HALTON ENVIRONMENTAL NETWORK

A STUDY TO EXPLORE THE FEASIBILITY OF AN URBAN ECO-FARM IN HALTON REGION

Funded by the Ontario Trillium Foundation / Fondation Trillium de l'Ontario

An agency of the Government of Ontario
Un organisme du gouvernement de l'Ontario

Report written by KENNEDY CONSULTING

October 14, 2021

Table of Contents

Acknowledgements

This study was conceived and commissioned by the Halton Environmental Network (HEN), based in Oakville, Ontario, Canada.

HEN gratefully acknowledges that this study was funded by the Ontario Trillium Foundation.

This study was completed by Kennedy Consulting.

HEN gratefully acknowledges the contributions of community partners listed in Appendix A.

Note that select, unattributed quotes from interviews are off set in the body of the report.

Acronyms

CHP	Country Heritage Park
FBO	Faith-based organization
GHG	Greenhouse gas
GSS	Greening Sacred Spaces Halton-Peel
HCDSB	Halton Catholic District School Board
HCHC	Halton Community Housing Corporation
HDSB	Halton District School Board
HEN	Halton Environmental Network
HFC	Halton Food Council
SDG	Sustainable Development Goals
STEM	Science, Technology, Engineering and Math
RAS	Rural Agricultural Strategy
UBC	University of British Columbia

1. Overview

1.1 About HEN

Established in 2004, Halton Environmental Network (hereafter referred to as HEN) is an incorporated, non-profit organization. Its mission is to promote action and engagement in environmental protection and sustainability in Halton Region which includes the Town of Oakville, the City of Burlington, the Town of Milton, and the Town of Halton Hills.

HEN's role within the community is twofold: (1) the organization has taken a leadership role in acting as a catalyst by bringing together stakeholders across Halton to develop climate change mitigation and adaptation policies and programs; and (2) HEN has also been actively engaged in initiating and implementing education programmes that address climate change and promote environmental sustainability.

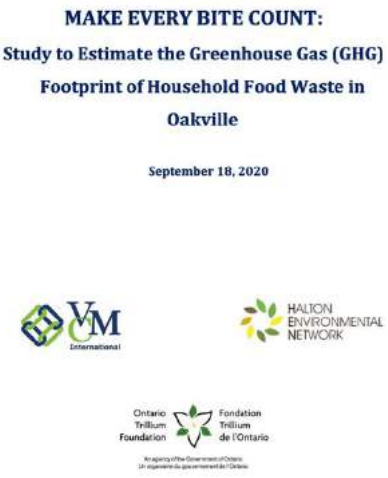
This study builds upon HEN's active work in the community of Halton and that of its community partners. Through Halton Food, Greening Sacred Spaces Halton-Peel, OakvilleReady, and its research-related work, HEN is already involved in initiatives focused on enhancing food security and bolstering community resilience.

Focus on HEN's Ongoing, Related Work

HEN is an active community partner, fostering food literacy, access to local, healthy, and culturally relevant food, and enhancing social cohesion through its programs. A few highlights of HEN's ongoing, related work are included below:

Halton Food

Halton Food's mission is "to educate residents about sustainable food production and promote access to local, healthy, culturally-relevant food through environmentally sustainable community gardening, urban farming and school gardens." Halton Food currently maintains community gardens across the region in partnership with Halton Community Housing, various faith-based organizations (FBOs), and the Town of Halton Hills (Acton Community Garden).

Greening Sacred Spaces Halton-Peel	Greening Sacred Spaces (GSS) assists faith communities in Halton and Peel Regions in creating more sustainable and environmentally-friendly places of worship through education, capacity building and supporting concrete action in the community. GSS is a program of HEN and a chapter of Faith and the Common Good. GSS has worked with FBOs in Halton Region to establish community gardens on their property, including several FBOs that are part of HEN's OakvilleReady initiative.
OakvilleReady	HEN, in partnership with the Town of Oakville and Faith & the Common Good, has established eight neighbourhood extreme weather resiliency hubs via its OakvilleReady initiative. The hubs are located in FBOs across the community. The goal of OakvilleReady is to help the community become more resilient to the effects of climate change. In addition to teaching residents how to respond to public emergencies as a result of extreme weather, seven of OakvilleReady's eight neighbourhood hubs have food gardens, or are exploring the idea of adding one. Knox Presbyterian Church is the only hub that doesn't have the space to incorporate a food garden.
Make Every Bite Count	 In 2020, HEN released the *Make every bite count* study. The purpose of the study was to understand the carbon "foodprint" of household food waste in Oakville and to guide future initiatives to improve the community's food literacy and reduce its environmental impacts. Key findings from the study include:

- Total household food waste in Oakville was estimated to be 16,370 tonnes, which represents 43,035 metric tonnes of carbon dioxide emissions equivalent (CO_2E)
- Composting all Oakville households' food waste would reduce CO_2E emissions by 2,227 tonnes
- The largest reduction in CO_2E emissions by food type would come from reducing avoidable food waste in meat and poultry
- The combination of reducing avoidable food waste by 50% and composting the remaining food waste would result in a reduction of CO_2E emissions equivalent to taking 3,345 cars off the road for a year

By identifying and analyzing the key drivers of household food waste, the study found that the majority of Oakville residents would benefit from more guidance on strategies to reduce their food waste by improving their food literacy, which includes purchasing, storage, and usage practices.

To learn more about HEN, visit haltonenvironet.ca

1.2 About This Study

HEN, as described above, is a community-oriented not-for-profit organization that is active across Halton in building resilience through gardening and planting initiatives. HEN was interested in exploring ways to expand its impact and applied for funding from the Ontario Trillium Foundation's (OTF) Seed Grant program. HEN was successful in its grant application and initiated this study in late 2020. The intent of the study was to **explore the concept of establishing an urban eco-farm in Halton Region that will serve as a learning centre to increase residents' awareness of the impact of the food system on climate change and the environment**[*].

This grant funding from OTF generously allowed HEN the time and space to explore whether an urban eco-farm could:

- Engage and empower more residents to grow food using small-scale solutions
- Build on the work HEN has done via the Make Every Bite Count Study to inspire citizens through the food that they eat to reduce their carbon "foodprint" and associated environmental impacts
- Contribute to a more sustainable and resilient community by building on the work HEN is doing with Halton Food, OakvilleReady and Greening Sacred Spaces

[*] Refer to sidebar on pages 5 and 6

The feasibility study had a threefold purpose:

1. To assess the viability of establishing a year-round operating urban eco-farm that will include micro farms, an aquaponics operation, greenhouses, a food forest, an insectivore meadow, a farmers' market, locavore eateries, exhibits, and a meeting hub.
2. To learn if there are models in other urban centres that can be replicated in Halton and the factors that need to be considered to make them successful here.
3. To determine if there is sufficient evidence to indicate that the proposed urban eco-farm through the delivery of educational programmes will result in citizens taking action in the way that they produce, consume, and waste food in order to reduce their carbon "foodprint" and associated environmental impacts.

The scope of this feasibility study was to gauge:

1. Level of community interest
2. Degree to which it will serve the needs of the community
3. Potential partners/supporters (public, private, non-profit sectors)
4. Successful similar models in other North American urban areas
5. Suitable locations and requirements for land use
6. Project costs and approach to obtain funding
7. Potential to be financially self-sustaining and how this can be achieved

This study represents an initial feasibility study to explore the concept of an urban eco-farm in Halton. At the start of the research process, the following six criteria were established as the means to qualitatively assess the feasibility of an urban eco-farm; these have been reviewed and discussed in collaboration with HEN staff.

An urban eco-farm, operated by HEN, will be perceived to be feasible if:

1. It aligns with HEN's strategic mandate
2. HEN demonstrates sufficient internal capacity
3. There is a presence of demonstrable co-benefits
4. It does not supplant existing market actors and is serving a community need
5. Identified risks are perceived to be surmountable (in the short and long term)
6. There is potential for consistent funding/revenue stream(s)

What is urban agriculture?

Urban agriculture (or urban farming) is the process of "cultivating, processing, and distributing food in or around urban areas." This term is often used to describe animal husbandry, aquaculture, urban beekeeping, and/or horticulture.

In general terms, urban agriculture differs from community gardening in that it normally involves a commercial aspect whereby food is grown to be sold, and not to be consumed personally, or shared. For this study, given HEN's mandate, the focus is more on the viability of the educational, research and/or demonstration aspects of urban agriculture rather than the profitability of the sale of products.

What are the benefits of urban agriculture?

The benefits of urban agriculture are multidimensional – they include reducing negative impacts on the environment, promoting the local economy, and strengthening social cohesion.

Urban agriculture can address many different, interconnected issues: climate change, food security, biodiversity, public health, economic growth, land management, and social connectedness. These are explored in more detail in Section 3.1.

Growing food in cities also offers some major advantages:

- Provides fresh, sustainable, locally produced food
- Food is grown in proximity to local markets
- It reduces transportation costs

An urban garden in New York City
Image Credit: Canva

What is the connection between climate change, agriculture, and food security?

Climate change, agriculture and the food system, and food security are interconnected.

The Intergovernmental Panel on Climate Change (IPCC) estimates that the global food system – agriculture and land use, and the storage, transport, packaging, processing, sale and consumption of food – accounts for approximately 21 to 37% of total GHG emissions (IPCC, 2019).

Agriculture and the food system are also vulnerable to the effects of climate change, which include:

- Increasing temperatures
- Changes in rainfall patterns
- More frequent and intense extreme weather events
- Water shortages
- Increased damages from flooding and wildfire
- Increased agricultural pests (weeds, insects and other pests that benefit from warmer temperatures)
- Land degradation

The effects of climate change are expected to reduce food availability and raise food prices, damage agricultural productivity, disrupt the stability of the global food supply and food supply chain, and reduce the nutritional quality of crops. In other words, climate change is projected to have a negative impact on all aspects of food security – the availability of food, the ability to access it, its nutritional quality, and a stable supply. Increased food insecurity and higher food prices are most likely to severely affect low income and vulnerable populations (IPCC, 2019).

Impact of Climate Change on Cities

Cities are particularly vulnerable to the effects of climate change. Climate models show that many Canadian cities, including those in southern Ontario, will experience a dramatic increase in the number of hot days and nights as the climate continues to warm. Increased heat leads to increased air pollution, as high temperatures turn vehicle exhaust into ozone and smog. More frequent and intense extreme weather events – such as flash floods – threaten city infrastructure, as well as citizens' homes (Climate Atlas of Canada, 2019). These problems are exacerbated by densely packed buildings and paved surfaces, which lead to the urban heat island effect in warm weather and flooding during heavy rain.

How could an urban eco-farm help Halton Region with climate change mitigation and adaptation?

An urban eco-farm could help Halton Region adapt to and mitigate the effects of climate change in several ways:

- Growing food locally reduces food miles (the distance between the location where food is grown and the location where it's consumed) which reduces GHG emissions
- Strengthening the local food system bolsters the Region's resilience and self-sufficiency in the face of increasing food prices or an unstable supply chain
- Creating more and better green space(s) in urban areas preserves habitat and promotes biodiversity, reduces the urban heat island effect, and will play an increasingly important public health role during hotter summers
- Educating citizens about the connections between food and climate change could lead to changes in consumer behaviour, such as:
    - Eating a more plant-based diet, which reduces the GHG emissions associated with animal-sourced food (such as meat and dairy)
    - Reducing food waste, which also reduces GHG emissions - from 2010–2016, for example, global food loss and waste equalled 8–10% of total GHG emissions (IPCC, 2019)
- Preserving existing farmland – the loss of agricultural land in urban and urban-adjacent areas can also jeopardize local food security
- Improving the region's green infrastructure, which provides benefits such as improved local air and water quality, shading, urban heat island mitigation, erosion control, and stormwater retention
- Organic farming practices improve soil health, which improves its ability to sequester carbon and retain water - approximately 80% of the Earth's terrestrial carbon is stored in soils (Shade & Tully, 2020)

1.3 Location

HEN operates across the Regional Municipality of Halton (Halton). Located on the western edge of the Greater Toronto Area (GTA), the Region is comprised of four municipalities which vary in size and character: Burlington, Halton Hills, Milton, and Oakville. Halton is among the fastest growing regions of Ontario (Government of Ontario [Ontario], 2021). The Region is home to a large and diverse urban population, as well as a vibrant agricultural sector. The southern municipalities of Burlington and Oakville are more densely populated and developed than the northern part of the region. Although the northern municipalities of Milton and Halton Hills have traditionally been more rural, they are undergoing rapid development and are projected to experience significant growth over the next decade.

1.4 Process

The process to develop the feasibility study included desktop research, interviews, focus groups, synthesis and analysis.

- *Desktop research*
    - Including case studies of similar initiatives (nine brief case studies of comparable entities outside of Halton Region and six of comparable entities within the Region)
    - Three select case studies are highlighted in Appendix B
    - Financial research about the organizations is included in Appendix C

- *Interviews* with:
    - Representatives from similar initiatives within Halton (Country Heritage Park, Meaghan Richardson of Mabel May Farms, Whole Circle Farm)
    - Representatives from similar initiatives outside of Halton (Ryerson Urban Farm, McQuesten Urban Farm)
    - Local policy makers / municipal government representatives (Regional Municipality of Halton, City of Burlington)
    - Municipal school boards (Halton District School Board and Halton Catholic District School Board)
    - A full list of interviewees is included in Appendix A

- Four discussion-based *focus groups*:
    - Two with self-selected community representatives from across all four communities in Halton
    - One with local agricultural and community garden representatives
    - One with high school-aged youth

HEN thanks all of those that participated in the interviews and focus groups to help inform this study.

Urban eco-farming is a multi-faceted topic, and HEN worked to connect with a range of representatives from across and beyond Halton

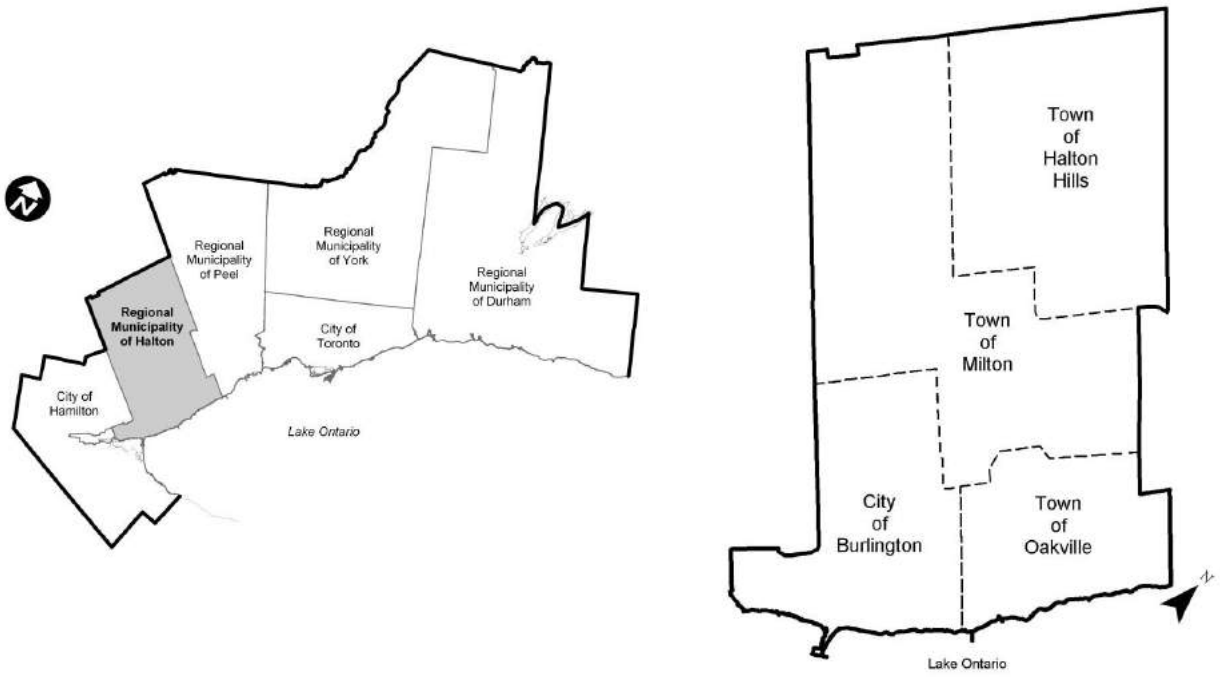
- *Synthesis* of findings, *analysis* of results, and *summarizing information* into a cohesive report.

2. Current Context

This section includes information about what HEN has learned about the current context and operating landscape in Halton for a potential urban eco-farm. This chapter was informed by the process outlined in Section 1.4.

2.1 Halton's Geography

Halton Region encompasses a land area 964 square kilometres (Halton Region [Halton], 2011). Urban centres account for approximately 30% of the land and the remaining 70% consists of rural and agricultural areas. The region's agriculture sector includes horse farms, oilseed and grain operations, greenhouse / nursery / floriculture operations, hay producers, livestock operations, and fruit and vegetable growers (Halton, 2016).



Map 1. Map of the Region of Halton showing its location in the Greater Toronto and Hamilton Area and an inset map with the four local municipalities (Source: Region of Halton's Official Plan)

Halton Region has a mix of rural and urban areas.

In 2016, the region's population density was 568.9 people per square kilometre. Oakville was the most densely populated city, with 1,395.6 people per square kilometre, followed by

Burlington, which had 987.3 people per square kilometre. Milton and Halton Hills were the least densely populated, with 303.2 and 221.4 people per square kilometre respectively (Statistics Canada [Stats Can], 2016).

Transit service in Halton is provided by the Burlington, Oakville and Milton municipal transit authorities; Halton Hills has no municipal transit system. These municipal transit services are not fully integrated, and the level of public transit service varies throughout the region (Dillon Consulting, 2013). In 2016, the majority of the region's population – 78.8%– commuted to work by car (Stats Can, 2016).

Municipal transit services are not fully integrated throughout the region.

2.2 Halton's Demographics and Expected Population Growth

As of 2016, the region's total population was 548,435. The bulk of the population lives in Burlington (34%) and Oakville (35%). Halton is one of Canada's fastest growing communities. By 2031 the region's population is forecast to increase by 35%. Of the four municipalities, Milton and Halton Hills are projected to experience the most significant population growth, with increases of 83% and 59% respectively (Halton, 2017). Under the Provincial Growth Plan, the region is mandated to grow to a population of 1.1 million by 2051.

Halton Region is culturally and ethnically diverse. According to the last census (2016), 25.7% of the population identified as visible minorities. Around 42% of Milton's population identified as visible minorities, compared to 30% in Oakville, 16% in Burlington, and 7.5% in Halton Hills. In 2016, the top 10 languages spoken at home (other than English and French) were Mandarin, Urdu, Spanish, Arabic, Polish, Punjabi, Tagalog, Russian, Portuguese and Korean (Stats Can, 2016).

Census data also shows that Halton Region is one of the most affluent communities in Canada. In 2015, the median economic family income in Halton Region was $119,370, approximately 131% higher than the provincial median family income. Oakville had the highest median economic family income, $133,291, approximately 146% higher than the provincial median family income (compared to $121,364 in Halton Hills, $112,739 in Burlington, and $112,626 in Milton) (Stats Can, 2016). However, there are also significant income inequalities. According to a 2018 report published by Community Development Halton (CDH), the average poverty rate in

Halton is 8.2%, compared to 14.2% in Ontario. Women, visible minorities, and newcomers experience higher poverty rates than the region's average.

Halton Region is diverse, growing, and relatively affluent.

Food Insecurity in Halton

Food insecurity refers to the inability of an individual or family to access adequate, nutritious food due to lack of money (Halton, 2019). According to *Beyond Hunger*, a report released by the non-profit Community Food Centres Canada (CFCC) in fall 2020, "before COVID-19, nearly 4.5 million Canadians struggled to put good food on the table for themselves and their families. In the first 2 months of the pandemic, that number grew by 39%, affecting 1 in 7 people." (p. 4). Urban farms and other organizations whose goal is to ameliorate food security and food sovereignty are well placed to address this problem.

In addition to underscoring food insecurity, the pandemic has also impacted food prices and highlighted vulnerabilities in Canada's food supply chain. Canada's 2021 *Food Price Report* notes that, "the pandemic affected the entire agri-food chain from farmgate to consumers. It caused border and facility closures, shifted consumer demand from food service to food retail and created unemployment and underemployment." (Charlebois et al., 2021, p. 5). The report projects that food prices will rise by 3 to 5% in 2021, an increase of $695 (5%) compared to 2020. This will bring a household's food spending up to $13,907 per year.

Though food insecurity is not a new problem in Halton, it has been exacerbated by COVID-19. In 2019 the average weekly cost of a basic healthy diet for a family of four in Halton was $228, an increase of 71% since 2003 (Halton, 2019). Since the pandemic started, local food charities report between a 30 and 300% increase in requests for food, at a time when they have fewer volunteers and donations (Oakville Community Foundation, 2020). Canada's 2021 *Food Price Report* notes that "families with less means will be significantly challenged in 2021, and many will be left behind. Immunity to higher food prices requires more cooking, more discipline and more research. It's as simple as that" (Charlebois et al., 2021).

Food insecurity is a real and ongoing challenge in Halton Region.

2.3 Current Legislative and Policy Framework

Municipal Planning Policies

Provincial and municipal plans and regulations affect how urban agriculture can be integrated into urban areas (City of Hamilton [Hamilton], 2013). Municipalities in Ontario operate under the *Planning Act,* which sets out the ground rules for land use planning in Ontario and describes how land uses may be controlled and regulated. The Act provides the basis for municipalities to prepare official plans and regulate land use through zoning bylaws and other regulations. In Ontario, official plans provide municipalities with a framework for establishing zoning bylaws, meaning that urban agriculture must first be encouraged by the official plan before it can be incorporated into zoning and related bylaws (Ontario, 2021).

Zoning bylaws control where and what type of urban agriculture is allowed. In Canada, municipal bylaws often do not directly address urban agriculture, although this is slowly changing (Mackey, 2016). There are many kinds of municipal bylaws that can affect urban agriculture, including bylaws related to buildings, water, soil, sales, animals, and nuisance. In addition to the official plan and zoning, municipalities can promote and integrate urban agriculture via policy tools such as food strategies, community garden policies, and land inventories.

Halton Region Official Plan

Halton Region's Official Plan is currently under review. We conducted a keyword scan of the discussion papers related to the Official Plan review (keywords: urban agriculture, food, community garden). The only explicit reference we found to urban agriculture was in the *Rural and Agricultural System Discussion Paper,* which states that "updating the policy framework to increase permissions for agricultural operations is a positive step in allowing near-urban agriculture the flexibility to modernize and adapt to changing conditions" (Halton, 2020, p. 14).

Municipal policies play a role in encouraging urban agriculture

Other Regional Background Documents

The Rural Agricultural Strategy (RAS) Background Report was prepared for the region as part of the Halton Region Strategic Action Plan 2015-2018. The report identifies several actions that could be implemented to support the agricultural and rural economy in Halton, one of which is to "encourage urban agriculture by making public land available for agri-food production" (Halton Region, 2016, p. 10). Although the initiatives suggested in the RAS don't have a direct impact on official plan policy, the report highlights policies that would help foster the development of urban agriculture in the region (Halton Region, 2019).

Zoning Considerations and Lessons Learned

Desk research and interviews with representatives from other urban farms indicate that zoning bylaws can act as major barriers to urban agriculture. One interviewee noted that zoning bylaws were one of the most significant challenges the farm faced early on. In fact, the project could not proceed until the municipality updated its bylaws to allow urban farms in existing zoning districts. Another interviewee emphasized the complexity of provincial and municipal regulations that affect urban agriculture and the importance of understanding the regulatory landscape. In the case of Halton Region, the zoning and bylaw restrictions and land use policies of multiple municipalities would need to be identified and evaluated for compatibility with the proposed urban eco-farm. *Additional research about specific siting requirements and/or policy connections is beyond the scope of this initial feasibility study.*

A Food Strategy for Halton

Halton previously had two regional programs focused on promoting local food: Feeding Halton and the Halton Food Council (HFC). Feeding Halton was a "collaboration of social services and agriculture community working together to increase food procurement from local farms to those in need" (Feeding Halton, 2017). Feeding Halton appears not to have been active since 2017. The HFC was established in 2009 as an independent community council whose goal was to increase awareness of food systems issues and opportunities. In 2016, HFC, became an incorporated, non-profit organization that operated in all four municipalities. In 2017, HFC began the process of developing a Food Strategy for Halton Region, but the project was never realized. In April 2020, HFC became Halton Food Gardens, a program of HEN (Halton Food, 2021). One of the Community Well Being Objectives outlined in the *Halton Region Strategic Business Plan, 2019-2022* is to develop a food strategy for Halton by 2021, though few additional details are provided about how the region will do so (Halton, 2019).

2.4 Other Relevant Policies

Provincial Policies

As Halton reviews and develops its Official Plan, it will need to consider several Provincial policies. Provincial policies require that Halton Region ensures that Provincial interests are preserved in its Official Plan (Halton, 2019). There are two Provincial policies that specifically refer to urban agriculture: the Provincial Growth Plan and the Greenbelt Plan.

Agriculture will be considered as Halton updates its Official Plan

Provincial Growth Plan and the Greenbelt Plan

The *Places to Grow Act* provides a framework for the adoption of regional-scale Growth Plans. In the case of Halton, the relevant Growth Plan is for the Greater Golden Horseshoe, which directs growth-related planning over the next 30 years. The intent of the Growth Plan is to reduce urban sprawl and make more efficient use of existing infrastructure. According to the *Halton Region Official Plan Review Agriculture and Rural Policies - Technical Background Report*, "the Growth Plan requires that municipalities look to new ways to accommodate growth that breaks from the past, in terms of how communities are designed, and how land uses are mixed, all in an effort to improve quality of life, health and general well-being" (Halton, 2019, p. 28).

The Greenbelt Plan permanently protects over 728,000 hectares of agricultural land and ecological systems from urban development, within the Greater Golden Horseshoe and beyond (Halton, 2019).

Section 4.2.6.7 of the Growth Plan and section 3.1.5.2 of the Greenbelt Plan both state:

> Municipalities are encouraged to implement regional agri-food strategies and other approaches to sustain and enhance the Agricultural System and the long-term economic prosperity and viability of the agrifood sector, including the maintenance and improvement of the agri-food network, by:
>
> a) Providing opportunities to support access to healthy, local, and affordable food, urban and near-urban agriculture, food system planning and promoting the sustainability of agricultural, agri-food and agri-product businesses while protecting agricultural resources and minimizing land use conflicts

Ontario Local Food Act

The Ontario Local Food Act was created in 2013 and amended in 2018. The purposes of the Act are:

1. To foster successful and resilient local food economies and systems throughout Ontario.
2. To increase awareness of local food in Ontario, including the diversity of local food.
3. To encourage the development of new markets for local food. 2013, c. 7, s. 1.

Mississauga Urban Agriculture Strategy

Mississauga, a neighbouring local municipality, in the Region of Peel, is currently developing a municipal Urban Agriculture Strategy. The City has released an initial draft, and is in the process of gathering community feedback and integrating it into the Strategy. The Urban Agriculture Strategy is a component of Mississauga's Climate Change Action Plan, which identified urban agriculture and food security as key factors in mitigating risks related to climate change and enhancing the community's resilience.

The purpose of the Strategy is to provide guidance on how to support the development of urban agriculture in Mississauga. In addition to drawing a direct connection between climate change and urban agriculture, it explores the social, economic, public health, and environmental benefits of growing food in cities. As such, and given their proximity to one another (Mississauga borders the eastern edge of Halton Region), there may be opportunities for Halton Region to learn from or emulate aspects of Mississauga's Urban Agriculture Strategy.

However, there are differences between Mississauga and Halton Region that should be noted. In addition to its Climate Change Action Plan, Mississauga already has several relevant municipal and regional polices in place, such as:

- Mississauga Official Plan (currently under review), which includes commitments to supporting various urban agriculture-related initiatives
- Living Green Master Plan, the goal of which is to identify actions that will enable the City to implement strategic environmental initiatives
- Peel Food Charter
- Peel Food Action Council Strategic Plan

Mississauga is also more uniformly urban than Halton Region, which contains both rural and urban areas. When it comes to developing and fostering urban agriculture, Mississauga's priorities and approach will likely differ from that of a more rural jurisdiction.

Other municipalities in Canada are taking a lead on urban agriculture

2.5 International Context

In addition to the local policy framework for urban agriculture, it is important to look at the international context. The United Nations has established "seventeen interlinked global goals designed to be a blueprint to achieve a better and more sustainable future for all." The Sustainable Development Goals (SDGs) were developed in 2015 and are intended to be achieved by the year 2030. Promoting urban agriculture is directly related to several of the SDGs, as captured in the following table:

SDG	#	Description
2, Zero Hunger	2.4	By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
	2.a	Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.
11, Sustainable Cities and Communities	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.
	11.7	By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.
	11.b	By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.
12, Responsible Consumption and Production	12.3	By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.
	12.8	By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.
13, Climate Action	13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
15, Life on Land	15.9	By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.

2.6 Existing Urban Farming Initiatives in Halton

As described above, this study builds upon HEN's active work in the community of Halton and that of its community partners. Through Halton Food, Greening Sacred Spaces, OakvilleReady, and its research-related work, HEN is already involved in initiatives focused on enhancing food security and bolstering community resilience.

As HEN considers the feasibility of an urban eco-farm, it is important to understand what related, pre-existing services and initiatives are operating in Halton. A summary of findings follows below:

Community Gardens Through HEN's Programs

HEN, via its programs Halton Food, Greening Sacred Spaces, and OakvilleReady, supports community gardens and other forms of urban agriculture at multiple sites in Halton. Some sites, including The Meeting House, St. Cuthbert's, and the Church of the Incarnation have started gardens, with support from HEN's programs, and grow, produce, and donate to local food banks, the Salvation Army Lighthouse and other shelters. These gardens, as well as many others in the community are currently supported in part by Halton Food, who provides guidance on how/when to plant, how to build beds, and where to find seeds/seedlings.

Open Doors at St Christopher's Anglican Church in Burlington operates a large community garden, in partnership with Halton Food, and all produce goes directly into their Garden Market (formerly known as the food bank) or their community meal programs. In the 2021 growing season alone, the garden at Open Doors has produced over 900 lbs of fresh vegetables and herbs. There are plans to extend the season through row covers, hoop houses, and other growing methods along with indoor growing through the winter.

The Acton Community Garden operates a community garden in partnership with Halton Food, POWER (Protect Our Water and Environmental Resources), and the Town of Halton Hills. The harvest from the Acton Community Garden is donated to local food distribution programs such as St. Albans Church, Georgetown Breadbasket, and community fridges.

Some social organizations, such as Summit Housing and Outreach Programs (SHOP), rent plots at municipal gardens to facilitate access to fresh produce for their clients and as well as horticulture therapy. Clients are invited to participate in gardening activities throughout the entire season: planting, watering, harvesting, cooking and seed saving. Halton Food is also collaborating with SHOP in these activities.

Halton Food collaborates with the Halton Community Housing Corporation (HCHC) where they have community gardens on several of its properties. In addition to improving access to sufficient, safe and nutritious food, HCHC uses the community gardens as focal points to provide programming to residents in partnership with other Halton community agencies, including Halton Food.

In March 2021, the Town of Oakville announced the launch of the Oakville Food Forest, managed by Halton Food, and Oakville Pollinator Pathway, led by Oakvillegreen. A food forest is a sustainable edible food system made up of fruit and nut-producing trees and shrubs, along with edible vines, ground covers, and below ground edible plants. The two projects will be located next to each other in an underused former fruit orchard and field within Kingsford Gardens Park. A press release from the Town of Oakville states the goal of these projects is "to increase the town's climate resiliency, food security and biodiversity" (Town of Oakville, 2021).

Additional funding for both the Food Forest and HCHC sites is being sought to plant edible, native species of trees and shrubs.

These additional plants will not only serve as a source of food but also educational opportunities for homeowners with fruit or nut trees in their backyard and needing guidance on proper pruning and care practices. A local network of resources will be established such as harvesting tools and volunteer lists to assist in gleaning the food. A model will be designed based on the work of Not Far From the Tree in Toronto.

HEN, via its programs Halton Food, Greening Sacred Spaces, and OakvilleReady, operates community gardens at three FBOs in Oakville – The Meeting House, St. Cuthbert's Anglican Church, and the Church of the Incarnation. In addition, Open Doors at St. Christopher's Anglican Church in Burlington runs a large community garden in partnership with Halton Food.

The Meeting House, St. Cuthbert's, and the Church of the Incarnation, grow, produce, and donate to local food banks, the Salvation Army Lighthouse and other shelters. Open Doors at St Christopher's Anglican Church in Burlington operates a large community garden, in partnership with Halton Food, and all produce goes directly into their Garden Market (formerly known as the food bank) or their community meal programs.

Community Gardens on Municipal Land

The **City of Burlington** operates five community gardens. Plots are assigned by a lottery draw for each season, and due to high demand, garden plot permits are limited to one season. The **Town of Milton**, in partnership with the Milton & District Horticultural Society, provides two community gardens for residents. The estimated wait time for the Sunny Mount Community Garden is between two and three years (data is not available on the other community garden). In **Halton Hills**, the Georgetown Horticultural Society has 14 allotment plots.

The **Town of Oakville** has four community gardens. The current estimated wait time for a garden plot is four years. Additionally, Oakville has made land available for growing fruits and vegetables. The Erchless Estate property now features a large number of vegetables and herbs which are harvested by Halton Food staff and volunteers and donated to Kerr Street Mission. Annual beds at Kingsford Garden Park have also been used to plant vegetables. Shell Park gardens also incorporate edible plants.

The **Town of Oakville** also operates, in partnership with Oakville Horticultural Society, a Junior Gardening program; families each have their own plot of land to plant and are requested to volunteer maintaining a communal plot. Families are permitted to take any food they produce and are asked to donate excess to local food banks to prevent any food from going to waste.

There are several existing community gardens across Halton

Other Community Gardens

A range of other organizations operate community gardens. Faith-based organizations, such as the Holy Cross Evangelical Lutheran Church and the North Burlington Baptist Church in Burlington, offer community garden plots for rent.

Salvation Army Lighthouse Shelter previously had its own food garden but it fell fallow due to lack of volunteer support.

School Food Gardens

HEN has partnered with Oakwood Public School to design workshops and develop programming in the underutilized front area of the school, now being transformed into an urban oasis by HDSB. The primary objective of this project is to invite and inspire the community to utilize this new space, come outdoors, connect with each other, and learn how to grow their own food.

HEN intends to develop inclusive programming to draw the school community to this space, including workshops for neighbours who live in high-rise apartment buildings or who live in multi-generational households.

Teaching gardens will serve as a community resource, providing residents and the broader community with examples for growing their own food and increasing community access to fresh food. This space will be a respite for COVID and provide an inclusive community space.

Community partners will also benefit from the new green space and programming. Oakwood PS also houses OP-CC which operates preschool programs. There is also a close relationship with Kerr Street Mission, which operates the afterschool program for Oakwood students.

Both GSS and Halton Food have provided support for gardening education and activities in many schools in Halton by providing workshops, teacher support and assistance with grant-writing to fund projects on school properties.

2.7 Other Comparable Initiatives Underway in Halton

There are a number of entities in Halton Region already engaged in work related to urban farming and agricultural education. Please note this list is not exhaustive.

Andrews Farm Market & Winery

Andrews Farm Market & Winery is an agritourism operation located in Milton. The farm offers walking trails, wagon-rides, a playground, pick-your-own fruits and vegetables, a farm store, and other family-friendly activities.

Bronte Creek Provincial Park

Bronte Creek Provincial Park occupies 2.5 square miles in Oakville. In addition to hiking trails and campgrounds, Bronte Creek Provincial Park offers two interpretive centres. Spruce Lane Farmhouse showcases what life was like for late nineteenth century farmers in Ontario and offers demonstrations and special events. The Nature Centre focuses on the unique natural elements of the park and includes a discovery room for hands-on learning and daily children's programs in the summer. The Park also has a Children's Farm and Play Barn with live animals.

Chudleigh's Entertainment Farm

Chudleigh's Entertainment Farm is located in Milton and is an agritourism operation. The farm offers apple picking, food and other special events, tractor and pony rides, and sells baked goods via the café it operates in downtown Milton (the Blossom Café).

Country Heritage Park

Country Heritage Park (CHP), located in Milton, is an 80-acre park, farming and food appreciation centre, featuring community gardens, bees, livestock, and a community kitchen.

CHP provides educational programming for students from grades 1 – 10 on topics including food literacy, history, outdoor education, sustainability, environmental awareness, and arts. CHP is known for testing and implementing innovative and forward-thinking agricultural practices. CHP also provides land for growing food to various cultural and community groups.

Royal Botanical Gardens

The Royal Botanical Gardens (RBG) in Burlington is comprised of over 1,100 hectares of gardens, arboretum, woodlands, wetlands, and 30 kilometres of trails. In addition to its 300 acres of display gardens, the RBG oversees and protects 2,400 acres of environmentally sensitive land between the Niagara Escarpment and Lake Ontario. The RBG offers a wide variety of events, courses, and workshops for families, children, and adults on gardening, nature, botanical arts, and wellness.


Image Credit: Canva

Springridge Farm

Springridge Farm in Milton is a multigenerational farm owned and operated by John and Laura Hughes. In addition to being a working farm, Springridge is an agritourism operation, open to the public from Easter through Christmas. The farm holds a variety of seasonal festivals, sells fresh produce, preserves, honey, and Christmas trees, and has an onsite gift store and café / bakery, located in a 19th century barn. Springridge grows strawberries, pumpkins, and gourds, and has honeybee hives on their property. The farm also offers school tours.

There are several existing farming-related organizations and attractions across Halton

3. Exploring Eco-Farm Concepts

3.1 Potential Benefits of an Urban Eco-Farm

Over the course of the engagement process for this feasibility study, the team read, heard, and learned a lot about what respondents felt an urban eco-farm could do for the community. Participants reported several structural problems that an urban eco-farm could play a role in resolving, which included:

- Strengthening Halton's response to climate change mitigation and adaptation
- Ameliorating threats to the local agriculture industry
- Providing education about food and farming
- Reducing food insecurity
- Contributing to reducing poverty, under-employment, and other social challenges

Each of these ideas is explored in more detail below.

Strengthening Climate Change Mitigation and Adaptation

An urban eco-farm can play a role in enhancing Halton Region's ability to adapt to climate change and to mitigate against its effects by:

- Improving the community's resilience and self-sufficiency in the face of increasing food prices or an unstable supply chain due to the impacts of climate change
- Educating people about the connections between food and climate change
- Improving citizens' ecological literacy and environmental awareness through education and hands-on learning
- Reducing food miles
- Reducing food waste
- Increasing carbon sequestration

Urban farms also provide other environmental benefits to their communities, such as:

- Mitigating flooding during severe weather events via an increased capacity to absorb stormwater
- Preserving existing farmland and creating more and better green spaces in urban areas
- Preserving habitat and biodiversity
- Reducing the urban heat island effect
- Improving air quality and soil health
- Increasing capacity for water preservation (via food forests and green roofs)

> An urban eco-farm could empower people to see how individual actions ladder into bigger change when it comes to tackling the climate crisis.

Ameliorating Threats to the Local Agriculture Industry

Farmers are facing uncertainty over the impact of climate change. An urban eco-farm could play a role in enhancing the resiliency of the agricultural sector in Halton by:

- Fostering innovation and technological advances in agriculture that enable farmers to adapt to the effects of climate change
- Conducting climate change research, such as studying soil health or climate impacts (e.g., drought, extreme rain, wind, heat) on crops
- Serving as a living lab and research hub to develop and test new climate change adaptation methods
- Providing a "safe space" for farmers to explore new cultivation methods (an "urban experimental farm for climate resiliency," in the words of one interviewee)

In addition to climate change, the agriculture sector in Halton Region faces many other threats (one interviewee noted that "the industry as a whole is on a precipice"). These include:

- The loss of farmland (due to rapid development and high land prices)
- Succession planning (due to an aging farm population and a shortage of knowledgeable, experienced agricultural workers)
- Lack of diversity in the sector
- A general lack of understanding of and connection to farming and agriculture in the community

An urban eco-farm could:

- Expose young people to contemporary agricultural practices and the future of the sector (there is currently only one high school in Halton Region which offers a Specialist High Skills Major in Horticulture and Agribusiness)
- Connect careers in agriculture with STEM and skilled trades (one interviewee emphasized that "we need to get the message out that farming is a sexy career")
- Highlight extension careers associated with agriculture (e.g., machine maintenance)
- Tackle common misconceptions about farming (one interviewee noted that many people's idea of farming is "mucking in the dirt, but [in reality] it's so much more" – it involves entrepreneurship, innovation, and using cutting-edge technologies)

- Build bridges between urban and rural communities (one focus group participant noted that the fact that people don't understand farming or feel connected to it is "a business destroyer." The better people understand the sector, the more they will be willing to support it).

> Halton Region is on its last generation of farmers. Who will take over after the current generation?

Providing Education About Food and Farming

Almost everyone we interviewed for this study (farmers and non-farmers alike) noted that, with an increasingly urban population, many people are far removed from farming and have a limited understanding of where their food comes from. One farmer observed that there are many residents of Halton Region "who've never been north of Highway 5 [the recognized border between the southern urban parts of Halton Region and the more rural northern parts]," and have never seen the rural, agricultural side of the community. An urban eco-farm could:

- Educate people about where food comes from, who grows it, and what is involved in production (which in turn enables people to better understand the environmental impacts of food production and food waste)
- Educate people about the benefits of local agriculture, which in turn builds support for farming
- Address common misconceptions about fresh food (e.g., having unrealistic aesthetic standards for fruit and vegetables, or "realizing that an ugly-looking tomato actually tastes good")
- Teach people how to grow their own food, and how to preserve and prepare the food they grow

> Experiential learning breeds fierce connection. With young children, experiences stay deep…what you experience when you are young stays with you.

Reducing Food Insecurity

Although Halton is a wealthy community, many of the people we interviewed for this study noted that there is hidden poverty, homelessness, hunger, and food insecurity in the Region.

Many focus group participants imagined an urban farm as a place that would bring people together to tackle this problem.

An urban farm could ameliorate food security in Halton by:

- Improving access to fresh, affordable food, particularly in "food deserts" and for people who can't afford healthy food (which is often more expensive than highly processed food)
- Helping to fill food gaps caused by climate change
- Providing space to grow food for people without access to land
- Increasing people's control over what they eat, by providing them with land to grow culturally appropriate foods

Contributing to Reducing Poverty and Under-employment

While Halton's poverty rates are lower than the national and provincial rates, poverty rates in the region are increasing: between 2005 and 2015, the size of Halton's population living in poverty grew by 53 percent compared to a 25 percent increase for the overall population (CDH, 2018).

In addition to providing citizens with nutritious, affordable food, an urban farm could also offer educational opportunities and economic benefits. Many focus-group and interview participants believed that an urban farm should be a means of helping and supporting vulnerable communities and people at risk. One farmer, commenting on the pressing need to provide opportunities for the people who have lost jobs and businesses as a result of the COVID-19 pandemic, described "food and farming [as] that leverage," and thought that an urban farm would play a key role in this area. Potential areas for contributing to improved employment in the region include:

- Providing job training and employment opportunities
- Providing education and internships
- Encouraging local food production enterprises and other entrepreneurial activities related to urban agriculture

Remedying Other Social Challenges

Many of our interviewees believed that an urban farm would be able to address a variety of other social problems, such as disenfranchisement, isolation and lack of community, and problems related to social determinants of health, by:

- Enhancing neighbourhood and community engagement
- Fostering a sense of accomplishment and connection to the earth by growing one's own food
- Creating a community gathering space
- Improving citizens' quality of life via access to green space and nature
- Improving health outcomes, by encouraging physical activity and social interaction
- Reducing stress, anxiety, and depression by enabling people who live in urban areas to spend more time outdoors, in nature
- Supporting and including newcomers and visible minorities, by providing them with space to grow culturally appropriate food and offering education about what foods can be grown in Canada

Rooftop garden
Image credit: Canva

An urban eco-farm could have multiple co-benefits, including high degrees of social connection. Focusing the vision of any such organization will be critical to its success.

3.2 Potential Offerings of an Urban Eco-Farm

Our interviews and focus group discussions revealed that people have many different expectations of an urban eco-farm and what elements it could and should include. We heard that an urban eco-farm…

- "…could show a farm as an entire system, from soil creation, to growing food, to seeing how animals are integrated with food production"
- "…should be about more than just growing stuff"
- "…is a place to showcase new and innovative farming and food production techniques"
- "…is not just one place and not just one thing"
- "…is about more than just the place, it's about teaching [and] educating, it's a source of best practices and gardening wisdom"

The table below captures what we heard from community members in answer to the questions "What does an urban eco-farm mean to you?" and "When you imagine an urban eco-farm, what comes to mind?"

Elements Related to Growing Food	• Gardens in which food plants are cultivated • Greenhouses • Rooftop gardens • Permaculture (including self-sufficient, naturalized spaces) • Hydroponics (i.e., growing plants in water instead of soil) • Vertical gardens (e.g., green / living walls) • High density planting • Cultivating fruit and nut trees • Food forests • Seed bank/seed exchange
Animal Husbandry	• Apiaries - keeping hives of honeybees for pollination and honey production • Small livestock – keeping goats, sheep, chickens, or rabbits • Aquaponics – the integration of aquaculture (the farming of fish) with hydroponics in which fish waste fertilizes the plants and the plants purify the water • Insects – raising insects as a protein source for people, pets and livestock

Elements Related to Climate Change Adaptation and Mitigation	• An urban eco-farm could act as a research hub for the agri-food sector, one that brings farmers, community partners, and specialists together to identify the key challenges facing agriculture in the context of climate change and work out how to tackle these challenges • Enhancing community resilience in the face of projected worsening food insecurity (due to climate change) by reinforcing and growing local food production capacity
Ecologically Friendly Elements	• Composting • Rainwater catchment system (catching rainwater runoff in barrels or cisterns for later use in irrigating crops) • Pollinator gardens or meadows
Natural Elements	• Wooded areas with trails • Ponds • Native species of trees, shrubs, and other plants
Commercial Elements	• An onsite market or farmers' market • An onsite bakery or café • An onsite commercial kitchen • Pop-up farmers' markets in different neighbourhoods • Mobile food truck • Refrigerated trucks / other forms of cold storage for fresh food • Pick-your-own fruit and vegetable gardens • Goat runs, goat yoga, alpaca walks, or other commercial activities based on interacting with farm animals
Elements Related to Location and Space	• Indoor and outdoor classrooms • Safe, healthy, and inclusive community gathering spaces (especially important in communities that lack parks, green spaces and other spots for meeting and gathering, such as coffee shops or libraries) • Event spaces (for community events, such as a farm-to-table dinner, or private events, such as weddings or birthdays) • Historical preservation of heritage buildings and barns

Virtual Elements	• Online market • Online community forum where people can post questions related to growing and preparing food • Cameras that allow people to watch plants and farm animals online
Educational and Community Building Elements	• In-person and/or online workshops, courses, lectures, and demonstrations on topics such as gardening, cooking, environmental awareness, and sustainability • Community events such as farm-to-table meals, movie nights, and holiday events (e.g., Halloween, Christmas) • Volunteer opportunities for community members • A destination for school field trips and a place for students to get hands-on, experiential learning • Internship opportunities for high school, college and university students • Provide gardening plots for people without access to land (e.g., people who live in high rise apartment buildings) • Provide space for different ethnic communities to grow culturally appropriate foods

An urban eco-farm could offer many products and services. Focusing the mandate of any such organization will be critical to its success.

People are screaming to get back to nature.

3.3 Potential Audiences

The potential audiences and/or beneficiaries of an urban eco-farm are captured in the table below.

Farm Activity	Audience	Potential Participation Points
Education	Children	• Field trips • Camps • Educational programming connected to curriculum
	Youth	• Co-op placements • Volunteer opportunities • Internships / apprenticeships • Employment opportunities

	Adults	• Classes, workshops etc. focused on:
		  ○ Practical, hands-on ways to enhance self-sufficiency (e.g., growing and preparing food, improving home energy efficiency)
		  ○ Awareness building re. climate change and environmental issues

	Educators	• Educators want experiential learning opportunities for their students and ways to connect their students with the 'real world' outside of the classroom • Educators are looking for ways to inform themselves on topics such as food literacy and growing food
Food Production	People living in poverty	• Access to free or low-cost fresh produce
	People without access to gardens	• Provide garden plots for growing food • Education on container gardening and balcony gardening
	Newcomers	• Provide land for growing culturally appropriate foods

		• Education on what kinds of food can be grown in Halton Region
	Indigenous people/ groups	• Incorporate Indigenous food and medicine gardens
	Organizations and programs that address hunger and food insecurity	• Grow produce for, or donate / sell it at a reduced cost to food banks and school food programs
Commercial Activity	Retail consumers	• Food box / Community Supported Agriculture (CSA) subscriptions • Sales of other farm goods (honey) and value-added products (jams, preserves)
	Food service industry	• Sell produce to restaurants specializing in local, sustainably-sourced food
	Tourists and Families	• Farm tours • Pick-your-own produce
Research/ Development	Farmers	• Showcase environmentally conscious farming methods
	Scientists/ researchers	• Serve as a living lab to develop and test new technologies and interventions related to climate change adaptation and mitigation

An urban eco-farm could have many different audiences. Focusing the target audience for any such organization will be critical to its success.

3.4 Potential Revenue Streams

Generating sustainable, long-term sources of revenue is an extremely important aspect of the potential feasibility of an urban eco-farm. Of course, an eco-farm's revenues would be offset by operating and capital expenses. The importance of ensuring profitability for any feasible option cannot be understated.

The ideas that were captured over the course of this study, via interviews, focus groups and research are presented in the table below:

Agricultural product sales	• Sales of fresh produce (retail and wholesale) • Sales of value-added products (preserves) • Seed sales
Related farm activities	• Memberships / co-op structure • Entrance fees • Venue rental (for weddings, birthdays, conferences, corporate retreats) • Paid programming (camps, workshops and courses) • Sales of gardening products and takeaway items (e.g., lettuce towers, take-home gardening kits) • Agritourism activities (farm tours, pick-your-own produce) • Community events (farm-to table nights) • Field trips
Grants and donations	• Government grants (Federal, Provincial, and Municipal) ○ Specific examples include Federal initiatives, such as the Canada Healthy Community Initiative, and municipal grants, such as the Halton Region Community Investment Fund and the Agriculture Community Investment Fund • Foundations • Corporate sponsors with an interest in food security and climate change (such as TD Friends of the Environment) • Individual donors
Partnerships/Other	• School boards (HDSB and/or HCDSB) • Partnerships with organizations with a similar mandate

- Partnerships with organizations with complementary mandates (to address areas where HEN is not as aligned, conceptually)
- Canadian Federation of Agriculture
- Ontario Federation of Agriculture
- United Way Seed Funding
- Ontario Trillium Foundation
- Making use of donor recognition opportunities (such as naming a building after a prominent donor)

An urban eco-farm could have many different revenue streams. Focusing the activities and managing costs of any such organization will be critical to its success.

3.5 Potential Operating Models

The organizational and operational structure of a potential urban eco-farm is of importance for governance, legal and financial reasons. Some of the operating and service models that have emerged include:

Model	Description
For-profit farms	• Designed to generate financial profit
Non-profit farms	• Generally, seek to generate revenues to serve a specific organizational mission • Often transfer a lot of the profit to defined community efforts • Often receive funding via grants and donations • Focus on education and training
Hybrid for-profit/non-profit	• A combination of profit- and purpose-driven mandates
Social enterprise	• "[A]n organization whose mission combines revenue growth and profit-making with the need to respect and support its environment and stakeholder network" (Deloitte, 2018). • (Could be combined with any of the operating models above)

A non-profit and/or social enterprise model would be most aligned with HEN's not-for-profit status

3.6 Potential Partnerships

HEN often partners with other not-for-profit entities, corporations, and public sector partners to advance its vision. With respect to an urban eco-farm, there are multiple parties that could be involved in planning, executing, advocating, and/or donating.

Note: These entities are listed for illustrative and discussion-based purposes.

Other potential partnership opportunities include:

- The Halton District School Board and the Halton Catholic District School Board
    - School Boards have land and resources that could be beneficial for collaboration and may facilitate local, community-based microsites
- Country Heritage Park (CHP)
    - CHP has land and space and already offers educational programming in line with the provincial curriculum on food literacy, history, outdoor education, sustainability, and environmental awareness
- Collaborating with organizations already receiving funding in this area (Kerr Street Mission, Food for Life)
- Regional and municipal government
    - Municipalities have resources (land and money)
    - There is the possibility of tying urban farm to municipal land use plans and climate change adaptation strategies
    - There is the possibility of partnering with municipalities to address zoning issues
- Collaborating with conservation authorities which have urban agriculture initiatives (such as the Toronto Region Conservation Authority)
- Collaborating with entities such as Bronte Creek Provincial Park and/or the Royal Botanical Gardens, that have land and an interest in urban agriculture / community gardens
- Collaborating with faith-based organizations that hold land
- Other entities that may be worth consulting with include:
    - Willow Creek Ecology Centre, an outdoor ecology / education centre located south-east of Georgetown
    - The Halton Agricultural Advisory Committee, which advises and assists the region's work to maintain a permanently secure, economically viable agriculture industry and preserve the character and landscape of Halton's rural areas.

- The Halton Region Federation of Agriculture, which represents the voice of agriculture in the local community and advocates on behalf of farm families in Halton Region on local agricultural issues
- The Golden Horseshoe Food and Farming Alliance, a partnership between the regional municipalities and Federations of Agriculture in Niagara, Peel, Halton, York, and Durham, and the cities of Hamilton and Toronto, Conservation Authorities, the Greenbelt Fund, Durham College and Niagara College, the Holland Marsh Growers and members of the food industry

It's exhausting trying to do it all on your own...An organization that is thinking about the bigger picture [in Halton] is long overdue.

3.7 Location-Related Considerations

Over the course of the project, we learned a lot about location-based considerations, including that proximity and accessibility are key and that urban vs. rural considerations are important.

Proximity and Accessibility are Key

Focus groups and interviews with community members revealed that almost everyone wants an urban eco-farm to be local, close-by and "in the neighbourhood." Many people indicated that they didn't want to have to travel far to visit an urban farm (the distance people were willing to travel varied based on the individual in question). Some observed that the greenhouse gas emissions associated with having to drive a long distance in order to visit wouldn't fit with the mandate of an urban eco-farm.

Many people also expressed the importance of ensuring that the eco-farm is easily accessible. One interviewee noted that when it comes to selecting a location (or several locations) equitable access needs to be top of mind. Will people with mobility issues be able to access the site? How easily will people without cars be able to get there? Another interviewee pointed out that if the eco-farm's main goal is education, it should be located centrally, so that schools, families and other community members can access it easily. The importance of situating the farm where there's good access to public transit came up repeatedly during our discussions with community members. This poses a challenge, as Halton Region is large and has limited public transit in certain areas (north of Steeles, for example).

One solution proposed by several community members was the idea of a multisite urban farm. Using a multisite model would increase accessibility and "meet people where they are." A multisite model could be comprised of a central hub with satellite locations, or simply several microsites located in different areas. People suggested placing microsites near schools and community centres or using non-traditional spaces such as reclaimed parking lots and industrial sites.

North vs. South (or Rural vs. Urban)

There was some discussion amongst community members about whether the eco-farm should be located in the northern (more rural) or southern (more urban) part of Halton Region.

Those in favour of a more rural location noted that as the north is less developed and land is more affordable, situating the farm there could allow for a physically bigger space. Several interviewees believed that more space would facilitate more opportunities for growing food, programming, facilities rental, and demonstration of new and innovative agricultural methods.

One participant felt that Burlington and Oakville "already have everything" and that locating the eco-farm in the north of Halton could act as a unique draw, attracting families, tourists, and/or students to the area. Others noted the increased potential for nuisance complaints from neighbours in urban areas, who may object to smells associated with farm activities, such as livestock and composting.

Arguments for siting the farm in an urban setting to the south (Burlington or Oakville) included:

- By definition, an urban farm should be located in an urban setting
- It would allow people living in urban areas to learn about food and agriculture
- It would make the farm more accessible than if it was located in a rural area

A potential solution could be to offer a combined model, with the farm's central hub located in an urban-adjacent area and satellite offshoots located in urban settings.

Urban agriculture
Image credit: Canva

4. Challenges and Opportunities

4.1 Potential Challenges

Assessing the feasibility of an urban eco-farm relates to all stages of development, including:

Over the course of the feasibility study, a number of challenges, at all stages of the lifecycle, were reported, including:

Planning	• The time and energy to establish a new entity can be all-consuming, especially for a small organization • There are legal and liability considerations to contend with • For a discussion of municipal zoning and planning policies, please refer to Section 2.3
Funding	• Financial stability is top-of-mind for all fledgling organizations • Donors (individuals, community groups, corporations) tend to focus on funding problems with more immediate solutions (e.g., food and shelter) rather than long-term issues like climate change ("Unless it's food or bricks and mortar, it's a hard sell.") • Urban farms with a community focus or whose goals are primarily social are unlikely to be financially viable on their own: they depend on external funding to survive (refer to Appendix C for additional substantiation) • Staffing / human resources is expensive
Siting or Establishing an Eco- Farm	• Land is expensive to rent or purchase • Site will have to include access to infrastructure such as water and electricity • Land quality and soil condition: ○ Soil in urban areas may be contaminated and require significant amelioration and amendment

	○ Standards for agricultural soil are high in Ontario – even trace elements of contaminants are an issue ○ Urban planners usually do not incorporate space for growing food and the spaces available for urban farms tend to be “the dregs [and] leftover bits of land that no one else wants” ○ Initial start-up costs will have to factor in environmental site assessment and mitigation of soil contamination
Renewal/Scaling	● Scale impacts feasibility ● “The larger the operation, the greater the challenges” ● It’s easier to start on a small scale ● Trial and error are more forgiving on a small scale ● “To do it well, you have to do it big!”
Miscellaneous challenges	● The diversity of Halton Region presents certain challenges, such as income inequality, the urban vs. rural divide, and accommodating the wide variety of cultural and ethnic backgrounds ● Balancing social and financial objectives: managing the inherent tension involved in trying to address social/community issues while being commercially viable is complex ● Trying to be all things to all people (a point revealed via our desktop research as well as the interviews and focus groups, which clearly indicated that people have many different expectations of an urban farm) (Rangarajan & Riordan, 2019) ● One interviewee observed that an urban eco-farm runs the risk of alienating the local farming community: "How we interpret 'farm' vs 'eco-farm' has the potential to either alienate or encourage friendship with local agricultural community."

4.2 Potential Opportunities

The scope and scale of opportunities related to the potential establishment of an urban eco-farm in Halton are explored in Section 3.1, and include the potential to:

- Strengthen Halton's response to climate change mitigation and adaptation
- Ameliorate threats to the local agriculture industry
- Provide education about food and farming
- Reduce food insecurity
- Contribute to reducing poverty, under-employment, and other social challenges
- Remedy other social challenges

4.3 Lessons Learned

When other service providers were asked what lessons they had learned about urban eco farming, the following themes emerged:

- Buy-in from local government (regional and/or municipal) is essential: it's necessary to have urban farming taken into consideration as part of the urban planning process.
- An urban farm needs to arise out of the needs of the community; it can't be parachuted in. This is key to the success of an urban farm. The community needs to be involved right from the initial visioning and design stages. If people see an urban farm as their space, they'll want to be a part of it.
- It's critical to understand the urban ecosystem (e.g., soil quality, stormwater management, heat island effect) in order to estimate costs related to land and labour.
- Remember and implement the rule of thirds: 1/3 of people can pay the full price (for produce, programming, plot rental etc.), 1/3 will need subsidies (e.g., students), and 1/3 of people will require donations.
- Farming can be fickle (e.g., weather, pests, disease) and requires significant experience and know-how.

5. Assessment of Feasibility

This section includes an assessment of the research findings to-date and a preliminary assessment of feasibility. The contents of this chapter are based on the body of research and our understanding HEN's mandate and organizational capacity.

5.1 Summary of Findings

The scope of this feasibility study was to gauge seven key items. A summary of findings, based on the research presented in Sections 2, 3 and 4, is listed alongside each of the key items:

1. Level of community interest
2. Degree to which it will serve the needs of the community
3. Potential partners/supporters (public, private, non-profit sectors)
4. Successful similar models in other North American urban areas
5. Suitable locations and requirements for land use
6. Project costs and approach to obtain funding
7. Potential to be financially self-sustaining and how this can be achieved

1. Level of community interest	• Feedback about the concept of an urban eco-farm was universally supportive and positive. It should be noted, though, that those individuals who chose to participate in focus group discussions were self-selected, and as such, were likely already interested in the concept of urban agriculture. There's a need in Halton for a more authentic farm experience that's not all about wagon rides. • There was widespread variation in the imagined service offerings for an urban eco-farm.
2. Degree to which it will serve the needs of the community	• A wide range of potential benefits that could be derived from the establishment of an urban eco-farm in Halton were evident.

3. Potential partners/ supporters	• There is strong potential for community-based operational partners for an urban eco-farm in Halton. • Establishing and operating an urban eco-farm would require many skillsets, including: agricultural/farming/gardening knowledge, marketing, communications, information dissemination/teaching skills, advocacy and coordination. • As a result, the level of effort required to convene, collaborate and organize partners would be substantial.
4. Successful similar models in other North American urban areas	• There is a lack of evidence that a not-for-profit, such as HEN, *operating alone,* could initiate and run an urban eco-farm. Other similar organizations have had large-scale institutional funders and/or collaboration among several invested partners.
5. Suitable locations and requirements for land use	• The engagement process revealed a strong desire for local, walkable options • Halton is a large and diverse region and respondents talked a lot about "easy access" to an eco-farm; the concept of urban eco-farm microsites might be one way to address this. ○ Essentially, HEN could partner with a landowner with multiple sites across the municipality to lease (or partner) to provide urban eco-farm services. Potential landowners include schoolboards and/or local governments (at community centres or right of ways). • *Upon reflection of the scope of work, given the preliminary stage of the feasibility study, actual siting was outside of the scope for this feasibility study.*
6. Project costs and approach to obtain funding	• There is a lack of evidence that a not-for-profit, such as HEN, *operating alone*, could self-fund an urban eco-farm; other similar organizations have had large-scale institutional funders and/or collaboration among several invested partners • *Upon reflection of the scope of work, given the preliminary stage of the feasibility study, actual costing was outside of the scope for this feasibility study.*

7. Potential to be financially self-sustaining and how this can be achieved	• Research on other eco-farm operators suggests that sustained, adequate, ongoing revenue sources remain the largest challenge to operations. • There is uncertainty about sustained revenue sources especially when balanced against the expenses associated with all stages of development and implementation.

Other Findings

Need for clarity of mission	• Given the wide-ranging list of desires and ideas emerging from the community and stakeholders about an urban eco-farm, HEN, or any other entity that proceeds with establishing such an enterprise, will need to have a clearly scoped mission and vision. • The risk of "doing everything" and "being everything to everyone" is possible in such a wide-open market. A clear mandate with specific goals will be necessary to avoid scope-creep.  You need to know where you are targeting your change.
Capacity	• Planning, assessing, siting, and operating an urban eco-farm is no small undertaking. The required energy, financial investment and requisite subject-matter knowledge is related, but a departure from, HEN's other, core programmatic work. The level of ongoing effort that will be required to coordinate (even one or multiple) sites cannot be understated. • There is a lot of existing community capacity that can be built upon, via partnerships. • Many interviewees commented on HEN's strong capacity for partnership brokering, relationship building, communication, and outreach.

Alignment	• Our research revealed a generally supportive local policy framework and an openness to the concept from decision-makers and community leaders. • There is alignment, strategically, between an urban eco-farm, HEN's mission, its ongoing programming (for example, Halton Food), and the broader SDGs.

5.2 Feasibility Assessment

At the start of the process, the following six criteria were established as the means to qualitatively assess the feasibility of an urban eco-farm; these have been reviewed and discussed in collaboration with HEN staff.

An urban eco-farm, operated by HEN, will be perceived to be feasible if:

1. It aligns with HEN's **strategic mandate**
2. HEN demonstrates sufficient **internal capacity**
3. There is a presence of demonstrable **co-benefits**
4. It does not supplant existing market actors and is **serving a community need**
5. Identified **risks** are perceived to be surmountable (in the short and long term)
6. There is potential for **consistent funding/revenue stream(s)**

An assessment of each of the criteria, based on the concepts explored in the chapters above, follows:

Criteria	Assessment	Commentary
1. Strategic Mandate	★★★★☆	• There are strong potential linkages between an eco-farm and HEN's mandate around local climate action; however, given the wide-ranging potential scope for an urban eco-farm, HEN would need to work to narrowly define the mandate of the eco-farm to ensure strict alignment with its board mandate.
2. Internal Capacity	★★★☆☆	• HEN has demonstrated capacity to deliver related programming, such as Halton Food and OakvilleReady and Greening Sacred

Criteria	Assessment	Commentary
		Spaces. HEN has well-established community relationships. ● Establishing, coordinating, and managing a multi-site eco-farm, alone, would be a drastic increase in workload and a huge operational load for an organization such as HEN.
3. Demonstrable Co-Benefits	★★★★★	● As listed and described in Section 3.1, there are numerous co-benefits associated with an urban eco-farm.
4. Serving a Community Need	★★★★☆	● Based on information collected, there is a stated need for an urban eco-farm; however, the scope needs to be further defined.
5. Surmountable Risks	★★★☆☆	● There are several potential challenges outlined in Section 4.1; the lack of a stable source of long-term operational and capital funding remains the largest risk.
6. Consistent Funding	★☆☆☆☆	● There is no immediate, available source of funding to establish an eco-farm.

5.3 Recommendations

Based on what we have learned, the concept of an urban eco-farm in Halton, is attractive to many community members and could offer a host of spin-off benefits – socially and environmentally.

HEN is interested and aligned, conceptually, to work towards the establishment of an urban eco-farm in Halton. However, the lack of funding and limited resource capacity would make it difficult, if not impossible, for HEN to lead and nurture a new, large-scale urban eco-farm in isolation.

If HEN desires to expand its impact in the urban gardening sphere, it may start by expanding the Halton Food program.

If HEN desires to expand its impact in the urban eco-farming space, we recommend that HEN build on its strengths to further explore the concept of an urban eco-farm in Halton, in collaboration with community partners.

HEN would bring the following attributes and strengths to this collaborative:

- Ability to convene partners and supporters
- Strong relationships with local government decision-makers and staff
- Experience leading related community programming across Halton (Halton Food, Oakville Ready, GSS, etc.)
- A climate lens and climate change-related expertise to the process. HEN is able to extract, understand, and communicate the environmental and climate change benefits related to the project
- An understanding of the pulse of the community
- Expertise in community outreach, education, and communication

HEN would be seeking partners that have a strong interest in urban agriculture and social equity, access to financial resources, and/or available land.

The other elements that would support a collective movement towards an urban eco-farm in Halton could be:

- Strong **municipal support** by way of supportive land use policies and funding
    - An urban eco-farm aligns with regional and municipal priorities, such as health and well-being and responding to our climate emergency
    - HEN would be willing to advocate, collectively, for any necessary policy changes and to seek funding from local government(s)

- Recognition and compensation for the hidden labour involved in **gathering and convening partners** across Halton to bring such an entity to life
    - This organizational role was suggested by many interviewees as something that HEN could and should take on, and HEN is keenly interested; however, the unfunded nature of this work is difficult for a small organization to sustain

- A deliberate programmatic connection between the urban eco farm and **local climate action;** for HEN to be involved, there needs to be direct alignment with HEN's mission.
    - This could be accomplished by focusing the mission or vision of the urban eco farm on subjects and activities that directly connect to climate change; these could include climate change research (for example soil quality or carbon sequestration) and/or partnerships with universities to help create additional funding opportunities

- Ensuring an inclusive, **Halton-wide approach** in all four local municipalities
    - Many participants requested a "local" approach rather than a "destination"; a hub and microsite approach could address HEN's (and the community's) desires for broad access to programming

5.4 Next Steps

We recommend that HEN proceed with exploring the concept of an urban eco-farm, in partnership.

HEN is seeking to leverage its valuable skills and connect with available partners to explore options related to:

- Securing land, including siting of a hub and/or microsites
- Financial modelling
- Advocating for institutional funding or grants
- Developing compensation models
- Ensuring programmatic alignment
- Crafting a Halton-wide approach

HEN is ready to move forward, in collaboration, to advance discussions with potential partners to confirm and document interest.

Appendix A: List of Interviewees

Date	Organization	Individual(s) Interviewed
March 2021	Halton Food	• Andrea Rowe, Director
June 6, 2021	Halton Natural Heritage Advisory Committee (NHAC)	• Peter Lambrick, farmer and member of NHAC
June 10, 2021	Town of Oakville	• Dave Gittings, Ward 3 Regional and Town Councillor
June 10, 2021	Halton Environmental Network	• Moira Matsubashi-Shaw, Director
June 11, 2021	Town of Halton Hills	• Jane Fogal, Wards 3 & 4 Regional and Local Councillor
June 11, 2021	City of Burlington	• Rory Nisan, Ward 3 Councillor
June 14, 2021	Country Heritage Park	• Jamie Reaume, CEO
June 15, 2021	Regional Municipality of Halton	• Anna Demarchi-Myers, Agricultural Liaison Officer • Martin Straathof, Rural and Agriculture Student Planner
June 16, 2021	Halton District School Board	• Suzanne Burwell, Environmental Sustainability Coordinator • Lisa Galay: Leader of Experiential Learning, grades 7-12 • Donna Norrie: Teacher • Veronica Kleinsmith: SHSM Board Lead
June 18, 2021	McQuesten Urban Farm	• Adam Watson, Project Manager, Neighbourhood Development Office, City of Hamilton

Date	Organization	Individual(s) Interviewed
June 22, 2021	Oakville Community Foundation	• Frances Pace, Director, Fundholder and Community Engagement
June 23, 2021	City of Burlington	• Kelly Cook, Planner, Burlington Agricultural and Rural Affairs Advisory Committee, City of Burlington
June 23, 2021	Georgetown residents	• Susan Robertson • Jean-Marc Raymond • Teresa K. • Megan Suddergaard
June 30, 2021	Food For Life / Mabel May Farms	• Meaghan Richardson, Director of Grants & Accountability, Food for Life; Co-Founder of Mabel May Farms
July 8, 2021	Whole Circle Farms (no longer active)	• Johann Kleinsasser, former owner
July 14, 2021	Halton Catholic District Schoolboard, Horticulture & Landscaping Program	• Al Nason, Lead Teacher • Jake Coleiro, Teacher • John Giusti, Teacher
July 15, 2021	Ryerson Urban Farm	• Sharene Shafie, Research Co-ordinator
July 16, 2021	United Way Halton & Hamilton	• Brenda Delodder, Vice President, Marketing & Communications

We also acknowledge and thank all focus group participants!

Appendix B: Research on Other Eco-Farms

Black Creek Community Farm

About Black Creek Community Farm

Founded in 2012, Black Creek Community Farm (BCCF) is an urban farm located in the northwest corner of Toronto, in one of the city's most densely populated neighbourhoods. The eight-acre property includes a heritage farmhouse and barn, greenhouses, a food forest and forest trails, chickens, beehives, and a farm store, among other features. BCCF's mission is "to serve and enrich our community through a thriving farm, healthy food, hands-on training and learning experiences," and "to inspire the next generation by providing leadership in food justice, and supporting diverse natural and social ecosystems." BCCF connects the issue of food security and hunger with race, class, health, housing and politics. The organization aims to increase food security for residents of its community by providing affordable fresh, organic produce, access to farmland, and a range of community and educational programming.

Programs

Like all organizations, COVID has had an impact on BCCF's programming. The farm currently offers:

- An emergency food box program, delivering food to community members who have been hit hard by the pandemic
- Harvest Share, a vegetable subscription program
- Educational programs, such as field trip programs, visits to schools and day care centres, Farmers in Training, and Junior Chefs
- An online summer camp for children
- A weekly mom and kids' group
- A variety of online workshops on gardening and food skills

Other programs (some of them pre-pandemic) include: a youth internship program, a seniors' garden, meal sharing programs, community baking days using the farm's outdoor oven, and annual events such as the Farm Festival, Maple Syrup Festival and Honeybee Days.

Funding

BCCF is a start-up that operates using a community development model. Publicly available information on the farm's sources of revenue is limited, but BCCF derives some funds from its on-site farm store, its Harvest Share Community Supported Agriculture (CSA) program, the sale of surplus produce to wholesale distributors, donations via the Black Creek Insider program, and their annual fundraiser, Dinner at the Farm.

Centre For Sustainable Food Systems at UBC Farm

About the Centre for Sustainable Food Systems at UBC Farm

The UBC Farm was created in 1999, on neglected fields on the University of British Columbia's south campus. After a decade of uncertainty regarding its future, UBC committed to retaining the farm and in 2011, the Centre for Sustainable Food Systems (CSFS) was established. The CSFS is a research hub based at the UBC Farm, focused on the social, environmental, and economic sustainability of food systems. The UBC Farm acts as a kind of living laboratory for CSFS researchers to experiment with new methods for climate-smart, sustainable agriculture. The 24-hectare property is situated within a coastal hemlock forest and features over 200 varieties of crops, as well as hedgerows, orchards, pasture, Indigenous-led gardens, honey beehives, and free-range chickens. The farm offers volunteer opportunities and educational programs, and sells its produce via two markets (both located at the UBC Farm), a weekly Community Supported Agriculture (CSA) subscription, wholesale distribution, and online seed sales.

Programs

The CSFS at UBC Farm offers a diverse range of learning opportunities, including:

- Courses and programs for UBC students, including the UBC Farm Practicum in Sustainable Agriculture, as well as certificate programs for non-UBC students
- Children's programs, such as summer and spring break day camps
- Community workshops on topics including gardening, baking, beekeeping, and fermentation
- Feeding Growth, an initiative that aims to support and grow BC-based, progressive food businesses
- Indigenous initiatives, including the Tu'wusht Garden Project, Tal A'xin: Maya in Exile Garden, and the Indigenous Health research & Education Garden
- Community Kitchen Series, a monthly event which addresses food literacy by bringing people together to cook a meal

Funding

The UBC Farm has received several large donations since its founding, including:

- $2 million donation from the co-founders of Nature's Path Foods in 2015[1]
- $1 million investment from the Real Estate Foundation of British Columbia in 2015[2]
- $1 million gift from the RBC Foundation in 2014[3]

Other sources of funding include:

- Fundraising events such as the Long Table Dinners Series, and the Joy of Feeding, an international food festival and fundraiser*
- Sale of farm produce via farmers markets, CSA program, and wholesale distribution
- Sale of freshly cut flowers grown on the farm and UBC Farm seeds

*Last held in 2017

McQuesten Urban Farm

About McQuesten Urban Farm

McQuesten Urban Farm was established in 2016 in Hamilton's east end, as part of an initiative to increase local food security. In addition to selling reasonably-priced fresh, organic produce, the farm also offers opportunities for residents to volunteer, develop skills, and build a sense of community. McQuesten Urban Farm is located on what used to be an unused parcel of City-owned land. It covers more than three acres and includes a community gathering space, an outdoor classroom and playground, an irrigation pond, a native plant walk, and greenhouses configured from shipping containers. McQuesten Urban Farm offers educational and community programming focused on building food literacy and skills for residents and volunteers. The farm's goal is "to empower our community with fresh food, food security, job opportunities, and skills to build healthy people and healthy minds."

Programs

McQuesten Urban Farm offers a variety of programs:

- Sprout Camp – nature-based summer camp for children*
- Educational workshops – school-curriculum based programs for students in grades 1-8, focused on soil, gardening, and food skills*
- Community workshops – food-based workshops for families, kids, and adults*
- McQuesten Fresh Food Boxes – weekly food box subscription program

*Temporarily closed due to COVID

[1] UBC Farm receives $2M from founders of Nature's Path Foods, September 17, 2015

[2] UBC Farm receives $1M grant from Real Estate Foundation of BC, January 28, 2015

[3] UBC receives $2M gift from RBC Foundation, June 20, 2014

Funding

McQuesten Urban Farm is a not-for-profit organization. Publicly available information on the farm's recent sources of revenue is limited, but some historical figures are available. In 2016, the City of Hamilton provided $350,000 to establish the farm; other funding sources provided $130,000.[4] In 2017, McQuesten Urban Farm received financial support from the Maple Leaf Foods Centre for Action on Food Security - $450,000 over the course of three years - to support the expansion of programs at the urban farm.[5]

The Hamilton Community Foundation[6] has provided significant grants to the urban farm since its inception:

- 2016 - $43,800
- 2017 - $113,875
- 2018 - $189,675
- 2019 - $184,375
- 2020 - $121,875

Other sources of revenue include the farm's weekly food box subscription program and its weekly fresh produce market, which operates from July to November.

[4] *Hamilton Neighbourhood Action Strategy, 2016 Annual Report*

[5] Maple Leaf Foods Tackling Food Insecurity, *The Hamilton Spectator,* December 8, 2106.

[6] Hamilton Community Foundation annual reports

Appendix C: Funding Research

To understand how comparable entities are funded, we looked at a total of 15 organizations, six in Halton Region and nine in other parts of Ontario and the US:

Organization	Location	Type
Black Creek Community Farm	Toronto	Business (operates using community development model)
Bronte Creek Provincial Park	Oakville	Provincial Park
Country Heritage Park	Milton	Charity
Evergreen Brickworks	Toronto	Charity
Halton Region Conservation Authority	Burlington	Charity
Halton Region Conservation Foundation	Burlington	Charity
Kortright Centre	Vaughan	Non-profit, run by the Toronto and Region Conservation Authority
Massachusetts Avenue Project	Buffalo, NY	Non-profit
McQuesten Urban Farm	Hamilton	Non-profit, supported by the City of Hamilton
Riverdale Farm	Toronto	Municipal, operated by City of Toronto
Royal Botanical Gardens	Burlington	Charity
Springridge Farm	Milton	Business
Steckle Farm	Kitchener	Charity
Sudbury Shared Harvest	Sudbury	Charity
Terrebleu	Milton / Campbellville	Business
The New Farm	Creemore	Business

Of these organizations, financial data is publicly available for seven of them. In general, detailed financials are available for registered charities (in Canada) and for organizations that are exempt from income tax (in the US). We found a limited amount of financial information on the two municipally-supported entities that we researched, and none at all for those that operate as for-profit businesses.

The tables on the following pages summarize the major sources of revenue for the seven organizations whose financial statements are publicly available. Data from 2019 and 2020 is included to take into account the financial impact of the COVID-19 pandemic.

Table C1. Major Revenue Sources – 2020, by organization

Org	Type	Location	Total Rev ($)	Largest Revenue Source	Amount ($)	% of Total	Second Largest Revenue Source	Amount ($)	% of Total	FY	Source
Country Heritage Park	Charity	Halton Region	**1,201,071**	Rental of land and/or buildings	643,524	**54%**	Govt funding	292,815	**24%**	2020	CRA
Evergreen Brickworks	Charity	Toronto	**17,724,251**	Govt funding	5,890,950	**33%**	Other revenue	4,354,525	**25%**	2020	CRA
Halton Region Conservation Authority	Charity	Halton Region	**29,322,376**	Total revenue from sale of goods and services (except to any level of government in Canada)	14,937,788	**51%**	Govt funding	13,267,416	**45%**	2020	CRA
Halton Region Conservation Foundation	Charity	Halton Region	**713,369**	Receipted and non-receipted donations and gifts from other charities	528,966	**74%**	Govt funding	184,403	**26%**	2020	CRA
Massachusetts Avenue Project**	Non-profit	Buffalo, NY	**676,783**	All other contributions, gifts, grants and similar amounts not included in government grants	370,714	**55%**	Govt funding	264,231	**39%**	2020	IRS Form 990
Royal Botanical Gardens	Charity	Halton Region	**20,170,336**	Govt funding	11,021,372	**55%**	Other revenue	4,164,817	**21%**	2020	CRA
Steckle Farm	Charity	Kitchener	**259,710**	Govt funding	106,986	**41%**	Other revenue	94,945	**37%**	2020	CRA
Sudbury Shared Harvest	Charity	Sudbury	**134,323**	Govt funding	86,194	**64%**	Receipted and non-receipted donations and gifts from other charities	28,850	**21%**	2020	CRA

*Amounts in USD
*Includes funding from Federal, Provincial & Territorial, Regional, and Municipal governments

*Amounts in USD
*Includes funding from Federal, Provincial & Territorial, Regional, and Municipal governments

Table C2. Major Revenue Sources – 2019

Org	Type	Location	Total Rev ($)	Largest Revenue Source	Amount ($)	% of Total	Second Largest Revenue Source	Amount ($)	% of Total	FY	Source
Country Heritage Park	Charity	Halton Region	**1,417,814**	Rental of land and/or buildings	990,310	**70%**	Govt funding	167,860	**12%**	2019	CRA
Evergreen Brickworks	Charity	Toronto	**24,704,810**	Total revenue from sale of goods and services (except to any level of government in Canada)	10,676,217	**43%**	Govt funding	4,457,150	**18%**	2019	CRA
Halton Region Conservation Authority	Charity	Halton Region	**34,072,439**	Total revenue from sale of goods and services (except to any level of government in Canada)	16,992,708	**50%**	Govt funding	16,493,806	**48%**	2019	CRA
Halton Region Conservation Foundation	Charity	Halton Region	**691,236**	Receipted and non-receipted donations and gifts from other charities	**474,855**	**69%**	Govt funding	210,840	**31%**	2019	CRA
Massachusetts Avenue Project*	Non-profit	Buffalo, NY	**543,489**	All non-govt contributions, gifts and grants	260,785	**48%**	Govt funding	196,223	**36%**	2019	IRS Form 990
Royal Botanical Gardens	Charity	Halton Region	**19,931,194**	Govt funding**	7,238,438	**36%**	Other revenue	5,600,955	**28%**	2019	CRA
Steckle Farm	Charity	Kitchener	**398,209**	Rental of land and/or buildings	174,256	**44%**	Total revenue from sale of goods and services (except to any level of government in Canada)	142,492	**36%**	2019	CRA
Sudbury Shared Harvest	Charity	Sudbury	**88,548**	Govt funding	53,648	**61%**	Receipted and non-receipted donations and gifts from other charities	29,048	**33%**	2019	CRA

*Amounts in USD

*Includes funding from Federal, Provincial & Territorial, Regional, and Municipal governments

*Amounts in USD
*Includes funding from Federal, Provincial & Territorial, Regional, and Municipal governments

We found limited information on funding sources for McQuesten Urban Farm, located in Hamilton, and Riverdale Farm in Toronto.

Municipal Entities	Financials

McQuesten Urban Farm	• 2016 – The City of Hamilton provided $350,000 to establish the farm; other funding sources provided $130,000 (Hamilton Neighbourhood Action Strategy, 2016). Additionally, McQuesten received $36,000 from the City to finance the salary of a full-time farmer for the project. (Kenny, 2016).
	• 2017 – McQuesten received financial support from the Maple Leaf Foods Centre for Action on Food Security; a three-year, $450,000 proposal to support the expansion of programs at the urban farm. McQuesten expected to receive $150,000 from the centre during the first year, with further funding based on meeting project objectives. (*Toronto Star,* 2016)
	• The Hamilton Community Foundation has provided significant grants to the urban farm since its inception:
	  ○ 2016 - $43,800
	  ○ 2017 - $113,875
	  ○ 2018 - $189,675
	  ○ 2019 - $184,375
	  ○ 2020 - $121,875
	  ○ 2021 - $55,339

Riverdale Farm	• Riverdale Farm relies primarily on funding from the City of Toronto. The farm costs about $500,000 per year to operate. • The farm typically receives between $10,000 - $15,000 per year in donations. • In 2020, Riverdale Farm received a one-time $200,000 donation from an individual donor. (*Toronto Star*, 2020)

Our research indicates that:

- In 2019, only two organizations, Royal Botanical Gardens and Sudbury Shared Harvest, counted government funding as their largest source of revenue (see table below)
- In 2020, this number increased to four, likely a result of the COVID-19 pandemic (see table below)
- Although COVID has clearly had an impact, government funding is a significant source of support for a majority of these organizations
- *Prior* to COVID, the organizations that relied on government funding the least were Steckle Farm, Country Heritage Park, and Evergreen Brickworks

Organization	% Revenue Derived from Govt Funding (2018)	% Revenue Derived from Govt Funding (2019)	% Revenue Derived from Govt Funding (2020)
Country Heritage Park	9	12	24
Evergreen Brickworks	11	18	33
Halton Region Conservation Authority	42	48	45
Halton Region Conservation Foundation	26	31	59
Massachusetts Avenue Project (U.S)	55	36	39
Royal Botanical Gardens	32	30	49
Steckle Farm	9	9	41
Sudbury Shared Harvest	37	61	64

- In 2019, four of the six Canadian organizations counted some form of self-generated revenue as their largest source of revenue (Country Heritage Park, Conservation Halton, Evergreen, and Steckle Farm)
- A few of the organizations that we researched derive a significant portion of their revenue from site rentals and events, although COVID may have had an impact on 2020 earnings in this area.
    - Country Heritage Park
        - In 2018, rental of land and/or buildings accounted for 53% of total revenue
        - In 2019, it accounted for 70%
        - In 2020 it accounted for 54%
    - Steckle Farm
        - In 2018 and 2019 rental of land and/or buildings accounted for 43% of total revenue

        - In 2020, rental of land and/or buildings accounted for only 14% of total revenue (The farm is a popular wedding venue, and events income likely dropped in 2020 due to COVID-19).
    - According to Evergreen's annual reports, 'third party events and hospitality' accounted the largest percentage of the organization's self-generated funds in 2018 and 2019:
        - In 2018, third party events and hospitality accounted for 29% of total revenue
        - In 2019, this accounted for 28% of total revenue
        - In 2020, the accounted for only 4% of total revenue (drop likely due to the COVID-19 pandemic)

Appendix D: References

1. Andrews Farm Market and Winery. (2021). About Us. Retrieved from: https://www.andrewsscenicacres.com/about-us

2. Artmann, M. and Sartison, K. (2018). The role or urban agriculture as a nature-based solution: A review for developing a systemic assessment framework. *Sustainability.* 2018:10, 1937.

3. Bronte Creek Provincial Park. (2021). Activities. Retrieved from: https://www.ontarioparks.com/park/brontecreek/activities

4. Canada Revenue Agency. (2021). Halton Region Conservation Society – Charity's Detail Page. Retrieved from: https://apps.cra-arc.gc.ca/ebci/hacc/srch/pub/dsplyRprtngPrd?q.srchNmFltr=conservation+halton&q.stts=0007&selectedCharityBn=107462483RR0001&dsrdPg=1

5. Canada Revenue Agency. (2021). Country Heritage Agricultural Society – Charity's Detail Page. Retrieved from: https://apps.cra-arc.gc.ca/ebci/hacc/srch/pub/dsplyRprtngPrd?q.srchNmFltr=country+heritage&q.stts=0007&selectedCharityBn=813821006RR0001&dsrdPg=1

6. Canada Revenue Agency. (2021). Evergreen – Charity's Detail Page. Retrieved from: https://apps.cra-arc.gc.ca/ebci/hacc/srch/pub/dsplyRprtngPrd?q.srchNmFltr=evergreen&q.stts=0007&selectedCharityBn=131815763RR0001&dsrdPg=1

7. Canada Revenue Agency. (2021). Royal Botanical Gardens – Charity's Detail Page. Retrieved from: https://apps.cra-arc.gc.ca/ebci/hacc/srch/pub/dsplyRprtngPrd?q.srchNmFltr=royal+botanical&q.stts=0007&selectedCharityBn=133500850RR0001&dsrdPg=1

8. Canada Revenue Agency. (2021). J. Steckle Heritage Homestead – Charity's Detail Page. Retrieved from: https://apps.cra-arc.gc.ca/ebci/hacc/srch/pub/dsplyRprtngPrd?q.srchNmFltr=steckle&q.stts=0007&selectedCharityBn=889678298RR0001&dsrdPg=1

9. Canada Revenue Agency. (2021). Sudbury Shared Harvest – Charity's Detail Page. Retrieved from: https://apps.cra-arc.gc.ca/ebci/hacc/srch/pub/dsplyRprtngPrd?q.srchNmFltr=sudbury+shared&q.stts=0007&selectedCharityBn=806424768RR0001&dsrdPg=1

10. Charlebois, S., et al. (2020). *Canada's food price report 2021*. Dalhousie University and University of Guelph. Retrieved from: https://cdn.dal.ca/content/dam/dalhousie/pdf/sites/agri-food/Food%20Price%20Report%202021%20-%20EN%20(December%208).pdf

11. Chudleigh's. (2021). Our Story. Retrieved from: https://www.chudleighs.com/our-story/

12. City of Burlington. (2021). Community Gardens. Retrieved from: https://www.burlington.ca/en/live-and-play/Community-Gardens.asp

13. City of Hamilton, Neighbourhood Development Strategy Office. (2013). *Urban agriculture policy, planning, practice: A report for the City of Hamilton, Ontario.* Retrieved from: https://www.hamilton.ca/sites/default/files/media/browser/2015-03-06/urbanagriculturepolicyplanningandpractice.pdf

14. City of Hamilton. (2016). *Hamilton Neighbourhood Action Strategy: 2016 Annual update.* Retrieved from: https://www.hamilton.ca/city-initiatives/strategies-actions/neighbourhood-development

15. Climate Atlas of Canada. (2019). *Canadian cities and climate change.* Retrieved from: https://climateatlas.ca/canadian-cities-and-climate-change

16. Community Development Halton. *Our Halton 2018; income inequality and poverty.* Retrieved from: https://cdhalton.ca/wp-content/uploads/2018/09/Our-Halton-2018-Income-Inequality-and-Poverty.pdf

17. Community Food Centres Canada. (2020). *Beyond hunger: The hidden impacts of food insecurity in Canada.* Retrieved from: https://cfccanada.ca/en/About-Us/Reports-and-Publications/Beyond-Hunger

18. Country Heritage Park. (2021). About Us. Retrieved from: https://www.countryheritagepark.com/about-us

19. Deloitte. (2018). Global Human Capital Trends. Retrieved from: https://www2.deloitte.com/us/en/insights/focus/human-capital-trends/2018/introduction.html

20. Dillon Consulting Limited for the Halton Food Council. (2013). *Community garden policy scan.* Retrieved from: http://sirepub.halton.ca/councildocs/pm/16/May%2020%202014%20Health%20and%20Social%20Services%20MO1214%20%20Halton%20Food%20Council%20Progress%2020122014%20%20MO1214%20attachment%202pdf%20173641.pdf

21. Feeding Halton. (2017). *About Us.* Facebook. https://www.facebook.com/feedinghalton/about

22. Gondhalekar, D. & Ramsauer, T. (2017). Nexus city: Operationalizing the Urban Water-Energy-Food Nexus for Climate Change Adaptation in Munich, Germany. *Urban Climate.* 2017:19, 28–40.

23. Government of Ontario. *Citizen's guide to land use planning: Official Plans.* Retrieved from: https://www.ontario.ca/document/citizens-guide-land-use-planning/official-plans

24. Government of Ontario. *Ontario population projections.* Retrieved from: https://www.ontario.ca/page/ontario-population-projections

25. Government of Ontario. *The Planning Act.* Retrieved from: https://www.ontario.ca/document/citizens-guide-land-use-planning/planning-act

26. Halton Community Housing Corporation. (2016). HC-18-16 - HCHC Community Gardens Update. Retrieved from: http://sirepub.halton.ca/councildocs/hc/19/Jul%205%202016%20Halton%20Community%20Housing%20Corporation%20HC1816%20%20HCHC%20Community%20Gardens%20Update%20%20HC1816%20Community%20Gardens%20Initiative%201doc%20198332.pdf

27. Halton District School Board. (2021). 2020-2021 Multi-Year Plan. Retrieved from: https://www.hdsb.ca/our-board/Pages/Multi-Year-Plan-2020-2024.aspx

28. Halton Food. (2021). *About Halton Food.* https://www.haltonfood.ca/about-us/

29. Halton Region. *The challenge of growth communities.* Retrieved from: https://www.halton.ca/Repository/Challenges-of-Growth-Communities#:~:text=Halton%20is%20one%20of%20the,of%201.1%20million%20by%202051

30. Halton Region. (2011). *Halton Region at a glance.* Retrieved from: https://www.halton.ca/getmedia/78cae1c4-f512-4be2-adeb-57bc389ee342/HE-halton-region-at-a-glance-2011.pdf.aspx?ext=.pdf

31. Halton Region. (2019). *Halton Region Official Plan review: Agriculture and rural policies – technical background report.* Retrieved from: https://www.halton.ca/getmedia/48d4fc29-8c9e-4dca-95a3-c4bb7bc23733/LPS-Agriculture-and-Rural-Policies-Technical-Background-Report.aspx

32. Halton Region. (2019). *Halton Region strategic business plan, 2019-2022.* Retrieved from: https://www.halton.ca/Repository/Strategic-Business-Plan-2019-2022

33. Halton Region. (2019). *Household food affordability health indicator report.* Retrieved from: https://www.halton.ca/Document/Health-Statistics/Household-food-affordability/Household-food-affordability#:~:text=In%202013%2F14%2C%206.8%25,lower%20than%20Ontario%20(12.2%25).&text=In%202019%20the%20average%20weekly,increased%20by%2071%25%20since%202003.

34. Halton Region. (2021). Our Communities – Halton Community Housing Corporation. Retrieved from: https://www.halton.ca/For-Residents/Housing-Supports-and-Services/Halton-Community-Housing-Corporation/Our-Communities

35. Halton Region. (2017). *Population demographics.* Retrieved from: https://www.halton.ca/Repository/Population-Demographics

36. Halton Region. (2011). *The road to change: Halton Region transportation master plan.* Retrieved from: https://www.halton.ca/For-Residents/Roads-Construction/Infrastructure-Master-Plans/Transportation-Master-Plan-to-2031-The-Road-to-C/Final-Transportation-Master-Plan-Transportation

37. Halton Region. (2016). *Rural agricultural strategy background report.* Retrieved from: https://www.halton.ca/getmedia/391c53f1-3297-4d58-abcf-306f86a1defa/LPS-Rural_Agriculture_Strategy_Background_Report.pdf.aspx?ext=.pdf

38. Halton Region. (2020). *Rural and Agricultural System Discussion Paper, Regional Official Plan Review.* Retrieved from: https://www.halton.ca/Repository/Rural-and-Agricultural-System-Discussion-Paper

39. Hamilton Community Foundation. (2021). Financial statements. Retrieved from: https://hamiltoncommunityfoundation.ca/resources/pub/

40. Internal Revenue Service. (2021). Form 990. Retrieved from: https://apps.irs.gov/app/eos/allSearch

41. Intergovernmental Panel on Climate Change. (2019). *Special report: Climate change and land.* Retrieved from: https://www.ipcc.ch/srccl/

42. Kenny, A. (2016, February 8). Good things grow with urban farm initiative. *The Hamilton Spectator.*

43. Mackey, T. (2016). *An analysis of zoning by-laws and urban agriculture in the City of Peterborough, Ontario* [Master's thesis, Trent University]. Retrieved from: http://digitalcollections.trentu.ca/objects/etd-416

44. Maple Leaf Foods tackling food insecurity. (2016, December 8). *The Hamilton Spectator.*

45. Milton and District Horticultural Society. (2021). Sunny Mount Community Garden. Retrieved from: http://www.miltonhortsociety.com/sunny-mount-community-garden/

46. Oakville Community Foundation. (2020). *Oakville resiliency report.* Retrieved from: https://www.theocf.org/wp2019/wp-content/uploads/2020/11/ORF-GIVEO-REPORT-WEB2.pdf

47. Rangarajan, A. and Riordan, M. (2019). *The promise of urban agriculture: National study of commercial farming in urban areas.* Retrieved from: https://smallfarms.cornell.edu/wp-content/uploads/2019/12/Promise-of-Urban-Ag_Full_102919-1.pdf

48. Riverdale Farm gets a $200,000 donation: Money left to city site by retired CBC employee who died last year. (2020, July 17). *Toronto Star.* A22.

49. Royal Botanical Gardens. (2021). About Us. Retrieved from: https://www.rbg.ca/about-us/

50. Shade, J. & Tully, K. (2020). *Organic farming practices for improving soil health.* Retrieved from: https://www.organic-center.org/sites/default/files/project/2020/03/soil-health-review_shadetully.pdf

51. Springridge Farm. (2021). Our Story. Retrieved from: https://www.springridgefarm.com/our-farm/farm-history/

52. Statistics Canada. (2016). *Census profile, Burlington, City* [Data table]. Retrieved from: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3524002&Geo2=CD&Code2=3524&SearchText=burlington&SearchType=Begins&SearchPR=01&B1=Income&TABID=1&type=0

53. Statistics Canada. (2016). *Census profile, Halton Hills, Town* [Data table]. Retrieved from: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3524015&Geo2=CD&Code2=3524&SearchText=halton+hills&SearchType=Begins&SearchPR=01&B1=Income&TABID=1&type=0

54. Statistics Canada. (2016). *Census profile, Halton, Regional municipality* [Data table]. Retrieved from: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CD&Code1=3524&Geo2=PR&Code2=35&SearchText=halton&SearchType=Begins&SearchPR=01&B1=All&TABID=1&type=0

55. Statistics Canada. (2016). *Census profile, Milton, Town* [Data table]. Retrieved from: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3524009&Geo2=CD&Code2=3524&SearchText=milton&SearchType=Begins&SearchPR=01&B1=Income&TABID=1&type=0

56. Statistics Canada. (2016). *Census profile, Oakville, Town* [Data table]. Retrieved from: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3524001&Geo2=CD&Code2=3524&SearchText=oakville&SearchType=Begins&SearchPR=01&B1=All&TABID=1&type=0

57. Toronto and Region Conservation Authority (TRCA). (2014). *Paths to achieving The Living City: Policies for sustainable communities.* Retrieved from: http://www.trca.on.ca/dotAsset/199319.pdf

58. Town of Milton. (2021). Community Gardens. Retrieved from: https://www.milton.ca/en/living-in-milton/climatechange-actions.aspx#Community-gardens.

59. Town of Oakville. (2021). Community Gardens. Retrieved from: https://www.oakville.ca/culturerec/gardens.html

60. Town of Oakville. (2021). Planting for our future: Town of Oakville partners with community groups to launch sustainable gardening initiative. Retrieved from: https://www.oakville.ca/townhall/nr-21mar19_01.html