Burlington Urban Agriculture Task Force

Report to Burlington City Council

"Put your faith in the two inches of humus that will build under the trees every thousand years"

—Wendell Berry

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Executive Summary

Many Burlington residents participate in urban food production in some capacity, either through gardening, keeping chickens, or growing or purchasing food from Burlington's peri-urban agricultural area, the Intervale. These people are motivated by values such as a love of local food, the recreational benefits of gardening, and the benefits that urban agriculture can provide to individuals, the environment, and the community.

Despite this broad range of activities, the City lacks policies specific to urban food production and residents often face barriers resulting from current policies or other factors that could be addressed through municipal policy. The City has a role to play in governing urban agriculture due to the fact that urban food production includes issues related to land use, public health, food safety, water quality, neighbor relations, and animal welfare.

"…[A] local food supply accelerates economic development, fosters a stronger and more sustainable community, improves the health of those who live and work in Burlington, and supports a system that regenerates and protects our natural resources and the environment."
- Plan BTV, 2012

In order to identify a set of policy recommendations to better support and govern urban agriculture in Burlington, the Urban Agriculture Task Force engaged community stakeholders in a year-long process and researched policy approaches used by other cities. This research informed the development of policy recommendations by incorporating stakeholder needs and considerations specific to the Burlington context. In order to address a variety of policy goals and priorities, a variety of approaches were identified, including ordinance revisions, education and outreach, and the coordination of multiple actors for specific urban agriculture projects.

The Urban Agriculture Task Force developed a set of more than 50 recommendations, which are detailed in the full report. A table summarizing the policies is included in Appendix A of the report. The pursuit of all of these recommendations will require a coordinated effort on the part of city offices, departments, leaders, organizational partners, and residents. For this reason, the Urban Agriculture Task Force also developed a set of implementation recommendations, which includes the creation of a City Food Office.

The Task Force identified a series of **crosscutting recommendations** that apply to many different urban agriculture activities. These include revisions to the zoning code, revisions to the general ordinance, outreach on urban agriculture policies, education on urban agriculture resources, encouraging communities of practice, adopting a mediation mechanism, coordinating with the state Agency of Agriculture, research needed to support future policy and measure progress against goals, incorporating food and agriculture into local planning efforts, adopting a Burlington Food Charter, and supporting access to land.

Home garden policy recommendations stipulate that the zoning code include a definition for home gardens and allow them in all residential zones to specifically protect the use of private

yards for food production; that the city should facilitate soil testing for contaminants; that the city should promote sustainable management practices; and that the city should explore ways to connect home food production practices to stormwater management.

Community garden policy recommendations focus on expanding the amount of community garden space in the city in order to accommodate the number of people interested, especially in underserved neighborhoods. The Task Force also recommended expanding the definition for community gardens to include the sale of produce and encouraging the incorporation of shared garden space into new developments. Other recommendations include partnering with local experts and organizations to leverage access to land and educational programming, streamlining permitting for structures to reduce barriers to building garden sheds, and providing infrastructural support to community gardens for water and soil testing.

The recommendations for **urban farms** include that the city could facilitate access to farmland outside the floodplain and support local agricultural economic activity to support Burlington's commercial farmers.

The **livestock and poultry** recommendations include that the city should adopt an animal welfare general ordinance to regulate humane treatment, that livestock and poultry structures should be regulated through zoning, that the city should create a registration system for urban livestock and poultry to track metrics and communicate with practitioners, that the city should adopt a general ordinance clarifying that slaughtering is legal as long as certain provisions are followed, and that roosters should continue to be regulated using the nuisance ordinance. Other recommendations include that the city should promote education on livestock care and slaughtering by disseminating information on resources through print and online media, and manage neighbor conflicts through the mediation mechanism.

The policy recommendations for **beekeeping** include that the city should revise the zoning code to specifically allow beekeeping and a certain number of hives outright (more allowed pending review) and set a minimum setback from property lines. A general ordinance recommendation includes additional requirements for beekeepers, such as requiring renters to obtain permission from their landlord and displaying the name and contact information for the beekeeper on each hive, thus placing some minimal additional burden on beekeepers for the sake of reducing risks. Other recommendations include that the city should promote outreach on policies, provide educational resources, and consider bees and other pollinators in city landscaping.

The recommendations for **hoophouses and greenhouses** include that the city should adopt definitions specific to these structures to differentiate them from buildings and that these structures should be exempt from zoning and building permits up to 400 ft^2.

The Task Force recommendation for **greenbelts**[1] is that the city should adopt an ordinance that prohibits food production in the greenbelt.

[1] The use of the term "greenbelt" in Burlington refers to the strip of land between the sidewalk and the street, which is a public right-of-way.

The **composting** recommendations suggest that the city should explore a community composting system to close the nutrient loop at a community level and the recently adopted state law (H.485) that phases in mandatory composting of organic waste by 2020.

Rooftop garden recommendations task zoning with exploring the use of incentives to encourage rooftop gardens and suggest that the city should explore the feasibility of putting rooftop gardens on city properties and Burlington Town Center Mall.

The **urban food forestry** recommendations similarly suggest that the city could initiate projects to map existing food-producing trees, identify potential tree planting locations, and establish and edible landscaping demonstration site.

The **school garden** recommendations address the feedback heard by the Task Force that the extent of garden education varies greatly between schools in Burlington. Although City Council does not have authority over school district curricular decisions, the Task Force felt that it was important to include recommendations for this important urban agriculture activity. Recommendations included that the school district should establish curricular support for school gardens and promote local awareness of program successes.

Recommendations for **food processing and sales** focus on providing support and permit exemptions to small-scale food processing outfits and those selling food grown in the city.

The pursuit of all of these recommendations will require a coordinated effort on the part of city offices, departments, leaders, organizational partners, and residents. For this reason, the Urban Agriculture Task Force also developed a set of implementation recommendations to begin to develop an implementation plan. The successful adoption of the Task Force recommendations will likely rely on the simultaneous use of the following strategies:

- Partner with the Burlington Food Council as it builds capacity to address these issues through work with local agencies and organizations on both urban agriculture and other local food system issues, supporting the organization through the provision of in-kind resources, as a formal support when obtaining grants, and as a “fee for service” consultant on food system matters;
- Establish a Burlington City Food Office, starting with a City Food Coordinator position, to advance the recommendations identified in this report, manage the production and dissemination of educational materials, organize workshops and events, and coordinate with the Agency of Agriculture, city departments, and local organizations on issues related to food production, processing, and sales in the city;
- Utilize existing city departments for the adoption and implementation of zoning and ordinance changes, and the creation of new outreach materials to support awareness of urban agriculture policies and how-to resources; and
- Partner with local experts and organizations to leverage resources and expertise in support of policy implementation and project coordination.

The Urban Agriculture Task Force also identified a set of recommendations for funding these efforts, which are located in Appendix B of the report. Potential funding sources include grant agencies focused on community development and sustainability, as well as those focused on specific urban agriculture activities such as community gardens and urban food trees.

1 Introduction

The city of Burlington, VT, has a strong local food culture, and many residents and urban farmers grow food within the city. However, the city lacks clear municipal policies on various practices related to growing food and keeping animals. In late 2010, the Burlington Food Council began work to address this issue. In March, 2011, Burlington's City Council created the Urban Agriculture Task Force, charged with "generating a cohesive urban agriculture policy informed in part by current research, best practices, and the needs of City residents."[2]

This report to City Council is the basis for the creation of a set of cohesive policies to better govern and support urban agriculture activities in Burlington. This report answers both broad policy questions and policy changes for specific urban agriculture activities changes so that urban agriculture can thrive in Burlington.



The research and deliberations that contributed to the creation of this report involved a year-long data collection process that started with a literature review and included an assessment of current policies, consultation with local stakeholders, and research on urban agriculture policies in other cities. Data collection methods included 27 semi-structured interviews, 7 public forums, and 5 stakeholder meetings. Public participation was integral to the process.

The introduction serves to ground the Task Force policy recommendations by providing an overview of urban agriculture in general, outlining the current state of urban agriculture in Burlington, and offering an overview of the Task Force recommendations with some vision for the future.

[2] Burlington City Council. (2011). Resolution relating to creation of Urban Agriculture Task Force. Burlington, VT.

History of the Urban Agriculture Task Force

This story starts with a chicken. In 2010, an urban homesteader in Burlington's Old North End was cited by code enforcement for having too many chickens. Upon researching the law, he found that the zoning ordinance being used to justify the removal of a good portion of his flock served a rather narrow purpose: to define whether a collection of animals comprised a "Boarding Operation" so that these types of facilities could be appropriately regulated. The regulation had nothing to do with the realities of raising animals for food or consider the type of animal under consideration. In fact, many Burlington households, having more than four animals in a combination of cats, dogs, birds, and hamsters, were in violation of the ordinance. This four-animal rule was the only thing that could be used to provide code enforcement with legal ground for asserting authority in response to a complaint that involved animals.[3]

Many city officials agreed that the ruling made little sense. As he made the calls to the city attorney's office, called planning and zoning, and went to hearings at the board of health, the resident found a lot of support for his cause, both from the city representatives and the other residents who attended the meetings and hearings.

http://7dvt.com/2010burlington-chicken-owners-say-four-hens-isn-8217-t-enough

More generally, there was sharp contrast between the feeling that Burlington is at the forefront of the local food movement and the realization that city policy does not adequately address issues specific to food production.

However, food system issues cross jurisdictional boundaries. It was unclear which city department was responsible for regulation of animals, when considered in the context of agriculture, and, more generally, the overall issue of food production within the city.

It became clear that the chicken issue was a symptom of a larger problem. While stakeholders could lobby for a change in the number of chickens, creating a very specific exemption for this one animal, this would not fix the structural issues regarding growing food in the city. What would happen when someone wanted a goat? When a driveway was converted to a garden? When home gardeners, seeking to provision themselves with three-season greens, put up hoop houses on their front lawn?

Seeing a broader need, the Burlington Food Council—a consortium of food-related organizations and interested residents—worked with Burlington's City Council to pass a resolution creating the Urban Agriculture Task Force (UATF), charged with the task of developing a cohesive urban agriculture policy for the city. The full City Council resolution may be found in Appendix C.

[3] In another recent incident, a household was ordered by an Animal Control Officer to stop keeping goats in their yard. See Ives, M. (2008). Get your goat, Seven Days. http://www.7dvt.com/2008get-your-goat.

1.1 What is urban agriculture?

Urban agriculture can be broadly defined as **growing food within a city**. The term can embody a range of activities, including home, school, rooftop, and community gardens, urban livestock and poultry, beekeeping, commercial farming, and the use agricultural structures such as of greenhouses and hoophouses.[4] Some definitions of urban agriculture encompass post-production activities such as processing, distribution, and marketing.[5] Urban agriculture can be commercial, noncommercial, or a hybrid.[6] In terms of scale, urban food production can occur in a space as small as a container on a balcony all the way up to agricultural fields many acres in size.

Urban agriculture practitioners include commercial farmers, city residents, recent refugees and immigrants, school children, and the elderly. Many urban agriculture projects are run by businesses, restaurants, community centers, government entities, or nonprofit organizations. People grow food in urban areas motivated by a wide range of reasons, including enjoyment of the recreational aspects of gardening, improved health and household security associated with self-provisioning, and values related to economic relocalization and food system sustainability.

Food grown in urban areas may be consumed by the person who grew it, shared with family, friends, or neighbors, or sold to other urban consumers. People who grow food may also have flower or rain gardens, but these are not technically urban agriculture since they do not produce food. Urban agriculture can occur on land held under a variety of property ownership models, including private property, public property, or institutional land. In some cities, urban land trusts hold property for community gardens to protect the spaces from competing land uses.

Many people participate in urban agriculture because they value the potential benefits it has to offer, including positive social, economic, environmental, and health outcomes. People may practice urban agriculture as a means to self-sufficiency, recreation, saving money, a sense of security, exercise, get outdoors, connect with family and neighbors, embody values in practical action, and even activism.

1.1.1 Benefits of urban agriculture

In response to concerns about a lack of food and agricultural knowledge, food insecurity, disparities in access, and corporate control over the food system, many people participate in urban agriculture projects motivated by interests in the **social benefits** it can provide, including education, increased access to healthy food, community development, and social justice. **Education** is a core goal of many organizational urban agriculture programs, particularly those targeting youth, and urban gardening programs can have a measurable impact on the relationship that young people have to the food they eat. At an individual or household level,

[4] Masson-Minock, M., & Stockmann, D. (2010). Creating a legal framework for urban agriculture: Lessons from Flint, Michigan. *Journal of Agriculture, Food Systems, and Community Development, 1*(2), 91-104.
[5] Bingen, J., Colasanti, K., Fitzpatrick, M., & Nault, K. (2009). Urban Agriculture. In L. E. Phoenix & L. Walter (Eds.), Critical food issues: Problems and state-of-the-art solutions worldwide: Greenwood.
[6] Hodgson, K., Caton Campbell, M., & Bailkey, M. (2011). Urban Agriculture: Growing healthy, sustainable places: American Planning Association.

urban agriculture can increase **access to healthy food** either through self-production or knowing someone who is growing food. Raising vegetables, fruits, herbs, and meat, coming together to grow, prepare or store food, and sitting around a table and sharing a meal, are fundamentally shared acts that **bring us together as a community**.

Urban food production offers an opportunity to build closer and more **direct economic connections** between producers and consumers, allowing farmers to receive a higher share of the money spent on food. Community gardens can have positive effects on **property values**, which can lead to better neighborhood conditions and increased tax revenues over time. It has even been suggested that urban agriculture has the potential to decrease cost of maintaining public land, increase local employment opportunities, and take advantage of underutilized resources. Urban agriculture can also offer opportunities for food **microenterprises**.

Urban agriculture can provide **open space benefits** and an opportunity for people to obtain food not grown in the conventional food system—a system associated with adverse environmental impacts. Urban agriculture can offer the opportunity for **ecological restoration** through the restoration of degraded land and reduced stormwater runoff. Urban agriculture has the potential to increase local biodiversity and provide green space micro-climate benefits such as mitigation of the urban heat island effect, humidity regulation, wind reduction, and shade provision.

From a **food system** perspective, there are many potential sustainability advantages to local agricultural production, including reduced energy usage, recycling of organic waste, and the use of ecological production methods. Although an urban area will not have enough land to completely support food production for its residents, urban agriculture can offset some amount of food that would otherwise be produced through conventional means. In addition, urban food projects can increase awareness about sustainable production methods such as organic agriculture, agroecology, and permaculture.

http://studio-g-architects.blogspot.com/2010/11/sustainable-and-sustaining-communities.html

1.1.2 Common challenges and risks

Although urban food production can be as straightforward as the right combination of soil, water, seeds, and sun, many social and physical characteristics of urbanized areas can pose barriers to agriculture in cities. Common **challenges** for urban agriculture relate to the inherent difficulties of growing food in an urban environment, including soil contamination, land access, and water access.

Despite the potential benefits from urban agriculture, care must be taken to minimize the potential for negative outcomes resulting from urban food production. Potential negative outcomes include risks to health, social systems, and the environment. **Health risks** can arise from historical land use patterns (e.g. contaminated soil) or unsafe practices (e.g. use of pesticides). **Social risks** include the promotion of patterns of privilege, inequity, and oppression.[7] In addition, user conflicts can arise from conflicting values and cultural norms. **Environmental risks** include soil and water pollution from chemicals or nutrients.

1.2 The opportunity for municipal policy

The community values and potential positive outcomes associated with urban agriculture highlight the importance of supporting urban residents in producing their own food and promoting the growth of urban agriculture projects. Given the risks and challenges noted above, there is a need to alleviate barriers and reduce the risks of negative outcomes. Municipal governments have an important role to play in meeting this need.

Municipal governments have a role to play in governing urban food production because urban agriculture can affect land use, human health, neighbor relations, animal wellbeing, and the local environment, all of which fall under the purview of municipal governments.

As recent interest in urban food production has grown, many cities are in the process of revamping their ordinances and zoning regulations to address the agricultural activities happening in their jurisdictions. Cities as diverse as Vancouver, BC, San Francisco, CA,

The municipal policy toolbox

There are a variety of mechanisms available for the governance of urban agriculture. Each has advantages and disadvantages depending on the policy goal. Municipal policy tools common to urban agriculture include:

- City-run programs
- Zoning ordinances
- General ordinances
- Information/Education
- Planning
- Partnerships
- Research
- Grant-funded initiatives

The Urban Agriculture Task Force considered these policy tools and developed recommendations based on the governance needs specific to each urban agriculture activity.

[7] While participation in a local food economy can contribute to a sense of connection to a broader community, it is important to recognize that culinary differences exist along lines of class, race, gender, and ethnicity. Food education programs should be sensitive to this fact so as not to reinforce existing oppressive social power dynamics. In addition, the importance of farmers getting a fair price for sustainably and fairly produced food can be at odds with anti-hunger and food security efforts. Sustainable agriculture projects should intentionally integrate those most affected by social inequality, otherwise social exclusion is likely to occur.

and Raleigh, NC have developed policies to govern and support urban agriculture. Many have also pursued food system planning and innovative initiatives to support urban agriculture projects.

1.3 Current food production activities in Burlington

The city of Burlington has a strong local food culture and contains examples of many of Vermont's most successful community food system models, including community supported agriculture from the city's peri-urban farms, a year-round farmers' market (several others operate on a seasonal basis), a downtown food co-op that sources a significant amount of local produce, meat and value-added products, restaurants featuring local food and seasonal ingredients, and a variety of community garden and food security organizations. The value of local food systems is widely appreciated.

1.4 A vision for Burlington's future

The City of Burlington can benefit in many ways from continuing its commitment to an equitable, healthy, and sustainable food supply through a commitment to urban agriculture. In doing so, the city can strengthen a local food system grounded in community and linked to rapidly developing state and regional efforts. This work can accelerate economic development, foster a stronger and more sustainable community, improve the health of those who live and work in Burlington, and put in place a system that regenerates and protect natural resources and the environment.

We envision a city where everyone who wants to grow or raise their own food has the space, information, and support to do so safely, responsibly, and in solidarity with their neighbors and the greater community. We envision an urban agriculture system that integrates with local and regional systems for a food system that is place based, sustainable, resilient, socially just, and secure.

Taking advantage of this opportunity will require a creative style of leadership that nurtures a growing community of practitioners and organizations through encouraging collaboration, engaging in proactive policy development that removes barriers, and very strategic high leverage investment. Rather than build a hierarchy, we recommend connecting existing resources through a networked approach.

The opportunity for innovative leadership

The city of Burlington has a long history of innovative community initiatives. The Community and Economic Development Office (CEDO), created in 1983 by city council resolution, and funded largely through Housing and Urban Development community development block grants, has provided leadership in the area of affordable development and related community based programs. The Legacy Project, initiated by Mayor Peter Clavelle in 2000, was on the forefront of sustainability planning. The Church Street Marketplace is at the core of a nationally recognized downtown, and the bike path, championed by Local Motion is one of the "Jewels of Lake Champlain." This pride in community and past achievements was expressed quite frequently during our research interviews with city officials.

The city could continue this tradition by taking a leadership role in providing a robust, proactive policy framework for urban agriculture practitioners throughout the city, and, more broadly, in making community food system development one of the core drivers of economic development. Such a policy focus dovetails well with city initiatives in the areas of climate change, sustainability, and fostering a high quality of life for all city residents.

1.4.1 Laying the policy groundwork for local food system development

The City of Burlington has an opportunity to support urban agriculture by removing policy barriers and initiating projects to facilitate local food production. When developing policy recommendations for urban agriculture in Burlington, the Task Force research process actively engaged those most affected by the issues and in order to meet the needs of stakeholders. This included balancing the needs of urban agriculture practitioners, city officials, and other community members. The Task Force also considered the implications for implementation and attempted to develop recommendations that utilize the existing regulatory frameworks and organizational relationships.

The Task Force developed more than 50 policy recommendations to address urban agriculture broadly as well as specific activities. The policy recommendations range from ordinance revisions that outline the humane treatment of livestock to zoning changes that exempt agricultural structures up to a certain size from the permitting process. For a summary table of the recommendations, see Appendix A.

2 Research activities

The research and deliberations that contributed to the creation of this report involved a year-long data collection process that started with a literature review and included an assessment of current policies, consultation with local stakeholders, and research on urban agriculture policies in other cities. Data collection methods included 30 semi-structured interviews, public forums, and stakeholder meetings. Public participation was integral to the process.

Review of current policies (Burlington and VT): The Task Force assessed the Burlington Municipal Charter, Comprehensive Development Ordinance, and General Ordinances, Vermont Accepted Agricultural Practices regulations, apiary laws, slaughtering and meat inspection laws, animal cruelty laws, and definitions of agriculture in various state laws. (See Appendix D and Appendix E for a complete overview of these laws.)

Interviews with local practitioners and experts. Task Force members conducted 10 semi-structured interviews conducted with local farmers, organizational representatives, and individuals engaged in urban food production.

Interviews with Burlington city officials and Agency of Agriculture employees. Task Force members conducted 7 semi-structured interviews with officials from a wide range of city departments and consulted with 4 representatives from the Vermont Agency of Agriculture.

Neighborhood Planning Assembly presentations. The Task Force presented at meetings of all 5 Neighborhood Planning Assemblies representing the city's 7 Wards to inform attendees about the project and solicit feedback.

Burlington Food Council forums. The Task Force consulted with local organizational representatives, city officials, and community members during forums held at Burlington Food Council meetings.

Residential livestock and poultry workshop. In January of 2012, the Task Force hosted a workshop for community members that drew 50 attendees. Participants broke into working groups to discuss various issues related to urban livestock

Backyard Livestock Policy Workshop, January 2012

Review of policies in other cities. The Task Force conducted an academic literature search and reviewed urban agriculture policies in dozens of cities, including Denver, CO, San Diego, CA, Santa Monica, CA, Portland, OR, Seattle, WA, Vancouver, BC, South Portland, ME, Baltimore, MD, and New York, NY.[8]

Interviews with urban agriculture policy experts and officials in other cities. The Task Force conducted 6 semi-structured interviews with urban agriculture policy experts and officials in other cities primarily regarding urban livestock and beekeeping, and corresponded with others through email. Cities included in this review are Albuquerque, NM, San Diego, CA, Seattle, WA, South Portland, ME, and Vancouver, BC. These cities were chosen because they represented a range of policy approaches to common urban agriculture policy areas. An urban agriculture policy expert at ChangeLab Solutions (formerly Public Health Law and Policy) was also interviewed.

Public review of draft report. A draft report was released in June, 2012. During June and July, the Task Force hosted 2 meetings with city officials and one meeting with the general public to obtain feedback on draft recommendations. The Task Force also collected community feedback through an online survey. During the month of August, the recommendations were revised based on stakeholder feedback.

http://www.wbur.org/2011/07/29/city-bees

[8] We recognize that many of these cities are substantially larger than Burlington. It should be noted that many smaller cities are undertaking urban agriculture policy changes similar to Burlington, but the larger cities are leading the way in urban agriculture policy because they have greater resources. This does not mean that approaches taken by large cities should be dismissed for our context; rather, Burlington has the opportunity to draw inspiration from the resources and experiences of larger cities, be creative with a relatively limited set of resources, and thus become a leader for other cities of comparable size.

3 Policy development process

Public policy develops through the political process, and may or may not be based in science or best practices. During our review of policies adopted in other cities, we identified many ways in which the unique characteristics of that city contributed to the policy approach ultimately chosen by that city. In order to create our recommendations, we developed specific goals based on the feedback from our community, utilized available science on specific issues, and worked with local stakeholders to identify potential policy approaches for Burlington. We have looked to other cities for inspiration, but we have not followed in their footsteps in cases where we see an approach that may better suit our community.

3.1 Policy tools approach

When considering the potential policy approaches that could be utilized, the Task Force considered the various policy tools that the city has at its disposal. As we identified policy goals, we chose to recommend policy tools that the city currently uses or could use in the future, including:

- City-run programs
- Zoning ordinances
- General ordinances
- Information/Education
- Planning
- Partnerships
- Research
- Grant-funded initiatives

There are various advantages and disadvantages associated with each type of policy approach. For example, a public education campaign on humane care of livestock may result in greater community awareness than an ordinance, but an informational campaign does not carry the weight of the law. In this case, we recommend both approaches be employed in order to both provide a legal basis for enforcement in cases of mistreatment and realize high rates of compliance. In this way, any or all tools may be employed towards the same objective.

4 A vibrantly agricultural city

The city of Burlington has a strong local food culture and contains examples of many of Vermont's most successful community food system models, including community supported agriculture from the city's peri-urban farms, a year-round farmers' market (several others operate on a seasonal basis), a downtown food co-op that sources a significant amount of local produce, meat, and value-added products, restaurants featuring local food and seasonal ingredients, and a variety of community garden and food security organizations. The value of local food systems is widely appreciated.

> ***Quick stats***
> With a population of 42,000 and an area of 10.6 square miles, the City of Burlington is characterized by a range of development types from a compact downtown to surrounding high and low density residential areas, commercial agriculture, and conserved open space.

Burlington residents currently participate in a wide variety of urban agriculture activities ranging from residential gardens and chickens to community gardens and commercial farms (Table 1). A number of nonprofit organizations provide gardening and agriculture coordination and education, including Friends of Burlington Gardens, City Market, the Intervale Center, Grow Team O.N.E., Burlington Permaculture, UVM Extension Master Gardeners, NOFA-VT, and the New Farms for New Americans program. Commercial farmers vend their produce at 4 weekly farmers markets during the growing season and one biweekly winter market.

Table 1. Scope of urban agriculture in Burlington

Activities	Infrastructure
Home, community, school, and rooftop gardens	Small-scale infrastructure (raised beds, cold frames, etc.)
Commercial farming	Hoophouses
Poultry and livestock	Greenhouses
Beekeeping	Livestock structures
Composting	Community kitchens
Preservation & processing	Farm stands
Produce sales	Farmers' markets

4.1.1 Home gardening and urban homesteading

Many Burlington residents participate in urban agriculture activities at their homes by gardening, practicing permaculture, and keeping bees, livestock, and poultry. These activities occur at a variety of scales, ranging from containers and window boxes to large gardens and animal structures.

4.1.2 Commercial farming

Burlington's peri-urban commercial agriculture is located predominately in the Intervale. Once home to Abenaki tribes and later the famous Vermont Revolutionary, Ethan Allen, the Intervale comprises 350 acres of agricultural land, trails, and wildlife corridors along the along the Winooski River. The Intervale is home to 11 organic farms, the city's largest community garden, and a garden supply store. The Intervale land is managed by the Intervale Center, a non-profit

organization that supports the Intervale's independent farms through its Farms Program, and runs a conservation nursery and a multi-farm delivery CSA.

Much of the Intervale land is part of the Winooski River floodplain, which both imposes some regulatory issues from the federal level and also offers highly fertile soils. In addition to the Intervale, commercial farming occurs at the Ethan Allen Homestead (see section on New Farms for New Americans, below) and privately-held farmland to the north. These areas are also in the Winooski River floodplain.

Local commercial farmers sell their products through both retail and direct market outlets. City Market, a cooperatively-owned grocery store in downtown Burlington with over 7,000 member-owners, features a wide range of locally produced food, including a significant amount from Intervale farms. The co-op actively promotes the local agriculture and offers community classes on gardening and cooking. Many urban farms sell directly to residents through Community Supported Agriculture (CSA) shares. One farm operates a produce truck that vends in the Old North End once a week. Four weekly farmers' markets operate throughout the growing season; the downtown farmers' market operates every other week throughout the winter.

Farming in a floodplain

Much of Burlington's agriculturally zoned land is located in the Winooski River floodplain and is prone to flooding after major rainfall events. Although this contributes to the high soil fertility found on this land, it also increases the financial risk that these farmers face year after year. The most significant recent flood resulted from Tropical Storm Irene in August 2011 at the height of harvest season, resulting in the loss of $750,000 worth of crops and equipment[1].

4.1.3 Community gardens

The City's Parks and Recreation Department administers the Burlington Area Community Gardens program, which was founded in 1972 and currently comprises 12 community gardens with approximately 500 allotment style plots. The program is run by one staff member and a network of volunteer site coordinators and has the goal of providing people with the opportunity to benefit from the recreational and community-building aspects of community gardens. Residents pay for garden space based on plot size (low-income participants are eligible for a 50% scholarship). The city's oldest community garden still in operation, founded in 1980, is located in the Intervale, and other gardens are scattered throughout the city. Most garden sites are on privately-owned land; only two are on city-owned land (Starr Farm and Callahan).

Who is growing food in Burlington?

The Burlington urban agriculture community includes people who are actively thinking about their role in the food system as well as people who simply like the taste of fresh tomatoes.

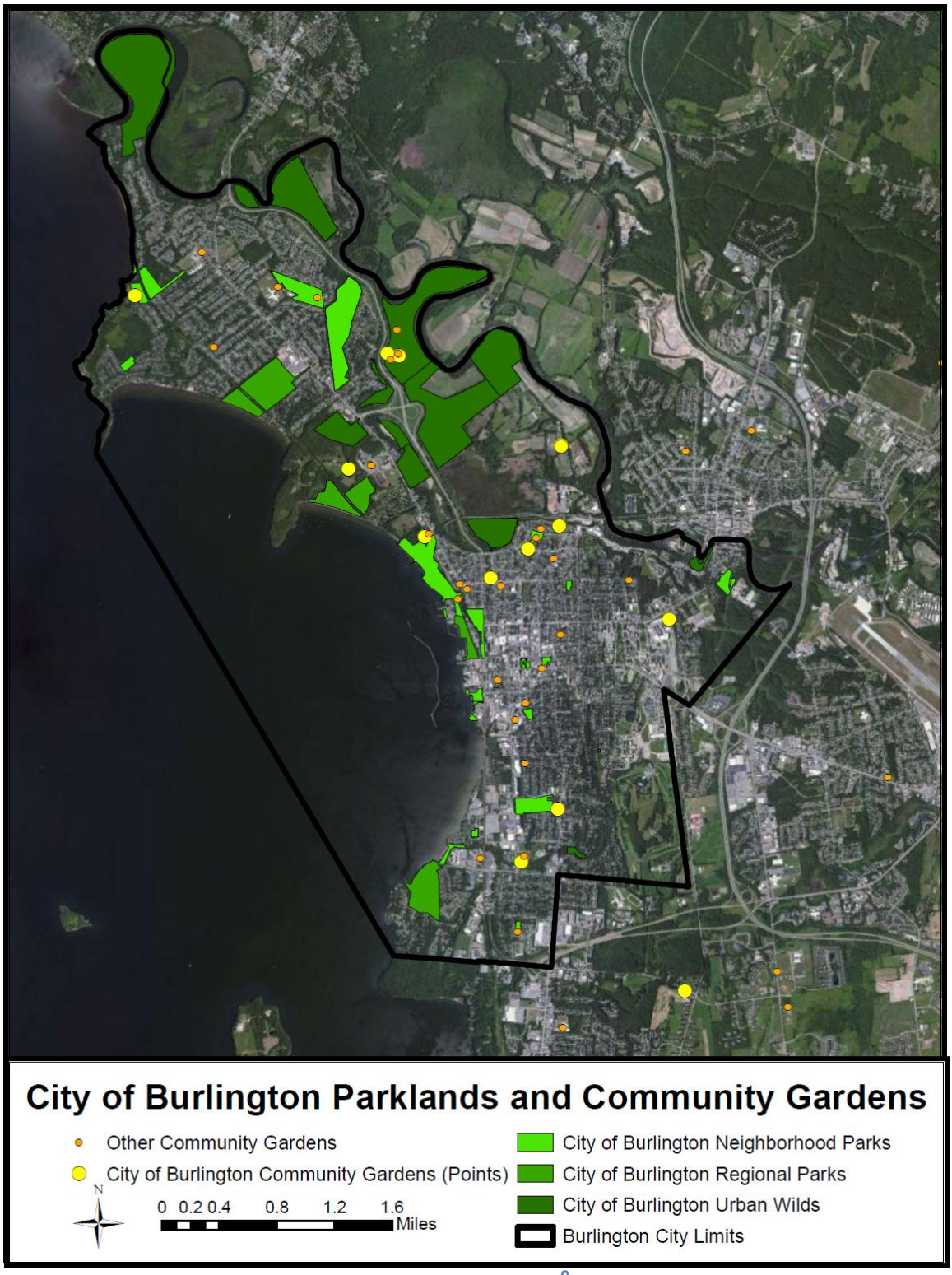

Figure 1. Community garden locations in Burlington[9]

[9] Map created by Elizabeth Brownlee

The city is also home to several independent gardens, including the Archibald and Riverside neighborhood gardens managed by Grow Team O.N.E., a grassroots community group in the Old North End. The two gardens on reclaimed land have space for 33 households.

4.1.4 New American integration through farming

The Association of Africans Living in VT (AALV) administers the New Farms for New Americans (NFNA) program, which aims to support refugee and immigrant households in growing food for their own use and support new farm and food-based enterprises. The program connects new Americans to agricultural land at the Ethan Allen Homestead and the Intervale, and offers educational programming on farming and business management. Over 90 families farm six acres, many of whom have agricultural expertise from their home countries. Around 40 households grow food for a mixed vegetable CSA and a Bhutanese CSA, and the program has plans to offer a West African CSA.

NFNA is notable for its successful efforts to provide new Americans with access to agricultural land and resources. Participants have the opportunity to grow culturally-appropriate food, save money on food, generate supplemental income, and achieve accelerated social integration and job outcomes. Many new Americans have extensive agricultural experience from their home countries, and have the potential to be productive members of Vermont's agricultural economy. In addition, NFNA is uniquely positioned to connect low income and marginalized communities to affordable local produce due to the low cost of production and personal connections to customers.

http://www.nytimes.com/2012/05/19/us/vermonts-refugee-farmers-rebuild-after-irene-floods.html

NFNA faces some unique challenges due to the nature of its work. The biggest challenge has been managing rapid program growth due to the popularity of the program. Although the program has expanded onto new land each year, it would benefit from access to more land with infrastructure for agriculture that is close to Burlington or Winooski. Transportation is a perpetual barrier, as most participants lack their own transportation, and the program van makes multiple trips from the AALV office to the fields at the Ethan Allen Homestead several days each week. Participants would benefit from public transportation to the Homestead and permanent market infrastructure such as farm stands in public housing, which would facilitate sales of fresh produce to neighbors. In general, the community would also benefit from more community gardens sites in the Old North End and Winooski.

NFNA is a model for small-scale agricultural entrepreneurship and access to growing space. Other populations could benefit from similar programs. There is tremendous potential for Burlington to support this important program through resources, information, and by coordinating on funding.

4.1.5 Organizational support for urban agriculture

Many local institutions and organizations provide land and resources for urban agriculture in Burlington (see Appendix F). Burlington College provides free garden space to families from the Somali and Burundi communities as part of the college's newly launched Sustainability and Urban Gardening Project. The Visiting Nurse Association Family Room and Friends of Burlington Gardens both operate garden programs at Ethan Allen Homestead. Friends of Burlington Gardens has supported the development of school, senior, group, and neighborhood gardens all over the city since 2001. The organization also manages the half-acre Healthy City Youth Farm at Hunt Middle School in partnership with the Burlington School Food Project. The hands-on farm-to-school program is designed to teach basic cooking and gardening skills, boost physical activity and increase healthy lifestyle choices for Burlington K-12 students. Burlington High School, Champlain Elementary School, Integrated Arts Academy, Sustainability Academy, Edmunds Elementary, C.P. Smith, and Flynn Elementary all have garden programs.

Food security facts

Despite a strong local agricultural economy, many Burlington residents live in food insecure households. In Vermont, 14% of households, and one in seven children in Chittenden County, are food insecure.[1] The Farm to Plate Initiative has identified goal that by 2020 "all Vermonters will have access to fresh, nutritionally balanced food they can afford."[1]

Burlington Permaculture is a community organization that facilitates education on permaculture and gardening by connecting neighbors, offering workshops, and sharing resources. The group aims to build a community and knowledge base in support of urban agriculture and a sustainable community in general.

In summary, Vermont's agricultural heritage provides an appropriate backdrop to the Task Force work to develop policies to support and govern urban agriculture in Burlington. Burlington residents participate in a broad range of urban agriculture activities, including home gardening and keeping livestock, commercial farming, organized farming programs, and community gardens. Many organizations support agricultural activities in the city, including several nonprofit organizations, the food co-op, and city departments. Despite this array of urban food production activities, many Burlington residents live in food insecure households.

4.2 Community values

During the Task Force policy process, many residents expressed that their interest in urban agriculture is motivated by a variety of personal and community values. The values articulated focused on the importance place-based food production with the goal of building an environmentally sustainable, resilient, socially just, and secure food supply. People grow their own food out of interest in having control over where their food comes from and for the recreational benefits of gardening. People involved in community gardens see the social capital benefits of sharing a space with neighbors, including fostering a neighborhood community and involving children and others who would not usually be involved in gardening and agriculture. In addition, many local farmers are inspired by an ethic of environmental stewardship and social justice ideals.

4.3 Barriers to urban agriculture in Burlington

Despite this diversity of urban agriculture activities, the Task Force identified a series of barriers to urban agriculture in Burlington, which are divided into **policy barriers** and **challenges**.

Policy barriers to urban agriculture arise from current laws, governance decisions, or implementation conventions that restrict urban agriculture activities, including:

- Lack of policies specific to urban agriculture activities
- Lack of clarity on existing urban agriculture policies
- Lack of agricultural expertise at city level
- Lack of coordination between organizations and city
- Restrictive zoning rules for structures, including setbacks and lot coverage
- Onerous permit process for structures and selling produce
- Prohibitive farm stand regulations
- Prohibitive home occupation regulations

Local stakeholders also noted that urban agriculture faces **challenges** that arise from the basic context of growing food in urban areas. While these challenges do not arise from current policy, they do have the potential to be addressed by future policy. Challenges for urban agriculture in Burlington include:

- Lack of practitioner knowledge on best practices
- Lack of access to land
- Soil contamination
- Language barriers
- Neighbor conflicts
- Economic viability of projects

The policy recommendations outlined in the Section 5, "Urban agriculture policy recommendations," address these general barriers, as well as issues for specific activities.

4.4 Stakeholder feedback on future policy

The task force solicited feedback from local stakeholders through interviews with farmers, vetting the research agenda with policy and food system experts, presenting and discussing a variety of urban agricultural activities at neighborhood planning assemblies, and meeting with city officials. From these conversations, these general themes emerged.

4.4.1 Local practitioners

The local urban agriculture practitioner stakeholder group included committed hobbyists and people involved in urban agriculture in some professional capacity. Participants from this stakeholder group advocated for policy approaches that remove current barriers, support their efforts, and do not create new barriers. They also provided valuable information regarding some of the technical aspects of urban agriculture activities.

Local practitioners would not like to see fees implemented for any urban agriculture activities, as this would pose new barriers to participation, especially for low-income practitioners. Also,

they would like regulation to be minimal, flexible, and scale-appropriate so that local residents may continue to produce food using a variety of techniques and approaches.

This stakeholder group expressed that urban agriculture best practices should be encouraged and promoted by the city, but that the city should not get involved in regulating them. However, in cases where an absence of regulation creates problems (e.g. in the case of the lack of animal cruelty laws for livestock), regulations should be adopted.

Across the board, this stakeholder group prefers that the city promote communities of practice rather than adopting prescriptive regulations. The idea of a community of practice was likened to hunter training courses, where experienced hunters pass on their knowledge and best practices to new hunters. Supporting a community of practice for a particular urban agriculture activity could involve facilitating events, workshops, and educational materials.

Local practitioners emphasized that outreach to neighbors can go a long way in terms of gaining their trust and support. One local beekeeper hosts a "bees and beer" night when he opens the hives.

4.4.2 City officials

The municipal officials involved in the Task Force research process were employees of the City of Burlington whose area of responsibility deals with urban agriculture in some regard. In general, city officials were very supportive of urban agriculture activities, though they noted the difficultly in balancing the needs and concerns of practitioners and neighbors. Participants from this stakeholder group emphasized an interest in ensuring that new regulations are in place to manage the small percentage of people who cause problems, but that regulations should not negatively affect the majority of people who follow best practices.

In terms of implementation, Code Enforcement expressed a strong desire for measurable standards to ease enforcement when needed. However, both the Department of Public Works and Code Enforcement expressed that exemptions from regulation would be useful where appropriate in order to reduce the burden of enforcement. Code Enforcement also emphasized that access to urban agriculture experts would greatly ease the burden of decision making in the field, as such partnerships could provide the expertise currently lacking in the city.

4.4.3 Burlington Community

Members of the Burlington community are people who live in Burlington but do not identify as urban agriculture practitioners. Participants from the Burlington community generally expressed support for urban agricultural activities, though some expressed concerns regarding the potential risk of water pollution from nutrient runoff (from manure and compost). This stakeholder group also emphasized the need to protect animal welfare.

The community identified the need for some basic standards to prevent problems from arising, but also felt that policies should be flexible to allow for the wide variety of situations in Burlington. For conflicts between neighbors, participants from this stakeholder group expressed that people should try to communicate directly with their neighbors instead of involving the city with the hope that most cases could be resolved before code enforcement, zoning, or the police need to be involved.

5 Urban agriculture policy recommendations

The recommendations below are comprehensive in scope and utilize state and nongovernmental resources in addition to city resources. The city should partner with the state in circumstances where the Agency of Agriculture has jurisdiction. Where the city has authority, general and zoning ordinances should be adopted that provide measurable standards for critical issues. Whenever possible, the city should partner with other governmental and nongovernmental organizations in order to leverage expertise and resources. Beyond regulation, the city can make significant gains by encouraging urban agriculture practitioners to network and share knowledge with each other. Neighbor relations can be improved through the use of mediation in dispute situations.

5.1 Crosscutting recommendations

This section outlines policy recommendations that apply to a variety of urban agriculture and food production activities. These suggestions seek to create a framework that support a range of policies addressing specific activities, such as livestock and gardens that are provided in following sections.

Our crosscutting recommendations include creating zoning and ordinances that specifically address the needs of urban agriculture practitioners, as well as supporting this community through a combination of education, outreach and community support.

5.1.1 Revise zoning ordinance to accommodate urban agriculture

→ PRIORITY ACTION

Land use priorities are expressed to a large degree through planning and zoning. Providing a cohesive framework for urban agriculture, therefore, requires a set of changes to zoning that clearly identifies and calls out urban agricultural practices so that they can be addressed in a holistic manner that recognizes the nature of food production. This can be supported by a clear articulation in city planning documents that food production is a priority, is supported by the city, and is integrated with other land uses. Looking to a broader context, it is important to "critically examine existing zoning codes and licensing regulations to determine if they create barriers for creating a healthful food environment in the community"[10]

The UATF has identified a range of recommended changes to zoning that would, in addressing urban agriculture as a distinct set of activities, more appropriately govern these practices and ease the level of conflict that comes with any activity in a close, urban environment. In addition to those specific to the topics in the following sections, there are several overarching recommendations for changes to zoning that rest on a foundation of adopting definitions to differentiate between agricultural and non-agricultural activities.

5.1.1.1 Adopt zoning definitions for urban agriculture activities

As a critical first step, and in coordination with the general ordinance, Planning and Zoning should develop distinct definitions to differentiate between food production uses and non-food

[10] "A Planners Guide to Community and Regional Food Planning", American Planning Association

production uses and to capture the variety of scales at which agricultural activities take place in Burlington. We suggest:

- **Urban agriculture:** is the production of food in a city at a household, community, or commercial scale and can involve a range of activities including the cultivation of plants, keeping animals, and aquaculture. Urban agriculture can address issues as broad as food security, community and economic development, environmental sustainability, and conservation of open space.
- **Peri-urban agriculture:** the production of food on relatively large areas of open land within the city limits. [Intervale farms, Tamarack Hollow, and NFNA would all be peri-urban]
- **Agricultural structure**: a structure used in conjunction with food production that qualifies for the state's definition of "agricultural structure" (exempt from municipal permitting per state law)
- **Urban agricultural structure**: a structure used in conjunction with food production that does not qualify for the state's definition of "agricultural structure,"[11] including, but not limited to, garden sheds, hoophouses, greenhouses, and livestock structures.
- **Urban livestock**: animals used for food production (including eggs, milk, and meat) in the city.
- **Urban farm:** A private, not for profit, or public farm used primarily for a commercial or educational agriculture.
- **Community garden**: A private, not for profit, or public garden used by a group of households to grow and harvest food crops or non-food crops (e.g., flowers) for personal or group consumption, for donation, or for sale. Community gardens may be principal or accessory uses and may be located on a roof or within a building.
- **Home garden:** A garden at a single-family or multifamily residence used for food production by the residents of the property, guests of the property owner, or a gardening business hired by the property owner. Home gardens include the front, side, or back yard, rooftop, courtyard, balcony, windowsills, fence, and walls.

Building on base of definitions, we recommend the following actions with for changes in zoning:

5.1.1.2 Streamline permitting process for urban agricultural structures

Urban agricultural structures (as defined above) up to 24 ft^2 for livestock or up to 400 ft^2 for other agricultural uses should be exempt from zoning permit process and lot coverage calculations. If they have water or electrical, they should be subject to the DPW permit process and inspection. Up to 2 structures shall be allowed; additional structures shall be subject to a site review.

Urban agricultural structures larger than the exempt sizes (but which do not qualify for the state's Accepted Agricultural Practices exemption[12]) shall be subject to a zoning permit, as well as a DPW building permit if they have water or electrical.

[11] See Appendix D for an explanation of Vermont's Accepted Agricultural Practices regulations.

Planning and Zoning should have at least one administrator who is very familiar with processes for urban agriculture situations, including who to contact at the state when people need to apply for exemptions. This applies to community gardens, livestock, and season extension structures, which are addressed specifically in the following sections on those activities.

5.1.1.3 Exempt small scale infrastructure

General small-scale infrastructure shall be exempt from city permitting processes because the scale of these technologies does not warrant city involvement. Small scale structures include, but are not limited to, cold frames, trellises, arbors, benches, temporary fences, bike racks, raised/accessible planting beds, terracing, compost or waste bins, picnic tables, garden art, rain barrel systems, barbecue grills, outdoor ovens, and children's play areas.

5.1.1.4 Establish zoning that recognizes the benefits of food production

Much like we give height bonuses in return for providing social goods such as affordable housing units, we should establish analogous bonuses that recognize the ecosystem services provided by land used for well-managed food production.

Land used for gardening provides benefits over and above the food produced. The conversion of impermeable surfaces to permeable surfaces can help to mitigate stormwater issues. When managed properly, the process of building soil sequesters carbon and can support brownfield remediation.

As with land use, our report contains specific recommendations that would coordinate with this bonus system, including require all new affordable housing units to contain designated yard or other shared space for residents to grow food, and encourage multifamily residential, commercial, institutional, and public new construction to incorporate green roofs, edible landscaping, and encourage the use of existing roof space for community gardening, where appropriate.

Just as there are minimum parking requirements for development, the city should consider minimum garden space requirements or incentives. Such a policy would be best developed in conjunction with planning for public and non-motorized transit, which would work alongside these requirements to reduce reliance on the private automobile.

Although it may not always be appropriate to prioritize food production over other uses, food production and access should be an important component of any development. We recommend:

- Allowing parking requirements to be offset by the provision of arable land under gardening/urban agriculture easements.
- Relaxing height restrictions to allow for rooftop gardening structures such as trellises, raised beds, and implement storage.

[12] See Appendix D for an explanation of Vermont's Accepted Agricultural Practices regulations.

- Allowing higher density development to be permitted if residence structures sited to maximize open land for food production and storm water management as protected uses, and to maximize solar energy gain.

In addition to the incentives above, we recommend the consideration of a policy that encourages the provision of garden space in all multi-unit developments. This requirement could be satisfied by neighboring properties or proximity to a community garden.

5.1.2 Adopt an urban agriculture general ordinance

→ *PRIORITY ACTION*

The Task Force is recommending that the City of Burlington adopt a general ordinance for several urban agriculture activities that would benefit from some regulatory oversight, including the humane treatment of livestock, livestock slaughtering, beekeeping, and greenbelt gardening. The specific ordinance recommendations are contained in subsequent sections 5.5.3, 5.6.3, and 5.8.3.

5.1.3 Promote awareness of policies related to urban agriculture

→ *PRIORITY ACTION*

The city should make information on urban agriculture policies available to the public through web and print resources. A special effort should be made to distribute these resources to non-English speaking communities by coordinating with the Association of Africans Living in Vermont.

Examples from other cities include:

- Chicago (http://www.cityofchicago.org/city/en/depts/dcd/supp_info/urban_agriculturefaq.html)
- Vancouver (http://vancouver.ca/commsvcs/LICANDINSP/animalcontrol/chicken/index.htm)
- Seattle (http://www.seattle.gov/environment/food_grow.htm)
- Portland, OR (http://www.portlandonline.com/bps/index.cfm?c=55279&a=362065)
- Philadelphia (http://www.phila.gov/green/growLocal.html)

5.1.4 Promote awareness of urban agriculture resources

→ *PRIORITY ACTION*

The City should play an active role in connecting practitioners with information on local and state regulations, as well as best practices. These resources should be available electronically as well as in print. These resources could take the form of an online clearinghouse, or a simple handbook, and include, but not be limited to:

- How-to (technical) information
- Local and statewide organizations
- Local and statewide programs and services

These resources should be translated into other languages to meet the needs of the city's diverse agricultural communities. Additionally, the City should strongly encourage the use of organic gardening and farming practices.

5.1.5 Encourage communities of practice

The city should encourage urban agriculture communities of practice by facilitating workshops and events and supporting local urban agriculture organizations. This would provide local residents with an opportunity to rely on a community of other practitioners for technical support and information on best practices, thus reducing some of the risks associated with improper management. Many groups in Burlington already engage with residents on urban agriculture issues, but there is the opportunity for this work to be expanded, especially when it comes to urban livestock.

Examples from other cities include:

- Vancouver Urban Agriculture Network (http://www.vuan.blogspot.com/)
- PDXBackyardChix (http://groups.yahoo.com/group/PDXBackyardChix/)
- Chicago Backyard Poultry Meetup Group (http://www.meetup.com/ChicagoBackyardPoultry/)
- Seattle Tilth (http://seattletilth.org/)
- Philly Urban Creators (http://phillyurbancreators.org/)

5.1.6 Develop and implement a mediation mechanism

Community mediation offers the opportunity to resolve conflicts between neighbors on a case-by-case basis rather than adopt restrictive ordinances that are not flexible enough to adapt to the variety of situations that will be encountered in developing a robust local food system. The city's Community Justice Center serves a similar function now, though that program is intended to facilitate justices in cases where a crime has been committed. The Community Justice Center is funded by a combination of city, state, and grant funding, and is supported by community volunteers. A similar, though less extensive, approach could be taken to create a small urban agriculture mediation program.

The city should convene a small group of volunteers with mediation experience who are willing to facilitate communication and problem solving in situations where agricultural activities are causing tensions between neighbors. If such an approach would be useful for other issues as well, it could be established as a more comprehensive program that also includes urban agriculture.

5.1.7 Coordinate with the Agency of Agriculture, Food and Markets

The Agency of Agriculture, Food and Markets has jurisdiction over Accepted Agricultural Practices that affect water quality regardless of the size of an agricultural operation. This means that anyone composting or keeping livestock must follow compost and manure management practices that adhere to the Accepted Agricultural Practices (AAPs), which often cannot be met without a variance on small urban lots.

The city should coordinate with the Agency of Agriculture, Food and Markets and the Agency of Natural Resources to develop a clear process for urban agriculture practitioners to follow in

order to comply with AAP regulations for compost and manure management. This may include the city advocating for the revision of the AAPs in order to accommodate smaller scale activities.

Additionally, this information should be disseminated through online and print outlets to ensure that Burlington practitioners are familiar with the state laws that affect them.

The city should maintain a list of contacts at the state level to consult with when issues come up that require agricultural expertise.

5.1.8 Monitor indicators to guide policy and measure progress

5.1.8.1 Maintain maps to inform urban agriculture decision making

As urban agriculture is a place-based activity, maps are critical. Maintain maps of current farming activities, community garden locations, and prime agricultural soils. Identify prime locations for future food production. Maps provide a basic foundation that can be used to inform policy and support program development. Many planning and academic mapping efforts are already underway, which can provide a basis for urban agriculture mapping in the future, including the Open Space Protection Plan update, which will include a map of agricultural production in the city.

5.1.8.2 Develop food system metrics

Metrics drive policy. We cannot assess or guide progress without information. The city should develop and maintain a set of metrics that reflect the policy recommendations developed out of this report. Basic tracking metrics could include the acres of land in public gardens, the number of households maintaining livestock, the number and sales volume of farmer's markets, and the an estimate of the percentage of food consumed locally that is produced from urban agricultural activities in the city.

The metric set should be consistent with those being developed at the state level by the Farm to Plate initiative.

A starting point for metric development could be the update of the local food assessment, first conducted by the Burlington Food Council in 2002, which served as a basis for the development of the Burlington School Food Project. We recommend contracting with the Burlington Food Council, in partnership with the UVM Food Systems Spire, to complete this work.

Many food system issues can be tracked using indicators that are already tracked or are easily available, while other indicators may be more difficult to obtain. There is an opportunity for the city to partner with local organizations and universities to compile this information into a comprehensive and ongoing food system assessment for Burlington. Examples metrics for food system issues include:

- **Livestock:** # of animals registered through the city system (see livestock recommendations below), # beehives in the city (see beekeeping section below)
- **Economy:** # farmers' markets in Burlington, # participating vendors at farmers' markets, value of sales from farmers' markets

- **Food security**: poverty rate, food security statistics, school children qualifying for free and reduced lunch, food shelf meals served
- **Community gardens**: # acres in community gardens, # participants, # people on waiting list, % returning gardeners
- **School gardens**: # acres in school gardens, # children participating
- **Composting**: # pounds of food scraps and yard waste composted in the city

There are a number of studies and reports that could be used as starting points for this effort, such as:

  - "Community Food Security Coalition Recommendations" for Food Systems Policy in Seattle"
  - "Charting Growth to Good Food – Developing indicators and measures of Good Food"
  - "Estimates of the Genuine Progress Indicator (GPI) for Vermont, Chittenden County and Burlington, from 1950 to 2000"
  - "Whole Measures for Community Food Systems – Values Based Planning and Measurement"

5.1.9 Incorporate food and agriculture into local planning efforts

For food policy – including urban agricultural policy – to remain vital and effective, it must be visible, and articulated as a priority in city planning documents. The benefits of planning for urban agriculture in a robust, sustainable manner dovetail with other city objectives, such as protecting open space, mitigating climate change and ensuring the fostering of a sustainable community.

To this end, the task force recommends incorporation of sections that detail the articulation of urban agriculture and food systems policy into the city's planning documents:

  - City Master Plan
  - Burlington Climate Action Plan
  - Sustainably Planning/Legacy Plan Update
  - Open Space Protection Plan
  - Housing and Community Development Action Plan
  - Plan BVT

5.1.10 Increase public transportation to food production areas

Consider areas with concentrated urban agricultural activities during transportation planning, for example bus service to current agricultural lands such as the Ethan Allen Homestead and the Intervale, bus service to future agricultural land within and outside the city, and sidewalks on Intervale Road.

5.1.11 Adopt a Burlington Food Charter

An overarching food policy in the form of a Food Charter can provide a mission statement about a community's food goals and values and be used as a basis for a city's food policy by guiding future decision making.

An important piece of the food charter as a foundational document is an assertion of the basic human right of community members to save seed, grow, process, consume and exchange food and farm products.

The city council should formalize the commitment to local food expressed explicitly in the resolution that created the task force and implicitly throughout city planning and policy documents by endorsing a food charter that contains priorities related to security and safety, ecological sustainability, economic benefits, accessibility and affordability, health, education, community, and civic engagement. Reflecting the values of the community, a food charter would be developed through an efficient and well-facilitated public engagement process, with legal authority ratified by the City Council and the Mayor.

Examples from other cities include:

- Toronto (http://www.toronto.ca/food_hunger/pdf/food_charter.pdf)
- Philadelphia (http://www.leadershipforhealthycommunities.org/images/stories/philadelphia_food_charter1.pdf)
- Vancouver (http://vancouver.ca/commsvcs/socialplanning/initiatives/foodpolicy/policy/charter.htm)
- New York City (http://www.mbpo.org/free_details.asp?id=179)

5.1.12 Support access to land at multiple scales

→ PRIORITY ACTION

The city can support access to land for food production through making more land available for urban agricultural activities, and through enabling more efficient use of existing land.

The city should encourage the development of programs that match land with households and farmers that could make use of it. Whether hosted at the city, as a municipal program, or within another organization such as the Burlington Food Council, city support is instrumental in ensuring that these programs are successful. We recommend that the city take the first steps towards developing these programs by supporting the convening of stakeholder meetings.

The City could also develop model language for shared use agreements.

5.1.12.1 Facilitate farmer/institutional land matching

This program would match larger parcels of land, owned by institutions such as the colleges with farmers looking for fields. The city could participate both in terms of developing this program and as a participant. The need for "higher and dryer" land was made painfully obvious during the past growing season, in which the bulk of the cities agricultural land, located in the Intervale, experienced both spring and fall flooding.

In addition to providing matchmaking services, the program would provide technical assistance to farmers and land-owners, to ensure that the permitting process is not a barrier.

5.1.12.2 Facilitate homeowner/gardener land matching

Some homeowners would enjoy seeing gardens on their properties, but for a variety of reasons, do not want to garden themselves. And, some residents, particularly those in the denser neighborhoods, would like to garden, but do not have the land. This program would encourage homeowners to allow other residents to garden on their property. While the core of the program would be a matchmaking facility – perhaps web based – the program would include a strong educational and technical assistance component.

5.1.12.3 Explore alternative conservation mechanisms

Some tracts of city land that are viable for agriculture have easements or other development restrictions that, while intended to protect against development, also preclude their use for growing food. While it is important to keep some land in "pure conservation" – untouched by any development, low impact cultivation is a use that keeps land open, ensures the continued provision of environmental services and so is in keeping with the sprit, if not the letter of these restrictions.

Two examples are McKenzie Park and the Urban Reserve.

McKenzie Park, an area of conservation land at the northern edge of the Intervale, is an area of open space that would be productive agricultural land. However, there are use restrictions for that land due to the federal Land and Water Conservation Funds that were used to purchase it and new uses need to be approved by the National Park Service. New activities must be available and accessible to anyone who wants to participate. Community gardening is considered allowable, as are educational activities. This land could be used for new community garden space or agriculture education programs.

The formerly industrial area known as the "North Forty" – which has been set aside as the "Urban Reserve" – is now coming under consideration in the planning process. Although the soil in this area is contaminated, this land could be used for greenhouse or other forms of food production that do not require soil cultivation

There are a variety of mechanisms that could be explored that would allow this land to be conserved as protected open space while at the same time being made available to practitioners. Several of these, including transfer of development rights, have been explored in a guide produced by the Vermont Law School Land Use Clinic "Facilitating Innovative Agricultural Enterprises".

We recommend that the city continue to guide this process for these parcels in particular, and for others as they are identified by ongoing planning efforts.

5.1.13 Promote urban agriculture on public land

The city owns many properties that could support food production. Urban agriculture activities should be considered and encouraged on public land as long as the project includes some sort of public benefit, including, but not limited to, education, workforce development, programs targeted at underserved or food insecure populations, or gleaning. Specific production activities could include crop production, livestock grazing, aquaculture, greenhouse production, orchards, or beekeeping.

Land could be made available through the existing community gardens program, or by arranging for use by existing programs, such as New Farms for New Americans. Alternatively, the city could explore the development of new programs that either match city land with practitioners, or re-direct city resources from ornamental uses to food production.

Several sections of this report include specific recommendations for this type of effort including Bees (Section 5.6) and Urban Food Forestry (Section 5.1.1). At the citywide level, we recommend adopting these as part of a comprehensive set of proactive policies that maximizes the use of city land for agricultural purposes. Developed by a working group that could include the Burlington Food Council, the city land steward, the city arborist, and Friends of Burlington Gardens, these policies could become part of an expanded city Open Space Protection plan, which is currently being updated.

5.1.14 Promote sustainable management practices

As with community gardens, food production throughout the city should follow organic practices. While we recognize that there are jurisdictional issues at the state and federal levels, the city should consider working towards a ban on non-organic pesticides and herbicides.

The city's Pesticide Ordinance forbids the use of pesticides or herbicides, or products containing them, within 500 feet of Lake Champlain or its tributaries without special permission from the Board of Health. Anyone who applies pesticides or herbicides, or products containing them, outside of the 500 foot buffer zone (or within the zone with permission) must notify the occupants of the property and adjacent residents between 24 hours and 10 days before application. The notice must include a fact sheet stating when and where the pesticide will be applied with warning label details and other information. Failure to post before application may result in fines of up to $500. [13] Additionally, the Burlington Board of Health actively encourages non-toxic approaches to weed and pest control and recommends Integrated Pest Management (IPM).

The recent persistent herbicide contamination at Green Mountain Compost and other commercial compost facilities in Vermont, and its consequences for gardeners and farmers across the city, while still unfolding, provides a stark warning about the ease with which these compounds can enter our food supply.

[13] Burlington, Vermont – Code of Ordinances, Sec. 17-9.

5.2 Home Gardens

Many local residents have gardens on their properties, either in the ground, in raised beds, or in container gardens. Home gardens have the advantage of being close to where people live, which means that people can easily harvest fruit and vegetables just by walking out their door.

One risk associated with home gardens is that urban soils are notoriously contaminated from past industrial uses, unauthorized waste disposal, lead paint, and vehicle exhaust. While this is a consideration for urban agriculture throughout the city, the perimeter of old homes are particularly at risk because of lead paint chips falling on the ground. Additionally, improper application of pesticides, herbicides, or fungicides can be detrimental to the health of both gardeners and their neighbors.

5.2.1 How current policy applies

CEDO has occasionally offered free soil lead testing to Burlington residents, based on availability of funding from the Burlington Lead Program. The Burlington Lead Program already offers educational materials regarding the risk of lead in vegetable gardens.

5.2.2 Policy examples from other cities

Most cities do not regulate home gardens, but may include a zoning definition for the activity and provisions related to fencing or other infrastructure.

5.2.3 Recommended actions

Home gardens, due to their private nature, do not warrant regulation. However, there are some basic zoning, programmatic, and educational efforts that can protect home gardens as a valuable use and ensure that home gardens are managed in safe ways.

5.2.3.1 Facilitate soil testing

Educational materials on soil contamination should also be made available on an urban agriculture website (in addition to the Lead Program website). The city should offer or connect people to free or subsidized soil testing that at minimum tests for lead and ideally tests for other contaminants as well.

5.2.3.2 Link home food production to stormwater management

The City should explore efforts to connect home food production into stormwater management, such as greywater irrigation, rain gardens, and rainwater catchment.

5.3 Community Gardens

In addition to providing space for people who don't have access to land to grow their own food in a safe environment, community gardens have many economic, social, and environmental benefits. They have been proven to improve the quality of life for people in the garden, provide a catalyst for neighborhood and community development, stimulate social interaction, encourage self-reliance, beautify neighborhoods, produce nutritious food, conserve resources, create opportunity for recreation, exercise, therapy, and education, reduce crime, preserve green space, create income opportunities and economic development, reduce city heat from streets and parking lots, and provide opportunities for intergenerational and cross-cultural connections.

There are several types of community gardens:

- Allotment gardens – sites divided into plots that are rented to gardeners. Neighborhood gardens are a subset of this type, with plots used by residents of designated neighborhood or area.
- School gardens – educational garden sites on school grounds involving students, teachers, and often, community volunteers.
- Group gardens – programs serving a group of participants such as youths, seniors, or immigrants.

Burlington has a long history of community gardening, dating back to the city's first community garden at Cliffside Park (now Oakledge) in 1972. By 1976, the city had 23 sites and nearly 1,000 plots. By 1985, those numbers had dropped to 255 plots, with only 190 rented. The City of Burlington Parks and Recreation Department took over management of the remaining eight gardens in 1986.

The Burlington Area Community Gardens (BACG) program now encompasses 12 community gardens with approximately 500 allotment style plots. The program is run by one staff member, along with a network of volunteer site coordinators, and overseen by a volunteer advisory board. Residents pay for garden space based on plot size and low-income participants are eligible for a 50% scholarship. The city's oldest existing community garden, founded in 1976, is located at Ethan Allen Homestead and other gardens are scattered throughout the city (see map below). Just under half of the garden sites (5) are on privately owned land. Two of the sites on public land are on parcels not managed by Parks and Recreation (Ethan Allen Homestead, Champlain Community Garden). Between these two sites and the 5 parcels on privately owned land, Parks and Recreation enters into a land use agreement between the city and the land owner for most of the community garden sites.

The city is also home to several independent gardens, including the Archibald and Riverside neighborhood gardens managed by Grow Team O.N.E., a grassroots community group in the Old North End. The two gardens on reclaimed land have space for 33 households.

The Winooski Valley Parks District's Ethan Allen Homestead site hosts several gardens and garden education programs: a BACG garden, the Visiting Nurse Association Family Room summer gardening/outdoor education program and the Friends of Burlington Gardens Community Teaching Garden.

5.3.1 How current policy applies

Under existing Burlington zoning, a community garden is defined as "A private not for profit or public common area used for gardening by a group of households." Community gardens are an approved use in all districts except Urban Reserve and Downtown Waterfront Public Trust districts. The minimum off-street parking requirements for community gardens are 1 parking spot per 10 plots in the neighborhood and shared use districts and none in the downtown district.

The city's municipal development plan identifies community gardens as a strategy to enhance neighborhood identity and character (I-25) and a site for agricultural entrepreneurship (VI-8).

In 2002, Burlington City Council approved a resolution in support of the maintenance and long-term expansion of the Burlington Area Community Gardens, including that city departments support the BACG program, that ordinances should be strengthened to support community gardens, the BACG program should be expanded to reach marginalized populations, and that the city should take advantage of opportunities to partner with local organizations on programs and grants.[14]

Although Burlington has a vibrant community garden culture and is often cited as a model for a city-supported system, there are several barriers to providing access to all residents who want to garden. The areas of greatest need for more garden space are the Old North End and South End.

- There is a waitlist for the city's community garden plots and independent neighborhood plots.
- Permit requirements for structures are burdensome and/or prohibitive.
- Community garden information and educational programming is only available in English.
- McKenzie Park could be used for new community gardens, but federal policy preclude commercial use of the land.
- Current community garden definition is limited to gardening and does not allow for livestock or bees.
- City needs land use permits to undertake capital projects and park amenity additions.
- Lack of large tracts of available land.
- Contaminated soil in dense residential areas.

Plot fees support BACG, but only cover approximately 60% of the cost of the city's program. Remaining funding comes from The Conservation Legacy Program (CLP) stewardship fund and the City's tree and greenway fund. The main funding sources for new garden development are the city's Conservation Legacy Program (CLP) fund[15] and Penny for Parks fund[16], which was created for the "capital improvement needs of city parks and community gardens" and is

[14] http://www.burlingtongardens.org/GardenResolution.html
[15] For CLP program details, visit http://www.enjoyburlington.com/Parks/ConservationLegacy.cfm
[16] For Penny for Parks program details, visit http://www.enjoyburlington.com/AboutUs/PennyforParks1.cfm

funded by an annual assessment. Community gardens are currently budgeted at 1.4% of the annual total.

The only mention of community gardens is state statute is in the chapter on downtown development where community gardens are mentioned as a public space that promotes social interaction. (24 V.S.A. § 2791. Definitions) The house of representatives passed a joint house resolution in 2004 supporting the establishment and expansion of community, neighborhood, and youth gardens and to increase their accessibility to disadvantaged population groups. (J.R.H. 47).

5.3.2 Policy examples from other cities

Municipalities around the country have adopted a variety of polices that support the creation and maintenance of community gardens, including providing financial support, technical assistance, and education. Communities can also promote community gardens by encouraging interim or temporary use of underutilized land for gardens, assisting in land acquisition for gardens, and helping manage community gardens and related educational programming. Here are some examples of government actions promoting community gardens compiled by Public Health Law & Policy (http://www.michigan.gov/documents/mdch/communitygardenpolicies_303374_7.pdf)

Community Gardens on Vacant Public and Private Land

- The City of Escondido, California, has an "Adopt-a-Lot" policy allowing community gardens to be operated as an interim use on both publicly and privately owned vacant land. A city employee works with landowners and the community to develop an agreement for the conditions and tenure of use of the land as a garden.
- Des Moines has a community garden program that allows the establishment of community gardens on city right-of-ways and real property.
- New York City has a law protecting and promoting the use of vacant lots for gardens.
- A number of cities, including Washington, DC, and Hartford, CT, collect and maintain an inventory of public or private vacant land suitable for gardens.

Financing and Acquiring Land for Community Gardens

- Seattle has provided parks with bond monies, public housing funds, and neighborhood matching grants to purchase land for and help maintain garden plots.
- Minneapolis allows use of tax-forfeited land (properties seized by the city from the landowner due to unpaid taxes) as garden sites without charge.
- Chicago formed a nonprofit called NeighborSpace with the Chicago Park District and the Forest Preserve District of Cook County. Each entity contributed funds to purchase lands for community gardens.
- Madison, Wisconsin, has used federal Community Development Block Grant funds to support community gardens.
- A number of cities, including Boston, Philadelphia, Providence, and New York City, have begun using land trusts to acquire and preserve community gardens.

Municipal Community Garden Programs

- Like Burlington, many cities around the country have municipally-operated community garden programs, such as Hartford, CT, Palo Alto, CaA, Portland, OR, and Sacramento, CA.

Public-Private Partnerships

A number of communities have created partnerships with nonprofit organizations to acquire land for and operate community gardens.

- Chicago has a city-funded nonprofit called NeighborSpace to acquire property to preserve land for community gardens. It also enters into operating agreements with local groups to use and maintain the spaces.
- The City of Seattle's P-Patch Community Garden Program works with the nonprofit Friends of P-Patch and the City Housing Authority to acquire, build, protect, and advocate for the gardens.
- The Tacoma-Pierce County Community Garden Program is a collaborative effort of the City of Tacoma, Tacoma-Pierce County Health Department, Metro Parks, Pierce County, Forterra , and other community groups.
- The gardens in Madison, Wisconsin are coordinated by the Community Action Coalition for South Central Wisconsin, Inc. A city-wide Committee on Community Gardens is made up of gardeners, and representatives of city bodies including the Plan Commission, Parks Commission, and the Community Development Block Grant (CDBG) Committee.

5.3.3 Recommended actions

5.3.3.1 Revise zoning for community gardens

Community gardens may be principal or accessory uses in all zones and may be located on a roof or within a building.

5.3.3.2 Increase the number of community gardens, especially in underserved neighborhoods

- Set the goal of ensuring that every city resident has access to a community garden site within a 10 minute walk, bike, or drive from their home or workplace. Identify areas that do not meet this standard and prioritize the establishment of new gardens in neighborhoods.
- Identify existing and potential community garden sites on public property, including parks, as well as commercial property, vacant land, and brownfields (as appropriate for remediation).
- McKenzie Park, an area of conservation land at the northern edge of the Intervale, is an area of open space that would be productive agricultural land. However, use of this land is restricted for commercial agriculture use due to the federal Land and Water Conservation Funds that were used to purchase it. New uses need to be approved by the National Park Service and activities must be available and accessible to anyone who wants to participate. This land currently can be used for new community garden space or agriculture education programs, but commercial agriculture is prohibited.

- Use Penny for Parks and Conservation Legacy funds to purchase available land for new gardens and improve infrastructure at existing gardens where needed. Penny for Parks currently dedicates $5,000 annually to proposals for garden site improvements.

5.3.3.3 Partner with local experts and organizations

- Increase support for community gardens through partnerships with other governmental agencies and private institutions including the school district, neighborhood groups, senior centers, businesses, and nonprofit gardening organizations.
- Secure additional community garden sites through long-term leases or through ownership as permanent public assets by the city, nonprofit organizations, and public or private institutions like universities, colleges, school districts, hospitals, and faith communities.
- Partner with local organizations to develop comprehensive, community-garden based educational programming.

5.3.3.4 Streamline permitting for structures in community gardens

- Community garden structures, including, but not limited to sheds, greenhouses, hoophouses, cold frames, compost bins, arbors, raised beds, shade structures, water collection systems, etc. (as defined in recommendation 5.1.1.3) up to 400 sq. ft. should be exempt from zoning permit process. If they have water or electrical, they should be subject to the DPW building permit process and inspection.

5.3.3.5 Ensure safe and secure garden operations

- Community garden land shall be served by a city water supply sufficient to support the cultivation practices used on the site.
- The city will provide soil testing for heavy metals and other contaminants in all community gardens.

5.3.4 Cost considerations and potential funding sources

The city has several options for expanding its network of community gardens, including purchasing land; using city-owned land, such as Oakledge Park (which was the site of Burlington's first community garden) or the landfill site in the Old North End; leasing land from private landowners, such as Burlington College; and incorporating independent gardens into the city's system.

The most costly of these options is purchasing land. One potential funding source is the city's Conservation Legacy Fund and the Penny for Parks fund, which was created for the "capital improvement needs of city parks and community gardens" and is funded by an annual assessment.

Plot fees can help support the BACG program, but do not cover the entire cost of the city's program.

5.4 Urban Farms

Urban farms are large-scale agricultural activities that are either managed as for-profit or nonprofit enterprises. Burlington's urban farms are located along the Winooski River, predominately in the Intervale. Much of this land is part of the Winooski River floodplain, which both offers highly fertile soils and imposes some regulatory issues from the federal level. In addition to the Intervale, commercial farming occurs at the Ethan Allen Homestead (see Section 4.1.3 on the New Farms for New Americans prgoram) and privately-owned farmland to the north.

Burlington's urban farms sell their products through both retail and direct market outlets. City Market, a cooperatively-owned grocery store in downtown Burlington with over 7,000 member-owners, features a wide range of locally produced food, including a significant amount from Intervale farms. The co-op actively promotes the local agriculture and offers community classes on gardening and cooking. Many urban farms sell directly to residents through Community Supported Agriculture (CSA) shares. One farm operates a produce truck that vends in the Old North End once a week. Four weekly farmers' markets operate throughout the growing season; the downtown farmers' market operates every other week throughout the winter.

5.4.1 How current policy applies

Vermont's Limitations on Municipal Bylaws[17] (24 V.S.A. § 4413) prohibits the city from regulating "accepted agricultural practices" and structures used for agricultural purposes (see Appendix D for the Accepted Agricultural Practices criteria for structures to qualify as "agricultural structures").

However, the state does recognize the role of zoning as a viable municipal tool for determining where agricultural activities take place. Burlington's Comprehensive Development Ordinance (zoning law) designates certain areas of the city as agricultural zones. Currently, these areas include the Intervale, the Ethan Allen Homestead, and privately-owned farmland northwest of the Homestead.

In combination, these two policies effectively eliminate the city's regulatory authority over Burlington's commercial farms. For this reason, the Task Force did not investigate or develop any regulatory recommendations for these activities.

Although the city has little power at a federal level, it should be noted that FEMA policy on building agricultural structures in the floodway has posed barriers to the installation of hoophouses in certain areas.

5.4.2 Policy examples from other cities

Some cities adopt separate zoning definitions for urban farms in order to separate them as a separate activity from other types of urban agriculture. Some cities allow urban farms as a permitted use in certain zones and a conditional use in other zones. Some cities may require

[17] http://www.leg.state.vt.us/statutes/fullsection.cfm?Title=24&Chapter=117&Section=04413

that urban farms test their soils, have a farm management plan, or disclose certain information such as when pesticides will be sprayed or the hours of operation. Cities may limit the size of urban farms, regulate the types of activities that can take place there, or place restrictions on agricultural infrastructure. However, as noted above, Burlington effectively lacks the authority to impose such regulations.

5.4.3 Recommended actions

Although the city does not have regulatory jurisdiction over commercial scale agriculture on land that is zoned for agriculture, urban farms could be better supported through actions that facilitate sustainable production and strengthen the local food economy.

5.4.3.1 Facilitate access to farmland outside floodplain

Farmers in the areas most at risk of flooding would benefit greatly from access to land on higher ground, especially considering the importance of developing adaptation strategies for climate change, which is likely to increase the frequency of extreme weather events in the northeast. The city could play a role in connecting farmers in the floodplain with institutional landowners in other parts of the city or in surrounding peri-urban or rural areas (see crosscutting recommendation 5.1.12.1).

5.4.3.2 Coordinate with state and federal agencies

The Agency of Agriculture has significant regulatory authority over commercial agriculture. The city should maintain relationships with Agency staff to understand the implications of new regulations and advocate on behalf of Burlington farmers.

FEMA policy on structures in the floodway has posed barriers to the installation of hoophouses in certain areas. The city has already played a valuable advocacy role with FEMA, and should continue to provide this support in coordination with the Intervale Center.

5.4.3.3 Support local agricultural economic activity

As mentioned in section 5.14 on food sales, the city should support the local food economy by supporting Burlington's several farmers' markets and instituting a city policy that prioritizes local food purchases. This could also include research on entry barriers to new markets such as supermarkets and local restaurants.

5.5 Livestock and Poultry

Many urban residents keep livestock and poultry for the production of eggs or meat. The most common livestock and poultry in Burlington are chickens. Some people also keep rabbits, and others have kept goats and pigs in the past, though we know of no pigs or goats currently in the city.

The livestock and poultry section is divided into subsections on various policy issues related to keeping animals in the city.

> ***How many chickens?***
>
> How many chickens does a household need? The answer to that question depends on how many eggs you want! A variety of factors contribute to the hen productivity of hens, including breed, time of year, and the age of the hen. When chickens are at the height of laying, the general rule of thumb is that 3 hens will provide an average of 2 eggs per day.
>
> As hens age, they lay less frequently. Anyone considering keeping laying hens should have a plan for their hens when this time arrives. Some people keep them for pets, some people try to find another home for them, and some people find that these hens make a tasty soup!
>
> When deciding how many hens to keep, another factor to consider is the size coop and run you will need to have. The Task Force is recommending a minimum of 1.5 ft^2 per chicken for indoor coop space, which means that someone wishing to keep 6 chickens must have enough space to accommodate (at minimum) a 9 ft^2 coop and a 18 ft^2 enclosed run. See Appendix G for a full table showing space requirements and egg production for different numbers of chickens. Supporting material and calculations are provided in Appendix H.

5.5.1 How current policy applies

Vermont's **Accepted Agricultural Practices** (AAPs) regulations[18] (6 V.S.A. § 4810) address water pollution from manure. These water quality laws apply to agriculture regardless of the number of animals kept. The AAPs require that manure be kept at least 100 ft. from property lines, a requirement that is very difficult for most urban lots to meet. The AAPs also require that manure be kept at least 100 ft. from surface waters. It is possible to apply for a variance from the Agency of Agriculture. Variances carry additional requirements to containerize manure or remove it regularly from the property.

Nuisance ordinance. Burlington's general code includes a nuisance ordinance that may be used for offensive odors, noises, and aesthetics. Because the city may define what constitutes a nuisance, the nuisance clause may be used in a variety of situations. Although there is no rule against keeping roosters in the city of Burlington, the nuisance ordinance is currently used in cases when neighbors complain about roosters.

Number of Animals. Burlington limits the number of animals a household may have through its zoning definition of "Boarding." A resident may not have more than 4 animals without being

[18] http://www.vermontagriculture.com/ARMES/awq/AAPs.htmm

considered an animal boarding facility, an activity that is not allowed in residential areas. Therefore, only four animals in total, of any kind, are allowed. This ordinance has been stretched to apply to livestock and poultry, despite the fact that it was put in place to govern non-agricultural activities.

Structures. All structures less than 16 ft^2 are exempt from zoning permits; there is no specific size cutoff for DPW building inspections (garden sheds require a permit, but doghouses do not). Regardless of structure type, all structures are subject to the following:

- A five foot setback from property lines
- Permitting and inspection of electrical work
- Maximum lot coverage[19] restrictions (for structures larger than 16 sq. ft.)

Any structure meeting the criteria to be considered an "Agricultural Structure" is exempt from the permitting process (see Appendix D for a discussion of how the state's Limitations on Municipal Bylaws apply to agriculture.)

Humane treatment. Unlike companion animals, livestock and poultry are not governed by strict humane treatment laws because "livestock and poultry husbandry practices" are exempt from the regulation. The state does have humane standards for slaughterhouses. Humane Society and Livestock Cruelty experts expressed the need for a legal basis to take action in cases of inhumane treatment.

Registration. No laws of this kind currently apply to livestock and poultry. However, Burlington currently requires dogs to be licensed annually for a fee of $26-48.

Slaughtering. Vermont does not regulate slaughtering of livestock and poultry for personal consumption. If the intention is to sell meat, non-poultry livestock must be processed at an inspected slaughterhouse. The on-farm slaughter of poultry for sale is exempt from this requirement, as long as certain provisions are followed and not more than 1000 whole birds are sold in one year. The laws apply at all scales, so hobby livestock keepers are also eligible for the exemptions.

5.5.2 Policy examples from other cities

Number of animals. Some cities list outright in their land use code how many of each animal is allowed given a certain amount of space on a property. Seattle allows 8 hens on any lot, in addition to various other livestock, for spaces that are over a certain square footage.

New York City Health Code gives residents the liberty to keep as much livestock as they want, so long as it doesn't commit a nuisance.

Structures. Cities may govern the size, location, or construction of the structure. Location requirement can include:

[19] Any structure contributes to a property's lot coverage, which is a calculation of the percentage of the lot with impervious surfaces. Lot coverage limitations are intended to mitigate storm water runoff and provide open space benefits. Lot coverage restrictions vary by zoning district, listed in Appendix B of Burlington's Comprehensive Development Ordinance //insert URL.

- Placement on property
- Distance from dwellings and/or property lines
- Mobile vs. stationary
- On pervious vs. impervious surface

In addition, the overall zoning classification can affect what types of structures are permissible.

Cities approach each issue differently.

- Some limit coops to single family residential lots, others allow them on multi-unit properties as well. Seattle allows coops in community gardens. Albuquerque does not allow them in high-density zones.
- Some cities require that coops be placed in rear and/or side yards only (with special provisions for corner lots)
- Most cities have setback requirements for coops, either from the nearest dwelling or the property line.
- Baltimore requires that coops be mobile with the intention of spreading the manure around the property (though this is not enforced)

Humane treatment. Some cities require that structures housing animals must be impermeable to predators and that chickens must be confined at all times. Some cities also provide minimum space requirements.

Registration. Many cities require residents to register their animals with the city in order to keep track of who is raising which kinds of livestock. This is similar to requirements to register your dog. The intention is to monitor how many people are engaging in these activities, to facilitate communication with practitioners, and, in the case of fees, to provide a revenue source for the city to cover the cost of implementing and enforcing urban livestock laws.

Registration may be free (e.g. Vancouver) or up to $80 per coop (e.g. Baltimore). It may be one-time (e.g. Baltimore and Vancouver) or annual (e.g. South Portland, ME). Higher fees may be associated with lower registration rates.

Slaughtering. Most cities either do not specifically address slaughtering in their code, or they do not allow it; however a few cities as diverse as Albuquerque, NM, Austin, TX, and Memphis, TN, specifically do allow slaughtering. In Rogers, AK, slaughtering is permitted inside only.

5.5.3 Recommended actions

Because of the complicated nature of livestock management and state law, the Task Force carefully considered which issues should be supported with new regulation and which issues should be addressed through public information and building a "community of practice". The idea of a community of practice was identified as an important method for promoting best practices that the city may not have the authority to regulate or that are otherwise unsuited for regulation.

As the catalyst for the formation of the Task Force, the question of how many livestock animals are appropriate in an urban yard remained a challenging one to answer. A variety of factors contribute to such a determination, including the type of livestock, the amount of space needed for humane management, the size of the property, and the size structure the property can accommodate. We have chosen to recommend flexible policies that are based on current structure size exemptions and the humane treatment of livestock.

5.5.3.1 Adopt a livestock welfare ordinance to regulate humane treatment [20]

→ PRIORITY ACTION

The city should adopt a general ordinance with regulations that provide the following minimum standards for humane care, as well as minimum space requirements based on livestock species:

- Animals must be provided with appropriate shelter from the elements
- Fresh water must be provided at all times
- Housing must protect from predators
- During daylight hours, animals must be kept in an enclosure unless under direct supervision. During non-daylight hours, animals must be kept in an enclosure that provides protection from predators.
- In cases where livestock will be kept in a non-residential situation, additional care should be taken to limit public access to the animals.
- Animals must be kept in a manner that is appropriate to their needs and allows them to express their natural behavior. Anyone keeping livestock must be familiar with the educational materials on caring for the species they are keeping [developed in coordination with the Humane Society, see below]. Humane Investigators[21] shall have the authority to assess animal appearance and behavior to determine whether animals are being cared for in a manner that is "appropriate to their needs" and allows them to express their "natural behavior."

[20] The humane treatment policy recommendations were developed in coordination with the Humane Society of Chittenden County.

[21] Humane Investigators are employed by the Humane Society of Chittenden County.

Species-specific minimum space requirements:

Species	Minimum indoor area	Minimum outdoor run area
Chickens	1.5 ft^2/chicken	3 ft^2/chicken
Pigs	Enough space for each pig to lay down and turn around	Per pig: six ft^2 for every 250 pounds of body weight
Goats		
Goats (buck/doe)	16 ft^2	27 ft^2
Kids	4 ft^2	5.5 ft^2
Doe with one kid	22 ft^2	33 ft^2
Any additional kid	4 ft^2	5.5 ft^2
Sheep		
Adult sheep (ram/ewe)	16 ft^2	27 ft^2
Lambs	4 ft^2	5.5 ft^2
Ewe with one lamb	22 ft^2	33 ft^2
Any additional lamb	4 ft^2	5.5 ft^2
Rabbits		
Male or female adult	3 ft^2	8.5 ft^2
Doe and litter	8.5 ft^2	9 ft^2
Rabbit from weaning to 8 weeks	1.5 ft^2	1.5 ft^2
Rabbit from 8 weeks to slaughter	2.5 ft^2	2.5 ft^2

Prior to adoption of the ordinance, the city should consult with the Humane Society of Chittenden County to develop similar minimum space requirements for other types of livestock including cows, horses, ducks, turkey, and geese.

5.5.3.2 Regulate livestock and livestock structures through zoning

The city should make urban livestock a permitted use in all zones provided the welfare ordinance requirements can be met. Through the adoption of a new definition for livestock, a distinction should be made between livestock (provisioning animals) and pets (companion animals) so that livestock are no longer regulated under the definition of boarding.

Livestock structures should be exempt up to 24 ft^2 (50% larger than non-agricultural accessory structures), therefore allowing for certain numbers of livestock based on the minimum space requirements in the general livestock welfare ordinance.

- **Chickens:** Based on a minimum coop space requirement of 1.5 ft^2 per chicken and a 24 ft^2 livestock structure exemption, 16 chickens are allowed outright (without a permit).
- **Goats and Sheep:** Based on a minimum shelter space requirement of 16 ft^2 per goat and a 24 ft^2 livestock structure exemption, one goat or sheep is allowed outright (without a permit).

- **Rabbits:** Based on a minimum shelter space requirement of 3 ft^2 per adult rabbit and a 24 ft^2 livestock structure exemption, 8 adult rabbits are allowed outright (without a permit). A greater number of young and adolescent rabbits may be kept (based on the table above).
- **Other livestock**: Once minimum space requirements are developed for other types of livestock, similar calculations should be done to indicate the maximum number of animals that may be kept without a permit for a larger structure.

In all cases, Accepted Agricultural Practices (manure management regulations) must be met.

For structures larger than 24 ft^2, residents must apply for an urban agriculture structure zoning permit unless they qualify for the state exemption[22]. Outdoor run area is not calculated towards structure size.

Supporting material and calculations for chickens are provided in Appendix H.

5.5.3.3 Create livestock registration system

Burlington should adopt a general ordinance requiring all practitioners to complete a free registration to support a variety of educational and practice based efforts. Some type of incentives should be provided to encourage people to register (e.g. the city could partner with a local business to offer coupons to people who register). Registration would provide the following functions:

- Communicate with livestock owners in case of loose animals or disease
- Advertise classes and events relevant to people keeping urban livestock
- Serve as a networking tool to connect farmers with one another
- Share information on city regulations and FAQs
- Provide a metric for how many people are keeping livestock

5.5.3.4 Adopt a slaughtering ordinance

The city should allow slaughtering that is consistent with state laws (see Appendix D). The city should adopt a general slaughtering ordinance that includes the following:

1. Waste material must be kept out of stormwater system
2. Appropriate disposal methods (including composting)
3. Neighbors with sightlines to the area where slaughtering occurs must be notified with one week notice regarding the day and time the activity will happen so they can choose not to be present while the slaughtering occurs

[22] See Appendix D for detail on Vermont's Accepted Agricultural Practices exemptions for agricultural structures.

Additionally, the city should revise the Animals and Fowl ordinance (Chapter 5) to exempt slaughtering of livestock from the provision against "illegally kill[ing]" an animal (Sec. 5-26).

5.5.3.5 Regulate roosters through nuisance ordinance

Roosters should continue to be addressed using the nuisance ordinance. This will allow people to keep roosters where they do not create a nuisance and provide a means to restrict the keeping of roosters in areas where they do.

5.5.3.6 Promote education on livestock care and slaughtering

→ ***PRIORITY ACTION***

The city should partner with local practitioners and organizations (including the Humane Society) to develop educational resources on caring for livestock, including best practices literature, local organizational resources, and options for dealing with unwanted roosters, injured or sick livestock, and old hens that aren't laying anymore. Educational materials should be distributed online and in print.

The city should partner with the Humane Society and other local organizations to develop educational materials on slaughtering for web and print distribution that include the following:

1. Overview of state slaughtering laws as they pertain to the urban context
2. Overview of Burlington's slaughtering ordinance
3. Best practices resources
4. Information on cultural differences and religious practices
5. Advice on respecting neighbors (talk with them beforehand)

5.5.3.7 Manage neighbor conflict

In cases of neighbor conflict outside the realm of city ordinance, a mediation method should be applied. In the case of roosters, the nuisance ordinance should be applied.

5.5.3.8 Track livestock metrics

The city should use information collected through the livestock registration system to track the number of people keeping animals in the city. The web administrator should report on the number of downloads.

5.6 Bees

Bees provide pollination services to wild and cultivated crops, as well as honey for human consumption. The domesticated honeybee (Apis mellifera) is of European descent, brought to America with early settlers in the 1600s. Honeybees have specially evolved to pollinate many agricultural crops, which native bees are not suited for. Within the last several years, Colony Collapse Disorder has been afflicting bees throughout the US, causing bee populations to plummet.

Urban beekeeping offers residents the opportunity to produce their own honey and pollinate their gardens. In addition, because bees will fly for several miles to find pollen, urban bees will also pollinate nearby agricultural areas. Bees can even be kept on rooftops, for example on top of Chicago's City Hall[23].

There are an estimated 20 or so active beekeepers in Burlington, with possibly 30-40 hives in the 05401 zip code[24]. Several hives are located in the Intervale, both for commercial honey production and pollination services. Rock Point School also has bees.

http://theselby.com/galleries/annie-novak/

5.6.1 How current policy applies

Vermont's apiary law requires that beekeepers complete a free, one-time registration with the Agency of Agriculture so that the state may track where apiaries are located and communicate with beekeepers in the case of disease or aerial pesticide spraying near an apiary. The state apiculturist visits apiaries throughout the state, including in the city of Burlington.

The apiary law also contains provisions to prevent the spread of disease. Beekeepers must report any disease in their hive and the state apiculturist has the authority to inspect hives and make determinations regarding the identification of disease. In addition, used equipment or colonies from another state must be certified as free of disease. Hives must be constructed with removable comb frames and an apiary may be located anywhere on the property.

The law also includes provisions specific to commercial beekeepers, including that beekeepers must report the breeding of bees for commercial sales and regulations regarding the establishment of new apiaries within certain distances of existing commercial apiaries.

For the full text of the Vermont apiary law, see http://www.leg.state.vt.us/statutes/fullchapter.cfm?Title=06&Chapter=172

[23] http://www.huffingtonpost.com/2011/07/29/beehives-thrive-in-chicag_n_913030.html

[24] Personal communication, Steve Parise, State Apiculturist, 2011.

Common beekeeping concerns

When it comes to bees, many people have fears related to swarms and stings. Following sound management practices is the best way for beekeepers to minimize interactions between people and bees, while education about swarms and stings provides an opportunity to mediate the fears of neighbors. One beekeeper emphasized the importance of engaging neighbors, for example by inviting neighbors over for "bees and beer" when opening his hives.

Swarms: Bees swarm when a colony outgrows its hive. When this happens, the colony splits and the queen leaves the hive with part of the colony to locate a new hive. Bees generally swarm near the original hive, for example in a tree, while scouts are sent to identify a viable new hive. Bees are quite docile when they swarm because they are not protecting a hive. Certain management practices can prevent swarming. When swarming does occur, it is an opportunity for a current or new beekeeper to establish a new hive. Experienced beekeepers know how to capture the swarm safely.

Stings: Bees sting when they feel their hive is threatened. For this reason, the greatest risk of stinging occurs close to the hive. A small portion of the population is allergic to bee stings, and a much smaller portion still may have an anaphylactic reaction to bee stings. There is little information available on the number of people who die each year from bee stings, but deaths from hornets, wasps, and bees average around 61 per year for the entire US[1]. (For a point of comparison, approximately 52 people per year die from lightning strikes[1], while approximately 30 people per year die from dog attacks in the US[1]). Death from bee sting is more common among Africanized honeybees, which cannot live in Vermont due to cold winters. The risk of stings is best reduced by practices that minimize the opportunity for interactions between bees and people. People who know they have an allergic reaction to stings should take caution near hives and carry an epi-pen with them.

The most common risk associated with beekeeping is the spread of disease from one hive to the next, which would threaten the health of the colony. Best management practices can reduce this risk.

Because domestic bees displace native bees, it is also important to remember that local ecosystems have a carrying capacity for European bees that should not be exceeded.

5.6.2 Policy examples from other cities

Some cities allow bees outright, but offer educational outreach on best practices in order to minimize risks (e.g. Vancouver). Other cities have minimal or extensive beekeeping ordinances, including requirements and/orfees to register hive(s) (e.g. Seattle, Santa Monica, and South Portland). Some cities require that hives must be on the property of the hive owner, while others are more flexible in allowing bees to be located on other properties. Some cities allow bees in community gardens (e.g. Denver).

5.6.3 Recommended actions

Because bees are partially wild animals that leave a person's property and interact with local ecosystems within a radius of several miles, they pose unique challenges. The main governance considerations for beekeeping are to minimize interactions between humans and bees, minimize the spread of disease between one hive and another, and provide educational information to the public regarding bee behavior.

5.6.3.1 Revise zoning ordinance to accommodate beekeeping

→ ***PRIORITY ACTION***

The City should adopt zoning code language to allow beekeeping as an allowed use in all zones (including at schools and community gardens), provided minimum standards can be met (see general ordinance below). Because of the size of beehives, they should be exempt from zoning and building permit processes.

- 2 hives allowed outright; more hives will be allowed based on criteria to be developed, including lot size and ability to adhere to practices required in the ordinance
- 5 foot setback from property line

5.6.3.2 Adopt a general beekeeping ordinance

→ ***PRIORITY ACTION***

The City should adopt a general ordinance that includes:

- Beekeeping is allowed in Burlington provided zoning requirements are met (see above)
- Renters must obtain permission from their landlord before keeping bees on their property.
- If hives are to be established at a multiunit apartment, all residents must be notified of the placement of hives on the property.
- The name and contact info of the beekeeper should be displayed on each hive.
- In case of swarms, the beekeeper must remove the swarm or contact a professional to do so.

5.6.3.3 Promote education on beekeeping

The City should partner with State Apiculturist and VT Beekeepers Association to develop educational materials on state law and best practices for web and print distribution that include the following:

- Summary of state apiary laws for urban beekeepers
- Encourage Burlington beekeepers to register with the state apiary program (http://www.vermontagriculture.com/ARMES/plantindustry/apiary/index.html)
- Encourage Burlington beekeepers to participate in VT Beekeepers' Association (http://www.vermontbeekeepers.org/) and Chittenden County Beekeepers Association
- Provide links to educational resources on best practices, including that hive entrances should be oriented away from human foot traffic, preferably with a tall bush or similar object placed in front of the hive to encourage bees to fly up when they emerge from

the hive, and that beekeepers should provide water to discourage bees from visiting neighbor's pools and birdfeeders.

- Create accompanying material for the non-beekeeping public regarding the reasons for urban beekeeping, explaining bee behavior, and information on who to contact in the case of questions or a swarm sighting.

5.6.3.4 Consider bees and other pollinators in city landscaping decisions

- City landscaping decisions should be made with bees and other pollinators in mind
- City landscaping should provide water sources for pollinators

5.7 Hoophouses and Greenhouses

Hoophouses and greenhouses are used by farmers and gardeners for season extension. Greenhouses are permanent structures with glass or hard plastic windows. Hoophouses (also called "high tunnels") are less permanent versions of greenhouses made of lightweight materials. In both cases, the glass or plastic allows UV rays to enter and heat the air in the enclosed space, thus encouraging plants to grow at a faster rate than in the colder outdoors. Both commercial farmers and urban gardeners use hoophouses and greenhouses, and they can be erected at a variety of scales.

http://www.kerrcenter.com/publications/hoophouse/index.htm

5.7.1 How current policy applies

State level limitations on municipal bylaws prohibit the city from regulating "agricultural structures" used for commercial purposes (24 V.S.A. § 4413).

Structures that do not qualify for this exemption are currently regulated like all other structures in Burlington:

- Structures are subject to 5 ft. setbacks from property lines
- Any structure with a foundation and in place for fewer than 30 days qualifies as a "temporary" structure
- Structures less than 16 sq. ft. are exempt from the zoning permit process and are not calculated into a property's lot coverage
- Structures greater than 16 sq. ft. require a permit and are calculated into a property's lot coverage
- Foundations are required for any structures greater than 400 sq. ft.
- All electrical work requires an inspection by DPW

Under the current interpretation, a hoophouse is a permanent structure if it is erected for more than 30 days, thus requiring a zoning permits. In one recent situation, a neighbor complained to the Planning and Zoning department about 2 hoophouses on South Willard St.[25] The complaint appears to have been based on aesthetics.

Farmers in the Intervale have encountered problems with FEMA regarding the use of hoophouses in the floodway. In times of flood risk, the plastic on hoophouses can rolled up to allow for the free flow of water through the infrastructure (similar to a fence). The Intervale

[25] See http://7d.blogs.com/blurt/2012/05/burlington-couple-busted-for-gardening-structures-in-front-yard.html

Center and city officials continue to engage with state agencies and FEMA officials to advocate for the use of these structures in that area.

5.7.2 Policy examples from other cities

Few other cities have policies specific to hoophouses and greenhouses. In Seattle, WA, both types of structures are allowed height exemptions.

5.7.3 Recommended actions

Greenhouses and hoophouses are important tools for season extension. Although they are structures, they should not be treated like buildings.

Note: These recommendations apply only to hoophouses and greenhouses that do not qualify for the state agricultural exemption. Thus, commercial farms (e.g. in the Intervale) should continue to follow the state exemption process.

5.7.3.1 Revise zoning ordinance for greenhouses and hoophouses

→ ***PRIORITY ACTION***

Burlington Planning and Zoning should adopt definitions of greenhouses and hoophouses that distinguish them from other types of structures. Example definitions:

- "A **greenhouse** shall mean a temporary or permanent structure typically made of, but not limited to, glass, plastic, or fiberglass in which plants are cultivated."
- "A **hoophouse** shall mean a temporary or permanent structure typically made of, but not limited to, piping or other material covered with translucent plastic, constructed in a "half-round" or "hoop" shape, for the purposes of growing plants."

Zoning code should specifically reference the state law regarding agricultural structures. Hoophouses and greenhouses that do not qualify for state exemption should be defined as "urban agriculture structures".

- Greenhouses and hoophouses should be allowed as both primary and accessory structures in all zones but conservation. Hoophouses and greenhouses with electrical work must apply for building permits. Up to 2 structures shall be allowed; additional structures shall be subject to a site review.
- Hoophouses should not have foundations.
- Hoophouses less than 400 ft^2 should be exempt from zoning permits and lot coverage calculations.
- Hoophouses greater than 400 ft^2 must apply for zoning permits and shall be subject to lot coverage calculations unless provisions are made to capture stormwater runoff.
- Hoophouses may have plastic on them for part of the year or the whole year.
- Greenhouses less than 400 ft^2 do not require foundations and should be exempt from zoning permits and lot coverage calculations.
- Greenhouses greater than 400 ft^2 must have foundations, must apply for zoning and building permits, and shall be subject to lot coverage calculations.

5.8 Greenbelts

Greenbelts are the city-owned strip of land between the sidewalk and the street. They hold plowed snow in the winter and can mitigate stormwater runoff in the warm months. Given the limited availability of open space for some city residents, greenbelts are sometimes used for both flower and vegetable gardening. However, concerns exist regarding soil contamination, right-of-way access, and maintenance.

Greenbelts areas are important pervious surfaces in the city landscape, as they can reduce stormwater runoff and mitigate water pollution. However, the receiving end of the pollution is the soil, which means that contaminants can accumulate. The primary concern for growing food in greenbelts is the human health risk of eating food grown in soil contaminated from the road and nearby impervious surfaces (including buildings). When snow is plowed from the road in winter, salt and other chemicals from the road are deposited onto the greenbelt. Other potential contaminants include runoffs from buildings such as lead paint and chemical contaminants from traffic (dusts from tire and road wear can wash off building exteriors). If the sidewalks are set next to the buildings, then the first infiltration site is the greenbelt.[26]

Although outside the scope of this document, there are important considerations for greenbelt management to maximize stormwater mitigation benefits.

5.8.1 How current policy applies

The greenbelts are owned by the City of Burlington. By city charter, property owners are required to maintain the greenbelt areas in front of their homes and businesses. Currently there are no policies regarding food production in the greenbelt. The major policy applying to greenbelts is that they are legally City right-of-way. The Department of Parks and Recreation is responsible for maintaining all trees located in the City right-of-way.

5.8.2 Policy examples from other cities

The Task Force was only able to locate one city (Seattle) with a policy regarding the cultivation of greenbelts for food. Seattle's policy is that residents can grow vegetables in the greenbelt, but cannot sell them.

[26] Garrett 2012, personal email communication.

5.8.3 Recommended actions

Given the concern about soil contamination risks and the important role greenbelts play in stormwater mitigation, we recommend that Burlington not allow food production in the greenbelt.

5.8.3.1 Adopt a greenbelt ordinance

The city should adopt a general ordinance, developed in coordination with DPW, Code Enforcement, and Parks and Recreation, that distinguishes between food crops and non-food plants and encourages appropriate stewardship, stating that:

- Food production in the greenbelt is prohibited.
- Flower gardening in the greenbelt is permitted. Perennials and rain gardens are preferred, as bare dirt does not mitigate stormwater as well as established plants. Gardeners should be aware that occasional maintenance by the city may require greenbelts to be dug up.
- Trees are permitted in the greenbelt based on approval from the city arborist.
- When possible, greenbelts should be lowered below the grade of the sidewalk and street to maximize stormwater mitigation.

The construction of any type of infrastructure may conflict with the city's right-of-way or handicapped access laws. Before a new policy is adopted, the city should consult with attorneys at ChangeLab Solutions, an organization that deals with both urban development and handicapped access laws on a regular basis.

5.9 Composting

Compost is both an agricultural nutrient input and a food system waste product. In this way, compost is the final link in the cycle from soil to plate and back to soil. Food scraps, plant material from gardens, and residuals from food processing represent a valuable stream of nutrients that should be conserved and cycled back to city residents. It is important that the city protect this resource stream and keep it accessible to city residents.

Chittenden Solid Waste District operates a commercial composting facility in Williston (Green Mountain Compost) and accepts food waste at all its drop-off centers. Several private haulers (including one bike-based business) collect food waste from homes, schools, businesses, and other institutions.

5.9.1 How current policy applies

The recent passage of the mandatory recycling bill (H.485) establishes a ban on organic materials from landfills starting in 2020.

5.9.2 Recommended Actions

5.9.2.1 Explore a community compost system

The city should explore how best to establish neighborhood scale composting operations. These would be located so that most residents are within walking/biking distance from a drop off point.

The city should start considering, perhaps as part of the food charter, the means to establish and ensure that this resource stream is protected as a common good and remains available for city residents.

5.9.2.2 Establish a pilot composting program for Church Street restaurants

The Church Street marketplace has more than 30 restaurants and regular street vendors within a four book area. Most restaurants currently compost their food waste, but there is no coordinated effort. The city should pilot a composting program for these businesses. Food waste could be picked up by a public hauling service similar to the curbside recycling service offered by Burlington Public Works. The waste could be brought to Chittenden Solid Waste District. With appropriate signage and outreach, this program would serve the dual role of diverting more organic matter from the waste stream and educating the public about waste management practices and soil health.

5.10 Rooftop Gardens

Rooftop gardens provide the opportunity to utilize the roofs of buildings for food production. A rooftop garden differs from green roof in that it is mainly for aesthetic or recreational purposes, whereas a green roof is usually built to cover a large area in the most economical and efficient means possible with a focus on improving the insulation or overall energy efficiency of cooling and heating costs within a building.

Typically, rooftop gardens are constructed on a flat roof common to many city commercial, institutional or industrial buildings, although they can be built on private residences as well. Rooftop gardens are generally composed of a structural support, a roofing membrane, water drainage and storage, a growing medium, and vegetation. Products such as grow bags are available, which are lightweight and allow just the right amount of water to be drained so that the plant does not get flooded in heavy rain.

Rooftop gardens and green roofs can offer many benefits. A home rooftop garden provides readily available food, rainwater absorption, and air filtration. The use of vegetation on a roof also maintains temperature control by reflecting heat, providing shade, and helping to cool the surrounding air through evapotranspiration. Plants also absorb solar radiation, reducing the "Urban Heat Island Effect" (which describes the higher overall temperatures caused by heat trapped and given off by pavement and buildings in dense urban environments) by minimizing the total area of dark, heat-absorbing surfaces such as rooftops and pavement.

There are, however, some risks involved with rooftop gardening, such as structural issues, weather, and cost. Structural issues are the most important risk to consider when creating a rooftop garden. Not all buildings are suitable, safe, structurally adequate, or have the weight capacity for growing a rooftop garden.

Another risk associated with rooftop gardening is weather. Because rooftop gardens have minimal shelter and often tend to heat up more than traditional gardens, extreme heat, wind, or other weather occurrences can cause damage to the garden, even destroying it completely.

In Burlington, there are currently green roofs on top of UVM's University Heights North building, Fletcher Allen Health Care, and the Seventh Generation office building.

5.10.1 How current policy applies

The city encourages the use of green roofs and other alternative strategies when it is not possible to meet other stormwater management standards. The city's Comprehensive Development Ordinance encourages green roof technologies (with a clearly articulated maintenance plan) and gray water collection.[27] Additionally, the Burlington Planning Commission has proposed providing regulatory incentives (via zoning) for green roofs. This effort is currently pending.

[27] Comprehensive Development Ordinance, Sec. 6.3.2 Review Standards

5.10.2 Policy examples from other cities

From Portland, Oregon to Toronto, Canada to New York City, many cities throughout the U.S. and around the world have begun to invest in rooftop gardening.

Chicago, IL, has long been a national leader in the use of green roofs. As of Fall 2010, Chicago has 359 green roofs that are built, totaling 5.5 million square feet. Chicago's City Hall Rooftop Garden, a 20,300 square-foot green roof was installed in 2001 as part of the city working with the EPA on the Urban Heat Island Initiative.

Many cities – including New York City, Washington DC, and Chicago - offer tax incentives and subsidies to encourage green rooftops. Toronto also has a new law, called the Green Roof Bylaw, requiring buildings of a certain size to have a green roof. While the law has received some criticism, it has been popular among residents as a means of becoming a greener city.

Setting standards to ensure specific objectives are met provides even more incentives for green roofs. Based on meeting the standards set by the municipality, developers can be offered incentives such as expedited permits for green projects and bonuses for density. Combined with monetary assistance in the form of tax incentives, fee rebates, or grants, investment in green roofs become more attractive.

Incentives may also be provided for rooftop gardens due to weather and climate issues. For example, Toronto's Eco-Roof Incentive Program provides incentives to commercial, industrial and institutional property owners to improve the sustainability of Toronto's infrastructure and its resilience to climate change. Financial incentives are also often provided for the construction of green roofs that support vegetation and cool roofs that reflect the sun's thermal energy. The program, launched in March 2009, supports the City's Climate Change Action Plan and complements the City's Green Roof Bylaw and the Green Standard by encouraging owners of existing buildings to retrofit their roofs. Also, because of their ability to decrease stormwater runoff and prevent flooding during intense rain events, incentives may be given to rooftop gardens that are sized to cover a specified percentage of the roof, have a minimum depth of planting medium, and are located in an area of concern.

5.10.3 Recommendations

5.10.3.1 Encourage rooftop gardening and green roofs

The city should explore zoning policy, including the use of incentives, to encourage rooftop gardening and green roofs.

5.10.3.2 Consider rooftop garden atop Burlington Town Center

The Plan BTV Downtown and Waterfront Master Plan includes recommendations for green roofs in several areas. The Burlington Town Center has a significant amount of flat surface that may be suitable for green roofs. The city should establish a working group to investigate the feasibility of constructing a green roof on the mall buildings and adjacent parking structures and develop cost estimates and potential funding sources.

5.11 Urban Food Forestry[28]

Urban food forestry refers to the planting, mapping, and harvesting of perennial food-producing plants ("food trees") in urban areas. Over the past decade, a variety of such initiatives have sprung up around North America and Europe. Planting initiatives typically draw inspiration from permaculture, forest gardening, and agroforestry, and go by a variety of names including urban orchards, urban food forests, edible parks, and urban forest gardens. Mapping initiatives focus on mapping urban food trees that fall within the public domain (typically located in public parks or overhanging fences onto public land); maps can be hand-drawn, Google-map based, or smartphone app based. Harvesting initiatives use various models, typically focusing on gleaning fruit from privately owned urban trees that are "donated" by their owners via a website; volunteers are then sent out to harvest fruit, and the resulting harvest is divided between tree owners, local food banks, and volunteers. Each of these three types of initiatives has been rapidly gaining popularity in recent years, in part due to the unique role food trees can play in urban agriculture.

Food trees offer a number of advantages over annual vegetable crops, and bring many of the benefits of urban forestry to urban agriculture. For instance, in contrast to vegetable crops, fruit and nut trees have a greater capacity for purifying air and absorbing carbon dioxide, providing shade, establishing wildlife habitat, stabilizing soil, providing pollinator fodder, are generally more resilient to extreme weather events such as cold and drought, and only needed to be planted once. Food trees can be planted in areas where other forms of urban agriculture, such as allotment gardens, are not feasible or are undesirable, and their perennial nature makes them better suited for "public produce," i.e. producing food that is free and open for anyone to pick.

Food trees also present some unique challenges in urban agriculture and planting requires careful research and execution. In an ideal scenario, urban food trees require minimal pruning and maintenance, yield large crops of attractive and palatable fruit that is physically accessible to members of the public, are resistant against diseases and pests, and do not attract undesirable wildlife or insects. The two most important factors in meeting these needs are species and cultivar selection, as well as site selection. Given climate change projections, coupled with the uniquely harsh conditions often presented by urban environments, selecting species that are resilient to extreme weather conditions, particularly cold and drought, is recommended. In addition to selecting appropriate species, cultivars with high levels of disease and pest resistance, low maintenance requirement, wildlife and bee value, aesthetic value, and high fruit quality with a wide appeal should be sought out.

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[28] This section is based on research conducted by Kyle Clark for a master's thesis. The thesis contains valuable data on example programs in other cities, matrices of tree species based on various criteria, and a quantitative assessment of the opportunity for food-producing trees in Burlington. For more information, see: Clarke, KH. 2011. Urban Food Forestry: Low-hanging fruit for improving urban food security? Lund University. Lund, Sweden. Available online from http://www.lumes.lu.se/database/alumni/09.11/Thesis/Clark_Kyle_Thesis_2011.pdf

5.11.1 Policy examples from other cities

A wide variety of food tree planting, mapping and harvesting have been established in cities around North America and Europe over the past decade. Planting initiatives range from small scale urban orchards such as the Ben Nobleman Community Orchard in Toronto, to large plantings such as the seven acre Beacon Food Forest in Seattle. Additionally, some initiatives have focused on planting single orchards, while others have focused on spreading multiple orchards throughout public land in the city; for instance, the Philadelphia Orchard Project has planted 29 urban orchards in the past five years.

Harvesting initiatives have been widely successful, harvesting substantial amounts of high-quality organic produce for food banks and attracting large numbers of volunteers. For example, between 2008 and 2010, Toronto-based Not Far From the Tree went from harvesting 3,000 pounds of fruit to almost 20,000 pounds; during the same period, the number of volunteers increased from 293 to 719. Such initiatives commonly receive awards and recognition for their contribution to urban sustainability, and attract a diversity of funders.

Urban municipalities are increasingly integrating food security into urban planning. For instance, while still relatively uncommon, a number of cities in British Columbia and California have integrated food trees into their urban forestry master plans (UFMPs), in part due to strong public support. The city of Selchelt, British Columbia, for instance, devotes an entire section of their UFMP to food security and discusses how encouraging the planting of urban food trees can contribute to the local food movement and build social capital within the city by establishing new and unique partnerships.

City officials have utilized a variety of strategies to pilot urban food tree plantings. One of the most comprehensive approaches is that of the City of Calgary, which is testing seven fruit- and nut-bearing species planted in five configurations: alongside community gardens, in public parks, as regional orchards, along pedestrian routes, and in urban domestic gardens. Evaluating the performance of each configuration will allow city officials to determine which strategy is best suited to meet their goals, which include bolstering local food production, fostering community involvement, and enhancing public education.

Mutual interest in urban food trees by members of the public and municipal authorities has spawned a variety of innovative private-public collaborations. One such example is the Seattle Orchard Stewards program, a component of City Fruit (http://www.cityfruit.org), which has trained over 30 volunteer stewards to work in five public parks containing fruit trees. This project is funded by a grant from the Washington State Department of Natural Resources and the U.S. Forest Service, and involves a three-part curriculum dealing with pruning, pest management, and harvest of fruit trees, and includes a permaculture component. In addition to performing maintenance operations, orchard stewards help to create policies around their orchards and hold community events.

5.11.2 What's the opportunity in Burlington?

Burlington has great potential to contribute to local food production and food security by incorporating food trees into its urban landscape. There are over 400 acres of public land that could potentially be utilized for edible landscaping around Burlington, where community

support is high, and such plantings would likely draw volunteer support and potentially lead to harvesting and mapping initiatives. Given the success in other cities around North America with similar demographics, urban food trees would likely be a successful addition to Burlington's urban forest and urban agriculture.

At present, there are a few small trial sites around Burlington that contain food trees, most notably the Callahan Garden, the newest garden in the city's Burlington Area Community Gardens system, established in 2011. The site consists of 40 garden plots that are surrounded by a fence. On the other side of the fence is a border planted with a variety of fruit and nut plants including gooseberries, currants, aronia berries, honeyberries, beach plums, hazelnut hybrids, blueberries, and more. Set further back from the planted border are a number of larger fruit trees including sour cherries. These plants are intended to provide free, high quality produce to the community.

Given the unique values that food trees provide within the urban forest, Burlington could leverage edible landscaping to help meet goals relating to climate change, public health, and food security, particularly by incorporating food trees into the urban forestry master plan and collaborating with neighborhoods interested in planting food trees.

5.11.3 Recommended actions

There is the potential for the city of Burlington to increase the number of food trees in Burlington in collaboration with the City Arborist. Potential next steps include:

5.11.3.1 Map existing urban fruit trees

Map existing urban fruit trees to determine distribution, species diversity, and opportunities for "retrofitting" existing ornamental fruit trees with high-quality varieties (e.g. grafting honey crisp onto a well-established crab-apple tree).

5.11.3.2 Identify potential locations for trees

Identify open spaces that present opportunities for urban orchards, food forests, or individual fruit and nut trees. Examples of such areas might be underutilized public spaces, edges of parks or sports fields, or sites alongside sections of the bike path.

5.11.3.3 Establish edible landscaping demonstration sites

Edible landscaping demonstration sites would engage communities with the idea of public produce and determining which model(s) of edible landscaping work best in Burlington. Assessing the successes and failures of existing pilot projects should also be part of this process. Prioritize new fruit and nut bearing species based on suitability for Burlington's climate, desirability by public, maintenance requirements, wildlife value, aesthetics, and other criteria.

5.12 School Gardens

The Burlington School District has a variety of school garden plots, ranging from two raised beds and hundreds of raspberry bushes, grapes and blueberries at the Integrated Arts Academy, to the ½-acre Youth Farm at Hunt Middle School. All schools have some garden space, but the usage varies in depending on staff and parent involvement, financial support, and usage by extracurricular programs like City Kids. Burlington's school gardens are supported by Burlington School Food Project in partnership with Friends of Burlington Gardens.

The Burlington School Food Project is a collaboration of the Burlington School District, Healthy City Youth Initiative/ Friends of Burlington Gardens, City Market, Vermont FEED, and Shelburne Farms, and is managed by the school food service. The project focuses on putting healthy local foods into Burlington cafeterias, and making community connections. In 2009, the Burlington School Food Project was asked to be a part of the USDA's Farm 2 School Team, and served as a model for other similar beginning projects throughout the country.

The school gardens do not have a dedicated source of financial support from the school district or the city. Working with the Burlington School Food Project, Friends of Burlington Gardens (FBG) manages the Healthy City Youth Farm at Hunt Middle School, assists with other school gardens in the district, and provides hands-on garden education through afterschool and summer programming. The nonprofit FBG is funded through grants, individual and business contributions, and fee-for-service programming. Plans are in the works to transition management of the school gardens to the Burlington School Food Project.

5.12.1 How current policy applies

School gardens are managed by the individual schools, partner organizations, and connected community members. The garden sites follow the same zoning and permitting rules as other properties.

Most of the policies are therefore established by these independent organizations when they convene as the School Food Project, which is managed by the school food service. The district's food service receives some funding from the federal government based on current food regulations, but finances are always a barrier to expanding programming.

5.12.2 Policy examples from other cities

Some city governments have enacted overreaching policies or legislation to give financial support and community support to healthy school programs. In May of 2010, the DC City Council passed the Healthy Schools Act of 2010 (B18-0564). This legislation is a comprehensive law to ensure that schools are a healthy place for all students. The Healthy Schools Act covers topics including

nutrition, health education, physical education and physical activity, Farm-to-School programs, school gardens and other wellness topics.

Many cities also have forged City partnerships with City Council, City Manager, Parks and Recreation and Public Works Departments. In New York City, the Legislative Director for the City Council spearheaded the development of new programs in response to needs in the city, including Grow to Learn NYC: Citywide School Gardens Initiative, a public public-private partnership with the Mayor's Fund to Advance NYC created to inspire, promote and facilitate the creation of sustainable school gardens in every New York City public school.

5.12.3 Recommended actions

Many of the recommendations in other sections of this report relate to the physical infrastructure of the school gardens. The following recommendations are targeted to the School District and general city support of school garden and farm to school initiatives.

5.12.3.1 Establish curricular support for school gardens

The district needs to include garden-based programming in its curriculum development and provide training for educators to ensure they have the resources and confidence to fully integrate garden programming into standards-based curriculum. Partner organizations could assist with this training.

Additional potential curricular ties for school gardens are available through the Burlington Technical Center, which currently has a culinary arts program that does not have required standards related to agriculture, nor connections to Farm to School projects.

5.12.3.2 Focus on education and outreach

While achieving national recognition among practitioners, many city residents are not aware of the extent of the Burlington School Food Project. Increasing awareness would increase public support for fully funding these initiatives. Coordinated outreach efforts to educate the public about school food and gardens could include the following:

Speaker series to help with outreach and education (Professional Development through school district): a cultural shift is needed for teachers to support the school garden work and integrate it into the curriculum, and proper professional development and training opportunities will help with this transition. Professional development can focus on incorporating gardens into classroom design and curriculum. A speaker series could also target parents to help garner parent support for the school gardens and Farm to School programs.

Marketing opportunities to highlight Burlington's Farm to School work: Community-wide outreach is needed to highlight projects that the organizations have undertaken, and encourage Burlington schools or other organizations to advertise their work to the parent and business community.

5.13 Food Processing

http://digital.library.unt.edu/ark:/67531/metadc549/

The Task Force research has uncovered the need for community processing facilities that range from simple kitchens to canning and slaughter facilities. In addition to a variety of functionality, the need extends exists at a variety of scales – we have a need for small scale that supports home/micro enterprise production, as well as a larger space that could support mid- to large-scale commercial ventures.

Community kitchens and canneries can provide a place for residents to preserve extra produce from their gardens, have community suppers, and process food harvested through gleaning and donations for use in food shelves and elder/youth meal programs.

A micro-enterprise processing and preserving facility would not need to be that much larger than some of the existing "public" kitchens that currently exist in churches and other non-profit institutions. Working at this scale, the issues are different from a full-on food venture center. While funding is an issue, the fact that these are not huge, capital intensive operations means that establishing sites and financing issues are not the major obstacles. Rather, the regulatory burden involved in ensuring that the kitchen is commercial grade, can obtain required permitting, and identifying the organizational structure is robust and able to maximize access are the bigger challenges.

5.13.1 How current policy applies

Food safety concerns are governed by health department regulations.

Rooms and meals tax/regulations may apply if food is served.

Home scale processing may be governed by home occupation ordinance.

5.13.2 Examples from other cities

The town of Keezletown, VA, has a community cannery that provides local residents with a community facility that supports canning large batches of vegetables and fruits. The cannery has been open since 1942. See http://www.keezletowncommunitycannery.com/.

In Toronto, ON, the West End Food Coop has a community cannery that was opened in 2010 with the goal of increasing local residents' knowledge of food preservation. See http://westendfood.coop/cannery.

5.13.3 Recommended actions

5.13.3.1 Conduct a needs and assets assessment

The city should undertake an assessment of the need for community scale food processing facilities and the potential sites already available in the community. For example, a list of all the school, community center, and church kitchens available in the city, with information on the times they are available and the cost to rent them, would be a valuable resource for residents and small businesses looking for local facilities.

5.13.3.2 Support new food enterprises

CEDO already provides business development support to new businesses in the city, including food enterprises. CEDO should continue to provide this support, with a focus on small-scale food ventures, in order to better support local food system economic development.

5.13.3.3 Exempt home food processing from home occupation requirements

In cases where food is produced on-site or at the resident's community garden plot, residents should be able to process food intended for sale at a home kitchen without a home occupation permit. One criterion for the exemption could be that only small food businesses qualify (for example less than $1,000 in sales a year). State-level health regulations for kitchens should still apply.

5.14 Food Sales

The sale of food produced in the city can range from backdoor sales and barter to sales by commercial farms at farmers markets to wholesale sales to city market. The local food and agriculture economy is supported by providing urban food producers with outlets to sell their products at all of these scales.

Farmers markets are appropriate venues for commercial farms and small-scale food enterprises. Farm stands are appropriate venues for selling extra products from home production or micro-scale enterprises. Mobile vending offers the opportunity for local farms and food producers to sell their products throughout the city's neighborhoods. Additionally, producers may barter with other producers through informal exchanges.

The creation of more market outlets will lead to many desirable benefits:

- Farmers have the opportunity for more direct sales
- Start-up entrepreneurs and new farms have access to new markets
- Consumers have improved access to locally produced food,
- Neighborhoods and the community have more opportunities to gather in a social setting
- Community areas can be revitalized by hosting such large gatherings
- Low-income, poor-access areas can have improved access to fresh food

Municipal governments can play a supportive role in promoting a healthy and active community by supporting local food economy through zoning ordinances that streamline the process for markets in desirable areas and ensure that low-income neighborhoods are gaining access to fresh produce. There are opportunities available through Federal Food Assistance Programs for low-income community members to utilize and gain better access to local, fresh produce.

City property and parks can be utilized for hosting markets throughout the week. Institutional and/or private partnerships are also underutilized opportunities for markets in the Burlington community.

Clear, minimal regulation and streamlined policy will play a supportive role in encouraging community organizations, like the Burlington Food Council and New Farms for New Americans, to establish markets in appropriate areas throughout Burlington. The city (or an organization in cooperation with the city) should also investigate how to utilize Federal Food Assistance Programs to promote Farmer's Markets in low-income areas.

In the meantime, local community organizations involved in food systems should be encouraged to establish markets in areas where markets are already permitted uses. This could be a potential fundraising tool for the organizations that wish to organize and host these markets, as well as good testing grounds to measure the viability of new markets in Burlington.

Finally, Burlington should adopt language that specifically allows producers to participate in informal barter exchanges for their products.

5.14.1 How current policy applies

At the State level: In Burlington's Municipal Charter, when it comes to regulating both markets and mobile food vending... "the city council shall not have power to license, tax, or prohibit farmers selling the produce of their own farm." (24 V.S.A. § 3-48)[29]

Zoning is the main mechanism for governing farmers' markets and farm stands in Burlington. The specific activity of a Farmers' Market and a Farm Stand fall under separate definitions in the zoning ordinance and, therefore, are subject to different zoning restrictions and allowances.

Farmers' markets fall under the definition of "open air markets" and are either a permitted or conditional use in certain zones. This allows for potential partnerships with private companies with space to host markets as a Conditional Use. However, the Conditional Use process is not an efficient mechanism for encouraging markets and it poses a barrier for small markets to gain access to such private or institutional spaces.

Farmers' markets are also prohibited in zones that would be ideal hosts, such as:

- Institutional: church, university, school areas
- Recreation, Conservation and Open Space: Parks, fields, and other public lands of similar nature.

Most of the farmers' markets in Burlington cannot meet the demand for spaces from all the farms in the area. This situation is leading to waiting lists, application processes, higher entry-fees for the farmers, and exclusion of some farmers from gaining access to sales in Burlington.

Farm Stands have been interpreted to fall under the definition of "Agriculture/ Agricultural Use" in the zoning ordinance. Farm Stands are permitted in city owned parks and public land, as well as on institutional. However, beyond these opportunities, Farm Stands are prohibited in most zones, including downtown, mixed residential, and enterprise zones where they have to potential to thrive. This interpretation also precludes the sale of produce from residential gardens and community gardens.

Residential gardens are further hindered from engaging in sales to any market through home occupation rules in the Burlington Comprehensive Development Ordinance (CDO). These rules are designed to govern occupations that are non-agricultural in nature, but prohibit activities like customers coming to the premises and external alterations to the property.

Farmers who wish to sell their produce through mobile vending throughout the streets of Burlington are exempt from Burlington's laws for Peddlers and Solicitors. However, Burlington gives no preferential treatment or discernment for mobile vendors who wish to sell healthy foods for the community.

There are no rules governing informal bartering exchanges.

5.14.2 Policy examples from other cities

The city of Minneapolis has created a definition for "Mini Markets" and outlined specific terms for how they should operate and where they may be located. All that is required is a permit to

[29] http://www.leg.state.vt.us/statutes/fullsection.cfm?Title=24APPENDIX&Chapter=003&Section=00048

operate, which greatly reduces the time and expense of establishing a new market, and they are kept small and manageable by only allowing 5 or fewer vendors who sell only their own locally grown produce. Various community organizations have taken initiative to establish these mini markets, and they are allowed in any location that complies with the preexisting health and zoning codes for locations with food sales.

The city of San Diego has adopted comprehensive guidelines for farmers wishing to sell produce throughout the city. Farmers may operate stands and sell their produce by-right in certain zoning areas so long as they follow the guidelines in the code. On City property, farmers who wish to sell must have a public liability insurance policy and include the city as an additional insured.

San Diego permits community gardens to sell their produce in all zones, with the exception that in residential zones sales are only allowed once per week.

San Francisco has given community gardens and residential gardeners even further freedoms by allowing outright the on-site and off-site sale of their produce. The new changes in the planning code created a definition for Neighborhood Agriculture that set the parameters for which sales and activities must operate within.

New York City has created a classification for "green cart" vendors in an effort to increase access to fresh fruit and vegetables in lower-income areas. The city has begun an initiative to issue 1,000 permits over the next two years to vendors who only sell fresh uncut produce in designated neighborhoods. This program is a win-win for vendors and the community they serve, as it creates opportunities for new vendors to enter the market and brings fresh, nutritious food to underserved areas.

5.14.3 Recommended Actions

5.14.3.1 Create a more supportive regulatory environment for Farmers' Markets

The city of Burlington should take initiative to revise its zoning policy to allow the establishment of Farmers' Markets and Farm Stands in more zones and with guidelines to streamline the process. The Conditional Use Review should not apply to activities related to the sale of food by growers.

Such zones and their respective areas that should be included are:

- Institutional Zones (school grounds, churches, hospital grounds, university/college campuses)
- Enterprise zones (Light Manufacturing, Pine Street businesses)
- Recreation/Greenspace, Conservation zones (public parks and fields)
- Residential High Density (parks in neighborhood zones)

The city should work with those seeking to establish markets to ensure that permitting does not present a barrier, and to provide stable sites from year to year.

By clearly defining the parameters of a Farmers' Market the city can streamline the process for those who wish to establish a market. With a streamlined process, the city will be less burdened and play a more passive role in the establishment and operation of such markets. San Diego provides a good model ordinance to set limitations to the markets, such as parking requirements, liability insurance, lot coverage, frequency of markets per week and limitations to sales.

http://www.foodsystemresearch.net/weekly-food-events-21/

5.14.3.2 Exempt sales of food grown on-site from home occupation requirements

It is easy to grow more of a particular type or kind of food than can be used immediately in a given household. To prevent this food from going to waste, as well as to allow households to increase their economic security, residents should be able to sell food that they have grown with a minimum of regulation. One criterion for the exemption could be that only small operations qualify for the exemption (for example less than $1,000 in sales a year). State-level health regulations for kitchens should still apply.

Informal sharing or bartering of food among neighbors should be an unrestricted activity in Burlington and should not count towards the value of sales.

5.14.3.3 Incentivize food vendors selling food produced locally

The city should provide an incentive to healthy food vendors to operate throughout Burlington, such as lower licensing fees or permitting access to school areas. By creating a classification for "healthy food carts" and delineating their special rights and responsibilities, Burlington can create an incentive for entrepreneurs to bring healthy and nutritious foods to more parts of the city.

5.14.3.4 Use city purchasing power to support local food

The city should develop a policy that prioritizes the purchase of food for city functions to come from local sources wherever possible.

6 Implementation recommendations

The recommendations contained within this report will not be realized as policy changes without intentional efforts on the part of city staff and local food system advocates. Those city departments involved in the revision and adoption of new policies should be directed to undertake such policy changes in a timely manner, with urgent attention given to recommendations identified within this report as priority actions.

With dedicated resources, efforts to improve Burlington's urban food system can go much further much faster. Therefore, efforts should be taken to support the Burlington Food Council as it continues its work and to establish a Food Office within city government.

6.1 Utilize existing city departments to adopt and implement new policies

6.1.1 Ordinance changes

- The proposed general and zoning ordinance changes should be considered and adopted following the standard city process
- In the case of high priority ordinance changes, every effort should be made to ensure that the process moves swiftly
- New ordinances should be enforced through the standard mechanisms (code enforcement and police department)
- Livestock registration should be managed by Burlington Police in a similar manner to dog licensing, with the option of online registration
- Zoning should designate an administrator as a contact point for urban agriculture issues
- One year after the new ordinances have been established, the city should endeavor to evaluate the new ordinances for effectiveness and ease of implementation, among other considerations.

6.1.2 Education and outreach

- CEDO should attempt to obtain a grant for the coordination, development, and dissemination of online and print materials that cover the basics of Burlington's urban agriculture regulations, best practice guidelines, and resources such as local organizations, websites, and educational literature. This work could be done through the Burlington Food Coordinator position mentioned above, in coordination with local organizations.
- The city web administrator should develop and maintain a new web area for urban agriculture information, similar to the "Bicycling and Walking" section.[30]

6.2 Support the Burlington Food Council

The city should support the Burlington Food Council as it continues its work with local agencies and organizations on both urban agriculture and other local food system issues. This support

[30] See http://www.burlingtonvt.gov/DPW/Transportation/Bicycling-and-Walking/Walk---Bike-In-Burlington/

may come in the form of in-kind support such as meeting space and the provision of city services, or it may come in the form of formal support when obtaining grants.

6.3 Establish Burlington City Food Office

While the Burlington Food Council will continue to serve an important role as a coordinating organization outside the city, there is also the potential for resources to be dedicated towards food policy staff within the city. Some larger cities such as New York City, Boston, and Baltimore have paid food policy coordinator positions located within the city government.

The city should create a City Food Office as a department reporting directly to the mayor. The first staff position should be a Food Coordinator, who will work to advance the recommendations identified in this report, manage the production and dissemination of educational materials, organize workshops and events, and coordinate with the Agency of Agriculture, city departments and boards, and local organizations on issues related to food production, processing, and sales in the city. The Food Office can also serve as a resource for other city departments during implementation.

6.4 Partner with local experts and organizations

Set up partnerships with experts who can provide code enforcement and the police department with expert knowledge when needed. In some cases (such as with the livestock humane treatment ordinance), experts recommendations could carry weight of law. The Burlington Food Council can manage this process. A provisional list is provided here:

- Animal welfare: Humane Society of Chittenden County (JoAnn Nichols, Humane Investigator)
- Bees: State Apiculturist (Steve Parise)
- Soil contamination: UVM Extension

6.5 Explore costs and funding mechanisms

Determining the potential costs of implementing these recommendations was outside the scope of the Task Force work, though rough cost estimates are provided in Appendix A. The City Food Office should conduct a study to understand the resources needed to implement these recommendations and potential funding mechanisms to support city administration and urban agriculture initiatives.

7 Funding recommendations

The policy recommendations outlined in this report may incur minimal or significant costs, depending on the combination and scale of efforts pursued. For an overview of cost estimates for all the policy recommendations contained in this report, see the summary table in Appendix A. The revision of zoning and general ordinance codes should not incur costs beyond normal city duties. Liaising with the state agencies and local organizations to develop educational materials will require a small amount of city staff time. Revising the city's website to post the educational materials will require city website development staff time. Printing the same educational materials will require minimal printing costs.

The expansion of programs, such as Burlington Area Community Gardens, or the creation of new programs, such as planting community orchards, will require more significant funding. For parks-based agriculture infrastructure and activities, the city could allocate a portion of the Penny for Parks fund. For city-wide food and agriculture initiatives that are not on city park land, the city could adopt a small tax (similar to Penny for Parks). This could support land purchases, infrastructure, staff time, and program development.

The city could also pursue grants to support specific programs and projects in the city. For a full list of potential funders, see Appendix B

8 Future research

Despite the significant research that went into the Task Force policy development process, many unanswered questions remain about the nature of urban agriculture in Burlington and the potential for increasing urban food production. Future research efforts by students or professionals could provide valuable contributions that could guide policy or inspire new projects. Future research efforts could include, but are not limited to:

- Understanding and explaining the legal system currently in place at both state and local levels
- Collecting data on the scope of urban agriculture activities in Burlington (e.g. number of houses with chickens, amount of food grown annually, etc.)
- Investigating the potential need for a community slaughterhouse (possibly publically or cooperatively owned)
- Assessing the feasibility of rooftop gardens on city properties
- Evaluating the impact of community gardens on food security
- Evaluating the impact of urban agriculture on local food system security
- Identifying land opportunities for increasing food production both within the city and regionally
- Evaluating the environmental impacts of urban agriculture
- Conducting an energy audit of urban food products in comparison with conventionally-produced products
- Evaluating the impact of urban agricultural production on the local economy

9 Conclusion

The City of Burlington has a rich local food culture yet it lacks policies specific to urban food production. In order to identify a set of policy recommendations to better support and govern urban agriculture in Burlington, the Urban Agriculture Task Force engaged community stakeholders in a year-long process and researched policy approaches used by other cities. The Task Force developed a comprehensive strategy to address a variety of policy goals and priorities through ordinance revisions, education and outreach, and the coordination of multiple actors for specific urban agriculture projects.

We envision a city where everyone who wants to grow or raise their own food has the space, information, and support to do so safely, responsibly, and in solidarity with their neighbors and the greater community. We envision an urban agriculture system that integrates with local and regional systems for a food system that is place based, sustainable, resilient, socially just, and secure.

The Task Force identified a series of crosscutting recommendations that apply to many different urban agriculture activities. These include revisions to the zoning code, revisions to the general ordinance, outreach on urban agriculture policies, education on urban agriculture resources, encouraging communities of practice, adopting a mediation mechanism, coordinating with the state Agency of Agriculture, research needed to support future policy and measure progress against goals, incorporating food and agriculture into local planning efforts, adopting a Burlington Food Charter, and supporting access to land.

Of the more than 50 recommendations, these are the high priority issues:

- Revise zoning ordinance to accommodate urban agriculture
- Adopt an urban agriculture general ordinance
- Promote awareness of policies related to urban agriculture
- Promote awareness of urban agriculture resources
- Support access to land at multiple scales
- Adopt a livestock welfare ordinance to regulate humane treatment
- Promote education on livestock care and slaughtering
- Revise zoning ordinance to accommodate beekeeping
- Adopt a general beekeeping ordinance
- Revise zoning ordinance for greenhouses and hoophouses

Enacting these recommendations will require a coordinated effort by city offices, departments, leaders, organizational partners, and residents. For this reason, the Urban Agriculture Task Force also developed a set of implementation recommendations. The successful adoption of the Task Force recommendations will likely rely on the following:

1) Approval of this report by Burlington City Council.
2) Additional capacity within the Burlington Food Council to assist city departments with proposed ordinance changes and the production and dissemination of educational materials, and to continue its work with local agencies and organizations on both urban agriculture and other local food system issues.
3) Establish a Burlington City Food Office, starting with a City Food Coordinator position to manage the production and dissemination of educational materials, organize workshops and events, and coordinate with the Agency of Agriculture, city departments, and local organizations on issues related to food production, processing, and sales in the city.
4) Use existing city departments for the adoption and implementation of zoning and ordinance changes.
5) Partner with local experts and organizations to leverage resources and expertise in support of policy implementation and project coordination.

There is tremendous opportunity to expand the level of food production in Burlington by clarifying current agricultural rules and developing new policies that support the production, processing, and sale of food grown in the city at a variety of scales ranging from home to community-based to commercial production. The city can play a valuable connecting people with information, resources, land, and each other to encourage a resilient agricultural community in Burlington. Together, we can shape the city's working landscape in a way that ultimately improves the quality and availability of food for all of its residents.

Healthy City Youth Farm at Hunt Middle School

Further Reading

The research that contributed to this report is outlined in greater detail in a Master's Thesis prepared by Alison Nihart, which contains an in-depth analysis of stakeholder feedback, policies from other cities, and the potential implications of the policy recommendations developed by the Task Force. See Nihart, A. (2012). Developing a cohesive urban agriculture policy for Burlington, VT. Master's Thesis: University of Vermont.

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- Burlington Parks and Recreation
- Burlington City Attorney's office
- Burlington Planning and Zoning
- Burlington Police Department
- Burlington Department of Public Works
- Burlington Code Enforcement
- Burlington Community and Economic Development Office
- Vermont Agency of Agriculture, Food and Markets
- Friends of Burlington Gardens
- Humane Society of Chittenden County
- Vermont Humane Federation
- Vermont Animal Cruelty Task Force
- Association of Africans Living in Vermont
- Intervale Center
- Burlington Permaculture
- Tamarack Hollow Farm
- Old North End Farmers' Market
- Diggers' Mirth Farm
- Backyard Farm VT
- Rural Vermont
- NOFA-VT
- University of Vermont
- Vermont Farm to Plate Initiative
- ChangeLab Solutions (formerly Public Health Law and Policy)
- Advanced Geospatial Systems, LLC

Appendix A. Summary of recommendations

Rec. No.	Action	Type of Action	Cost range	Primary implementing body
5.1	**Crosscutting recommendations**			
5.1.1	Revise zoning ordinance to accommodate urban agriculture	Zoning	Low	Planning and Zoning
5.1.1.1	*Adopt zoning definitions for urban agriculture activities*	"	"	"
5.1.1.2	*Streamline permitting process for urban agricultural structures*	"	"	"
5.1.1.3	*Exempt small scale infrastructure*	"	"	"
5.1.1.4	*Establish zoning that recognizes the benefits of food production*	"	"	"
5.1.2	Adopt an urban agriculture general ordinance	General ordinance	Low	City Council
5.1.3	Promote awareness of policies related to urban agriculture	Communications	Med	Burlington Food Council
5.1.4	Promote awareness of urban agriculture resources	Communications	Med	Burlington Food Council
5.1.5	Encourage communities of practice	Coordination	Med	Burlington Food Council
5.1.6	Develop and implement a mediation mechanism	Programmatic	Med	TBD
5.1.7	Coordinate with the Agency of Agriculture, Food and Markets	Coordination	Low	TBD
5.1.8	Monitor indicators to guide policy and measure progress	Planning	Med	TBD
5.1.8.1	*Maintain maps to inform urban agriculture decision making*	Planning	Med	Planning and Zoning
5.1.8.2	*Develop food system metrics*	Evaluation	Med	TBD
5.1.9	Incorporate food and agriculture into local planning efforts	Planning	Low	Planning and Zoning
5.1.10	Increase public transportation to food production areas	Planning	High	Planning and Zoning
5.1.11	Adopt a Burlington Food Charter	Public process	Low	TBD
5.1.12	Support access to land at multiple scales	Programmatic	Med	TBD
5.1.12.1	*Facilitate farmer/institutional land matching*	"	"	"
5.1.12.2	*Facilitate homeowner/gardener land matching*	"	"	"
5.1.12.3	*Explore alternative conservation mechanisms*	"	"	"
5.1.13	Promote urban agriculture on public land	Programmatic	Med	Parks and Recreation
5.1.14	Promote sustainable management practices	Communications	Med	Burlington Food Council
5.2	**Home Gardens**			
5.2.3.1	Facilitate soil testing	Programmatic	Med	TBD
5.2.3.2	Link home food production to stormwater management	Research	Med	DPW
5.3	**Community Gardens**			
5.3.3.1	Revise zoning for community gardens	Zoning	Low	Planning and Zoning
5.3.3.2	Increase the number of community gardens	Programmatic	High	Parks and Recreation

5.3.3.3	Partner with local experts and organizations	Coordination	Low	Parks and Recreation
5.3.3.4	Streamline permitting for structures in community gardens	Zoning	Low	Planning and Zoning
5.3.3.5	Ensure safe and secure garden operations	Programmatic	Med	Parks and Recreation
5.4	**Urban Farms**			
5.4.3.1	Facilitate access to farmland outside floodplain	Programmatic	Med	TBD
5.4.3.2	Coordinate with state and federal agencies	Coordination	Low	Multiple
5.4.3.3	Support local agricultural economic activity	Programmatic	Med	Multiple
5.5	**Livestock and Poultry**			
5.5.3.1	Adopt a livestock welfare ordinance to regulate humane treatment	General ordinance	Low	City Council
5.5.3.2	Regulate livestock and livestock structures through zoning	Zoning	Low	Planning and Zoning
5.5.3.3	Create livestock registration system	Programmatic	Med	TBD
5.5.3.4	Adopt a slaughtering ordinance	General ordinance	Low	City Council
5.5.3.5	Regulate roosters through nuisance ordinance	General ordinance	Low	Code Enforcement
5.5.3.6	Promote education on livestock care and slaughtering	Communications	Med	Burlington Food Council
5.5.3.7	Manage neighbor conflict	Programmatic	Med	TBD
5.5.3.8	Track livestock metrics	Evaluation	Med	TBD
5.6	**Bees**			
5.6.3.1	Revise zoning ordinance to accommodate beekeeping	Zoning	Low	Planning and Zoning
5.6.3.2	Adopt a general beekeeping ordinance	General ordinance	Low	City Council
5.6.3.3	Promote education on beekeeping	Communications	Med	Burlington Food Council
5.6.3.4	Consider bees and other pollinators in city landscaping decisions	Programmatic	Low	DPW
5.7	**Hoophouses and Greenhouses**			
5.7.3.1	Revise zoning ordinance for greenhouses and hoophouses	Zoning	Low	Planning and Zoning
5.8	**Greenbelts**			
5.8.3.1	Adopt a greenbelt ordinance	General ordinance	Low	City Council
5.9	**Composting**			
5.9.2.1	Explore a community compost system	Research	Med	TBD
5.9.2.2	Establish a pilot composting program for Church Street restaurants	Programmatic	High	CSWD
5.10	**Rooftop gardens**			
5.10.3.1	Encourage rooftop gardening and green roofs	Zoning	Low	Planning and Zoning
5.10.3.2	Consider rooftop garden atop Burlington Town Center	Research	Med	Planning and Zoning
5.11	**Urban Food Forestry**			
5.11.3.1	Map existing urban fruit trees	Planning	Med	Planning and Zoning

5.11.3.2	Identify potential locations for trees	Planning	Med	Planning and Zoning
5.11.3.3	Establish edible landscaping demonstration sites	Programmatic	High	Parks and Recreation
5.12	**School Gardens**			
5.12.3.1	Establish curricular support for school gardens	Programmatic	Med	TBD
5.12.3.2	Focus on education and outreach	Communications	Med	TBD
5.13	**Food Processing**			
5.13.3.1	Conduct a needs and assets assessment	Research	Med	CEDO
5.13.3.2	Support new food enterprises	Programmatic	Med	CEDO
5.13.3.3	Exempt home food processing from home occupation requirements	Zoning	Low	Planning and Zoning
5.14	**Food Sales**			
5.14.3.1	Create a more supportive regulatory environment for farmers' markets	Zoning	Low	Planning and Zoning
5.14.3.2	Exempt sales of food grown on-site from home occupation requirements	Zoning	Low	Planning and Zoning
5.14.3.3	Incentivize food vendors selling food produced locally	Programmatic	Low	Planning and Zoning
5.14.3.4	Use city purchasing power to support local food	Programmatic	Low	City Council
6	**Implementation recommendations**			
6.1	Utilize existing city departments to adopt and implement new policies	Coordination	Low	-
6.2	Support the Burlington Food Council	Coordination	Med	-
6.3	Establish Burlington City Food Office	Coordination	High	-
6.4	Partner with local experts and organizations	Coordination	Med	-
6.5	Explore costs and funding mechanisms	Research	Med	Burlington Food Council

Highlight = High priority recommendation

Cost range based on informal estimates:

Low: <$1,000. Costs could likely be absorbed by normal departmental operating budgets

Med: >$1,000 and <$10,000. City may need to obtain grant funding or create budget line specific to this work

High: >$10,000. City would likely need to obtain grant funding or create a new mechanism to generate revenue

Appendix B. Grant funding resources

Vermont and New England-based foundations

- VT Community Foundation
- Lintilhac Foundation
- Orton Foundation
- High Meadows Fund
- Castenea
- New England Grassroots Environmental Fund
- Vermont Community Foundation
- VT Food Funders Network
- Sustainable Agriculture and Food System Funders Network

Grants available for urban agriculture projects

Fruit Tree Planting Foundation

America the Beautiful Fund - Provides free seeds to garden projects.

Captain Planet Foundation - Is committed to supporting hands-on environmental projects for young people, and provides grants from $250 to $2,500 to school and community groups.

Fiskars®- Project Orange Thumb - Offers an annual grant program, Project Orange Thumb. Community garden groups can apply to receive up to $1,500 in Fiskars® garden tools and $800.00 in supplies, such as seeds and mulch. Grant recipients also receive t-shirts for garden volunteers/members.

Lindbergh Grants program - Grant categories include agriculture, aviation/aerospace, education, health, adaptive technology, waste minimization and management, and conservation of natural resources.

The Lorrie Otto Seeds for Education Fund - Provides small grants to schools and other organizations that work towards creating outdoor education areas.

Mott Foundation - Facilitates effective planning, networking, organizing, and communication among individuals and groups fighting for environmental, economic, and social justice. Lists more than 400 grant opportunities, resource and legal groups from 40 states, Washington D.C., Puerto Rico, Canada, and Mexico.

National 4-H Council - Provides opportunities for young people and adults to take action on issues critical to their lives, their families, and their communities. Youth and adults work in partnership in the design of the project, the proposal writing process, the implementation, and the evaluation of funded projects. Grants are awarded to 4-H/ Extension groups and are not available to individuals.

National Gardening Association - Each year 400 schools and youth groups are awarded tools, seeds, garden products, and educational materials. NGA also has an online tool that will allow you to search for funding opportunities in your region.

Profits for the Planet Program - Provides funding to efforts that affect positive and meaningful change and have measurable outcomes. Stonyfield Farm also donates product to organizations.

SeaWorld/Busch Gardents/Fujifilm Environmental Excellence Awards - Schools and community groups are eligible for these grants. Previous award-winning projects have tackled a wide variety of environmental problems, including habitat restoration, school yard beautification, energy and waste reduction, environmental education and community outreach, wildlife protection, and natural resource conservation.

Seeds of Change® - Provides organic seeds to organizations promoting learning and sustainable living through school, community and outreach-based organic gardening projects.

Sustainable Agriculture Research and Education (SARE) - This is a program of the United States Department of Agriculture, and awards are given to projects which actively address sustainable agriculture, including urban agriculture.

National Geographic Young Explorers Grant - Provides grants for 18-25 year-olds to pursue research, exploration, and conservation-related projects consistent with National Geographic's existing grant programs. Grants vary from $2,000 to $5,000 depending on the significance of the project.

Youth Venture - Provides seed money grants of up to $1,000 for new youth-created, youth-led, sustainable ventures that benefit the community. Youth ages 12-20 who want to start a new ongoing environmental club or organization can get guidance on how to plan, organize, and launch their venture, along with funds for start-up expenses.

New England Grassroots Environment Fund - Provides grants to community environmental projects rural, suburban, and urban areas throughout New England. Since its inception 15 years ago, NEGEF has built up a core grantmaking program that has funded over 1,000 different community groups located in over 50% of New England’s cities and towns, putting over $3.6 million directly into these communities. These grants range from $500 to $2,500 for its region wide small grants program, and from $500 to $10,000 for its urban grants program.

Specific to urban food forestry

The cost of implementing an urban orchard or food forest can vary widely depending on the size of the planting, maturity of the trees chosen, and royalties paid for specialty varieties. Additionally, the quality of soil at the planting site, and the potential for volunteer workers can affect implementation costs. As a general guideline, bare root fruit trees from a wholesale nursery range from $0.50 to $5.00, and can reach up to $100 for mature trees that have been specially bred.

When considering the cost of planting urban food trees, one should also consider the economic benefits of the trees being planted. Burlington’s Department of Parks and Recreation website cites an estimated benefit of $60,000 over the life of a 50-year old tree, not including less easily measured benefits such as aesthetic, recreational, and psychological benefits. Many of these benefits are unique to woody perennial species, and thus food trees should be considered as part of any comprehensive urban agriculture strategy.

Urban food forestry initiatives, particularly those focused on edible landscaping, have attracted a wide variety of both public and private funders; their ability to address multiple sustainability challenges opens up funding opportunities that are otherwise not available for urban agriculture projects. There are a number of grants specifically targeted towards urban food trees, such as those provided by the Fruit Tree Planting Foundation, a non-profit organization, and Communities Take Root, a project funded by Nestle that sponsors 12 community orchards in cities around the United States each year (last year one of these grants was awarded to the town of Waitsfield). It is not uncommon for urban orchards to attract a diverse body of funding partners; for instance the Ben Nobleman Community orchard currently has six partners, including the City of Toronto, Wal-Mart, and Fiskars; City Fruit has 15 funders and over 20 partners including United Way, the Seattle Department of Parks and Recreation, and the Seattle Tree Fruit Society; and the London Orchard Project has 15 funders including the City of London, Green & Black Organic, and the Lottery Fund, as well as 8 local authority partners, 5 housing association partners, and 3 university and school partners. This diverse mixture of funding streams highlights the broad interest urban food trees have begun to generate in recent years.

Appendix C. Enabling legislation

RESOLUTION RELATING TO CREATION OF URBAN AGRICULTURE TASK FORCE

(As amended & adopted 03/21/11, signed by Mayor 03/23/11)

In the year Two Thousand Eleven

Resolved by the City Council of the City of Burlington, as follows:

WHEREAS, a strong community-based food policy can provide benefits to the citizens of the City of Burlington including access to a healthier diet, a stronger local economy, a more robust food supply, and environmental benefits;

WHEREAS, Burlington is home to innovative, community-based food projects including the Burlington School Food Project, the Burlington Area Community Gardens, the Food Systems Spire at the University of Vermont, Friends of Burlington Gardens, and the Intervale Center, a nationally recognized leader in food system innovation;

WHEREAS, Burlington residents are engaging in urban agriculture, defined broadly as "the growing of food and related activities within city boundaries," including urban homesteading, permaculture, gardening, and community farming and raising livestock including but not limited to chickens, rabbits, sheep or goats; and

WHEREAS, the City of Burlington currently lacks sufficiently clear regulations or a cohesive policy addressing urban agriculture; and

WHEEREAS, there are locations in Burlington where urban agriculture is appropriate and other areas of the City in which it may not be appropriate;

WHEREAS, this lack of sufficiently clear regulations or policy can cause confusion and creates an obstacle to engaging in these activities;

WHEREAS, there currently is no single governing board devoted to review issues related to urban agricultural activities;

WHEREAS, the City of Burlington currently supports the continued development of a healthy, equitable, and sustainable food policy through the Burlington Food Council;

NOW, THEREFORE, LET IT BE RESOLVED that the Burlington City Council hereby creates the Urban Agriculture Task Force ("Task Force") which is charged with recommending to the City Council a cohesive urban agriculture policy, improved rules and regulations addressing urban agriculture, and steps to better promote urban agriculture in Burlington;

BE IT FURTHER RESOLVED that the Community and Economic Development Office will facilitate Task Force meetings and will coordinate staff for the Task Force as appropriate and as necessary by the Planning & Zoning Department, the Code Enforcement Office, the Parks & Recreation Department, the City Attorney's Office, and the Public Works Department; and

BE IT FURTHER RESOLVED that the Task Force shall consist of one (1) member of the Burlington Food Council appointed by the Burlington Food Council, one (1) member of the Board of Health appointed by the Board of Health, one (1) member of the Planning Commission appointed by

the Planning Commission, and up to 4 additional community members appointed by the Burlington Food Council;

BE IT FURTHER RESOLVED that, in particular, the Task Force is to

(1) Generate a cohesive urban agriculture policy informed in part by current research, best practices, and the needs of City residents,

(2) Review the current rules and regulations that govern urban agriculture in Burlington, including but not limited to city ordinances and zoning regulations,

(3) Seek input from residents, stakeholders, and experts as appropriate, such as the Intervale Center and the UVM Food System Spire;

(4) Identify potential inconsistencies or gaps in the current regulations and make recommendations on clarifying and improving them,

(5) Identify barriers to urban agriculture and make recommendations on how the city can better promote and govern urban agriculture, where appropriate

(6) Make recommendations on how to integrate the needs of city residents with statewide and regional food system development efforts, and

(7) Create a written action plan including actionable next steps for the City Council and city departments, a timeline and outline of necessary work, and potential funding sources for further policy development and implementation;

(8) Consider where urban agriculture may be appropriate in Burlington and that shall include hearing from the Burlington Police Department and the office of code enforcement; and

BE IT FURTHER RESOLVED, that the Task Force shall provide a final, written action plan as outlined above to the City Council within 1 year after adoption of this Resolution by the City Council, with interim reports to the City Council at three-month intervals describing activities to date.

Appendix D. Applicable state laws

Many state laws affect urban agriculture directly or interact with municipal laws affecting urban agriculture. Although several of the laws were designed for commercial agriculture, the generous definitions associated with "agriculture", "farming," "agricultural practices," and "agricultural structures" result in applicability at a wide range of scales, and many hobby urban agriculture practitioners are affected by these laws.

The **Burlington Municipal Charter**[31] (24 V.S.A. § 3-48) grants authority to the City of Burlington on a wide range of governance topics. It is relevant to urban agriculture because it prohibits the city from having "power to license, tax, or prohibit farmers selling the produce of their own farm". This raises some questions about the limitations that have previously been imposed regarding when and where farmers markets may occur, as well as the need to license a mobile vending unit operated by one of the farms. The Municipal Charter also grants authority to the city to define and site slaughterhouses.

Vermont's **Limitations on Municipal Bylaws**[32] (24 V.S.A. § 4413) prohibits the city from regulating "accepted agricultural practices" and structures used for agricultural purposes. (See Accepted Agricultural Practices section below for definition of "agricultural structure".) The on-the-ground implications for this law are that all authority to prohibit or allow agricultural practices rests with the Agency of Agriculture. However, the state does recognize the role of zoning as a viable municipal tool for determining where such activities take place, and although the law exempts agricultural structures from the permitting process, farmers must still notify the city zoning department in writing and provide a sketch of the site, structure, and appropriate setbacks.

Vermont's **Accepted Agricultural Practices** (AAPs) regulations[33] (6 V.S.A. § 4810) are primarily concerned with protecting water quality in the state. The regulations address nutrient management (manure, compost, and fertilizer) by requiring setbacks from property lines and surface waters. The notable consideration for Burlington residents is that these regulations apply at all scales, regardless of whether the practice is used in conjunction with a farm business. Thus, the storage of manure of compost on urban lots would be subject to setbacks, which at 100 feet are significantly greater than most urban lots in Burlington can accommodate. The Agency of Agriculture and the Agency of Natural Resources are responsible for enforcing these regulations, though at small scales enforcement is complaint-based. A variance is possible in some cases when the requirements cannot be met, though variances come with additional requirements to containerize the nutrient source or remove it regularly from the property.

The AAPs also provide definitions for "agricultural structures" (section 4.07) that are used to determine whether a municipality has the authority to permit the structure or whether it falls under the jurisdiction of the Agency of Agriculture (see section on Limitations on Municipal Bylaws, above). A structure is considered an "agricultural structure" if it:

[31] http://www.leg.state.vt.us/statutes/fullsection.cfm?Title=24APPENDIX&Chapter=003&Section=00048
[32] http://www.leg.state.vt.us/statutes/fullsection.cfm?Title=24&Chapter=117&Section=04413
[33] http://www.vermontagriculture.com/ARMES/awq/AAPs.htmm

- is used in connection with the sale of $1000 or more of agricultural products in a normal year; or
- is used in connection with the raising, feeding, and management of at least the following number of adult animals: four equines; five cattle or American bison; fifteen swine; fifteen goats; fifteen sheep; fifteen fallow deer; fifteen red deer; fifty turkeys; fifty geese; one-hundred laying hens; two-hundred and fifty broilers, pheasant, Chukar partridge, or Coturnix quail; three camelids; four ratites (ostriches, rheas, and emus); thirty rabbits; one hundred ducks; or one-thousand pounds of cultured trout; or
- is used by a farmer filing with the Internal Revenue Service a 1040 (F) income tax statement in at least one of the past two years; or
- is on a farm with a business and farm management plan approved by the Secretary.

Vermont's **Apiary Law**[34] (6 V.S.A. § 3021) applies to both professional and hobby beekeepers, and includes a requirement that all beekeepers complete a free, one-time registration with the Agency of Agriculture so that the state may track where apiaries are located and communicate with beekeepers in the case of disease or aerial pesticide spraying near an apiary. The State Apiculturist is responsible for enforcing the law, and visits apiaries throughout the state, including in the city of Burlington. The apiary law also contains provisions to prevent the spread of disease. Beekeepers must report any disease in their hive and the state apiculturist has the authority to inspect hives and make determinations regarding the identification of disease. In addition, used equipment or colonies from another state must be certified as free of disease. Hives must be constructed with removable comb frames and an apiary may be located anywhere on the property. The law also includes provisions specific to commercial beekeepers, including that beekeepers must report the breeding of bees for commercial sales, and regulations regarding the establishment of new apiaries within certain distances of existing commercial apiaries.

Vermont's **slaughtering and meat inspection laws**[35] (6 V.S.A. § 3301) allows the on-farm slaughter of animals for personal use, but animals for sale must be taken to an inspected slaughterhouse. The on-farm slaughter of poultry for sale is exempt from this requirement[36] , as long as certain provisions are followed and not more than 1000 whole birds are sold in one year. The laws apply at all scales, so hobby livestock keepers are also eligible for the exemptions.

Vermont's **animal cruelty law**[37] (13 V.S.A. § 351) exempts "livestock and poultry husbandry practices" from the regulation, but does not define these practices. This means that livestock owners are not required to follow specific provisions to ensure that their animals are treated humanely. The enforcement implications of this exemption are that humane investigators and enforcement officials lack a clear legal mechanism to persecute offenders in cases of mistreatment.

[34] http://www.leg.state.vt.us/statutes/fullchapter.cfm?Title=06&Chapter=172
[35] http://www.vermontagriculture.com/fscp/meatInspection/regulations.html
[36] http://www.leg.state.vt.us/statutes/sections.cfm?Title=06&Chapter=204
[37] http://www.vactf.com/manual/chap7/

Appendix E. Applicable Burlington laws

The city of Burlington uses two regulatory mechanisms: a Code of Ordinances, with general codes for the city[38], and a Comprehensive Development Ordinance[39], the land use and zoning code for the city. Penalties for noncompliance include tickets and fines.

General ordinances

Chapter 5 of the Code of Ordinances, **Animals and Fowl**, includes general provisions for the keeping of animals, establishes a pound, and outlines enforcement and impoundment. Despite the title, this section of the code does not mention any regulations related to fowl. It does contain a provision for nuisance animals (Sec. 5-4), which is currently used to regulate roosters. Sec. 5-26, Cruelty, prohibits "torture, torment or […] neglect" as well as prohibiting someone from "illegally kill[ing]" an animal. However, it does not address whether there is any exemption for "legal" killing in the case of slaughtering animals for food.

Chapter 8 of the Code of Ordinances, **Buildings and Construction**, outlines the requirements for obtaining a building permit for any structure to be constructed in Burlington. Agricultural structures are not required to be designed by a registered architect or engineer.

Chapter 17 of the Code of Ordinances, **Health**, prohibits the sale of "fruit or merchandise" in the "street or other public place" without the approval of city council (Sec. 17-5). Sec. 17-6 requires that any outside display for "fruits, vegetables or other foodstuffs" be "properly protected from insects, dust, dirt or any other foreign or unwholesome material by suitable coverings." Sec. 17-7 outlines the license provisions for the sale or delivery of milk.

Chapter 29 of the Code of Ordinances, **Vegetation,** prohibits the planting of trees in public parks or right-of-ways without the prior approval of the board of parks commissioners.

Zoning ordinances

Burlington's **Comprehensive Development Ordinance** (CDO) contains definitions for "animal boarding," which outlines that any person keeping more than four animals greater than three months of age shall be considered to be operating a boarding operation, which is a regulated use in the city. The boarding definition does include an exception for livestock in areas approved for agricultural use. However, in nonagricultural areas this effectively limits the number of livestock a person may have to four. The CDO also includes definitions and associated uses for "agriculture," "community garden," "composting," and "farm structure."

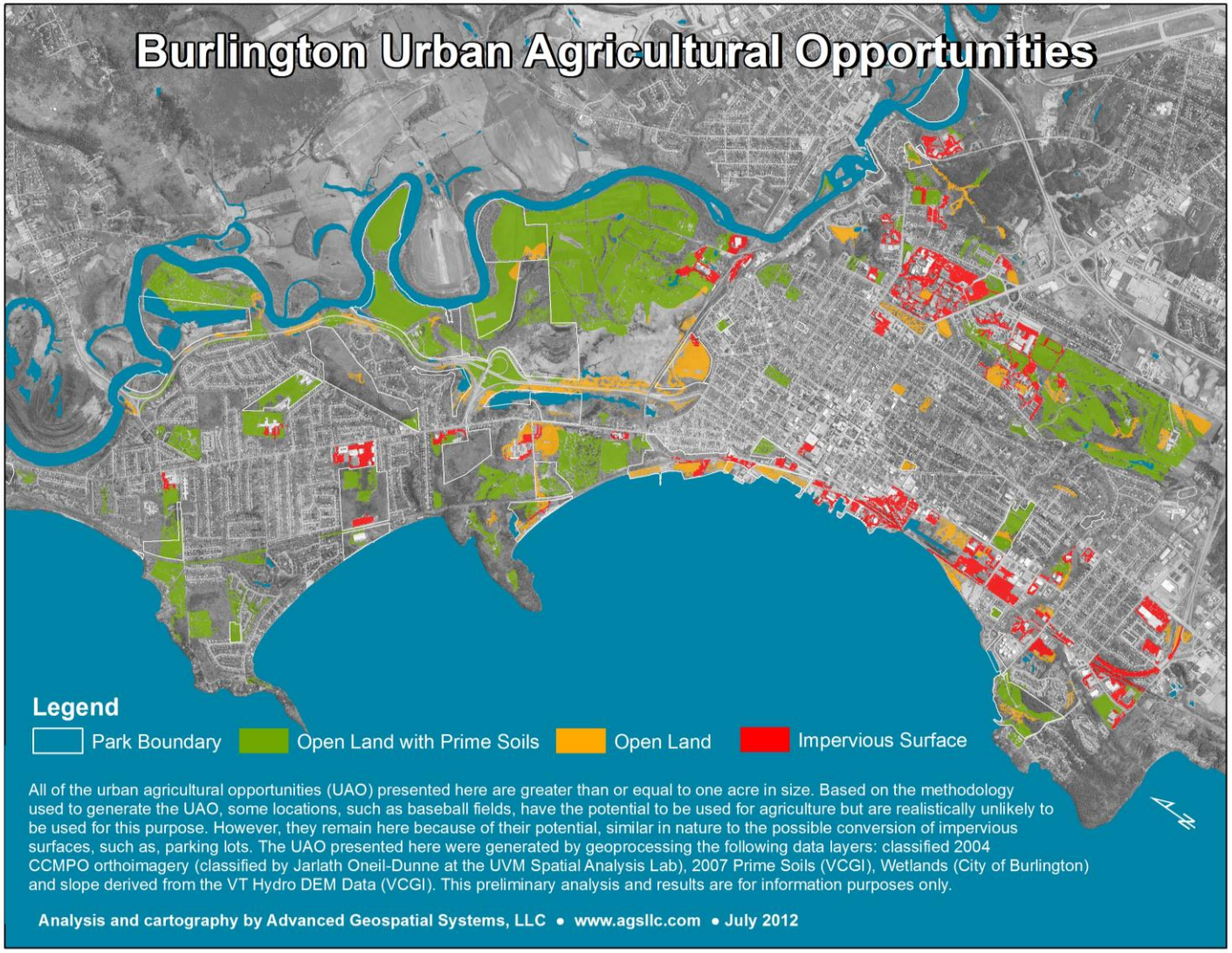
The CDO includes a requirement that the construction of any structures greater than 16 sq. ft. requires a zoning permit. Community gardens are allowed in most zones with the exception of the Downtown Transition and Urban Reserve zones, and one parking spot per ten plots is required in the neighborhood and shared use districts. The CDO also includes rules regarding "Home Occupations," which limits the type of businesses that people may operate out of their homes. Finally, the CDO includes a definition for "Open Air Markets," which allows for locally grown produce, crafts, and baked goods, which is used to govern the city's farmers markets.

[38] Available at: http://library.municode.com/index.aspx?clientId=13987
[39] Available at: http://www.burlingtonvt.gov/PZ/Zoning/Zoning-Ordinance/

Appendix F. Burlington urban agriculture organizations

Organization	Website
Burlington Permaculture	http://burlingtonpermaculture.weebly.com/
City Market	http://www.citymarket.coop/
Farm to Plate	http://www.vsjf.org/project-details/5/farm-to-plate-initiative/
Flashbulb Institute	http://www.theflashbulb.org/
Fletcher Free Library	http://www.fletcherfree.org/
Friends of Burlington Gardens	http://www.burlingtongardens.org/
Friends of the Hort Farm	http://www.friendsofthehortfarm.org/
Gardener's Supply	http://www.gardeners.com/
Green Mountain Compost	http://www.greenmountaincompost.com/
Grow Team ONE	http://www.growteamvt.com/
Intervale Center	http://www.intervale.org/
National Gardening Association	http://www.garden.org/
NOFA-VT	http://nofavt.org/
Rural VT	http://www.ruralvermont.org/
Small Business Development Center	http://www.vtsbdc.org/
UVM Center for Rural Studies	http://www.uvm.edu/crs/
UVM Center for Sustainable Agriculture	http://www.uvm.edu/~susagctr/
UVM Entomology Lab	http://www.uvm.edu/~entlab/
UVM Extension	http://www.uvm.edu/extension/
UVM Farmer Training Program	http://learn.uvm.edu/sustainability/farmer-training/
UVM Food System Research Collaborative	http://www.uvm.edu/crs/?Page=projects/fsrc.html&SM=projects/projectssubmenu.html
UVM Food System Spire	http://www.uvm.edu/foodsystems/
UVM Master Gardeners	http://www.uvm.edu/mastergardener/
UVM Plant Pathology Lab	http://pss.uvm.edu/pd/pdc/
Women's Agriculture Network	http://www.uvm.edu/wagn/
Vermont Farm and Garden Exchange	http://www.vtfarmandgardenexchange.com/
Vermont New Farmer Project	http://www.uvm.edu/newfarmer/

Appendix G. Urban agriculture opportunities



(previous page) Figure 2. Urban agriculture opportunities greater than one acre

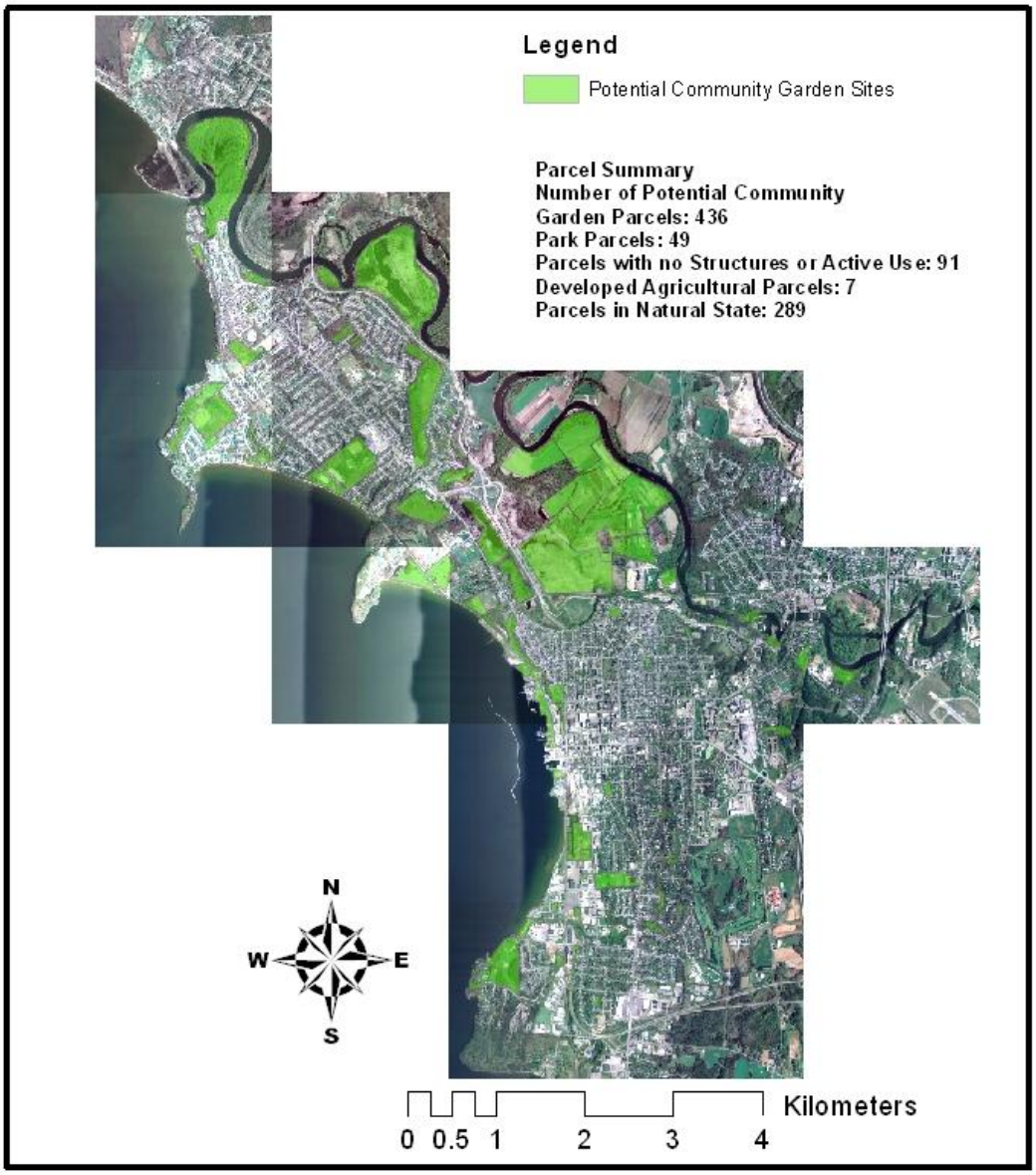
The map on the previous page identifies land opportunities for urban agriculture production on land parcels one acre or greater. Some areas may already be in agricultural production and therefore do not represent new opportunities.

Impervious and Open spaces:
Count: 76 polygons/opportunities
Minimum: 1.00462 acres
Maximum: 17.4897 acres
Sum: 228.228759 acres
Mean: 3.00301 acres
Standard Deviation: 3.039489 acres

Open space with prime soils
Count: 136 polygons/opportunities
Minimum: 1.012431 acres
Maximum: 101.081993 acres
Sum: 1053.363084 acres
Mean: 7.745317 acres
Standard Deviation: 14.031538 acres

Marginal Open Land
Count: 85 polygons/opportunities
Minimum: 1.074526 acres
Maximum: 82.883575 acres
Sum: 328.617701 acres
Mean: 3.866091 acres
Standard Deviation: 8.987759 acres

Advanced Geospatial Systems, LLC did this analysis and map production pro bono



Criteria: Parcels which are parks, vacant, undeveloped or agriculture on soils which are prime based on state or regional criteria.

Data Layer: Chittenden County RPC Land Use Data (2008) and Agriculturally Important Soil Units from SSURGO Soil Data
Data Source: VCGI
Map Projection: Vermont State Plane Meters
Map Composition and Analysis by: Cole Talbot

Figure 3. Potential areas for new community gardens in Burlington

Appendix H. Chicken policy supporting material

Table 2. Overview of proposed minimum space requirements for chickens and egg production estimates

Number of chickens	Sq. ft. minimum coop space requirement (1.5 ft^2/chicken)	Sq. ft. minimum outdoor run space requirement (3 ft^2/chicken)	Eggs/ day	Eggs/ week	Dozen/ week
2	3	6	1.3	9.2	0.8
3	4.5	9	2.0	13.9	1.2
4	6	12	2.6	18.5	1.5
5	7.5	15	3.3	23.1	1.9
6	9	18	4.0	27.7	2.3
7	10.5	21	4.6	32.3	2.7
8	12	24	5.3	37.0	3.1
9	13.5	27	5.9	41.6	3.5
10	**15**	**30**	**6.6**	**46.2**	**3.9**
11	16.5	33	7.3	50.8	4.2
12	18	36	7.9	55.4	4.6
13	19.5	39	8.6	60.1	5.0
14	21	42	9.2	64.7	5.4
15	22.5	45	9.9	69.3	5.8
16	24	48	10.6	73.9	6.2
17	25.5	51	11.2	78.5	6.5
18	27	54	11.9	83.2	6.9
19	28.5	57	12.5	87.8	7.3
20	30	60	13.2	92.4	7.7
21	31.5	63	13.9	97.0	8.1
22	33	66	14.5	101.6	8.5
23	34.5	69	15.2	106.3	8.9
24	36	72	15.8	110.9	9.2
25	37.5	75	16.5	115.5	9.6
26	39	78	17.2	120.1	10.0

With the proposed minimum space requirements and the permit exemption for structures under 16 sq. ft., 10 chickens may be kept without a permit. Any residents wishing to keep more than 10 chickens must apply for a permit to build a larger chicken coop.