



**WINDSOR AND ESSEX
COUNTY COMMUNITY
FOOD SYSTEM
ASSESSMENT 2018**



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Table of Contents

Acknowledgements	3
Report Prepared By.....	3
Report Contributors	3
Windsor-Essex Food Policy Council Steering Committee	3
Additional Thanks	3
Executive Summary	11
Section 1: Introduction	15
Setting the Stage for a Food System Assessment.....	16
Local Context.....	18
Broader Context	22
Summary: Why a Local Food System Assessment Now?.....	27
Section 2: Methodology.....	28
Review of Local Resources and Assets.....	28
Research and Stakeholder Engagement	29
Assessment Plan and Timelines	30
Data Analysis Notes.....	31
Community Conversations	31
Online Community Survey	36
Food Systems Stakeholder Consultation	43
Food System Asset Mapping	45
Section 3: Brief Community Profile	50
Population and Economic Conditions Relevant to Food Insecurity	50
Social Risk Index	50
Food System and Health	56
Vegetable and Fruit Consumption	56
Sugar-Sweetened Beverage (SSB) Consumption	56
Foodborne Illness.....	57
Summary	57
Section 4: Production	59

Natural Assets	61
Soil and Climate.....	61
Agricultural Land	67
Agricultural Products	73
Farm Types	73
Production Breakdowns.....	75
Farm Operators.....	78
Producers	78
Migrant Workers	79
Hours of Work and Supplemental Income.....	80
Farm Practices and Operations.....	81
Farm Practices	82
Use of Technology.....	82
Greenhouse Production	83
Agriculture and the Economy	85
The Business of Local Agriculture	85
Economic Impacts	91
Production: From the Community	94
Survey Findings.....	94
Open-Ended Feedback	95
Strengths, Challenges, and Opportunities	99
Land	99
Local Food	100
The Business of Agriculture.....	101
Workforce.....	101
Summary	102
Section 5: Processing and Distribution	104
Processing	105
Food Processors in Windsor and Essex County	105
Food Processing Practices	107
Economic Contributions of Food Processing	108

Distribution	113
Food Distribution Supply Chain.....	113
Food Distribution in Windsor and Essex County.....	114
Food Distribution Patterns.....	116
Alternative Food Distribution Models.....	117
Processing and Distribution: From the Community	118
Survey Findings.....	118
Open-Ended Feedback	119
Strengths, Challenges, and Opportunities	123
Competing Globally	123
Support for Local Processing and Distribution.....	124
Reducing Waste.....	125
Summary	126
Section 6: Access and Consumption	127
Access.....	130
Food Access and the Built Environment	130
Poverty, Food Insecurity, and Access.....	142
Access: Bringing it All Together.....	153
Consumption.....	157
Eating Habits in Windsor and Essex County.....	158
Purchasing Habits in Windsor and Essex County.....	158
Food Literacy	162
Food Safety.....	163
Supports for Healthy Eating and Food Literacy	165
Access and Consumption: From the Community	166
Survey Findings.....	167
Open-Ended Feedback	172
Strengths, Challenges, and Opportunities	177
Grocery Stores.....	177
Accessing Local.....	178
Food Security.....	179

Healthy Eating	179
Environmental Supports	180
Summary	181
Section 7: Waste Management	183
Relevant Policy and Legislation.....	183
Organic Waste Management in Windsor and Essex County	186
Local Response to Food and Organic Waste Framework	189
Waste Management: From the Community.....	191
Survey Findings.....	191
Open-Ended Feedback	192
Strengths, Challenges, and Opportunities	194
Composting	194
Food Diversion	195
Summary	196
Section 8: Gaps, Recommendations, and Limitations.....	197
Gaps	197
Recommendations	198
Limitations.....	205
Section 9: Next Steps	207
References	209
Appendix A: Federal Food Related Initiatives	227
Federal Food Related Initiatives.....	228
Food Policy Proposals.....	230
Appendix B: Community Conversation Data Collection Materials	231
Appendix C: Community Survey.....	237
COMMUNITY FOOD SURVEY	238
<i>Introduction.....</i>	238
Appendix D: Community Survey Results.....	247
Appendix E: Detailed Demographic Profile of Windsor and Essex County	256
Demographic Profile of Windsor and Essex County	257
Population	257

Diversity.....	260
Family Characteristics	264
Economic Factors	265
Nutrition and Health	284
Appendix F: Essex County Agriculture Statistics Summary	298
Appendix G: Actions and Timelines for the Ontario Food and Organic Waste Framework ...	303
Appendix H: Essex-Windsor Solid Waste Authority Regional Landfill Specifications	306
Appendix I: Recommendations by Sub-Area.....	309

Executive Summary

“The produce is absolutely beautiful and fresh and lasts so much longer. The flavor makes such a huge difference. The meat is of higher quality. Having locally grown/made food makes a huge difference, financially, health-wise, emotionally too -supporting our local farmers and all those who are part of it -butchers, cheese makers, wine makers, etc. matters. We have peace of mind knowing where our food has come from, who has had a literal and figurative hand in touching the food we eat. It is something we should be proud of having in our community, something that should help those who are in need.”

~ Windsor and Essex County Resident talking about our local food system

In the fall of 2018, the Windsor-Essex Food Policy Council and the Windsor-Essex County Health Unit, with support from the WindsorEssex Community Foundation, initiated this Comprehensive Food System Assessment for Windsor and Essex County. This project represents the culmination of many years of work and focus by a wide variety of individuals passionate about food in Windsor and Essex County. The purpose of the assessment was to build a foundation for sustained, ongoing, food system work to come over the next many years in this region. As a comprehensive assessment, it considered all aspects of the food system contained in the current food system framework – production, processing, distribution, access, consumption, and waste management. The time is right for food system work with recent Federal and Provincial food policy initiatives, as well as poverty reduction initiatives supporting food security.

With a focus on the entire Windsor and Essex County region and beginning in September of 2018, an environmental scan, local research and broad stakeholder engagement were undertaken to inform this assessment. A total of 681 community connections were made through face to face community conversations, a community survey and stakeholder engagement sessions across Windsor and Essex County. Grounded in a knowledge of the local community, including both strengths and vulnerabilities, the assessment delved into assets, strengths, challenges, and opportunities in the local food system. The following provides a brief summary of findings across the various food system areas.

Production

Windsor and Essex County have a strong presence in the agricultural sector, driven in part by natural assets such as land and climate. Food production, both traditional and greenhouse, and associated industries contribute significantly to the local economy both in terms of contributions to gross domestic product and employment. Oilseed and grain farming are most common, along with vegetable and fruit production. Local greenhouse activity contributes significantly to the provincial total, producing vegetables and fruit year round and, more recently alternative crops such as cannabis. Research and innovation at the local level is contributing to growth in this area.

Challenges are also noted. Climate change, while expected to bring opportunities, will also bring challenges that need to be considered proactively. The potential loss of agricultural land is a concern for many, as is the rising price of farmland and ownership by non-residents and non-farmers. Regulations offer protection to consumers, but can pose issues for competitiveness at all levels. Smaller scale farmers have additional struggles such as aging and start up costs (costs for new farmers is often prohibitive). While production overall is profitable, many farmers report having to take non-farm work to make ends meet.

Overall, community members are generally in favour of measures that support local farmers, particularly small scale food farmers, and believe that protecting agricultural land is necessary. Residents are also highly supportive of local food and food production, but express concern about pesticides and other potential hazards they believe are part of the food production process. Community members claimed to not have strong knowledge in the area of production however, and believe that education is needed for children and adults.

Processing and Distribution

Food processing and distribution also play a significant role the local economy, with food and beverage being the region's second largest manufacturing sector, generating over \$2 billion in revenue annually. Windsor and Essex County benefit from a strong food production base, a variety of small and large processors, and a local geography that is proximal to the United States and main transportation routes. While heavy regulation of food processing plants presents challenges to competitiveness, technology and local research and innovation across manufacturing domains means Windsor and Essex County are well positioned to grow in food processing and distribution sectors. Community members felt local processing is an asset that should be encouraged.

A central challenge is the desire to keep more locally produced products in Windsor and Essex County. Many community members saw this as important. As with the rest of the province, this area exports a great deal of its local food products and imports far more. Given the large, centralized food distribution supply chains that predominate, a regional food system that directly connects consumers with local products is harder to realize. The need for, and interest in, smaller, regional food distribution systems was clear and a case can be made for economic growth through increased local production of traditionally imported foods. While residents that were surveyed believe food grown or produced here should be available here, there was some appreciation that the issue is more complicated.

Access and Consumption

Windsor and Essex County have the largest number of assets in this area of the food system. For those with the means, restaurants, grocery stores, convenience stores, supermarkets, specialty food markets, and other types of establishments offer food access throughout Windsor and Essex County. Farmers' markets, farm stands, and farm gate sales offer additional opportunities to purchase fresh, local products in season. Urban agriculture is also going on locally, in backyards, in community gardens, and through community-supported agriculture. For

many, access to food was not experienced as an issue, although the ability to get fresh local food was more of a concern for some.

Despite many residents reporting having access to food, others gave voice to challenges associated with food access stemming from low income and associated factors. Poverty continues to be an issue in Windsor and Essex County, deeply entrenched in some areas, and food insecurity is present for as many as 1 in 10 households and 1 in 4 low-income households in Windsor and Essex County. Community food programmes are available and offer some assistance but on their own are unable to address underlying causes of food insecurity. Food deserts also exist in Windsor and Essex County, typically in locations where poverty is more prevalent.

The limited information that is available about dietary habits suggests that residents of Windsor and Essex County continue to under-consume vegetables and fruit and spend more on junk food than fresh food. Programmes to address food insecurity, as well as those teaching healthy eating and food skills were viewed as important by many community members.

Waste Management

The *Waste-Free Ontario Act* and *Ontario's Food and Organic Waste Framework*, highlight the expectation of complete diversion of organic waste from landfill by 2022. This is paving the way for a local municipal composting programme if all stays on track at the provincial level. Currently, a municipal composting programme is lacking in Windsor and Essex County but community members are interested. As much as 50% of local household waste is organic.

In addition to supporting municipal composting and making efforts to reduce food waste at home, community engagement efforts suggest that residents feel very strongly about the importance of food diversion or rescue programmes. Such programmes take healthy but less marketable food generated through industry, grocery stores, restaurants, and other food sources, and move it out of the waste stream to provide healthy and safe food to those who need it. Local programmes include Gleaners and Plentiful Harvest, but community members believe there is more that can be done.

Recommendations

The local food system in Windsor and Essex County has many strengths but lacks an integrated focus. The Windsor-Essex Food Policy Council itself is an excellent start, as is the commitment to a comprehensive assessment such as this. Recommendations represent the integration of themes gleaned from relevant legislation, local data and reports, community input, and stakeholder knowledge. They also attempt to maximize the existing local food system assets, build on what has gone before, and move toward a more integrated approach to food system planning.

The largest number of recommendations pertain to Access and Consumption and Production, in line with the interests voiced by the community. These can be read in full in the Recommendations portion of the report. The system-wide recommendations listed below

emphasize the cross-sectoral work that spans the food system. These are summarized as follows:

- Cross-Sectoral Work
 - The importance of working together across the food system and across sectors is vital. Collaborations should include engagement with municipal partners and policy makers, as well partners in education, labour, research and innovation, and industrial and institutional settings.
- Financial Supports
 - Financial assets were some of the least common assets identified across the food system. Exploring innovative strategies to generate or leverage financial supports across the food system would be helpful. For example, this might include corporate social responsibility initiatives to raise dollars via shareholder activism.
- Promotion
 - Promotion efforts should focus on food as common to all people and capitalize on opportunities to promote and educate across multiple food system areas at once. Working with the media to market successes is a useful way to gain momentum and potential buy-in for cross-sectoral partnerships, while also addressing potential apathy.
- Research and Innovation
 - Windsor and Essex County have a number of potential partners to support research and innovation. Partnering for small pilot projects is an excellent way to start to extend the reach of the Windsor-Essex Food Policy Council while also providing opportunities for a more complex food system focus.

Section 1: Introduction

The Windsor-Essex Food Policy Council, the Windsor-Essex County Health Unit, and WindsorEssex Community Foundation are proud to present this first comprehensive food system assessment for Windsor and Essex County. This represents the foundation for sustained, ongoing food system work to come over the next many years in Windsor and Essex County. It is comprised of input from stakeholders and community members across the region and the food system and considers all aspects of the food system contained in the current food system framework – production, processing, distribution, access, consumption, and waste management. Given the magnitude of this task, it is hoped that this report function as a guidepost for future food system work, identifying both fruitful paths for collective movement and places for further inquiry and learning.

The immediate drive for this comprehensive food system assessment came from the Windsor-Essex Food Policy Council (WEFPC). The Council is a network of local food system representatives and community members, supported by the Windsor-Essex County Health Unit, who share a vision of a food system in Windsor and Essex County that is healthy, sustainable, and accessible for all (Windsor-Essex Food Policy Council, 2018). A smaller group of enthusiastic WEFPC members convened as the Food System Assessment Steering Committee and were particularly key in supporting and informing this work.

Partnership is also at the core of this project. The Windsor-Essex County Health Unit is strongly invested in the work of the Windsor-Essex Food Policy Council and food system work more generally. Across many and varied programmes, including chronic disease prevention and well-being, food safety, healthy environments, healthy growth and development, and school health, food is a focus either directly or indirectly. From a foundational perspective, health equity, and in particular food security, are seen as important contributors to population health outcomes and are also focal in public health programmes and standards (Ministry of Health and Long-Term Care, 2018b). In addition, the community conversation portion of this project was financially supported by the WindsorEssex Community Foundation, Community Foundations of Canada, and Loblaw Companies Limited.

Setting the Stage for a Food System Assessment

A food system assessment is a participatory, collaborative process to explore the strengths and needs of the local food system. The purpose of a food system assessment is to create a picture of the entire food system and inform decision-making, policies and recommendations to improve the system (Ross & Simces, 2008). Food system assessments have become a staple in food systems planning efforts. While different types of assessments exist, the current work utilizes a comprehensive food system assessment approach. Comprehensive food system assessments seek to analyze the systemic nature of the local food system, including the land requirements, production, processing, distribution, consumption, and disposal of waste. This includes addressing the interactions of food with social, environmental, and economic concerns (Freedgood, Pierce-Quiñonez & Meter, 2011).

This assessment takes as its starting place, the existing food system framework developed by Food Matters Windsor Essex in partnership with the local community and captured in the Good Food Charter of Windsor Essex County (Food Matters Windsor Essex County, 2014).

Although often containing common elements, food system frameworks are unique and variable. As shown in Figure 1, the current local food system framework is comprised of production, processing, distribution, access, consumption, and waste management.

Figure 1: Windsor Essex Food System Framework



The food system is not synonymous with the food industry; although there is certainly cross-over. The food industry is complex as it includes the collective of businesses that supply food. The food industry includes agriculture, manufacturing, food processing, marketing, food distribution, food services, food retailers, regulations, research and development, and financial services.

As a regional food system assessment, the current work concerns itself with the Windsor and Essex County area. This area is the traditional territory of the Three Fires Confederacy of First Nations, comprised of the Ojibway, the Odawa, and the Potawatomie people. Windsor and Essex County (i.e., Essex County Census Division or CD) is the southern-most land mass in Canada (Figure 2). Located in Southwestern Ontario, the 2016 Census reported the region as having a total population of 398,953, a figure up 2.6% from the 2011 Census. The region measures 1,850.9 square kilometres with a population density of 215.5 people per square kilometre. Approximately 54% of the region’s population live in the City of Windsor (217,188), with the remainder situated in the surrounding municipalities of Tecumseh (23,229), Lakeshore (36,611), Essex (20,427), LaSalle (30,180), Amherstburg (21,936), Kingsville (21,552), Leamington (27,595), and the Township of Pelee Island (235). The region is directly across the border from Detroit, Michigan (Statistics Canada, 2017).

Figure 2: Map of Windsor and Essex County



Local Context

As is often the case, community change efforts are cumulative and occur over time. This food system assessment has endeavored to capture decades' worth of effort in food-related work in Windsor and Essex County. This work has provided a strong foundation on which to build and yielded important lessons about what makes for progress and what can stand in the way.

Some of the earliest community food and food security milestones in Windsor and Essex County include:

- 1970:
 - Windsor Essex Food Bank Association becomes a member of the Ontario Food Bank Association
- 1990 – 1999
 - Attempts to establish community food choice hubs in East, West, Central, Windsor and the County
- 2000 – 2009
 - Fed Up Food Collective established
 - Jumpstart Student Nutrition Program established
 - Health Action Initiative
 - Food For Change Partnership
 - Ontario Student Nutrition Program -Southwest Region established

The beginnings of the current iteration of food system work in Windsor and Essex County began in 2009 with the publication of the Hungry for Change report which explored sustainable food systems in Windsor and Essex County (Food for Change Committee, 2009). This was followed by the formal establishment of Food Matters Windsor Essex in 2011, with support from the Ontario Trillium Foundation and a range of community partners. The group included a diverse array of food system representatives with a mandate to act, advocate, and promote a healthy food system and community. Through a range of community consultations, the group brought the Good Food Charter of Windsor Essex (Food Matters Windsor Essex, 2014) into being in 2014. This document speaks to community values related to local food and espouses the guiding principles of Celebration of Food, Environmental Sustainability, Social Justice, and Sustainable Economic Development. A loss of funding resulted in the group ceasing to function in 2015.

In 2014, the Food Security Planning Table was formed. The United Way brought together food security funders as a project steering committee to drive an updated Food Security Strategy for Windsor and Essex County. The Strategy was intended to guide activities and possible funding decisions for the next 10 years. The group's work was informed by a series of six stakeholder conversations and a community survey aimed at better understanding food access and insecurity in the region. The work of the group is summarized in their Design Table Backgrounder Report (Food Security Planning Table, 2016).

One of the themes that emerged from meetings of the Food Security Planning Table related to funding. Funders were unsure where to invest their money, and organizations felt the stress of the uncertainty of one-time or limited project funds. This was believed to negatively impact project progress, undermine effective partnerships, and create an inhospitable environment with organizations competing for the same, and very limited, funds. Three main outcomes emerged from these conversations: 1. a desire to discuss opportunities for collaboration to prevent duplication; 2. the possible creation of a new structure to move this work forward; and, 3. interest in pursuing a local Food Policy Council. At this point, the Windsor-Essex County Health Unit committed to supporting the formation of a Food Policy Council.

October 2017 saw the recruitment of Windsor-Essex Food Policy Council members through an application process with an initial meeting held in early 2018. As noted, the WECHU, in conjunction with the Windsor-Essex Food Policy Council, and the WindsorEssex Community Foundation launched this Community Food System Assessment in September 2018 and plans to use the assessment to guide their work for the next five years and beyond. Table 1 provides a timeline of key milestones and events in previous local food system work over the past ten years.

Table 1: Selected Milestones in Food System Work in Windsor and Essex County

2009	<ul style="list-style-type: none"> ● Hungry for Change report is released
2010	<ul style="list-style-type: none"> ● Food Matters Committee formed ● Food Matters Community Forum is led by United Way and Pathway to Potential
2011	<ul style="list-style-type: none"> ● Food Matters Windsor Essex County is formed, funded by Trillium
2012	<ul style="list-style-type: none"> ● Growing Food Partnerships Event urges collaborative approach to local food systems via advocacy and policy council
2013	<ul style="list-style-type: none"> ● Sustain Ontario's Bring Food Home Conference is in Windsor Essex with over 400 food system leaders in attendance
2014	<ul style="list-style-type: none"> ● Good Food Charter launches at Tecumseh Recreation Complex ● Food Security Planning Table is convened
2015	<ul style="list-style-type: none"> ● Food For All Forum held with outside food security experts and community, call for additional community consultations ● Food Security Planning Table conducts access-focused consultations
2016	<ul style="list-style-type: none"> ● Food Security Planning Table recommends Food Policy Council ● WECHU commits to support a local Food Policy Council
2017	<ul style="list-style-type: none"> ● Recruitment begins for Windsor-Essex Food Policy Council
2018	<ul style="list-style-type: none"> ● First meeting of the Windsor-Essex Food Policy Council ● Community Food System Assessment report to be released 2019
2019	<ul style="list-style-type: none"> ● Windsor-Essex Food Policy Council to use Community Food System Assessment to set priorities and goals for the next 5 years and beyond

Municipal Plans and Commitments to Food

Municipal support for food-system related work is also an important part of the local context. The *Environmental Master Plan for the City of Windsor* (City of Windsor, 2017) includes Responsible Land Use as one goal. Two key objectives and their associated actions related to responsible land use are as follows:

- **Objective: Support Education, Engagement, and Local Food Production**
 - Implement and expand on the Community Garden on Municipal Property Policy.
 - Actively promote the use of underutilized, vacant City of Windsor property for the use of community gardens.
 - Encourage Windsor's farmers' markets.
 - Develop and promote the local food system through education, including programmes for kids.
 - Explore the potential for an urban bee cooperative or a chicken cooperative on municipal property.
 - Promote the health benefits of drinking water over sugar-sweetened beverages for hydration.
 - Promote the use of Essex Windsor Solid Waste Authority's compost.

- **Objective: Food Strategy**
 - Engage in a comprehensive community food assessment to inform a food strategy.
 - Build on the development of the Windsor Essex County Food Charter and the food system work of various organizations.
 - Assess the viability of a regional food council or committee.
 - Include the need for data gathering to further understand the local food system and the opportunities for improvement.

The *City of Windsor 20-year Strategic Vision* (City of Windsor, 2016) may also be relevant to future food system work. It recognizes Windsor's strategic location, proximity to markets, favourable climate, and biodiversity as strengths to be capitalized on. While a focus on jobs may also be relevant, particularly if it includes the food sector, the area of most direct applicability would seem to be quality of life objectives in the 20-year vision, which include:

- Creating the conditions to alleviate poverty and ensuring a high quality of life is accessible for all
- Promoting choices that support a healthy environment
- Planning for integrated transit and transportation options with consideration for regional opportunities
- Promoting walking and cycling as healthy and environmentally-friendly modes of transportation

In examining the *County of Essex Official Plan* (County of Essex, 2014) there is a concerted focus on the natural environment and agriculture. Goals for Essex County agriculture include:

- Protecting prime agricultural areas
- Limiting expansion of primary settlement areas onto lands designated as agricultural
- Creation of minimum lot size for agricultural parcels

In addition, each municipality in the County may have bylaws that are relevant to the local food system. While a closer look at each municipality would be a useful exercise going forward, it is interesting to consider the views of council candidates during the Fall 2018 elections (Windsor-Essex County Health Unit, 2018c). The Windsor-Essex County Health Unit asked candidates how they would allocate resources across seven priority areas for public health. Responses from 87 mayoral and council candidates across the county showed built environment was the third highest priority area, followed by food security. Climate change occupied the lowest position with fewer resources allocated.

Broader Context

Food system work exists in a broader context. It is closely tied to issues of food sovereignty, sustainability, and security, all of which are intertwined. As well, the larger political context has an impact on the direction of food system work through funding priorities, policy, legislation, and advocacy.

Food Sovereignty, Sustainability and Security

Championed by La Via Campesina, an International Peasant's Movement, and refined through broad consensus, food sovereignty has been defined as *"the right of peoples to healthy and culturally-appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems."* The discourse of food sovereignty shifts the focus on food from a commodity to a public good. It is distinct from the notion of food security for its emphasis on food citizenship, which underscores the need for citizens to have a say in how their food is produced and where it comes from. The core of food sovereignty is reclaiming public decision-making power in the food system (Food Secure Canada, 2011).

The People's Food Policy published in 2011 was the first Canadian policy based on advanced food sovereignty principles (Food Secure Canada, 2011). Among them are seven pillars of Canadian food sovereignty, noting that the seventh emerged specifically from discussions around Indigenous food sovereignty:

1. Focuses on Food for People
2. Values Food Providers
3. Localizes Food Systems
4. Puts Control Locally
5. Builds Knowledge and Skills
6. Works with Nature
7. Recognizes that Food is Sacred

Given the focus on public decision making when it comes to food sovereignty, community food system assessments such as this one that have a great deal of public consultation are a positive step toward food sovereignty. The concept of food sovereignty is also consistent with the vision of the WEFPC of a food system that is healthy, sustainable, and accessible.

Food sustainability is a key element of food system planning, albeit broad in scope. The Food and Agriculture Organization of the United Nations and the UN High Level Task Force on Global Food and Nutrition Security (Brundtland, 1987) define a sustainable food system as *“a food system that delivers food and nutrition security for all in such a way that the economic, social, and environmental bases to generate food security and nutrition for future generations are not compromised.”* A related concept is that of “food justice” which speaks to addressing inequity and disparity in the food system as an element of sustainability, and ensuring the communities that have experienced injustice are empowered to participate in the political process (Alkon & Agyeman, 2011). Similarly, sustainable diets are also worth noting. These are characterized by dietary choices that reduce environmental impacts, contribute to food and nutrition security, are protective and respectful of biodiversity and ecosystems, are culturally acceptable, accessible and affordable, and are nutritionally appropriate while making the most of natural and human resources (Dietitians of Canada, 2017).

Food security is a world-wide issue. Indeed, the Rome Declaration on World Food Security in 1996 spoke to the universal right to safe and nutritious food. Defining food security remains challenging due to the varied application of the concept to food access and food systems at levels ranging from the local to the global. However, Dietitians of Canada reference a comprehensive definition provided by the Food and Agriculture Organization (FAO) that is suitably broad and particularly well-suited to a public health focus:

“Food and nutrition security exists when all people at all times have physical, social, and economic access to food, which is safe and consumed in sufficient quantity and quality to meet their dietary needs and food preferences, and is supported by an environment of adequate sanitation, health services and care, allowing for a healthy and active life.”
(Dietitians of Canada, 2016)

Conversely, food insecurity is defined in Canada as *“inadequate or insecure access to food due to financial constraints”* (PROOF Food Insecurity Policy Research, 2018b). As measured on a national level, food insecurity is only a function of affordability. This differs from internationally recognized definitions of food insecurity that may also include other aspects such as availability, safety, personal and cultural acceptability, and/or quality.

Food insecurity is a significant social and health problem in Canada, and studies of household food insecurity in Canada have found it to be a robust predictor of health care utilization and costs for working-age adults, independent of other social determinants of health (Tarasuk et al., 2015). Edge and Howard (2013), reports that approximately 7.7% of Canadian households self-report being food-insecure. Food insecurity is associated with inadequate nutrition, such as iron deficiency, and a myriad of health problems including hypertension, dyslipidemia, cardiovascular disease, depression, poor sleep, and mental health conditions. Food insecurity is also found to result in poorer health outcomes throughout the lifespan. Additionally, food

insecurity in Canada is more likely to affect at-risk populations (e.g., Aboriginal peoples, lone-parent families, women and children, immigrants, the elderly). Key risk factors of food insecurity include income, the costs of food and non-food essentials such as rent, hydro, heat, geographic isolation, lack of transportation, and food illiteracy (Howard & Edge, 2013).

Food Policy, Legislation and Advocacy

A wide range of Federal and Provincial policies and initiatives have had an impact on local food system work and have influenced the type of work undertaken.

Federal Food Policy Initiatives

At a Federal level, *A Food Policy for Canada* was expected to be released in 2018, although at the time this report was written, it had not yet been published. The intent of the policy is to set a long-term vision for the country's health, environment, social, and economic goals related to food as well as to identify short-term actions to improve Canada's food system (Government of Canada, 2017a). Consultations focused on food security, health and food safety, the environment and economic growth were held across the country in 2017. As a broad based initiative, the consultation and subsequent policy will involve the cooperation of a number of federal government departments and agencies, including:

- Agriculture and Agri-Food Canada
- Atlantic Canada Opportunities Agency
- Canadian Food Inspection Agency
- Canadian Institutes of Health Research
- Canadian Northern Economic Development Agency
- Employment and Social Development Canada
- Environment and Climate Change Canada
- Finance Canada
- Fisheries and Oceans Canada
- Global Affairs Canada
- Health Canada
- Crown-Indigenous Relations and Northern Affairs Canada
- Indigenous Services Canada
- Innovation, Science and Economic Development
- Public Health Agency of Canada
- Privy Council Office
- Statistics Canada
- Western Economic Diversification Canada

In addition to the Canadian Food Policy, a range of other federal level food-related initiatives and food policy proposals are summarized in Appendix A. Food Secure Canada also provides a useful timeline for food policy work in Canada (Food Secure Canada, 2019).

Federal Poverty Reduction Initiatives

August 21, 2018 the Federal Government released *Opportunity for All – Canada’s First Poverty Reduction Strategy* (Government of Canada, 2018a). The Strategy is based on three pillars that focus government actions to reduce poverty. One of these pillars, Dignity, relates to “Lifting Canadians out of poverty by ensuring basic needs—such as safe and affordable housing, healthy food, and health care are met.” With a targeted 20% reduction in poverty by 2020 and a 50% reduction in poverty by 2030, the strategy will monitor food insecurity as a key indicator of basic need. A Poverty Reduction Act has also been proposed to support long-term viability of the strategy and government accountability.

Provincial Food Policy Initiatives

Within the province of Ontario, there have been a number of food-related initiatives over the past years as well.

In November 2013, Ontario passed Bill 36, the *Local Food Act, 2013* (Local Food Act, 2013, S.O. 2013, c.7). This bill is the first of its kind in Canada, and was designed to help build Ontario's economy, create more jobs, and expand the agri-food sector by making more local food available in markets, schools, cafeterias, grocery stores, and restaurants throughout the province. The bill also aimed to increase awareness of local food in Ontario, including the diversity of local food, and develop new markets for local food. Alongside the *Local Food Act*, *Ontario’s Local Food Strategy* was published in 2013 with three core objectives: increased consumer awareness and education about local food, improved access to local food, and expanded local food production. Since that time, annual Local Food Reports have been published by the Ministry of Agriculture, Food, and Rural Affairs to highlight Ontario’s local food economy (Ministry of Agriculture, Food, and Rural Affairs, 2019).

The *Ontario Food and Nutrition Strategy* report, published in 2017, was developed with the goal of strengthening Ontario’s food systems and improving the health and well-being of Ontarians through an evidence-informed, cross government, multi-stakeholder coordinated approach to food policy development and a plan for healthy food and food systems in Ontario (Ontario Food and Nutrition Strategy Group, 2017). Ultimately, the strategy seeks to create a productive, equitable, and sustainable food system that supports all Ontarians. Strategic directions include healthy food access, food literacy and skills, healthy food systems, (including food production and economic development), food systems excellence and innovation, and environmental protection. An evidence summary can be found in Appendix D of the Ontario Food and Nutrition Strategy.

Provincial Poverty and Food Security Initiatives

Similar to the Federal level, provincial food-related work is partly tied to poverty reduction efforts. The *Ontario Poverty Reduction Strategy (2014-2019)* (Government of Ontario, 2014) was launched in 2014 and included measures to make basic necessities, including food, more affordable for families in Ontario. The most recent annual report on the poverty reduction strategy (Government of Ontario, 2017a) is continuing to address food security.

One outcome of the Poverty Reduction Strategy is the current development of Ontario's first Food Security Strategy (Government of Ontario, 2018a). The vision of the food security strategy is "a province where every person has access to high-quality, safe, nutritious and culturally-appropriate food, to support them in leading healthy and active lives." It builds on the work of existing past and present programmes including:

- Ontario's Healthy Kids Strategy (finished in 2018)
- Student Nutrition Program
- Healthy Eating, Active Living (HEAL)
- Northern Fruit and Vegetable Program
- Fresh from the Farm
- Healthy Fundraising for Ontario schools
- Indigenous Fetal Alcohol Spectrum Disorder and Child Nutrition Program
- Aboriginal Diabetes program
- Urban Aboriginal Healthy Living Program

The Province identified the following four broad focus areas for the Food Security Strategy:

1. Empowering communities with custom-made solutions
2. Working toward integrated food initiatives that use knowledge to drive collective impact
3. Recognizing that food security is about more than food
4. Driving innovation

At the time this report was written, the strategy had not yet been released, but provincial consultations were completed in 2017.

Ontario's minimum wage was increased to \$14 per hour in 2017 as a result of the Fair Workplaces, Better Jobs Act of 2017 (Bill 148) (Canadian Labour and Employment Law, 2018). The planned increase from \$14 to \$15 per hour, scheduled to take effect in 2019, was repealed in 2018 with the introduction of the Making Ontario Open for Business Act (Bill 47). The basic income pilot project was planned in 2016, announced in 2017, and partially implemented in 2018 before it too was cancelled.¹ The Low-Income Individuals and Family Tax (LIFT) Credit came into effect in 2019 and provides up to \$850 in Ontario Personal Income Tax relief for low-income Ontario taxpayers.

¹ A number of key poverty reduction strategies are now marked with the following disclaimer on Government of Ontario web pages: "This page was published under a previous government and is available for archival and research purposes."

Summary: Why a Local Food System Assessment Now?

While Windsor and Essex County have a rich history of work with various aspects of the food system, the Windsor-Essex Food Policy Council (WEFPC) felt that the time was right for a comprehensive food system assessment.

The existence of Federal and Provincial food policy initiatives, launched and forthcoming, and supported by a wide range of organizations, agencies, and advocacy groups, bode well for food system work at this time. Also important are poverty reduction initiatives supporting food security.

Locally there is a solid history of food system work in Windsor and Essex County, particularly in the area of food security. However, recent discussions have highlighted the need for a focus across the food system. The existence of the WEFPC represents a strong start and the Council's commitment to this community food system assessment will provide a sound basis for moving forward. There is also evidence of governmental commitments to food system work at both municipal and county levels.

It bears repeating that this project was made possible at this time due to support from partners and funders. Comprehensive reviews of this type are time and resource intensive. The presence of dedicated staff and financial investments have made this work possible.

Section 2: Methodology

This community food system assessment was comprised of two central components:

1. Review of local resources and assets; and,
2. Research and stakeholder engagement.

Review of Local Resources and Assets

This phase of the project involved conducting a broad environmental scan of information and data relevant to all aspects of the local food system. Sources reviewed included, but were not limited to, reports, legislation, documents, and previous scans. The intent of this scan was to identify assets, gaps, strengths, and weaknesses in the local food system. The identification of assets was particularly important.

Assets are tangible resources unique to a region or geography that can be leveraged by the community to create positive change. They are what communities want to keep, build on, and sustain for the future. More specifically, food system assets are those tangible resources that are part of the local food system that can likewise be used to enact positive changes.

The identification of local resources and assets involved a multi-pronged strategy aimed at maximizing acquisition of local data and information. The following is a summary of strategies used:

- Input was initially solicited from WEFPC members via a survey. They provided a wide range of recommendations for information and data sources across the food system.
- Consultation with epidemiology team members at the Windsor-Essex County Health Unit (WECHU) helped identify good population-level data sources and existing reports from which to access relevant information.
- Standard search methodology was employed to explore scholarly and grey literature, as well as online sources to further identify relevant legislation, reports and research.
- Local resources, assets and other issues were identified through a review of all the aforementioned sources, with subsequent stakeholder engagement activities providing additional important insights.

Research and Stakeholder Engagement

Community and stakeholder engagement was obtained through a range of research initiatives, including face-to-face community conversations, a community survey, stakeholder consultation, and asset mapping sessions. In total, 681 community members provided input across all types of engagements (see Table 2).

Table 2: Community Consultations Summary

<p style="text-align: center;">Community Consultations 681 Points of Community Contact</p>
<p style="text-align: center;">Community Conversations 112 Face to Face Conversations</p>
<p style="text-align: center;">Community Survey 532 Completed Surveys</p>
<p style="text-align: center;">Stakeholder Engagement 25 Key Stakeholders Consulted</p>
<p style="text-align: center;">Asset Mapping 12 Windsor-Essex Food Policy Council Members Engaged</p>

Community engagement activities were promoted through a media release and social media beginning October 26, 2018. An additional media release was issued on November 26, 2018 to further boost survey participation toward the end of the data collection period (“Health Unit seeks input,” 2018).

Community engagement and data collection activities formally ended on December 6, 2018 with the closing of the online survey. Subsequent months marked a time of final analyses, compilation, synthesis, and integration of the wide range of information gathered in the months previous.

Assessment Plan and Timelines

Creative Momentum Consulting was engaged in September of 2018 to support the food system assessment. **The goal of the assessment was to establish an overview of the current state of the Windsor and Essex County Food System and identify areas for further work and improvements across the food system.** The main components of the project included a review of local resources and assets, as well as community research and stakeholder engagement, the findings of which are contained in this report and recommendations (see Figure 3).

Presented below are brief descriptions of project components and timelines, with specific methodological details to follow:

Figure 3: Food System Assessment Steps



- **Review of Local Resources and Assets**
 - *Environmental scan and analysis* (Sept 17-Dec 1): Information and data relevant to all aspects of the local food system framework were used to identify history, assets, gaps, strengths, and weakness
- **Research and Stakeholder Engagement**
 - *Community Consultations* (Oct 25-Nov 22): 11 consultations with the general public across all municipalities with the exception of Pelee Island were conducted to identify assets, issues, priorities and municipal variations
 - *Online Community Survey* (Oct 24-Dec 6): Online and hard copy survey was distributed for the general public looking at beliefs, attitudes, practices, assets, issues, and areas for action
 - *Food System Stakeholder Consultation* (Nov 21): A half day interactive consultation was held with local experts from across the food system to identify strengths, assets, challenges, solutions, opportunities, roles, gaps, and collaborative strategies
 - *Food System Asset Mapping* (Nov 28): A two-hour asset-mapping session invited WEFPC members to examine assets, asset types, and strategies to support asset sustainability
- **Report and Recommendations**
 - Initial Draft (December 21, 2018) and Final Report (February 2019)

Data Analysis Notes

Analysis of quantitative data was generally carried out using Excel, however, the CheckMarket programme (checkmarket.com) used for the online survey provided cross-tabulation figures. Qualitative data was obtained from community conversations and the online survey, as well as stakeholder engagement and asset mapping exercises.

Qualitative data was analyzed using thematic analysis techniques, coding first for food system elements, then later for second, and in some cases, third level themes (Creswell, 2014; Nowell, Norris, White & Moules, 2017). While all responses were analyzed, unique responses that represented the viewpoint of one person or a small minority (fewer than 10%) generally were not reported in this report. Rather, themes are reported only when they are shared by a larger group of respondents. Additional detailed descriptions of the various methodologies used for each community engagement strategy are provided in the relevant sections.

Community Conversations

In the fall of 2018, between October 25th and November 22nd, a total of 11 community conversations were hosted across Windsor-Essex County.² Table 3 provides locations, dates, and numbers of participants for each community conversation. Nine community conversations were initially planned, however one additional event was added in Windsor due to the size and population density of the city. As well, an unexpected opportunity to collect data in Essex led to having two in this Municipality, bringing the total number of community conversation events to 11.

Community conversations were advertised on the WECHU website, in social media, and were promoted by community partners. To address concerns over possible low attendance at the community conversations, events were hosted at municipal locations that are typically frequented by members of the community, often timed to match ongoing events. Venues included recreation complexes, libraries, and a shopping centre. Events included hockey games, recreational classes, and a chili cook-off. This proved to be an important decision as very few participants identified themselves as coming expressly to take part in the conversations, but many were happy to offer their opinions when invited by interviewers. Those who saw the advertising for the community conversations and chose to attend specifically for that purpose typically had stronger thoughts and opinions about the food system. Some of these individuals were expecting a large group session; however, they were pleased to have the exclusive attention of an interviewer to explore their thoughts and concerns.

² While the Township of Pelee Island is an important part of Windsor and Essex County, it was not feasible to include the Island itself as a site for engagement due to its geographic isolation and small population size (235 persons in 2016). Residents were able to complete the community survey and could attend a community consultation event in the nearby municipalities of Leamington or Kingsville.

Table 3: Locations, Dates and Participant Numbers for Community Conversations

Municipality	Date	Location	Participants
Essex	October 25	Essex Centre Sports Complex	34
Amherstburg	November 1	Amherstburg Public Library	4
Windsor	November 1	Central YMCA	9
Lakeshore	November 6	Atlas Tube Centre	10
Windsor	November 8	Devonshire Mall	21
Essex	November 13	Essex Centre Sports Complex	3
Kingsville	November 15	Kingsville Public Library	10
Leamington	November 15	Kinsmen Recreation Complex	2
LaSalle	November 19	Vollmer Culture and Recreation Complex	5
Tecumseh	November 20	Tecumseh Arena	6
Windsor	November 22	University of Windsor	8

Tables and posters were set up to advertise the event and participants either approached the table or, where allowable, were approached by interviewers. It should be noted that at some venues, interviewers were not allowed to actively solicit participants, but could invite participation if engaged directly by interested community members.

Interviewers included WECHU Public Health Nutritionists, Registered Dietitians, Health Promotion Specialists, and Dietetic Interns, as well as the primary researcher. Interested participants were oriented to the food system model in simple terms and were provided with a supplementary information sheet and diagram. Included on the sheet were the key questions to be addressed. Interviewers followed a set protocol. To maximize comprehension for interviewees, only three questions were formally asked of participants. These were focused on perceived food system assets, issues, and priorities for change. Interviewers received mentoring on how to engage participants by making use of probes. These probes and other reminders were placed on the interview protocol sheet which was available to interviewers for easy reference at all times.

Probes proved to be important as many participants initially believed they had little to contribute but ultimately offered a great deal of information once engaged. Feedback was recorded verbatim on data sheets and reviewed immediately after interview completion with answers coded by food system element at that time. Additional demographic information (i.e., sex, year of birth, household size, and experience as a food producer) was also collected. To encourage participation, participants were offered incentives such as reusable cutlery or sandwich holders. They were also given a card, which offered additional information about the

online survey. The participant information sheet, the interview protocol with instructions and probes, and recording sheets are included in Appendix B.

A total of 112 individuals were engaged in face to face conversations about the food system. An analysis of the sample's demographic responses was used to provide a general picture of the representativeness of the sample. Tables 3 through 5 compare 2016 Census figures for the Windsor and Essex County area to community conversation sample demographics. Based on 95% confidence intervals, sample values that were significantly above or below that of the population value were identified. These are noted in Tables 4 through 6 using arrows as follows:

↑ Survey proportion significantly above population value

↓ Survey proportion significantly below population value

It should be noted that the small sample size for the community conversations resulted in large confidence intervals which make comparisons between sample characteristics and population proportions less reliable. As such, these should be taken as evidence of general trends only. It should also be noted that qualitative data collection is typically less concerned with numbers and more concerned about the quality of the information collected and achieving saturation in terms of the themes emerging from data analysis.

As shown in Table 4, Essex was over-represented relative to the population, likely due to having two data collection opportunities in Essex. Leamington was significantly under-represented relative to the population, which is also the case with the online survey. While it is not clear why there was a lower response from Leamington area on the survey, practical difficulties with the location limited participation in the case of the Leamington community conversation. Specifically, the community consultation in Leamington was held at a recreation complex while a large hockey game was under way. Although there were many attendees, most were focused on entering the arena to watch the game and did not remain in the entranceway where interviewers were located. As well, interviewers were prevented from entering the arena area to solicit potential participants, all of which resulted in the low numbers at the Leamington community conversation event. While Windsor respondents were somewhat lacking relative to the population for the community conversations, this was balanced by over-representation in the online survey. Tecumseh, LaSalle and Amherstburg are not technically under-represented when using a 95% confidence interval as the criteria, but in practical terms participation was lower in those areas, although more robust and representative for the online survey. Please note: all tables that show percentages that should total 100% may not add up to 100.0% due to statistical rounding

Table 4: Comparison of Community Conversation Sample and Census by Municipality

Municipality	Sample #	Sample %	Population %
Windsor ↓	38	34%	54.4%
Essex ↑	37	33%	5.1%
Kingsville	10	9%	5.4%
Lakeshore	10	9%	9.2%
Tecumseh	6	5%	5.8%
LaSalle	5	4%	7.6%
Amherstburg	4	4%	5.5%
Leamington ↓	2	2%	6.9%

Source: Statistics Canada, 2016 Census of Population.

In terms of representativeness by sex, the community consultations in general had a relatively even mix of female and male identified participants (Table 5) and although females still outnumbered males, it was not significantly so when compared to population values.

Table 5: Comparison of Community Conversation Sample and Census by Sex

Sex	Sample #	Sample %	Population %
Female	65	60%	49%
Male	43	40%	51%

Source: Statistics Canada, 2016 Census of Population

Members of the 15 to 44 year old age group were over-represented in community conversations, relative to the population (Table 6). However, this may have been due in part to the fact that many community conversations were held at recreation complexes when child and youth programming was running, making parents of young children and youth in this age group more frequent participants. The average age of community conversation participants was 49, with ages ranging from 19 to 80.

Table 6: Comparison of Community Conversation Sample and Census by Age Group

Age	Sample #	Sample %	Population %
15-44 ↑	59	53%	44%
45-64	29	26%	35%
65+	24	21%	21%

Source: Statistics Canada, 2016 Census of Population.

In looking at households, 44% (49) of community conversation participants reported having one or more children under the age of 18. This is consistent with the 41% figure for census families in private households with children in Windsor and Essex County. Of those participants with children under 18, the average age of the adult in the household was 40 and the average number of children was two. For those community conversation participants without children in their household, the average age was 56. Finally, of those taking part in the community conversation, 10% (n=11) reported being food producers.

Interviews focused on three main areas of the local food system. Participants were asked: *What is working well? What is not working well?* and, *What would be your priority for change?* Thematic analysis of the feedback from the 112 participants yielded a total of 635 qualitative data units. All data units were initially classed in terms of their relationship to the food system (i.e., production, processing, distribution, access, consumption or waste management). As shown in Table 7, food access, waste management and production were the most commonly mentioned parts of the food system for those taking part in the community conversations, and these were also endorsed as priority areas for action.

Table 7: Food System Areas by Counts and Percentages Overall and for Priorities

Food System Area	Overall Number	Overall Percent	Priority Percent
Production	104	18%	23%
Processing	34	6%	5%
Distribution	56	9%	8%
Access	214	36%	29%
Consumption	71	12%	7%
Waste Management	112	19%	28%

Online Community Survey

Between October 24th and December 6th, 2018 an online survey was made available to all residents of Windsor and Essex County. The survey was deployed using the CheckMarket survey platform. Paper copies of the survey were also disseminated through community partners. Surveys were completed then returned to the research team and responses were entered manually. The survey was advertised on the WECHU website, on social media, and was promoted by a range of community partners. Survey promotion cards were also provided to community members during community conversation events. The survey asked participants to consider their food-related beliefs, attitudes, and practices and identify food system assets, issue, and areas for action (see Appendix C for a full copy of the survey and Appendix D for all survey results). Demographic responses were monitored weekly, and marketing and promotion efforts were tailored to try and achieve a representative sample by targeting under-represented groups.

Selection bias (bias related to differences in responders versus non-responders) is a general limitation when conducting surveys. Researchers have found that females and individuals with higher education are over-represented in voluntary surveys (Cheung, Klooster, Smit, de Vries & Pieterse, 2017). Additionally, web (versus mail) surveys tend to be more commonly completed by individuals with higher income and education, and those living in urban settings (Pew Research Centre, 2015). Monitoring sample composition and using targeted promotions helped to increase the proportional representativeness of this sample. However, this does not address potential selection bias.

Tables 8 through 15 compare 2016 Census figures for the Windsor and Essex County area to survey sample characteristics. Full tables with both Census and Survey numbers, percentages, and upper and lower confidence intervals are included in Appendix D. Based on 95% confidence intervals, survey values that were significantly above or below that of the population value were identified. These are noted in Tables 7 through 14 using arrows as follows:

- ↑ Survey proportion significantly above population value
- ↓ Survey proportion significantly below population value

Table 8 shows that Leamington was under-represented and Windsor over-represented in terms of the distribution of the population by municipality. It is unclear why Leamington is under-represented in the online survey. As previously noted, Leamington was also under-represented in the community conversations. Taken together, this is worth noting, given the importance of food production and processing in the Leamington area.

Table 8: Comparison of Census and Survey Values for Municipality

Municipality	2016 Census %	Survey%
Lakeshore	9.2%	9.1%
Leamington ↓	6.9%	3.2%
LaSalle	7.6%	6.5%
Kingsville	5.4%	4.0%
Tecumseh	5.8%	6.8%
Amherstburg	5.5%	4.9%
Essex	5.1%	6.3%
Windsor ↑	54.4%	59.2%

Source: Statistics Canada, 2016 Census of Population

As noted in Table 9, individuals 65 and over were under-represented relative to the local population, and conversely, those 15 to 44 and 45 to 64 were over-represented. At the same time, community members 65 and over were proportionally represented in the community consultation sample. This difference may reflect a greater familiarity, comfort, and ease with online surveys for the younger population. The average age of survey participants was 47 (compared to 49 for community conversations). Survey participant ages ranged from 15 to 81.

Table 9: Comparison of Census and Survey Values for Age Group

Age	2016 Census %	Survey %
15-44 ↑	44.1%	48.1%
45-64 ↑	34.7%	40.4%
65+ ↓	21.2%	11.5%

Source: Statistics Canada, 2016 Census of Population

Females were over-represented and males under-represented relative to the population of Windsor and Essex County (Table 10). This was consistent throughout survey data collection, and while efforts were made to recruit more males, they remained under-represented. It should be noted, however, that rather than reflecting a lack of reach, this may speak to socio-cultural differences. For example, one could speculate that the larger proportion of females versus males filling out the survey may be reflective of a greater interest in, and role related to, food in the home for women. Males and females were relatively evenly distributed in the community conversations.

Table 10: Comparison of Census and Survey Values for Sex

Sex	2016 Census %	Survey %
Male ↓	49.2%	25.7%
Female ↑	50.8%	74.1%

Source: Statistics Canada, 2016 Census of Population

Given the significant ethno-cultural diversity of Windsor and Essex County, a number of different strategies were used to reach the multi-cultural community. This included specific recruitment and advertising through organizations serving New Canadians, such as the Windsor Essex Local Immigration Partnership (WELIP), and intensive efforts by members of the WEFPC with ties to Immigrant serving organizations. Table 11 suggests that while the survey was completed by a range of individuals, those identifying as Black, Indigenous, South Asian, and Chinese were under-represented relative to the population. Other groups (e.g., Korean, Japanese) were not represented at all, although they remain a relatively small proportion of the local population. Individuals identifying as Caucasian or White were over-represented relative to the population.

Table 11: Comparison of Census and Survey Values for Ethnicity

Ethnicity	2016 Census %	Survey %
Black ↓	3.4%	0.2%
Indigenous ↓	2.5%	0.2%
South Asian ↓	3.0%	1.1%
Arab	4.7%	3.1%
Chinese ↓	2.2%	0.7%
Caucasian/White ↑	81.9%	92.3%
Southeast Asian	1.1%	0.7%
Filipino	1.0%	0.7%
Latin American	1.0%	0.7%
Korean	0.2%	0.0%
Japanese	0.1%	0.0%
West Asian	0.4%	0.4%

Source: Statistics Canada, 2016 Census of Population

This sample also tended to under-represent those with lower levels of education and over-represent those with higher educational attainments (Table 12).

Table 12: Comparison of Census and Survey Values for Highest Level of Education Completed

Education	2016 Census %	Survey %
No certificate, diploma, or degree ↓	19.1%	0.6%
Secondary ↓	31.0%	14.1%
Apprenticeship or trades	6.7%	N/A*
College/CEGEP ↑	21.7%	30.9%
University certificate or diploma below bachelor level	1.8%	N/A*
University certificate, diploma, or degree at bachelor level or above ↑	13.2%	29.9%
Postgraduate ↑	6.4%	20.4%

Source: Statistics Canada, 2016 Census of Population

* Note: Categories including apprenticeship, trades, or university certificates and diplomas below bachelor degree were not captured in the online community survey. Survey percentages do not add up to 100% due to respondents who preferred not to identify the highest level of education completed.

Similarly, in terms of income, those individuals in lower income brackets tended to be under-represented (Table 13). Being aware of this through ongoing monitoring of survey demographic responses, attempts were made to reach those with lower household incomes through the City of Windsor.

Table 13: Comparison of Census and Survey Values for Household Income (Before Tax)

Before Tax HH Income	2016 Census %	Survey %
Under \$19,999 ↓	10.5%	5.0%
\$20,000 to \$29,999 ↓	8.4%	4.3%
\$30,000 to \$39,999 ↓	8.8%	6.2%
\$40,000 to \$49,999 ↓	8.9%	5.2%
\$50,000 to \$59,999 ↓	8.3%	4.5%
\$60,000 to \$69,999 ↓	7.4%	4.1%
\$70,000 to \$79,999	6.6%	5.8%
\$80,000 to \$89,999	6.0%	5.8%
\$90,000 to \$99,999	5.2%	6.8%
Over \$100,000	29.8%	33.3%

Source: Statistics Canada, 2016 Census of Population

Note: Survey percentages do not add up to 100% due to respondents who preferred not to identify the highest level of education completed.

Table 14 indicates that employed individuals were over-represented, while those not in the labour force (e.g., retired individuals, students, stay at home parents) were under-represented. However, the percentage of unemployed individuals who filled in the survey was proportional with the overall population rate.

Table 14: Comparison of Census and Survey Values for Employment Status

Employment	2016 Census %	Survey %
Employed ↑	55.7%	67.4%
Unemployed	4.4%	6.3%
Not in labour force ↓	39.8%	20.4%

Source: Statistics Canada, 2016 Census of Population

Note: Survey percentages do not add up to 100% due to respondents who preferred not to identify the highest level of education completed.

Finally, although immigrants were under-represented overall, the proportion of recent immigrants (i.e., those having immigrated in the 5 years prior to the 2016 Census) was representative of the population (Table 15).

Table 15: Comparison of Census and Survey Values for Immigration Status

Immigration	2016 Census %	Survey %
Immigrant ↓	21.9%	14.4%
Recent Immigrant	2.8%	1.2%

Source: Statistics Canada, 2016 Census of Population

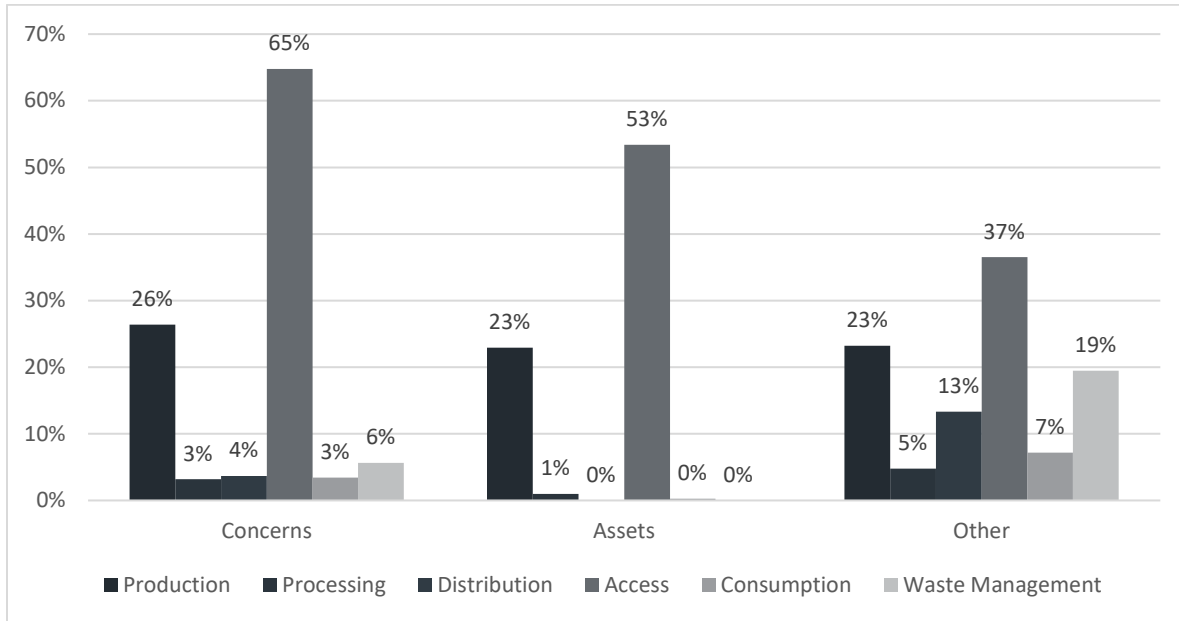
Response rates for open-ended survey questions were quite high with more than three quarters (%) of the 532 individuals who completed the survey providing useable responses to the first two questions and more than half providing useable feedback for the final open-ended question. As with the community conversation data, initial coding involved identifying data units by food system area. Subsequently, secondary coding was applied. Table 16 shows the breakdown of total and useable responses, the number of secondary codes generated for each question and the number of individual coded data units that resulted. A total of 1,116 useable responses were provided, yielding 2,844 individual data units.

Table 16: Responses and Coding Results for Open-Ended Survey Questions

Open-Ended Survey Questions	Total Responses	Useable Responses	Secondary Codes	Coded Data Units
What is the most important concern you have about food in Windsor and Essex County?	417	409	30	1070
What is the best thing about food in Windsor and Essex County?	420	414	23	1010
Do you have any other recommendations or suggestions to improve the Food System in Windsor and Essex County?	332	293	23	764

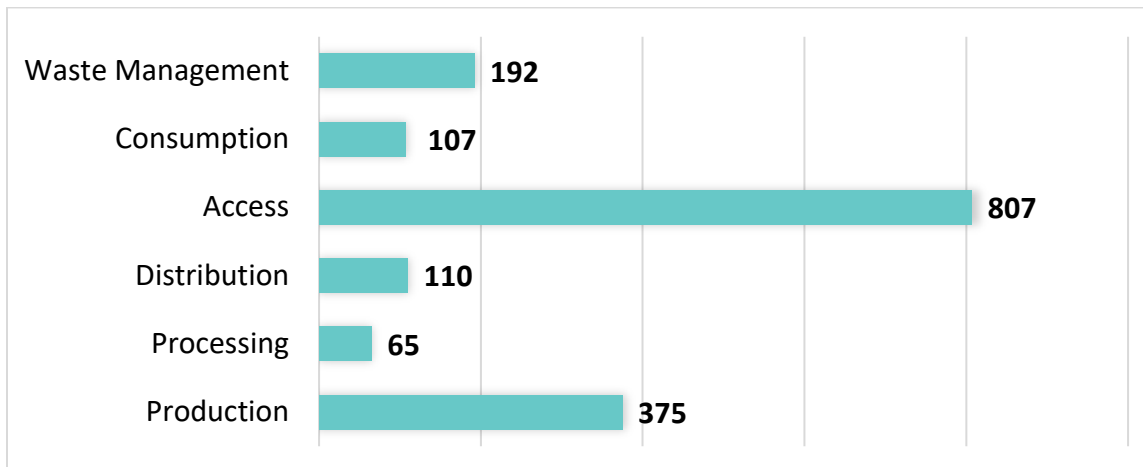
Initial coding of assets, concerns, and additional recommendations by food system area (see Figure 4) show that, similar to the community conversations, comments were predominantly in the areas of food access and production for both concerns and assets. In fact, some of the strongest assets in the food system also represented areas of concern and places for improvement for many participants. Many additional comments provided are also associated with food access and production as well as waste management. Ultimately, data units were examined by food system area and secondary code, and were subsequently compared for thematic content. The specific themes that emerged are incorporated into relevant sections of this report to give voice to the varying perspectives of the local community.

Figure 4: Percentage of Comments Related to Concerns, Assets and Other Feedback by Food System Area



In looking at the area of focus across all open-ended feedback for both the community conversations and the survey (Figure 4), the largest focus was on access (49%), followed by production (23%) and waste management (11%). The numbers in Figure 5 represent the number of data units associated with each area of the food system.

Figure 5: Frequency of Open-Ended Feedback by Food System Framework Components for Community Consultations



Food Systems Stakeholder Consultation

On November 21, 2018 a total of 25 key stakeholders from across the food system met for half a day for an interactive consultation. The purpose of the consultation was to identify strengths, assets, challenges, solutions, opportunities, roles, gaps, and collaborative strategies related to the local food system. Table 17 provides a summary of sectors and organizations represented. The presence of both producers and processors at the stakeholder consultation was remarked on by participants who had attended past food system-related events, noting that these particular types of stakeholders had previously not been well represented. Their presence is encouraging from the perspective of future broad collective action.

Table 17: Stakeholder Sectors and Organizations

Sector	Organization
Health	Windsor-Essex County Health Unit City Centre Health Care Canadian Mental Health Association Victorian Order of Nurses
Business	Downtown Windsor Farmers' Market Mastronardi Produce Ltd. Dainty Foods
Government	City of Windsor Municipality of Leamington
Social Services	Workforce WindsorEssex Unemployed Help Centre Southwestern Ontario Gleaners
Agriculture	Community Member/ Producer Essex County Federation of Agriculture
Community	Community Member

The session began with a networking lunch, followed by a brief presentation of relevant local data. Two interactive exercises followed. The first was a World Café style session. Attendees rotated between five tables, each representing a different part of the food system (i.e., production, processing and distribution, access, consumption, and waste management). Groups worked together at each table to identify strengths, challenges, solutions, and opportunities for that area of the food system. Attendees had the opportunity to participate in discussions related to all areas of the food system.

The second exercise focused participants on thinking outside a conventional understanding of the food system as moving through a predictable cycle from production to processing to distribution etc., as implied in the current food system framework being used by the WEFPC (shown below). Instead, the focus was on identifying novel interconnections between food system elements. For example, this could entail considering the relationship between food processing and waste management with waste from processing moving directly into composting programmes, or initiatives that directly connect production and access through farm to table distribution strategies.



Working in small groups, each table was provided with a large printed version of the food system framework and participants used markers and post-it notes to explore novel interconnections that could support integration and efficiency in the local food system. The wrap up discussion focused on lessons learned, surprises, exciting ideas, and gaps needing further attention. Specific findings from the stakeholder engagement are included in relevant sections of this report.

Food System Asset Mapping

As a final consultative activity, members of the WEFPC were invited to attend a two-hour asset mapping session on November 28, 2018. The focus of the session was examining and prioritizing assets and asset types with the ultimate intent of identifying strategies to support asset sustainability. A total of 12 WEFPC members attended, including a community member, and individuals from sectors including:

- Urban Agriculture
- Food Processing
- Food Service
- Waste Management
- Education
- Community Food Programmes
- Community Organization
- Public Sector/Government

Contrary to a deficit or needs based approach, asset mapping provides information about the strengths and resources of a community, in order to build on these assets to address community needs. Asset mapping has been used successfully in many food system assessments. The “whole assets approach” was used to provide a comprehensive accounting of assets across the region and the food system framework (Fuller, Guy & Pletsch, 2002).

Ideally, asset mapping should have input from as wide a range of community members as possible. In this case, assets were identified through community conversations, the online survey, the stakeholder consultation, and the environmental scan. Assets were categorized according to the “type” of asset. The asset categories used for the asset mapping exercise were taken from the Sustainable Livelihood Framework (SLF) (Harvard Humanitarian Initiative, 2014). This framework was originally developed to improve organizations’ efforts to eliminate poverty in developing nations, but has since been applied in many contexts and has been used extensively in food system work (Hilchey, 2012). The SLF identifies five core asset categories or types of capital on which sustainable livelihoods are built:

- Human (e.g., people, labour, knowledge, skills)
- Physical (e.g., livestock, farms, equipment, buildings)
- Natural (e.g., land, water, soil, climate)
- Financial (e.g., money, savings, income)
- Social (e.g., networks, groups, associations)

Participants reviewed the list of assets identified through the environmental scan and engagement activities, adding any assets they felt were missing. From an initial list of 50 assets, participants added an additional 18 assets, bringing the total to 68. Table 18 provides a list of assets by food system area.

Table 18: Assets by Food System Area

Production
• Agriculture Organizations
• Climate
• Community Gardens
• Community Supported Agriculture
• Farmers
• Greenhouse Growers
• Land/Soil
• Locally Grown Produce
• Migrant Farm Workers
• Organic Grown – Grass-fed meat/dairy
• Pollinators
• School Gardens
• Urban Farming/Agriculture
• Water
Processing
• Food Manufacturing
• Food Processing Facilities
Distribution
• Food Delivery
• Food Storage
• Proximity to US Markets
Access
• Community Kitchens
• Community Meals
• Community Transit
• Convenience Stores
• Emergency Meals
• Fairs and Festivals
• Farm Stands
• Farmers’ Markets
• Food Banks
• Food Recovery Programmes
• Gleaners
• Grocery Stores
• Income Supports
• Meal Programmes
• Pick Your Own

Production
<ul style="list-style-type: none"> • Restaurants
<ul style="list-style-type: none"> • Retail Outlet (on or off-farm)
<ul style="list-style-type: none"> • School Lunch Programmes
<ul style="list-style-type: none"> • Specialty Food Stores
Consumption
<ul style="list-style-type: none"> • Dietitians
<ul style="list-style-type: none"> • Education Programmes
<ul style="list-style-type: none"> • Food Safety Programmes
<ul style="list-style-type: none"> • Health Services
<ul style="list-style-type: none"> • Recreation Programmes
<ul style="list-style-type: none"> • Schools
Waste Management
<ul style="list-style-type: none"> • Landfilling
<ul style="list-style-type: none"> • Municipal Waste Processing
<ul style="list-style-type: none"> • Organic Waste Management
<ul style="list-style-type: none"> • Recycling

In addition to assets attached to specific parts of the food system framework, asset mapping also identified 20 assets that the group referred to as “system assets.” These assets, while not specific to individual parts of the food system, were still viewed as important for their capacity to leverage positive change broadly. They are listed in Table 19.

Table 19: List of System Level Assets

System Assets
Advocacy Groups
Biotechnology (Biocontrols)
Champions
College
Community Associations
Community Development Programmes
Co-ops
Elders
Food Culture
Government
Local Media
Promotion and Marketing
Research Programmes
Social Financing
Social Innovation
Social Media
Technology
Tourism
University
Networks

After finalizing the list of assets, participants then chose the three that they considered the most important, placed them on a sticky note and classed them by asset type. As noted previously, assets could be classed as Human, Physical, Natural, Financial, or Social. After reviewing and discussing the reasons for their choices, participants were then asked to further prioritize one asset for each asset type using coloured dots. While a more comprehensive

consideration of assets and asset types will be provided in the sections of this report dealing with specific food system areas, those assets deemed most important by the group are shown in Table 20 in order of importance, along with the asset type they represent. Key natural assets included the local climate, soil and land, income supports were seen as important financial assets, farmers as central human assets, food processing facilities as important physical assets, and schools as important social assets.

Table 20: Most Important Food System Assets by Asset Type

Key Assets	Asset Type
Climate	Natural
Income Supports	Financial
Farmers	Human
Soil/Land	Natural
Food Processing Facilities	Physical
Schools	Social

Participants then chose an asset category to focus on and reviewed each asset listed under the category capturing their reflections on the following:

- Are these assets sustainable?
 - If so, what supports their sustainability?
 - What are the opportunities associated with these assets?
- If these assets are not sustainable:
 - What are the threats to sustainability?
- How might we be able to preserve and increase the collective value of these assets?

This exercise was focused on considering the sustainability of local food system assets to support future planning efforts. The resulting thoughts and reflections are integrated into the report.

Section 3: Brief Community Profile

A comprehensive food system assessment needs to be grounded in the realities of the local community. Detailed demographic information has been placed in Appendix E for reference. The following, however, provides an upper level summary of key demographic information relevant to this food system assessment with emphasis on:

- Populations vulnerable to, or affected by, food insecurity in this region
- Economic conditions that limit access to or affordability of food
- Negative health issues relevant to the current food system

Population and Economic Conditions Relevant to Food Insecurity

Windsor and Essex County cover a broad geography with a mix of rural and urban communities. Over half of the population in Windsor and Essex County (54%) live in Windsor. Despite this, Windsor has less land area than many other municipalities, leading to a greater population density in Windsor compared to neighbouring municipalities. The mix of urban, small urban and rural communities in Windsor and Essex County creates unique food-system challenges and opportunities. The presence of a vibrant agricultural sector in the County creates opportunities for fresh food access that may be less common in the city (e.g., farmers' markets, farm stands). At the same time, transportation to access food may be a challenge for some in a more rural setting given the distance required to access food sources and the lack of public transportation.

Predicted population growth remains low in Windsor and Essex County, with the most significant increase expected for those 65+. While seniors have been identified as a risk group for food insecurity by the Ontario Association of Food Banks (2018), there is evidence to suggest that households with seniors' incomes as their primary source of income are less likely to be food insecure due to protection afforded to seniors through Canada's pension programmes (PROOF Food Insecurity Policy Research, 2018b). At the same time, to the extent that nutritional needs shift over the life span and mobility can change, an aging population will still change the context of the food system over time.

Social Risk Index

The Social Risk Index is a useful tool for summarizing a broad range of social risk factors.

The conceptual model for the Social Risk Index (SRI) was developed by Human Resources Development Canada (HRDC, 2003) as a tool for providing a general picture of potential community vulnerability and has since been used extensively for community planning across multiple regions. Examples of SRI use for planning can be seen for school boards (Barrett, Peterson, & Millar, 2013), municipalities (Social Planning Council of Sudbury, 2014), and early years planning (Quennell & Smart, 2010). It has also been used by the City of Windsor for early years and child care planning (Munro, Gartner-Duff & Fraser, 2018). The index uses nine risk variables as follows:

- **Low income:** % in low income based on After Tax Low-Income Measure (LIM-AT)
- **Lone Parents:** % of lone-parent families
- **Immigrants:** % of recent immigrants
- **Education:** % without certificate, degree, or diploma
- **Unemployment:** unemployment rate
- **Income from GTP:** % of income from government transfer payments (GTP)
- **Language:** % speaking neither French nor English
- **Mobility:** % moving in the past year
- **Renting:** % renting housing

These variables are used to profile the socio-economic context of communities. It is an especially helpful tool for providing a simple, comprehensive picture of socio-economic challenges because it provides a single measure of community risk. The SRI is derived by comparing social risk index variable values for a smaller geographical unit with those of a larger geographical unit. For example, values for Windsor and Essex County could be compared to those of the province. A point is added for all instances in which index variable values for the smaller geographic area exceed those of the larger area. Scoring of the SRI yields a maximum of 9 points. A score of 1-2 is deemed low risk, 3-4 somewhat low risk, 5-6 somewhat high risk, and 7 or more, high risk.

SRI data from the 2016 Canadian Census is shown in Table 21 for Ontario, Windsor and Essex County, and each local municipality. The results of comparing Windsor and Essex County values to those of Ontario appear in the final column. For each indicator where the Windsor and Essex County value exceeds that of the province, a point of 1 is scored in the final column. When the final column is totalled, Windsor and Essex County are considered to be at “Somewhat High Risk” compared to the province.

Table 21: Social Risk Index Values for Ontario, Windsor and Essex County and Municipalities

	Tecumseh	Lakeshore	LaSalle	Amherstburg	Essex	Kingsville	Leamington	Windsor	Windsor and Essex County	Ontario	SRI Score: Windsor and Essex County
Low income	5.7%	6.0%	5.6%	8.1%	9.5%	9.2%	16.0%	23.3%	16.5%	14.4%	1
Lone Parents	14.4%	11.0%	12.9%	13.8%	14.9%	10.6%	16.0%	23.1%	18.4%	17.1%	1
Immigrants	5.0%	5.1%	7.1%	4.0%	4.3%	4.3%	7.5%	15.6%	12.6%	12.3%	1
Education	13%	16%	14%	17%	19%	23%	36%	19%	19.1%	17.5%	1
Unemployment	4.7%	4.6%	5.1%	6.3%	5.7%	5.2%	6.0%	9.2%	7.3%	7.4%	0
Income (GTP)	9.9%	9.1%	8.4%	11.7%	14.1%	12.8%	17.3%	17.0%	14.0%	11.1%	1
Language	0.7%	0.4%	0.7%	0.3%	0.4%	2.7%	4.9%	2.6%	2.1%	2.5%	0
Mobility	8.1%	8.5%	7.7%	9.1%	8.9%	9.4%	12.8%	13.8%	12%	12%	0
Renting	12.5%	9.1%	6.6%	14.7%	15.5%	15.6%	31.0%	36.5%	27%	30%	0
Score											5

Source: Statistics Canada, 2016 Census of Population

Scoring Key	
Low Risk	1-2
Somewhat Low Risk	3-4
Somewhat High Risk	5-6
High Risk	7+

A further comparison of each local municipality to Windsor and Essex County as a whole reveals low risk levels for most municipalities relative to the County, with two exceptions. Results (Table 22) show Leamington having a score of 5 which is considered “Somewhat High Risk” and Windsor having a score of 8 which is considered “High Risk” relative to Windsor and Essex County. This suggests that both Leamington and Windsor may be areas with evidence of relatively higher social risk where additional supports may be warranted, a finding that is consistent with the results of the Poverty of Place Index used in the United Way *Taking Back our Neighbourhoods* report (United Way Windsor-Essex County, June 2016).

Table 22: Social Risk Index Variables, Values and Scores for Local Municipalities with Evidence of Risk

	Leamington	Windsor	Windsor and Essex County	SRI Score: Leamington vs Windsor and Essex County	SRI Score: Windsor vs Windsor and Essex County
Low income	16.0%	23.3%	16.5%	0	1
Lone Parents	16.0%	23.1%	18.4%	0	1
Immigrants	7.5%	15.6%	12.6%	0	1
Education	36%	19%	19.1%	1	0
Unemployment	6.0%	9.2%	7.3%	0	1
Income (GTP)	17.3%	17.0%	14.0%	1	1
Language	4.9%	2.6%	2.1%	1	1
Mobility	12.8%	13.8%	12%	1	1
Renting	31.0%	36.5%	27%	1	1
Score				5	8

Overall, Windsor and Essex County stand out as having risk factors related to low income, lone parenting, recent immigration, lack of education and reliance on government transfer payments. The City of Windsor also has populations with additional risk factors. Research on household food insecurity in Canada shows clear links between these risk factors and food insecurity. Local data for Windsor and Essex County along with relevant research findings are summarized in Table 23. Risk Factors appearing in bold are those where Windsor and Essex County rates are higher than that of the province. To the extent that many of these risk factors can intersect (e.g., lone parent families in low income), risk may be magnified.

Table 23: Social Risk Factor Data for Windsor and Essex County and the Relationship to Food Insecurity

Risk Factor	Windsor and Essex Data	Research Findings: Relationship to Food Insecurity
Being in Low income	<ul style="list-style-type: none"> • In 2015, 64,665 individuals (16.5%) were in low income compared to only 13.4% in 2005. • The value for Windsor and Essex County are significantly higher than that of Ontario. • Females are more likely to be in low income in Windsor and Essex County. 	<ul style="list-style-type: none"> • Severe food insecurity is very sensitive to income and households with very low incomes are at much higher risk of being severely food insecure (PROOF Food Insecurity Policy Research, 2018b).
Lone Parenting	<ul style="list-style-type: none"> • Lone-parent families account for 18% of all census families and the majority of lone-parent families (80%) are female-led. • Almost half (41%) of lone-parent families reported having 2 or more children. • The number of single parent families in the region increased from 2001 to 2016. 	<ul style="list-style-type: none"> • Households with children led by female lone parents are especially vulnerable to food insecurity; one-third of these households in Canada are food-insecure (PROOF Food Insecurity Policy Research, 2018b).
Recent Immigration	<ul style="list-style-type: none"> • Approximately 10,800 individuals immigrated to Windsor and Essex County between 2011 and 2016, predominantly in Windsor and Leamington. • Leamington and area are home to a significant population of migrant workers. 	<ul style="list-style-type: none"> • Households are more likely to experience food insecurity if they are new immigrants (Dietitians of Canada, 2015).
Lower Education	<ul style="list-style-type: none"> • Almost one fifth (19%) of Windsor and Essex County residents 15 and over have no certificate degree or diploma in 2016. 	<ul style="list-style-type: none"> • The adjusted odds of food insecurity are higher among those without a university degree (PROOF Food Insecurity Policy Research, 2018b).

Risk Factor	Windsor and Essex Data	Research Findings: Relationship to Food Insecurity
Unemployment	<ul style="list-style-type: none"> The unemployment rate at the time of the 2016 Census was 7.3%, with 14,290 individuals reporting being unemployed. 	<ul style="list-style-type: none"> The unemployment rate at the time of the 2016 Census was 7.3%, with 14,290 individuals reporting being unemployed.
Mobility Renting	<ul style="list-style-type: none"> In total, 12% of residents reported moving in the year prior to the census and 27% are renting their home. In 2017 there was a wait list for affordable housing of 4,435 households, a 31% increase from 2016. 	<ul style="list-style-type: none"> Renters make up two-thirds of the food-insecure households in Canada and 1 in 4 households that rent their accommodations are food-insecure (PROOF Food Insecurity Policy Research, 2018b).
Income (GTP)	<ul style="list-style-type: none"> Data from Ontario Works Social Assistance Management System (2018) for Windsor and Essex County show an overall increase in cases (1.5%), beneficiaries (4.0%), and dependent children (6.9%) from December 2016 to March 2017. 	<ul style="list-style-type: none"> Most (70%) households reliant on social assistance in Canada are food-insecure and almost a third (29.4%) are severely food-insecure (PROOF Food Insecurity Policy Research, 2018b).

To summarize, Windsor and Essex County have higher rates of a number of risk factors related to food insecurity. This is consistent with data on food insecurity locally. Canadian Community Health Survey (Windsor-Essex County Health Unit, 2018a) data provided by the Windsor-Essex County Health Unit found that in Windsor and Essex County in 2013-2014:

- Over 1 in 10 households (10.8%) were moderately or severely food insecure.
- Nearly 1 in 10 children (9.7%) were moderately or severely food insecure.
- Over 1 in 4 low-income households (27.4%) were moderately or severely food insecure.

As well, data from the Windsor Essex Food Bank Association indicate that food bank usage in Windsor and Essex County has increased from 2017 to 2018. Increases were observed in the number of seniors served (65+), visits to food banks, unique individuals served, and adults served who were new immigrants (i.e., in Canada fewer than 10 years) (Windsor Essex Food Bank Association, 2018).

Food System and Health

The connection between the food system and population health is broad. Healthy eating behaviours play a critical role in promoting health and in preventing, managing, and treating various chronic diseases, including heart disease, diabetes, and some cancers. For example, Windsor-Essex County Health Unit data suggests that between 2000 and 2009, 1,924 cancer deaths in Windsor and Essex County could have been prevented by modifying risk factors or health behaviours, including healthy eating (Windsor-Essex County Health Unit, 2016b). Additionally, food contamination also poses health risks to the community.

Vegetable and Fruit Consumption

Vegetable and fruit consumption is used as a population indicator for healthy eating, as vegetable and fruit intake is associated with a lower risk for many health problems such as heart disease and cancer. This data is gathered by the Canadian Community Health Survey, which asks the number of times a person eats vegetables and fruit each day. Data gathered in 2013 and 2014 from Statistics Canada revealed that just over 1 in 3 (34.9%) residents in Windsor and Essex County consumed vegetables five or more times a day (Windsor-Essex County Health Unit, 2016). Spending patterns suggest that more money is spent on less healthy options than on vegetables and fruit.

Further data analysis has identified that certain population groups do not consume vegetables and fruit as frequently. Vegetable and fruit intake was lower among males compared with females. Vegetable and fruit intake was also lower among those who are single, separated, divorced, or widowed, compared with those who were married or common-law. Individuals from households with low education also tended to consume less vegetables and fruit, as was the case for individuals from households with low income (Windsor-Essex County Health Unit, 2016). Among adults 45-64 years old, the consumption of vegetables and fruit five or more times per day was 3.7-times lower for those from low-income households (14.8%) when compared to those from high income households (54.7%). Age did not appear to be a factor.

Sugar-Sweetened Beverage (SSB) Consumption

Excess consumption of added or free sugars is a contributing factor to chronic diseases including diabetes, cardiovascular disease, and tooth decay (Windsor-Essex County Health Unit, 2016). The consumption of sugar-sweetened beverages (SSBs) is used as a population indicator for healthy eating, because it is the main source of added sugar in the North American diet (Malik et al., 2010). Main SSBs include soda pop, fruit juice, sport and energy drinks, flavoured drinks, flavoured milk, and coffee and tea beverages.

The World Health Organization (2015) recommends that added or free sugars should not make up more than 10% daily energy intake. This translates to about 200 Calories for an adult, or about 12 teaspoons of sugar. Ideally, free sugars from the diet should not exceed 5% energy intake (World Health Organization, 2015).

Data on sugar-sweetened beverage consumption was collected by the Rapid Risk Factor Surveillance System in 2015, and surveyed respondents in Windsor and Essex County were asked about SSB consumption in the last seven days. Overall, more than 2 of 3 adults (68.7%) reported consuming SSBs on a regular basis, and over a quarter (28.7%) reported consuming SSBs daily. This was similar for males and females.

The consumption of SSBs was associated with age: residents between the ages of 25 and 44 reported a higher consumption of SSBs compared with older respondents (ages 65 and over). The most frequently consumed SSB was soda pop, followed by coffee, tea, or hot chocolate with added sugar (Windsor-Essex County Health Unit, 2016). It was also discovered that that over half (52.8%) of local residents did not know that sugar sweetened beverages were linked to overweight and obesity (Windsor-Essex County Health Unit, 2016b).

Foodborne Illness

Enteric disease refers to illness caused by bacteria, viruses or parasites, transmitted primarily through the consumption of contaminated food or water. The 2015 Infectious Disease Report by the Windsor-Essex County Health Unit provides the most up-to-date information regarding foodborne illness prevalence locally (Windsor-Essex County Health Unit, 2017b). In 2015, there were 219 cases of enteric illness in Windsor and Essex County, with increases noted in the rates of salmonellosis, cyclosporiasis and cryptosporidiosis. All three are typically associated with consumption of contaminated food products, among other routes for exposure.

Summary

Certain demographic features of Windsor and Essex County are relevant to the food system. An aging population stands to change the food needs and challenges that can be expected in the future. As well, the economic situation for residents of Windsor and Essex County may be leading to greater vulnerability in terms of food security. The number of lone parent families has continued to grow, with the bulk of these being female led. High school completion rates lag behind that of the province as well. Unemployment has been higher in Windsor and Essex County in recent years, although overall it is falling and more closely mirroring the rates for Ontario. Housing stress is a reality for more than one fifth of local households and homelessness persists for others.

Together, these factors contribute to local poverty rates. In 2015, 16.5% of residents in Windsor and Essex County were considered to have a low income (LIMAT), with females, lone parent families and the youngest members of the community particularly impacted. Low-income rates are highest in Windsor and Leamington, although poverty exists in all municipalities to some degree. As a result of poverty in the community, moderate or severe food insecurity is a reality for 1 in 10 households, 1 in 10 children and 1 in 4 low-income households. Food bank usage in Windsor and Essex County rose from 2017 to 2018, with seniors and recent immigrants among those increasingly using services.

Long term social determinants such as poverty have been linked to poor health outcomes. Addressing pervasive chronic disease risk factors (e.g., diet and physical activity) remains an important strategy for reducing chronic disease risk locally. Windsor and Essex County have challenges in these areas, notably for this report, consistently low vegetable and fruit consumption.

Section 4: Production

The following sections will provide an overview of local agriculture in Windsor and Essex County, feedback from community engagement and a summary of strengths, challenges, and opportunities for this region. Appendix F contains a summary of key agricultural statistics for this region for 2016 with comparisons to 2011.

The Dollars and Sense report on strengthening Ontario's food system is offered as important context for this section of the food system assessment and the food system as a whole (Kubursi et al., 2015). This report built on a body of work done in recent years to strengthen sustainable food systems across the country. The report's objectives were two-fold: to better understand the economic and environmental impacts of regional food systems; and to assess how increasing regional food production and distribution would affect the larger food system. It focused on Southern Ontario because of the significant food production in the region.

Ontario is a major net importer of food. The report concluded that Ontario was lacking regional economic development opportunities to enhance and support the production and distribution of local food. It estimated that more than half of Ontario's \$20 billion in imported food products could be produced in the province. Further, if local production were expanded to replace just ten percent of the top ten fruit and vegetable imports, the Ontario economy would gain close to quarter of a billion dollars in Gross Domestic Product (GDP) and 3,400 full-time jobs. The research also concluded that when more food is produced locally, energy use and pollution from transportation are reduced.

This report indicated that the potential for local food systems to build healthy economies, protect the environment, and strengthen social fabrics is far from being fulfilled. It also recommended investment in the development of regional food systems, and called for providing the supportive regulatory environment, infrastructure, and distribution networks required for these systems to flourish.

A number of important local assets related to production were identified by stakeholder groups (Table 24). The majority of these will be considered in this section. It should be noted that few financial assets were identified in this area as particularly lacking. Additional research would be helpful to identify potential financial assets of which stakeholders may be unaware.

The next sections consider food production in Windsor and Essex County in terms of the natural assets, agricultural products, grower characteristics, production practices, and the economic realities of agricultural production.

Table 24: Production Related Assets in Windsor and Essex County by Type and Number

Type of Asset	# of Assets	Identified Assets
Human	3	Greenhouse Growers Farmers Migrant Farm Workers
Physical	4	Greenhouse Growers Community Gardens School Gardens Locally Grown Produce
Natural	5	Climate Land/Soil Organic Grown -Grass fed meat/dairy Pollinators Water
Financial	0	
Social	5	Community Gardens School Gardens Agriculture Organizations Community Supported Agriculture Urban Farming/ Agriculture

Natural Assets

Windsor and Essex County have a number of natural assets that contribute heavily to agriculture and food production in the area. These include soil, climate, and land.

Soil and Climate

The local soil and climate are integral to food production in Windsor and Essex County. There are a variety of soil classification systems, the most common of which is the Soil Capability Class. Used by the Canada Land Inventory, there are seven classes ranging from class 1 lands, which have the highest capability, to class 7 lands, which have the lowest capability to support agricultural land use activities.

As noted in a recent agricultural lot size study sponsored by the County of Essex (Jones Consulting Group Ltd. & AgPlan Limited, 2017), this region has relatively high soil capability for the production of field crops with an average soil productivity index equal to soil capability class 2. Most of Essex County (excluding Windsor) has been identified as prime agricultural land (Figure 6). While there are some differences in the average soil capability/productivity index of the lower tier municipalities within Essex County (Figure 7), the range of difference is only 5% and all municipalities would be classed, on average, as being equivalent to soil capability class 2.

Figure 6: Soil Productivity Index for Essex County Municipalities (Excluding Windsor)

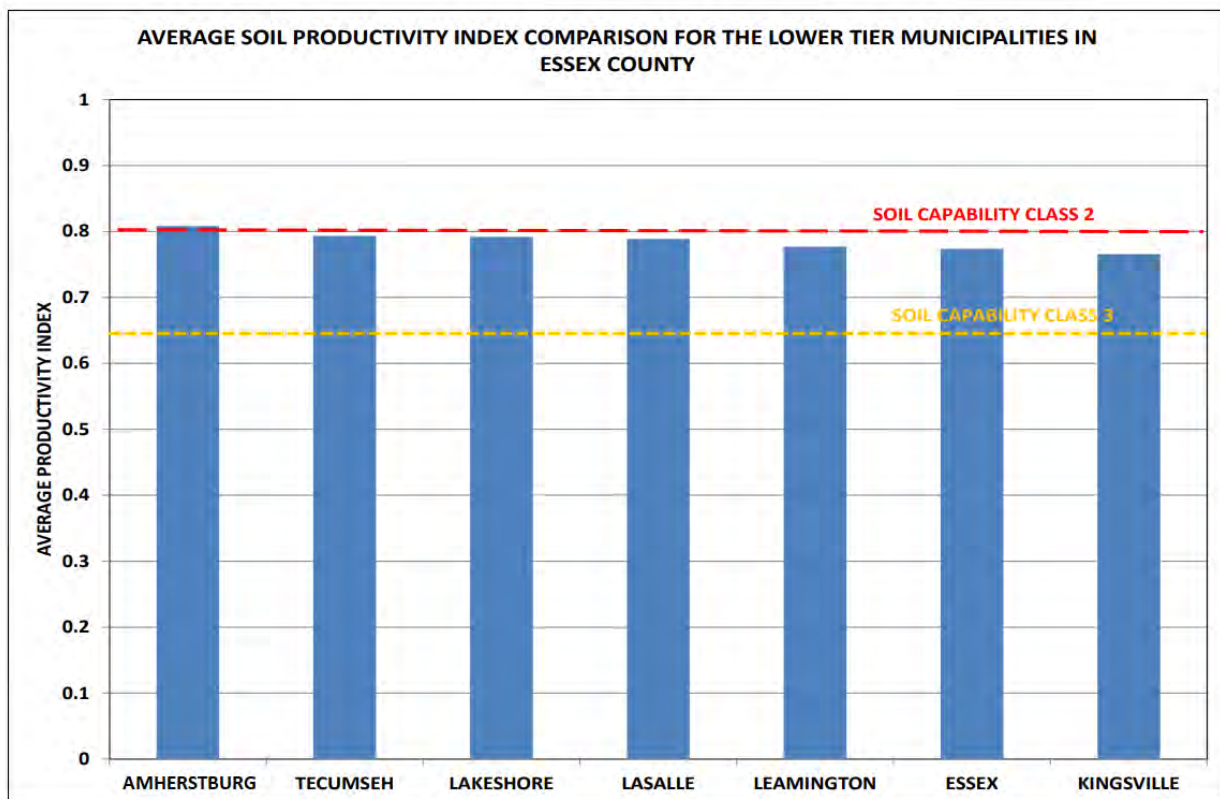







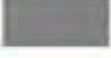







Figure 7: Essex County Soil Classification Map



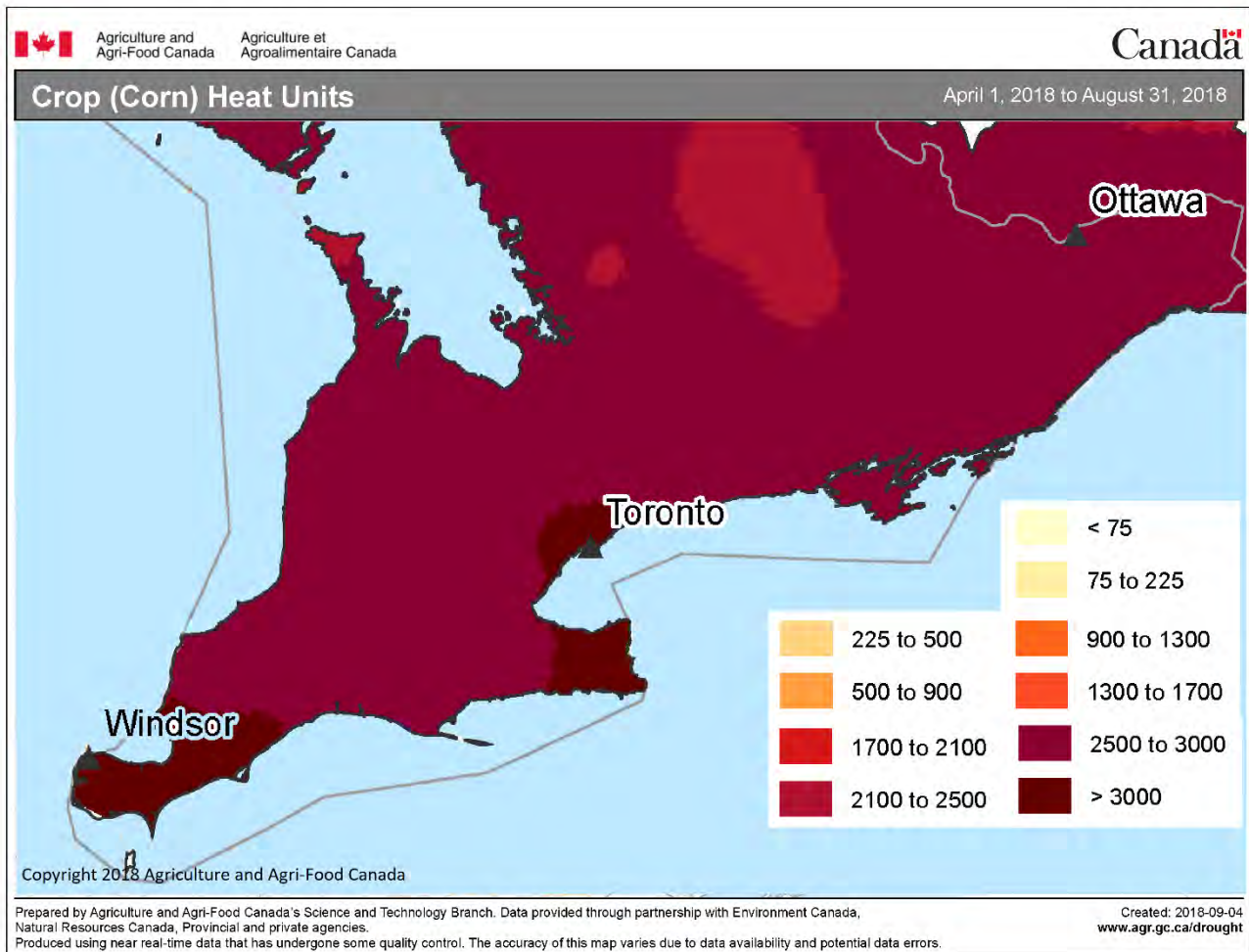
Legend

Soils CLI - Rating

	CLI1 = 1, , 100		CLI1 = 5, , 100
	CLI1 = 2, , 100		CLI1 = 6, CLI2 = 6, 50-50
	CLI1 = 2, CLI2 = 2, 50-		CLI1 = 7, , 100
	CLI1 = 2, CLI2 = 2, 60-		O, , 100
	CLI1 = 2, CLI2 = 3, 50-		W, , 100
	CLI1 = 3, , 100		Essex County
	CLI1 = 3, CLI2 = 2, 50-50		

Climate is also an important factor in production. Food producers have traditionally used Crop Heat Units (CHUs) to predict the potential growth of heat-loving agricultural crops, such as corn, canola, and soybean. However, CHUs have also been used as broad agroclimatic indicators as they have historically increased with temperature (Morand, et al., 2017). As shown in the crop heat map in Figure 8, the climate of Windsor and Essex County is one of the warmest in Ontario. This relative warmth drives plant growth, and reducing energy costs associated with greenhouse production. This, in large part, explains the prevalence of greenhouses in the region (Jones Consulting Group Ltd. & AgPlan Limited, 2017).

Figure 8: Distribution of Crop Heat Units in Southwestern Ontario



Experts agree that climate change is a threat to the planet impacting many facets of existence, not least of which is agricultural production. Indeed, the International Panel on Climate Change notes that climate change is already having impacts on agriculture (Intergovernmental Panel on Climate Change, 2018).

One particularly useful study of the southwestern Ontario area, including Windsor and Essex County, with regards to climate change is *The Ontario Climate and Agriculture Assessment Framework (OCAAF) Final Report* (Morand, et al., 2017). Published in June 2017, the report featured an assessment of corn production in southwestern Ontario and the application of climate change modeling. As noted by the authors, climate change creates both risks and opportunities for Ontario agriculture. Longer growing seasons may create opportunities, while extreme events like intensive and prolonged rain and drought may be damaging. The authors stated that managing for increased agricultural productivity and working to reduce risks under climate change will require careful consideration of changing weather and climate conditions, as well as key landscape and soil characteristics, crop suitability, farm management options, and policy and programme support. It should also be noted that the impacts of climate change on agriculture will not be the same everywhere, and impacts to productivity will vary by region. The implications of climate change for greenhouse growing in particular will be considered in the section on greenhouse production.

As seen in Tables 25 and 26, mean annual temperature in Southwestern Ontario is projected to rise by 3.3 degrees Celsius by 2050, while projected precipitation is expected to increase by 7.4 mm annually. Annual moisture availability, calculated by subtracting potential evaporation from precipitation, is projected to result in increasing moisture deficits. While some moisture deficit is expected in the summer months, authors stated that under climate change, the balance between incoming precipitation and outgoing potential evaporation will become more challenging (Figures 9 through 11). These changes are also expected to be accompanied by an earlier start to the growing season and a later end, resulting in an overall longer growing season.

Table 25: Projected Climate Changes for Southwestern Ontario from 1981 to 2050

	1981-2020	2020	2030	2040	2050	Change by 2050
Projected Change in Mean Annual Temperature (°C)	8.1	9.5	10.0	10.6	11.4	+3.3
Projected Change in Mean Annual Precipitation (in mm)	915	940	949	974	983	+7.4
Projected Annual Moisture Availability (Precipitation – Potential Evaporation) for: May	7.8	4.4	5.0	4.8	4.0	-3.8
Projected Annual Moisture Availability for: June	-36.0	-40.5	-44.0	-44.2	-50.8	-14.8
Projected Annual Moisture Availability for: July	-53.0	-62.5	-63.4	-68.5	-75.5	-22.5
Projected Annual Moisture Availability for: August	-38.8	-47.0	-51.5	-53.8	-57.1	-23.3

Table 26: Projected Changes to the Growing Season for Southwestern Ontario from 1981 to 2050

	1981-2020	2050
Start	May 12	May 7
End	Oct 30	Nov 18
Length	172 Days	196 Days

Figure 9: Southwestern Ontario Average Temperature by Month Historical and Projected

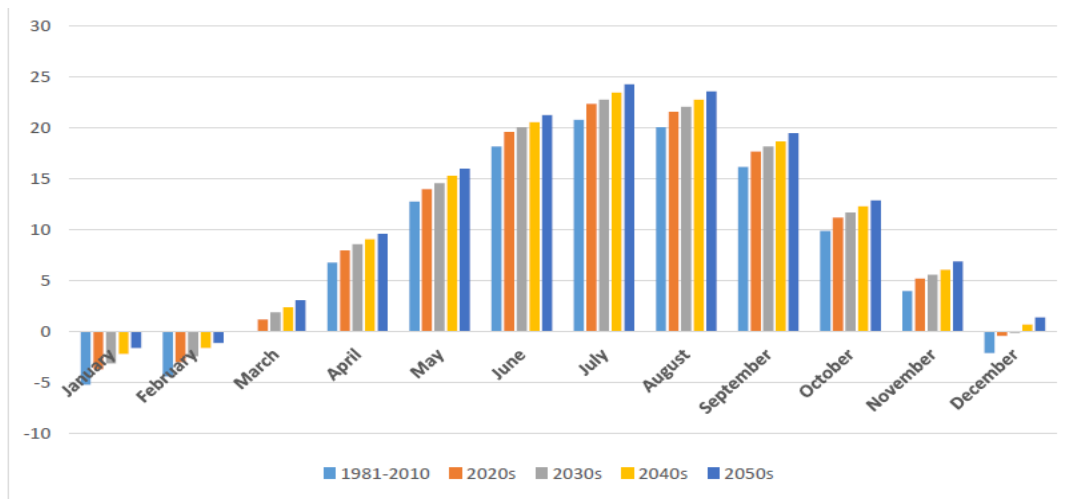


Figure 10: Southwestern Ontario Average Precipitation by Month (mm) Historical and Projected

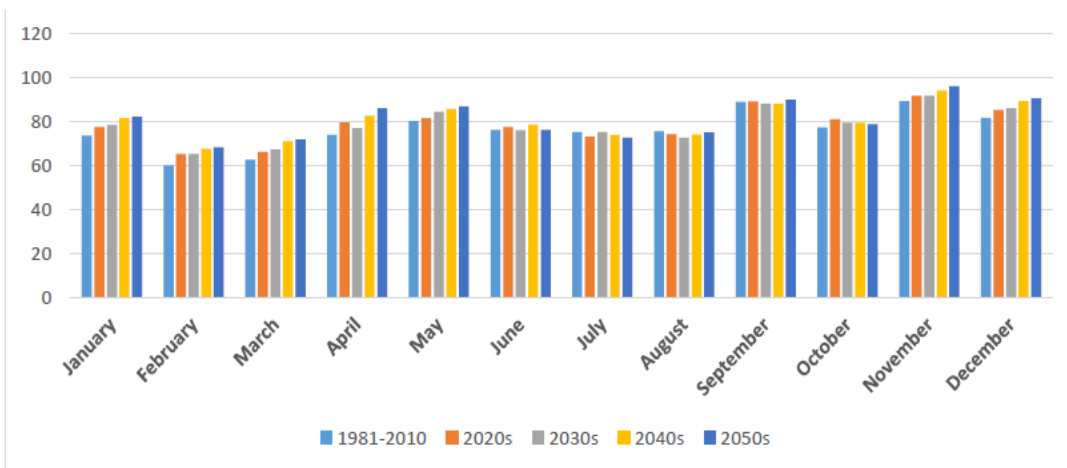
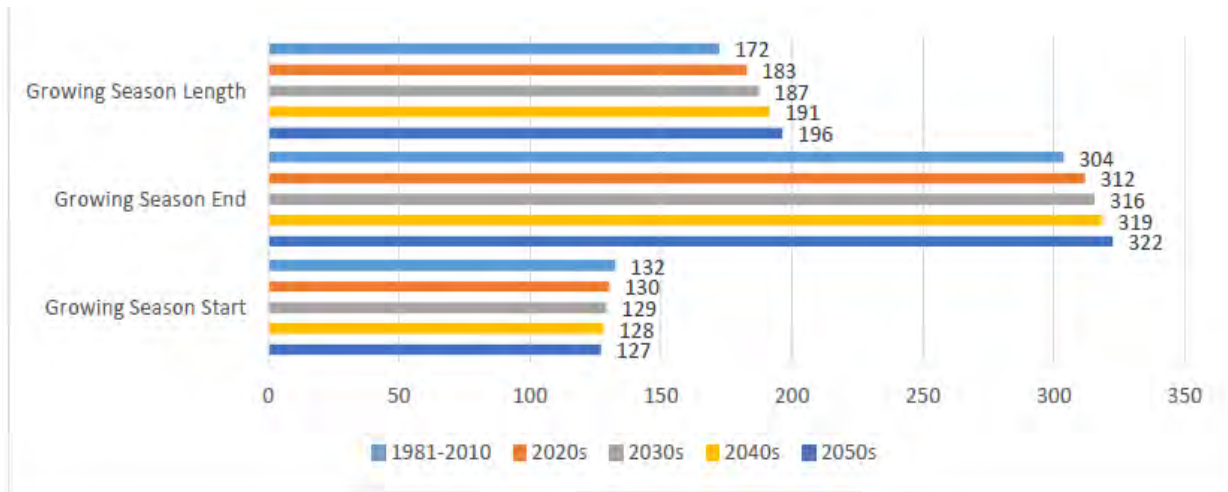


Figure 11: Southwestern Ontario Growing Season Start/End/Length Historically and Projected



Agricultural Land

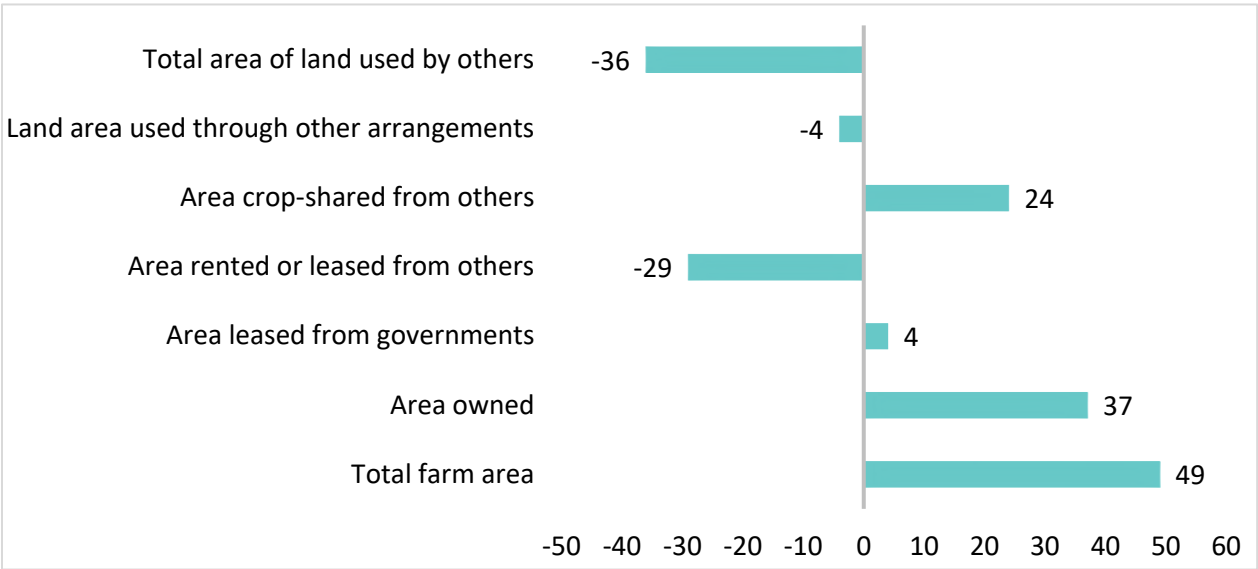
Land is another prime agricultural asset in Windsor and Essex County, and the availability and affordability of land is important to consider. With regards to the availability of local farmland, data provided by the Ontario Ministry of Agriculture, Food and Rural Affairs (Ontario Ministry of Agriculture, Food and Rural Affairs, 2018c) showed the change in total farm area and total farmland from 2006 to 2016 for Windsor and Essex County and various comparators (Table 27). *Total Farm Area* was drawn from the Census of Agriculture and represents the total land owned, used and/or controlled by active farmers. *Total Farmland* was taken from the Municipal Property Assessment Corporation (MPAC) and typically includes most or all total farm area as noted by the Census of Agriculture as well as land that which is not actively farmed but remains assessed for agricultural purposes. While the total farm area in Windsor and Essex County increased by 6.2% from 2006 to 2016, total farmland decreased by .82%. In Windsor and Essex County in 2016, total farmland was recorded at 350,218 acres by the Census of Agriculture compared to total farmland which was 343,117 acres according to MPAC. The reason for this discrepancy is that local farmers are currently using land for agricultural purposes which has not been zoned for agriculture (Ontario Ministry of Agriculture, Food and Rural Affairs, 2018c).

Table 27: Changes in Total Farm Area and Total Farmland for Windsor and Essex County and Comparators

	% Change 2011 to 2016 to Total Farm Area	% Change 2011 to 2016 to Total Farmland	% Change 2006 to 2016 to Total Farm Area	% Change 2006 to 2016 to Total Farmland
Windsor and Essex County	6.59	-0.48	6.20	-0.82
Chatham-Kent	8.00	0.09	6.61	-0.06
Southern Ontario	3.03	-0.15	0.23	-2.01
Ontario	-2.52	2.43	-7.23	1.57

Tenure of land refers to whether farmland is owned, leased, rented, crop-shared, used through other arrangements, or used by others.³ In examining changes in farm tenure from 2011 to 2016 (Figure 12), there was an increase in the number of farm areas reported as owned (+37), crop-shared (+24) and government leased (+4), and a decrease in the number of farms reported as used by others (-36), rented or leased from others (-29), and other arrangements (-4). In terms of owned farmland, the largest percentage of owned farm area by acreage was in Lakeshore (35%), followed by Kingsville (17%), and Leamington (16%) (Statistics Canada, 2017c).

Figure 12: Change in Land Tenure in Windsor and Essex County by Number of Farms from 2011 to 2016



In terms of the size, over half of farms in Windsor and Essex County (58%) in 2016 were between 10 and 129 acres (Table 28). The largest proportion (41%) were between 10 and 69 acres. From 2011 to 2016 the largest growth was for farms in the 10 to 69 acre range (+68) and the largest decrease for farms 70 to 129 acres (-21).

³ Total farm area is the difference between the sum of all land tenures minus 'Total area used by others.' The 'number of farms reporting' does not equal the sum of the parts because farms reporting more than one category (or activity) are only counted once.

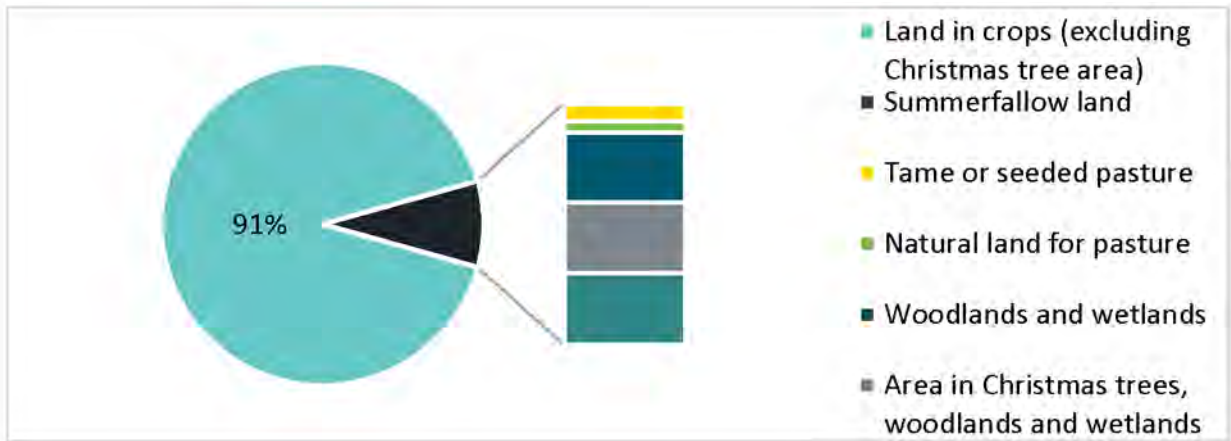
Table 28: Windsor and Essex County Farm Sizes 2011 and 2016

	2011	2016	Difference	Percentage in 2016
Total number of farms	1,581	1,630	49	100.0%
Farms under 10 acres	130	131	1	8.0%
Farms 10 to 69 acres	595	663	68	40.7%
Farms 70 to 129 acres	304	283	-21	17.4%
Farms 130 to 179 acres	115	114	-1	7.0%
Farms 180 to 239 acres	100	89	-11	5.5%
Farms 240 to 399 acres	130	129	-1	7.9%
Farms 400 to 559 acres	64	61	-3	3.7%
Farms 560 to 759 acres	39	52	13	3.2%
Farms 760 to 1,119 acres	50	56	6	3.4%
Farms 1,120 to 1,599 acres	27	20	-7	1.2%
Farms 1,600 to 2,239 acres	18	18	0	1.1%
Farms 2,240 to 2,879 acres	4	7	3	0.4%
Farms 2,880 to 3,519 acres	3	4	1	0.2%
Farms 3,520 acres and over	2	3	1	0.2%

Source: Statistics Canada, 2016 Census of Agriculture

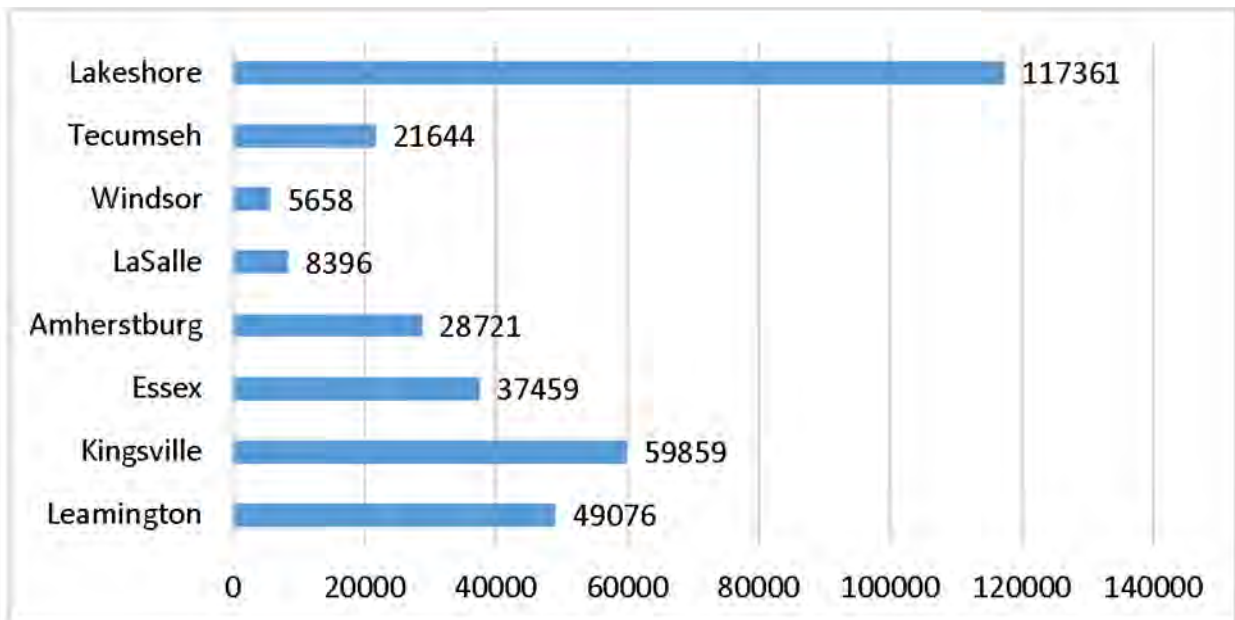
In 2011 there were 1,581 total farms in Windsor and Essex County representing 3.1% of all farms in Ontario. This figure increased to 1,630 in 2016, with Windsor and Essex County farms representing 3.29% of Ontario farms. Farmland in use increased by 21,836 acres from 2011, for a total of 359,223 acres of farmland in use in 2016. As shown in Figure 13, the majority of farmland in 2016 (91% or 328,174 acres) was used for crops (excluding Christmas trees). The remainder (9% or 31,049 acres) was kept as summer fallow land, tame or seeded pasture, natural land for pasture, woodlands and wetlands, used for Christmas tree, or other. This is consistent with land usage in 2011.

Figure 13 Use of Farmland in Essex County (2016)



As shown in Figure 14, land use for crops by acreage in 2016 was highest in Lakeshore (117,361) which was nearly double that of the next highest municipality, Kingsville (Statistics Canada, 2017c).

Figure 14 Acres of Land Used for Crops by Municipality (2016)

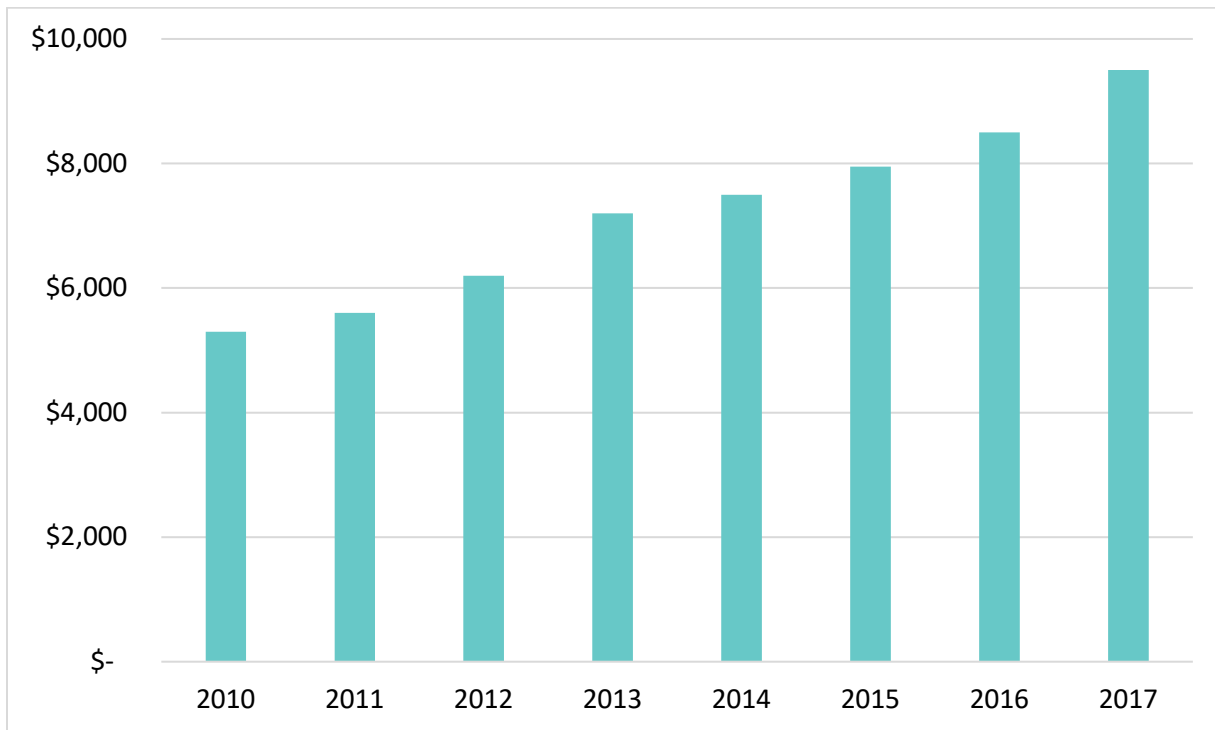


In looking at the cost of local farmland, one study of agricultural land values in Southwestern Ontario (Parker, 2017) cites a 9.76% average increase in land values from 2016 to 2017 (Table 29). Examining the percentage change in values from 2010 to 2017, the average increase for Windsor and Essex County was 8.69%, which is the smallest average increase of all counties in the southwest. Across the southwest, this report also cites a median value of \$12,710 per tillable acre in 2017. Median values for tillable land in Windsor and Essex County have risen consistently from 2010 to 2017 (see Figure 15), although relative to other counties, Windsor and Essex County remains less expensive with 2017 values lower than that of all other counties with the exception of Bruce and Grey. The median value for tillable land in Windsor and Essex County in 2017 was between \$9,000 and \$10,000 per acre.

Table 29: Change in Value of Tillable Acres for Counties in Southwestern Ontario from 2010 to 2017

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	Average
Windsor and Essex County	2.37%	13.61%	18.44%	3.67%	3.44%	6.71%	12.57%	8.69%
Huron	23.88%	36.89%	20.24%	-9.47%	1.54%	8.33%	3.57%	12.14%
Perth	8.72%	34.38%	17.50%	8.05%	4.55%	-2.80%	6.94%	11.05%
Oxford	7.81%	19.07%	25.64%	5.58%	6.12%	5.60%	7.41%	11.03%
Middlesex	41.80%	24.25%	5.82%	7.65%	4.58%	9.41%	7.78%	14.47%
Elgin	37.65%	15.38%	29.01%	8.79%	5.31%	3.44%	12.86%	16.06%
Lambton	4.34%	69.19%	36.80%	-10.71%	3.98%	-0.88%	17.64%	17.19%
Kent	23.44%	14.06%	26.75%	8.0%	-5.70%	2.28%	2.46%	10.19%
Bruce	43.9%	29.52%	39.30%	-2.34%	1.72%	12.55%	2.20%	18.12%
Grey	1.62%	50.29%	-6.99%	16.71%	23.59%	-0.56%	15.86%	14.36%
Wellington	20.08%	20.21%	16.86%	-2.97%	14.10%	2.42%	18.04%	12.68%
Average	19.60%	29.71%	20.85%	2.99%	5.75%	4.23%	9.76%	13.27%

Figure 15: Median Land Values for Windsor and Essex County from 2010 to 2017



Additional self-report data obtained from a voluntary survey of Ontario farmers in 2017 (Deaton, 2018) provided the following information regarding farmland values and rental costs in Windsor and Essex County:

- Median estimated rental cost per tillable acre: \$200
- Median estimated purchase price per tillable acre: \$9000
- Percentage of farmland purchases made by farmers in the past 12 months: 75%

The purchase price figure is consistent with what has been previously noted. The latter figure suggests that approximately 25% of local farmland may not have been purchased by farmers.

Protection of farmland remains a concern. The 2005 *Environmental Attitudes Survey* (DPRA Canada, 2005) that informed the *City of Windsor's Environmental Master Plan* found that 14.9% of approximately 500 households surveyed in Windsor felt that preserving ecosystems/farmlands was a priority. The County of Essex Official Plan spoke to the protection of prime agricultural areas. Further, a recent lot size study commissioned by the County of Essex (Jones Consulting Group Ltd. & AgPlan Limited, 2017) has recommended that the minimum agricultural lot size of 40 hectares (100 acres) be utilized for the County Official plan. They cited a number of reasons for this, including protecting the limited number of larger lot sizes in Essex County; fewer than 7% of lots are 40 hectares or greater. The City of Windsor Brownfield Redevelopment Strategy (City of Windsor, 2010) also offers the possibility of protecting local farmland. Efficiently using redeveloped Brownfield sites for new development can reduce the risk of urban sprawl into prime agricultural areas. The potential loss of green field lands has also

become a point of debate in the ongoing battle regarding the location of the region’s mega hospital.

Agricultural Products

Windsor and Essex County farmers grow and produce a wide variety of products. The following section provides an overview of these products, including consideration of how production may shift over time.

Farm Types

Farm-type data for the 2016 Census of Agriculture was derived using the North American Industry Classification System (NAICS) 2012. In examining data on farm type, the largest number of farms (1,106 or 68%) in 2016 in Windsor and Essex County were oilseed and grain farms. The number of such farms grew by 75 from 2011 to 2016. There was also an increase in farms involved in other animal production from 2011, although these only represented 6% of all farms in 2016. Conversely, there was a notable decrease in the number of farms reporting fruit and tree nut farming (-20) and greenhouse, nursery, and floriculture production (-21). However, even with this decrease, greenhouse, nursery, and floriculture production still represented the second largest group of farms in 2016 at 186, or 11% of all farms in Windsor and Essex County (Table 30).

Table 30: Farms by Type in Windsor and Essex County for 2011 and 2016

	2011	2016	Difference 2011-2016	% of All Farms in 2016
Oilseed and grain farming	1,031	1,106	75	68%
Other animal production	84	95	11	6%
Cattle ranching and farming	24	30	6	2%
Other crop farming	47	49	2	3%
Sheep and goat farming	9	10	1	1%
Hog and pig farming	7	6	-1	0%
Poultry and egg production	14	13	-1	1%
Vegetable and melon farming	88	85	-3	5%
Fruit and tree nut farming	70	50	-20	3%
Greenhouse, nursery, floriculture production	207	186	-21	11%

Source: Statistics Canada, 2016 Census of Agriculture

Gains in oilseed and grain farming were mainly due to growth in soybean and corn farming. Growth in other animal production was due to increases in apiculture and horse and equine production. The decrease in greenhouse, nursery and floriculture production was mainly due to a drop in floriculture, nursery, and tree nut production and other crops grown under cover (Table 31).

Table 31: Sources of Change in Farm Types in Windsor and Essex County from 2011 to 2016

	2011	2016	Change 2011-2016
Oilseed and grain farming	1031	1106	75
Soybean farming	628	667	39
Oilseed (except soybean) farming	1	1	0
Dry pea and bean farming	1	3	2
Wheat farming	108	108	0
Corn farming	115	158	43
Other grain farming	178	169	-9
Greenhouse, nursery, floriculture production	207	186	-21
Mushroom production	3	2	-1
Other food crops grown under cover	139	133	-6
Nursery and tree production	34	27	-7
Floriculture production	31	24	-7
Other animal production	84	95	11
Apiculture	6	13	7
Horse and other equine production	63	70	7
Fur-bearing animal and rabbit production	2	0	-2
Animal combination farming	12	10	-2
All other miscellaneous animal production	1	2	1

Source: Statistics Canada, 2016 Census of Agriculture

Production Breakdowns

The next sets of tables, unless otherwise indicated, were obtained from the Ontario Ministry of Agriculture, Food and Rural Affairs, and represent a synopsis of food production in Windsor and Essex County in 2016. The percentage of provincial production and changes from the 2011 Census of Agriculture are also provided (Ontario Ministry of Agriculture, Food and Rural Affairs, 2018a).

As previously noted, oilseed and grain farming were the largest industry groups in Windsor and Essex County by number of farms (Table 32), followed by greenhouse, nursery and floriculture. Windsor and Essex County oilseed and grain farming accounted for 6.6% of the provincial total, while greenhouse, nursery and floriculture in Windsor and Essex County accounted for 9.1% of provincial totals. Since 2011, there was a 90% increase in beef cattle ranching and farming in Windsor and Essex County, while dairy cattle and milk production, and fruit and tree nut farming decreased.

Table 32: Windsor and Essex County Farms by Industry Group, 2016

Farms by Industry Group, 2016 Census (number of farms)	Windsor and Essex County	Ontario	Percent of Province	Percent from 2011
Beef cattle ranching and farming	21	6,786	0.3%	90.91
Dairy cattle and milk production	9	3,439	0.3%	-30.77
Hog and pig farming	6	1,229	0.5%	-14.29
Poultry and egg production	13	1,816	0.7%	-7.14
Sheep and goat farming	10	1,097	0.9%	11.11
Other animal production	95	5,902	1.6%	13.10
Oilseed and grain farming	1,106	16,876	6.6%	7.27
Vegetable and melon farming	85	1,856	4.6%	-3.41
Fruit and tree nut farming	50	1,362	3.7%	-28.57
Greenhouse, nursery and floriculture	186	2,050	9.1%	-10.14
Other crop farming	49	7,187	0.7%	4.26

Locally, soybean was the major field crop in acreage, accounting for 6.6% of the provincial share (see Table 33). Corn for grain and winter wheat were the next highest in terms of acreage for Windsor and Essex County, although winter wheat acreage decreased from 2011. Acreage devoted to corn for silage and hay also dropped from 2011, while the acreage afforded to oats for grain increased notably.

Table 33: Major Field Crops in Windsor and Essex County, 2016

Major Field Crops, 2016 Census (acres)	Windsor and Essex County	Ontario	Percent of Province	Percent from 2011
Winter wheat	56,829	1,080,378	5.3%	-15.44
Oats for grain	461	82,206	0.6%	179.39
Barley for grain	37	103,717	0.0%	12.12
Mixed grains	0	92,837	0.0%	-
Corn for grain	61,973	2,162,004	2.9%	16.22
Corn for silage	1,398	295,660	0.5%	-10.50
Hay	5,370	1,721,214	0.3%	-18.17
Soybeans	182,926	2,783,443	6.6%	13.95
Potatoes	1,697	34,685	4.9%	2.48

Apples and grapes remained the largest fruit crops by acreage in Windsor and Essex County in 2016 (Table 34), accounting for 7.4% and 5.7% of provincial totals respectively. Peaches, strawberries, and raspberries were also produced. Grape production by acreage dropped somewhat from 2011, although the percentage decrease in acreage for peaches and strawberries was larger.

Table 34: Major Fruit Crops in Windsor and Essex County, 2016

Major Fruit Crops, 2016 Census (acres)	Windsor and Essex County	Ontario	Percent of Province	Percent from 2011
Total fruit crops	x	51,192	-	-
Apples	1,182	15,893	7.4%	-13.72
Sour Cherries	x	2,121	-	-
Peaches	157	5,232	3.0%	-40.30
Grapes	1,068	18,718	5.7%	-10.03
Strawberries	31	2,915	1.1%	-40.38
Raspberries	13	680	1.9%	-13.33

x indicates data is unavailable

Major vegetable crops by acreage in 2016 for Windsor and Essex County were field tomatoes, sweet corn, green peas, and green or wax beans. Field tomato production in Windsor and Essex County accounted for more than one quarter of the provincial total. From 2011 to 2016 green pea production increased dramatically, while sweet corn decreased (Table 35).

Table 35: Major Vegetable Crops in Windsor and Essex County, 2016

Major Vegetable Crops, 2016 Census (acres)	Windsor and Essex County	Ontario	Percent of Province	Percent from 2011
Total vegetables	8,582	135,420	6.3%	-1.06
Sweet corn	1,192	22,910	5.2%	-23.34
Tomatoes	4,154	15,744	26.4%	-9.97
Green peas	703	16,268	4.3%	23.333
Green or wax beans	686	9,732	7.0%	12.09

In terms of livestock, pigs, cattle and calves, dairy cows, and sheep and lamb had the largest numbers in terms of production in Windsor and Essex County in 2016, although they represent a relatively small proportion of the provincial total. Number of steers increased from 2011 to 2016, while sheep and lambs, and pigs decreased (Table 36).

Table 36: Livestock Inventories for Windsor and Essex County, 2016

Livestock Inventories, 2016 Census (number)	Windsor and Essex County	Ontario	Percent of Province	Percent from 2011
Total cattle and calves	4,092	1,623,710	0.3%	-14.89
Steers	455	305,514	0.1%	65.45
Beef cows	475	236,253	0.2%	-7.95
Dairy cows	1,067	311,960	0.3%	-16.25
Total pigs	7,772	3,534,104	0.2%	-40.14
Total sheep and lambs	1,359	321,495	0.4%	-62.96

Windsor and Essex County also produced more than 137,000 turkeys, hens, and chickens in 2016, although these represent a small portion of the provincial total. From 2011, hen and chicken numbers dropped (Table 37). No turkeys were recorded in the 2011 Census for Windsor and Essex County.

Table 37: Poultry Inventories for Windsor and Essex County, 2016

Poultry Inventories, 2016 Census (number)	Windsor and Essex County	Ontario	Percent of Province	Percent from 2011
Total hens and chickens	65,582	50,759,994	0.1%	-73.18
Total turkeys	72,111	3,772,146	1.9%	-

Finally, given the interest in organic foods, a total of 17 farms in 2016 reported having organic products for sale (1% of all local farms). The majority reported certified organic products for sale (94%) while a smaller proportion reported having transitional organic products (12%).

Farm Operators

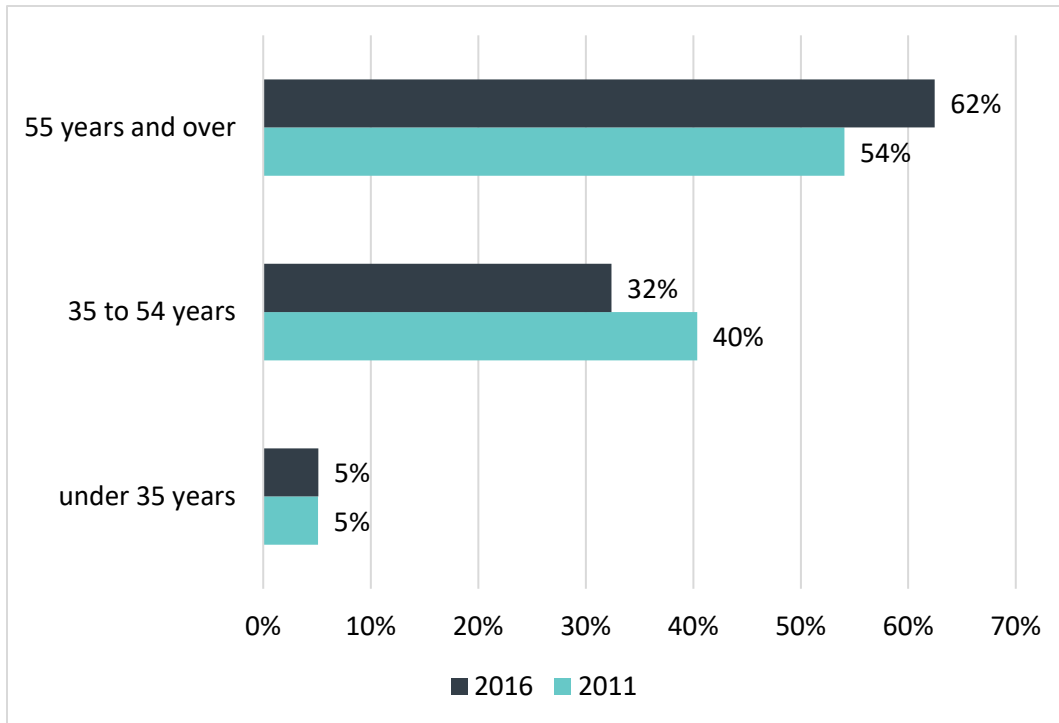
As previously noted, there were 1,630 farms in Windsor and Essex County in 2016, an increase of 49 farms from 2011 figures. At the same time, the number of operators decreased by 10 from 2011 (2,155) to 2016 (2,145) with an average of 1.3 operators per farm in 2016. Farms in Essex County represented 3% of all farms in Ontario and 10% of all farms in Southern Ontario. The following section will explore some of the characteristics of farm operators and workers in Windsor and Essex County, including the challenges they face in the industry.

Producers

Relative to the population, farming continued to be a male dominated profession. In 2016, only 24% of operators on all farms in Windsor and Essex County were female (n=520), with women somewhat better represented on farms with two or more operators (38%). From 2011 to 2016, the percentage of female operators in Windsor and Essex County increased overall by 2% (n=450), with an increase of 4% (n=40) on farms with only one operator. Trends in Windsor and Essex County mirror those of Chatham-Kent, Southern Ontario, and the province as a whole (Statistics Canada, 2017c).

In relation to age, farm operators 55 years and over made up 62% of operators on all farms in Windsor and Essex County in 2016 (n=1,340), a figure up 8% from 2011 (Figure 16). This greater percentage of operators 55 years and over in 2016 is consistent with figures for Chatham-Kent, Southern Ontario, and the province as a whole. However, this proportion is greater in Windsor and Essex County and Chatham-Kent Counties (62%) than in Southern Ontario (57%) and Ontario as a whole (55%), a finding supported by a younger average age of operators in Ontario (55.3 years) compared with Windsor and Essex County (57.9 years). The proportion of older operators was even higher for farms with one operator (66%) in Windsor and Essex County in 2016. At the same time, the proportion of all operators under 35 was constant at 5% from 2011 to 2016 locally and across all types of farm operations. The proportion of all operators 33 to 54 years of age declined from 40% to 32% in 2016 in Windsor and Essex County. Succession plans were reported by 203 farms locally in 2016, with family members accounting for 96% of successors, for the most part sole successors (Statistics Canada, 2017c).

Figure 16: Percentage of All Farm Operators in Windsor and Essex County by Age Group in 2016



Migrant Workers

Among those also employed in agriculture in Windsor and Essex County are a sizeable number of international farm workers and local farmers rely heavily on their support. Many of these farm workers leave their families for months at a time, living and working in local communities to support their families at home. Workers come from many places including Mexico, Jamaica, Honduras, Thailand, and Guatemala (Windsor Essex Local Immigration Partnership, 2018).

According to the Windsor Essex Local Immigration Partnership (WELIP), migrant workers typically come to the community under two government programmes: the Seasonal Agriculture Worker Program and the Low Skills Worker Program (Windsor Essex Local Immigration Partnership, 2010). Approximately 5,000 workers were coming through the Seasonal Agriculture Worker Program annually in 2010. However, workers can also be hired outside those programmes, for example through the Temporary Foreign Worker Program, making precise figures on the actual number of workers difficult to obtain.

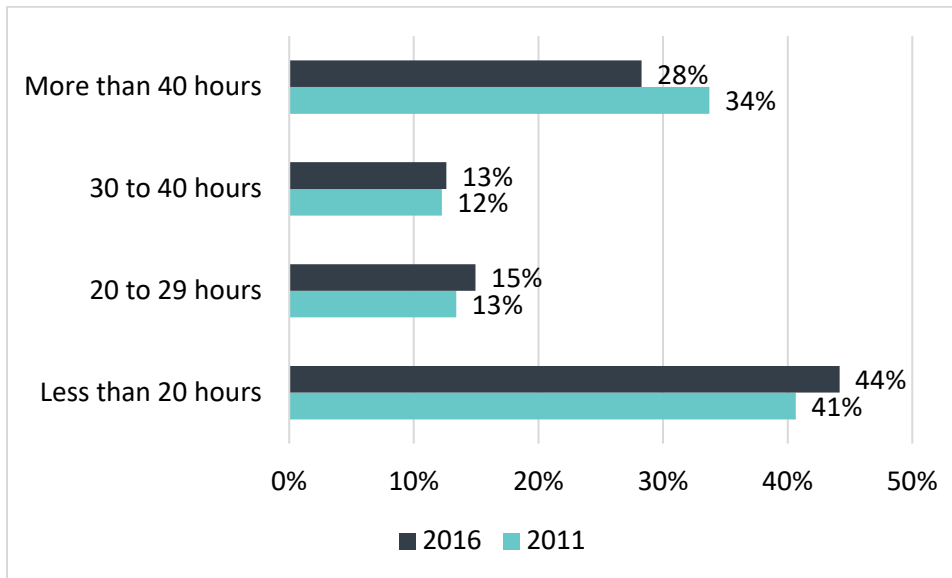
There has been a growing concern over challenges faced by migrant workers. These include both challenges related to their rights and working conditions, as well as integration with the local community. One national evaluation of migrant worker rights in Canada estimated that approximately 21,195 agricultural workers received work permits in Ontario in 2017 (Canadian Council for Refugees, 2018). The report identified a number of challenges facing these workers, including their exclusion under the Ontario Employment Standards, specifically with regards to provisions on overtime pay, maximum work hours per day, and the right to unionize and collectively bargain. They are also excluded from minimum wage provisions. While access to healthcare is available for workers in the Seasonal Agriculture Workers Program, many are unaware and may not seek treatment or pay out of pocket. Recent changes to WSIB in 2018, however, are poised to better assist migrant agricultural workers with a work-related injury or illness.

In terms of integration with the local community, the Migrant Worker Community Program (Migrant Worker Community Program, 2019) in Leamington is a registered charity that offers social, cultural, and recreational opportunities for migrant workers and helps to build cultural bridges between workers and host communities in Leamington, Kingsville, and the surrounding areas. As noted by the programme coordinator, workers can struggle with the need for health and service information in their own languages, interpretation services, transportation, and access to internet-connected computers. In many ways, migrant farm workers face the same barriers and challenges as do New Canadians. Recently, WELIP has partnered with the Ontario Greenhouse Vegetables Growers (OGVG) for the Building a Stronger, More Connected Kingsville-Leamington initiative aimed at fostering inclusion and integration between resident and non-resident communities in rural locations (Windsor Essex Local Immigration Partnership, 2018).

Hours of Work and Supplemental Income

In terms of the average number of hours per week worked on the farm, over half of all operators reported working fewer than 20 hours a week (44%) or more than 40 hours per week (28%) in Windsor and Essex County in 2016 (Figure 17). This is consistent across Southern Ontario and the province suggesting that farming is either part-time or full-time work, while middle ground is lacking. From 2011 to 2016, the number of operators working more than 40 hours a week in Windsor and Essex County decreased by 6%, representing 125 operators (Statistics Canada, 2017c).

Figure 17: Percentage of Operators Working on the Farm by Hours per Week in Essex County, 2011 and 2016



When operators were asked about the amount of paid non-farm work done weekly, more than half (57%) reported doing no paid non-farm work, a figure consistent from 2011 to 2016 for operators in the Windsor and Essex County area. The remaining 43% reported paid non-farm work, with approximately one fifth (19.8%) reporting doing more than 40 hours of paid non-farm work per week in 2016. These figures are similar for Chatham-Kent, Southern Ontario and the province (Source: Statistics Canada, 2016 Census of Agriculture). The need to supplement farm income, either through an off-farm job or through the creation of an agriculturally related farm business, is common. In fact, more than 80% of Ontario farms from 2005 to 2011 had off-farm income that exceeded net farm income (Jones Consulting Group Ltd. & AgPlan Limited, 2017).

Farm Practices and Operations

The day-to-day operations associated with farming and food production have become more complicated, particularly as technological innovation and large scale farming have become more common. Increases in regulations and controls over agricultural production, while important, have also increased the complexity of farming. The following section considers local farming practices and the use of technology, along with consideration of greenhouse production as a specific type of local food production.

Farm Practices

As noted, farm practice is complex, in part by legislation and regulation. Any farm practice involving the management of water, nutrients, land use, construction, or other environmentally-related activity implies legal obligations for those undertaking that farm practice. To illustrate, a factsheet published by the Ministry of Agriculture, Food and Rural Affairs (2012) summarized 64 pieces of legislation relevant to farming practice.

The Census of Agriculture provides a range of information on farm practices in Windsor and Essex County, including data related to tillage, land inputs, manure use, forms of weed control, and irrigation. While a comprehensive review of all practices is beyond the scope of this report, Table 38 provides figures on land inputs in Windsor and Essex County in 2011 and 2016. The most common land inputs were herbicides and commercial fertilizers in 2011 and 2016. The use of insecticides rose from 2011 to 2016, as did the use of fungicides.

Table 38: Agricultural Land Inputs for Windsor and Essex County in the Year Prior to the Census as a Proportion of Farms Reporting

Land Inputs	2011	2016
Herbicides	68%	68%
Insecticides	17%	25%
Fungicides	16%	21%
Commercial fertilizer	69%	65%
Lime	12%	12%
Trace minerals and nutrients	-	15%

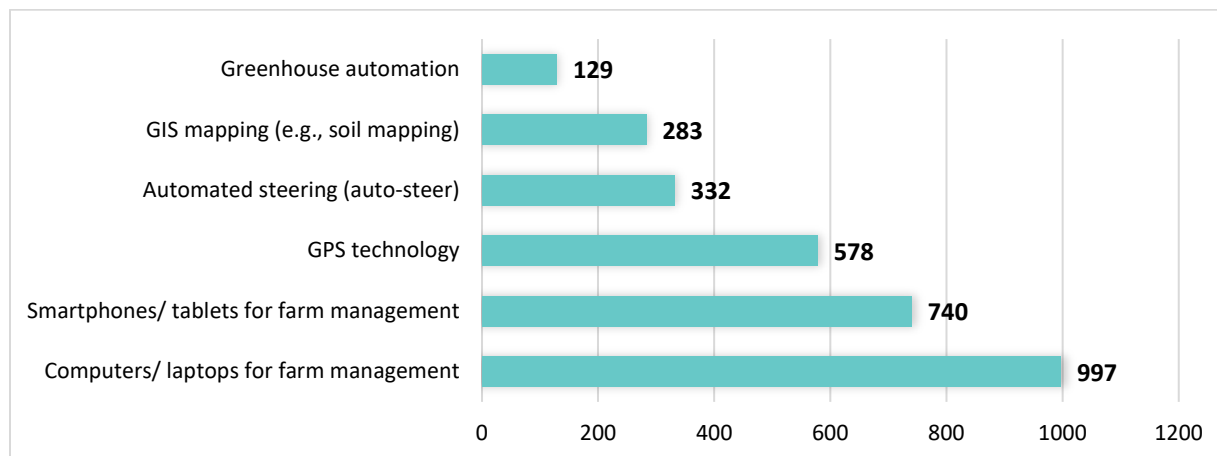
Source: Statistics Canada, 2016 Census of Agriculture

Use of Technology

Farm operations increasingly involve technology. One technology seen on farms in Windsor and Essex County are renewable energy producing systems. In 2016, 252 farms (15% of all farms) in Windsor and Essex County reported using some form of renewable energy. Of the farms reporting use of renewable energy, solar panels were used by 195 (77%) farms and wind turbines by 81 (32%) farms, representing 12% and 5% of all farms in Windsor and Essex County respectively. A greater percentage of wind turbine use was reported in Chatham-Kent (44%). In general, wind turbines were much more common in Windsor and Essex County and Chatham-Kent Counties as compared to Ontario as a whole (18%). Conversely, Ontario farms reported a greater percentage of solar panel use (86%).

Other technologies are commonly used by farms in Windsor and Essex County, including computers and laptops, smartphones or tablets, and GPS technology (Figure 18). Also reported but not appearing on Figure 18 are other technologies including automated animal feeding and automated environmental controls for animal housing (Statistics Canada, 2017c).

Figure 18: Commonly Reported Farm Technology Used in Essex County in 2016



Greenhouse Production

Windsor and Essex County are home to a thriving greenhouse industry. A warm climate which helps to reduce the energy costs required for greenhouse growing is one reason for the abundance of local greenhouses. Furthermore, some researchers have predicted that increased use of greenhouses for food production is likely, due to the capacity for greenhouses to protect crops from drought and storm that may become a reality of climate change (Kainer & Sefton MacDowell, 2013). At the same time, severe weather events continue to pose risks for greenhouse growing due to the increased sensitivity of greenhouse products to sudden shifts in temperature, structural damage incurred during weather events, and increased insurance costs. Water usage in the greenhouse industry creates potential challenges where climate change is concerned as well. Ultimately, issues including food security, climate change, water scarcity, and energy security will drive greenhouse producers to improve management and technologies to maximize resources (Dias et al., 2016).

Windsor and Essex County have 11% of Ontario’s greenhouses, accounting for 53% of the total square footage across the province. From 2011 to 2016, the number of farms reporting greenhouse areas in Windsor and Essex County dropped by 12 from 182 to 170. However, in the same period, the square footage devoted to greenhouse uses rose by 17,736,168 square feet. This was largely due to an increase in the square footage devoted to greenhouse vegetable production in Windsor and Essex County, which accounted for 82% of farms reporting greenhouse use and 96% of square footage devoted to greenhouse production in 2016 (Table 39).

The majority of farms reporting greenhouse use in 2016 were found in Leamington (55%) and Kingsville (35%). Leamington and Kingsville share a somewhat even proportion of greenhouse flower farming (31% and 24%), while Leamington enjoys a greater share of greenhouse vegetable production (60% versus 37% for Kingsville) (Statistics Canada, 2017c).

Table 39: Greenhouse Products for Windsor and Essex County, 2016

	Number of farms	% Farms	Square feet	% Square Feet
Total greenhouse area in use on census day	170	100%	84,114,866	100%
Greenhouse flowers	29	17%	2,457,712	3%
Greenhouse vegetables	139	82%	80,730,545	96%
Other greenhouse products	13	8%	926,609	1%

Source: Statistics Canada, 2016 Census of Agriculture

Note: total numbers and percentages do not add up to 100% as participants could select more than one response

Greenhouse production in Windsor and Essex County also now includes cannabis. However, since legalization came after the 2016 Census of Agriculture, less is known about the amount that is produced locally. However, a business in Leamington is one of over 30 Licensed Producers legally allowed to cultivate and sell cannabis under Health Canada's Marijuana for Medical Purposes Regulations (MMPR). As reported by the WindsorEssex Economic Development Corporation (WindsorEssex Economic Development Corporation, 2019), this grower has approximately 45,000 sq. ft. of greenhouse space and grows approximately 2,700 kilos of cannabis annually. As of August 15, 2018, there were 115 licensed producers in Canada, more than half of which (62) are located in Ontario. All of those with cultivation and sales licenses will also be approved to grow and supply the recreational market and are expected to generate billions in annual sales in Canada (Schmidt, 2018). By 2024, Health Canada projects that the medical cannabis market in Canada will reach \$1.3 billion. Public Health Ontario indicated that as of April 2018 no studies on health effects associated with exposure to cannabis odours were available in scientific or grey literature (Public Health Ontario, 2018).

Research and innovation continues to develop in greenhouse operations. Locally, the Harrow Research Station is engaged in research focused on sustainable year-round greenhouse crop production using supplemental lighting and automation technologies (Agriculture and Agri-Food Canada, 2017). As part of the Arrell Food Summit held in Guelph and Toronto in May of 2018, participants explored the development and use of robotics and digital technologies in managing plant growth, harvesting, and marketing in the hothouse industry. A wide variety of issues and opportunities for the greenhouse industry were noted, including big data, blockchain technologies, robotics, and automation (Van Duren, Hansen Sterne & Moussa, 2018).

Agriculture and the Economy

Agricultural production contributes significantly to the local economy. The following section considers the business realities in local farming and the broader economic impacts of production for Windsor and Essex County.

The Business of Local Agriculture

Farming is a complex business enterprise, and this report will briefly investigate the financial data associated with farm operations. While a nuanced look at the budgetary details of farm operation is beyond the scope of this report, a general sense of incoming and outgoing costs, as well as capital assets will be considered.

Farm capital represents the value of capital used in the production of agricultural commodities, regardless of whether the capital is owned or leased. Like most capital assets, these are also subject to depreciation. In looking at farms by total farm capital in Windsor and Essex County in 2016, just over one quarter (27%) of farms reported capital totaling \$500,000 to \$999,999. One fifth of all farms in 2016 reported capital of \$3,500,000 and over. In Chatham-Kent, Southern Ontario and Ontario, almost 50% of all farms fell into these two capital ranges, although in comparing Windsor and Essex County and Chatham-Kent Counties, proportions were reversed with 19% of farms in the lower range and 27% in the higher range in Chatham-Kent. From 2011 to 2016, Windsor and Essex County saw an increase of 116 farms at the highest capital levels, and a corresponding decrease of 115 farms in the \$100,000 to \$499,999 range. Table 40 provides information on farm capital by type of capital for Windsor and Essex County farms in 2016. Common capital costs included land and buildings and farm machinery and equipment.

Table 40: Farm Capital by Type for Windsor and Essex County Farms in 2016

	% of All Farms	Market Value in \$	Average \$/Farm*
Total Farm Capital	100%	\$4,895,656,030	\$3,003,470
Total Land and Buildings	100%	\$4,521,722,869	\$2,774,063
Land and buildings, owned	96%	\$3,323,159,214	\$2,123,424
Land and buildings, rented or leased from others	38%	\$1,198,563,655	\$1,923,858
Total All Farm Machinery and Equipment	100%	\$361,044,323	\$221,500
Total tractors	91%	\$135,949,123	\$24,169
Pick-ups, cargo vans, cars and other passenger vehicles used in the farm business	81%	\$39,927,503	\$18,597
Grain combines and swathers	31%	\$46,258,823	\$83,349
Forage harvesters, balers, mower-conditioners, etc.	13%	\$4,694,672	\$10,817
Tillage, cultivation, seeding and planting equipment	55%	\$53,841,789	\$59,891
Irrigation equipment	10%	\$7,919,730	\$51,095
All other farm machinery and equipment	64%	\$65,777,979	\$63,370
Total Livestock and Poultry	19%	\$12,888,838	\$42,120

*Average is calculated per farm reporting having that type of capital and is not an average of all farms.

Source: Statistics Canada, 2016 Census of Agriculture

A quick examination of average market value in dollars of farm capital for farms across the region (Table 41) indicates that average value was higher in Windsor and Essex County than for the province overall, but remained lower than average values for Chatham-Kent and Southern Ontario.

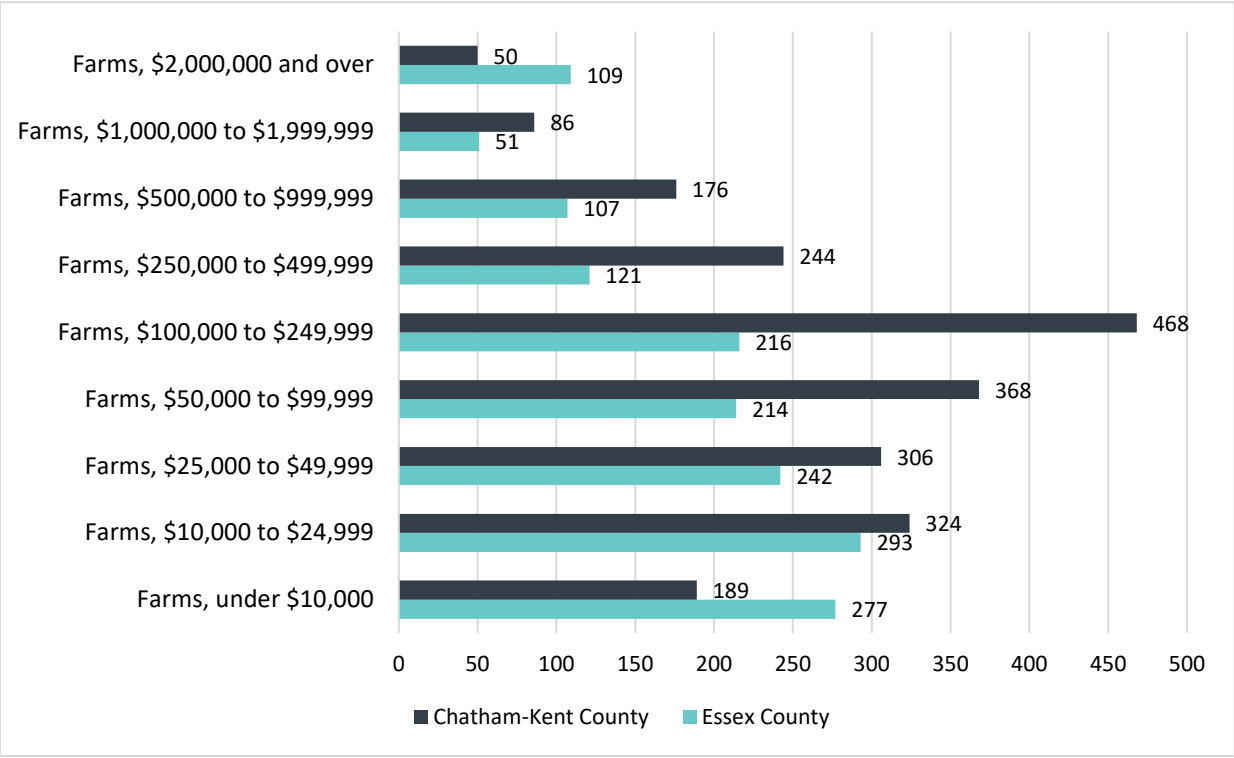
Table 41: Average Farm Capital Market Values in 2016

	Ontario	Southern ON	Chatham-Kent	Essex County
Total Capital Market Value (\$)	\$131,785,355,823	\$52,075,879,994	\$7,062,613,914	\$4,895,656,030
Average Capital Market Value (\$)	\$2,656,963	\$3,062,747	\$3,194,308	\$3,003,470

Source: Statistics Canada, 2016 Census of Agriculture

Total gross farm receipts refer to the gross farm receipts of the agricultural operation in the year prior to Census or the last complete accounting (fiscal) year. In 2016, Windsor and Essex County accounted for 7% of Ontario’s gross farm receipts. From 2011 to 2016, gross farm receipts in Windsor and Essex County increased by \$269,144,818 to a total of \$1,056,448,369 in 2016. More than three quarters (76%) of farms in Windsor and Essex County had farms receipts of \$249,999 or less. From 2011 to 2016, Windsor and Essex County saw an increase in the number of farms classed as having gross farm receipts of \$2,000,000 and over. While Chatham-Kent exceeds Windsor and Essex County in terms of the number of farms reporting gross farm income (2211 versus 1630), total gross farm receipts in Windsor and Essex County were more than 1.6 times higher than those in Chatham-Kent in 2016. This indicates that while there were more farms reporting income overall in Chatham-Kent compared to Windsor and Essex County in 2016, Windsor and Essex County farms reported higher profits. Figure 19 suggests that this disparity is due almost exclusively to the larger number of farms in Windsor and Essex County with farm receipts of \$2,000,000 and over (109 in Windsor and Essex County versus 50 in Chatham-Kent) (Source: Statistics Canada, 2016 Census of Agriculture).

Figure 19: Distribution of 2016 Gross Farm Receipts in Windsor and Essex County and Chatham-Kent Counties



In terms of operating expenses, the average farm in Windsor and Essex County in 2016 reported annual operating expenses of \$563,021 (Table 42). This is an average increase of \$133,678 from 2011. In looking at 2016 average operating expenses for Chatham-Kent, Southern Ontario and the province, Windsor and Essex County average operating expenses were noticeably greater.

Table 42: Operating Expenses for 2016 for Windsor and Essex County and Comparators

		# of Farms Reporting	Dollars	Average Operating Expenses/Farm
Windsor and Essex County	2011	1,581	\$678,790,950	\$429,343
	2016	1,630	\$917,723,456	\$563,021
	Change 2011-2016	49	\$238,932,506	\$133,678
Chatham-Kent County	2016	2211	\$523,137,316	\$236,607
Southern Ontario	2016	17003	\$5,535,361,748	\$325,552
Ontario	2016	49600	\$12,789,937,973	\$257,862

Source: Statistics Canada, 2016 Census of Agriculture

Employees represent a major expense for farmers. As shown in Table 43, Windsor and Essex County have the largest average number of employees per farm in all cases when compared to Ontario, Southern Ontario and Chatham-Kent County. Of note are the average number of year-round full-time (13.2), year-round part-time (5.8), and seasonal (13.1) employees per farm. The average number of total employees in Windsor and Essex County at 18.3 per farm is also quite high relative to Chatham-Kent, Southern Ontario and Ontario. While Windsor and Essex County also had marginally more family member employees than other areas, this figure is much more consistent across comparator areas (Statistics Canada, 2017a).

Table 43: Farm Employees by Type of Paid Work for 2016

		Ontario	Southern Ontario	Chatham-Kent	Windsor and Essex County
Paid work on a year-round basis (full time)	# of farms reporting	6,220	2,542	220	252
	# of employees	24,788	12,554	819	3,327
	Average	4.0	4.9	3.7	13.2
Paid work on a year-round basis (part time)	# of farms reporting	4,229	1,662	141	131
	# of employees	11,131	4,988	324	757
	Average	2.6	3.0	2.3	5.8
Paid work on a seasonal or temporary basis	# of farms reporting	7,320	3,137	350	340
	# of employees	46,139	28,136	2,400	4,457
	Average	6.3	9.0	6.9	13.1
Total number of employees	# of farms reporting	12,305	4,971	520	467
	# of employees	82,058	45,678	3,543	8,541
	Average	6.7	9.2	6.8	18.3
Total number of employees that were family members	# of farms reporting	8,414	3,547	371	341
	# of employees	18,661	8,267	770	828
	Average	2.2	2.3	2.1	2.4

Source: Statistics Canada, 2016 Census of Agriculture

To summarize, Windsor and Essex County farms reported a total of \$4,895,656,030 in farm capital in 2016 (Table 44). Total net cash income represents the total gross farm receipts minus total operating expenses. In Windsor and Essex County, total net cash income in 2016 was \$138,724,913. In comparing average net cash income across the region, Windsor and Essex County reported the largest average net cash income at \$85,107 per farm. It should be noted, however, that this value needs to be viewed against farm capital which may be owned or leased. Average farm capital in Essex County was \$3,003,470 in 2016.

Table 44: Net Cash Income and Farm Capital Figures for Windsor and Essex County and Comparators for 2016

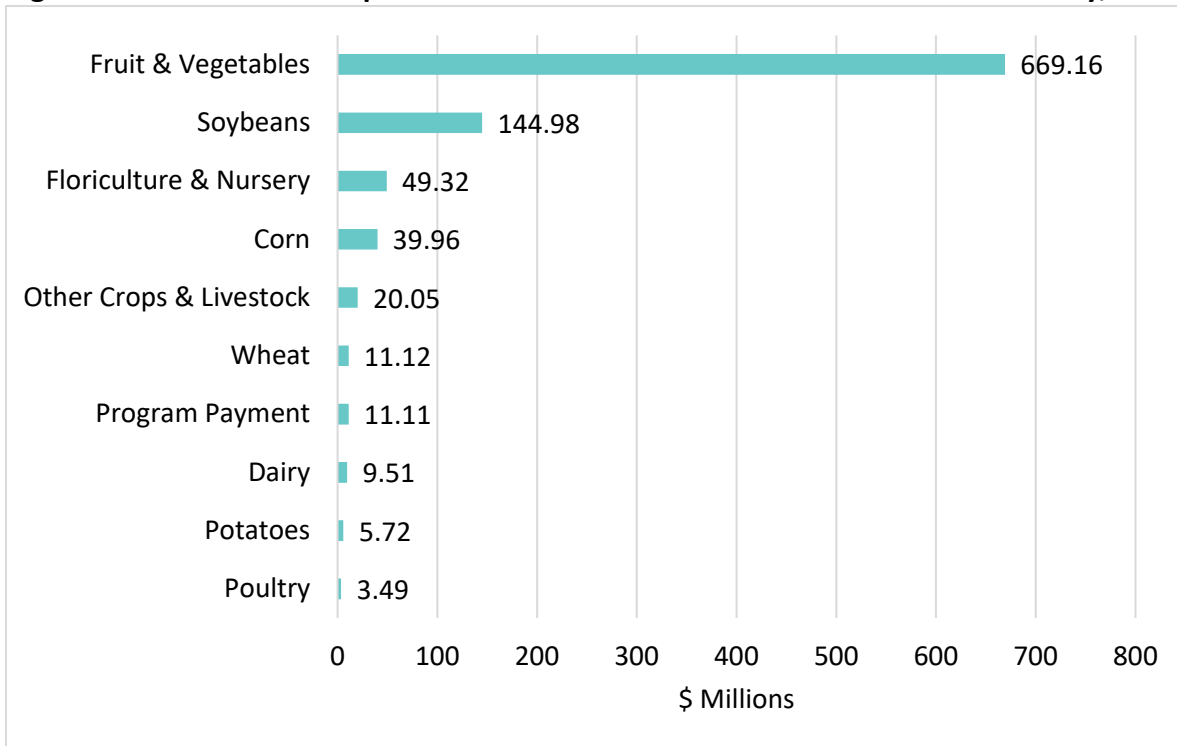
	Total Windsor and Essex County	Per Farm Average Windsor and Essex County	Per Farm Average Chatham-Kent	Per Farm Average Southern Ontario	Per Farm Average Ontario
Gross Farm Receipts	\$1,056,448,369	\$648,128	\$295,857	\$390,825	\$304,977
Total Operating Expenses	-\$917,723,456	-\$563,021	\$236,607	\$325,552	\$257,862
Net Cash Income	\$138,724,913	\$85,107	\$59,250	\$65,273	\$47,115
Farm Capital	\$4,895,656,030	\$3,003,470	\$3,194,308	\$3,062,747	\$2,656,963

Economic Impacts

The economic benefits of local agricultural production are plentiful. Food production brings dollars into the area through the sales of products, but also through the many jobs created by the agricultural sector. The full economic impacts, however, are more nuanced. Although farm and greenhouse production often take centre stage, they are part of a broader economy that includes the network of businesses that support the agri-food sector locally. These include seed, feed, fertilizer and pesticide suppliers, construction companies and farm equipment manufacturers and retailers among others. All of these contribute to the local economy as well.

In terms of immediate economic impacts, Windsor and Essex County farm cash receipts in 2016 totaled \$971.27 million, with fruit and vegetables and soybeans topping the list for revenues (Figure 20) (Ontario Ministry of Agriculture, Food and Rural Affairs, 2018b).

Figure 20: Farm Cash Receipts for Main Commodities in Windsor and Essex County, 2016



As noted, however, a full appreciation of the economic impacts related to food production is much broader. Essex County’s role in the larger Ontario agri-food chain (i.e., farm, food manufacturing, and retail) in 2017 in terms of Gross Domestic Product was \$2,963 million dollars – approximately 7% of the provincial total. Similarly, Essex County farm, food manufacturing, and retail employed 7% of all such workers in the province (Table 45) (Ontario Ministry of Agriculture, Food and Rural Affairs, 2018b).

Table 45: Essex County Agri-Food Value Chain Impact 2012-2017

Gross Domestic Product¹	2012	2013	2014	2015	2016	2017
Essex County	2,353	2,527	2,735	2,750	2,889	2,963
% of Provincial Revenue	7%	7%	8%	7%	8%	7%
Employment	2012	2013	2014	2015	2016	2017
Essex County	51,622	54,813	59,330	58,761	61,329	61,659
% of Employment in Province	7%	7%	8%	7%	8%	7%

¹ millions of chained 2007 dollars

Data provided elsewhere in this report show that agricultural production in 2016 employed 3,327 full-time year-round farm workers, 757 part-time year-round and 4,457 seasonal or temporary workers, for a total of 8,541 farm workers. In 2016, individuals employed in farming represented 3% of all workers in Essex County. Of those, 58% were employed on farms and 42% were employed in greenhouses.

Because the economic impacts of food production are closely linked to processing and distribution as part of the larger value-chain, additional information relevant to the economic contribution of food production can also be found in the following section of this report that addresses production and distribution. However, it may be useful to consider potential opportunities to expand the economic impact of production locally. As noted in the Dollars and Sense report (Kubursi et al., 2015), researchers estimated that replacing even 10% of the top ten fruit and vegetable imports with locally grown produce has the capacity to boost gross domestic product, create additional jobs and reduce environmental impacts associated with transportation. Similarly, these researchers also predicted that increasing organic food production to a realistic 10% would improve farm incomes, while having the additional benefits of reduced use of pesticides, chemical fertilizers, antibiotics and medication in animal feed, and decreased energy demands and emissions (Kubursi et al., 2015).

Production: From the Community

Community engagement activities explored production in a number of ways. The community survey posed specific questions to gauge public perceptions and practices, while the community conversations allowed participants to address any part of the food system they wished, although as open-ended responses suggested, production was a popular topic. The following provides findings from the various community activities on the topics of food production.

Survey Findings

Participants were asked about the extent to which they agreed with a range of statements relevant to food production. Responses were on a 5-point scale that ranged from 1 (Strongly Agree) to 5 (Strongly Disagree). With Likert scales such as these, median response is the most suitable and easy for interpretation (Institute for Computer Based Learning, 1998). Responses suggest that participants strongly agreed or agreed with support for new farmers entering the profession, urban agriculture, the protection of land that could be used for agriculture, and financial and other support for small-scale food farmers, and also agreed that there is a wide variety of food grown locally (Table 46). Respondents were less sure that local food is produced in an environmentally-friendly way, and also less sure they had knowledge of local farming and food production.

Table 46: Community Survey Responses on Production

Survey Items	Median Response
I believe local food is produced in an environmentally friendly way.	Neither Agree nor Disagree
I do not know a lot about local farming and food production.	Neither Agree nor Disagree
I think that as local farmers get older, others should be supported to start farming.	Strongly Agree
I think it is important to provide financing and support for small-scale local food farmers.	Agree
I think there should be support to grow food in the city (e.g., rooftop gardens, community gardens, public fruit trees).	Strongly Agree
There is a wide variety of food grown locally.	Agree
I think it is important that land which could be used for farming is protected.	Strongly Agree

Cross-tabulations of the data revealed the following significant group differences:

- Leamington respondents believed a wide variety of food is grown locally and reported knowing more about farming and food production than respondents from other municipalities.
- Respondents who believed in supporting new farmers as current farmers get older also support providing financing and support for small-scale food farmers.
- Respondents who disagreed that local food is produced in an environmentally friendly way were more likely to prioritize organic purchases and to strongly agree that they actively choose what they eat in order to reduce risk of obesity and chronic disease.
- Respondents who believed they are knowledgeable about local farming and production also believed they are knowledgeable about processing and distribution and are more likely to have shopped at fruit and vegetable stands in the past year.

Open-Ended Feedback

Community members who took part in the community conversations and those who completed the online survey provided a great deal of feedback related to production. Production was mentioned in 23% of all responses and it was the second most frequently mentioned element of the food system after food access. A presentation of the central themes in this area is included here along with illustrative quotes in italics. As much as possible, comments were left unaltered, with limited editing for grammar and spelling.

Overall, respondents provided comments about the process of local production, the importance of the local land and soil, support for local and urban agriculture, and concerns about cannabis. Local food production was seen as an enormous strength in this region and a source of pride.

“Local food production, and the pride this community has for it.”

“Our locally grown produce truly stands out in terms of taste and quality. The farmers really care for their crops.”

In terms of the process of production, concerns were raised about potential over-farming and monoculture. As well, many respondents spoke to beliefs about hazardous chemicals in the ground or in the food, including pesticides, fertilizers, and nitrogen.

“Farmers have over-farmed, nutrients not in soil which means fewer in food”

“Findings chemicals in food and dirt is concerning”

“Pesticides, how much is on fruit and veg, how to get it off our food”

At the same time, there were voices of disagreement over perceptions of danger in the food system.

“An excessive amount of nonsense... the promotion of 'Organic' food as more than just over-priced.... the demonization of 'GMO' when it has been proved safe and beneficial”

For some respondents, greenhouse production was a particular target of criticism, with perceptions of a narrow variety of foods grown in greenhouse, along with concerns about chemical use, and reduced taste and nutritional value compared to field-grown products. Others felt that the greenhouse industry is threatening cash crop farmers.

“I wonder about the very narrow varieties of food produced in the greenhouses- tomatoes, peppers, cucumbers. Would be great if a greater variety of produce could be grown so that we could be more locally sustainable outside the traditional growing period”

“Have less faith in the nutritional value of hydroponic foods than those grown in soil.”

“Cash Crop Farming is losing land. Greenhouses are not Farmers they should not get the benefits a real Farmer has...and what chemicals are they putting into these plants to start picking within two weeks.”

Alongside the perception of harm in the production process among some respondents was support for “environmentally-friendly” food production methods. There was not necessarily agreement on what this means, although a number of respondents considered non-GMO and pesticide, hormone and fertilizer-free as synonymous with environmentally friendly. One respondent who, while echoing a desire for environmentally responsible farming, also identified the importance of recognizing and acknowledging the local Indigenous community as some of the first producers on this land.

“Also, when farming is done we need to be doing it in an environmentally conscious way (e.g., organic, with respect for animals and caring for the local ecosystem). It should always be done in consultation with the local Indigenous people of this area.”

Many felt there was a great deal to be learned from local farmers about the “old ways” of farming in a more sustainable manner, including the use of organic, natural fertilizers.

“Own a farm -soy beans and feed corn -concerned about chemicals that farmers use, there are healthier ways to help grow”

“Need to put natural practices back into farming, climate change will be affected”

“Need to educate about the old ways of farming, go back to the old ways”

At the same time, some participants expressed being less concerned about Canadian food production, citing higher standards than what they perceive exist in the United States.

While many respondents spoke to the local climate as being very positive for food production, they also expressed concerns about the farming industry and called for protection and support for land and farmers. In particular, smaller farms were seen as having a difficult time competing with larger businesses, and making a living in farming was seen as a challenge. Supports in the case of crop failure were mentioned, as was the need to protect farmland from city encroachment, urbanization and zoning bylaws.

“Protecting available land for farmers and supporting them to produce a diversity of produce, support the next generation of farmers, so they can be profitable, successful and good stewards of the land, loss of topsoil an issue”

“People are no longer interested in farming and feel they cannot make an adequate living to raise a family and plan a retirement”

“We are losing farmland to housing”

Although not a concern for all, opinions on cannabis production were very strongly held. Those who spoke about it believed that it is resulting in a reduction in local food production and a loss of farmland to greenhouses. While the potential for cash revenues was acknowledged by some, there was an overall sense that controls on cannabis production and proliferation are needed.

“Major concern in some groups is the growth of greenhouses and cannabis, recommend enforcing bylaws and safe practices to grow cannabis, the soil conditions of WEC shouldn't be exploited for cannabis growing to avoid air pollution...there's tremendous money for sure but we have to preserve it”

Urban agriculture was mentioned but so was the need for education in this area, and a reconsideration of laws that may make urban agriculture more difficult.

“Have a garden and share extras with neighbours...they should teach kids in the schools more about gardening to know where food comes from”

“Make chickens legal with a limit per household”

Many respondents saw the need for education and knowledge-building related to food production. Others spoke to the need to clarify common misconceptions related to food production.

“Education and clearing up misinformation, informing consumers of the costs associated with growing locally”

“Bridge gap between producers that are growing nutrient dense products and consumers not knowing the difference, people hear so much about organic food”

“Understanding and awareness of the production process, GMO and the benefits to production, these processes are necessary to feed the growing population”

Broad community education about food production was seen as a positive, particularly for youth.

“Good to get young people interested in growing, important, should be promoted”

“As a farmer, visit schools to teach kids about agriculture, surprised that youth have opinions about agriculture but are sometimes misinformed”

“Teach children how to garden and importance of composting”

Ultimately, local food was viewed as a prime asset that should be promoted for health, taste, and freshness.

“Everything grown here is good”

“Where we live, production, fresh fruit and veg, it's ‘exciting’ to eat here in the summer”

“We have fresh food because it is grown here, it is healthier, lasts longer, tastes better”

Strengths, Challenges, and Opportunities

As part of the community engagement, 25 stakeholders from across the food system met and discussed the strengths, challenges, and opportunities related to the local food system using a World Café exercise that allowed participants to consider each element of the local food system framework. Stakeholders were then asked to consider unique opportunities for synergy or interconnection across the food system that would support integration and efficiency.

The following is an accounting of stakeholder feedback related to production, organized by thematic area that emerged through the exercise: the land, local food, the business of agriculture, and the workforce. The tables that summarize group discussion reflect the thoughts and words of the stakeholders.

Land

The flat landscape in Windsor and Essex County, the good weather and soil, and the ability to grow a variety of food were viewed as strengths. Stakeholders identified a number of production challenges related to land. The threat of agricultural land loss due to urban development was noted, as was potential competition for land due to cannabis production. While the climate was noted as a strength, the growing unpredictability of weather was considered a challenge. Lack of adequate infrastructure for farmers, such as potable water was seen as an issue. The ownership of farmland by non-farmers was another issue identified. According to stakeholders, when farmland is rented out, there may be less vested interest in good land maintenance (e.g., crop rotation and soil inputs), which can impact soil quality. The notion that some areas have poor soil was also raised, although this would seem to contradict earlier data presented on soil quality in Windsor and Essex County. Stakeholders discussed the importance of improving the financial competitiveness of local crops and explored possibilities associated with social enterprise and incentives for diversifying crops.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> • A flat landscape with the ability to grow diverse types of food • Good weather – in the sun belt • Plenty of good soil 	<ul style="list-style-type: none"> • Some areas have poor soil • There is competition for the land with urban development • Ownership of land by non-farmers • Competition with cannabis production • Lack of adequate infrastructure for farmers (e.g., potable water) • Weather can be unpredictable 	<ul style="list-style-type: none"> • Improve financial competitiveness of local crops • Possibilities for social enterprise • Incentives for diversifying crops

Local Food

Stakeholders also discussed connecting to local food production. The existence of urban agriculture, specifically community gardens, as well as the proximity of many municipalities to sites of active food production were seen as strengths, as were local businesses that make direct connections between local producers and consumers. Challenges to local food production were also noted. Those include a waning of urban gardening, as well as a loss of agricultural land and the proliferation of industrial food production (i.e., for feed or fuel versus production of food for people). Stakeholders felt there were opportunities to be seized in promoting community gardens and community shared agriculture, and diversifying the types of production (e.g., fruit trees and bees) that are undertaken there. They also noted that there are opportunities to educate the community and reconnect them to the notion of gardening. A range of different solutions were posed to make urban agriculture simpler, including roof top greenhouses, vertical farms, and grow lights. Stakeholders did note, however, that such initiatives should be supported by working with municipalities and making education related to food production a more common occurrence.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> • Urban agriculture, community gardens • Municipalities are close to food production • Local businesses, such as food box delivery services, are connecting farms directly to consumers 	<ul style="list-style-type: none"> • Loss of urban gardens • Most local food production is industrial, for feed or fuel; farmland used for animal feed and not food for people • Greenhouses on really good soil • Solar farms competing for land 	<ul style="list-style-type: none"> • Promote community gardens and community shared agriculture; fruit trees and bees in cities • Educate community on urban gardens and reconnect them to gardening • Use roof tops for small greenhouses; vertical farms, less foot print; year round growing lighting systems • Better collaboration with municipalities • Make food production part of food skills teaching; link “from farm to table” to the school curriculum • Education to increase public demand for local food

The Business of Agriculture

Stakeholders also discussed the economic impact of local production and agriculture. No strengths were noted by the group. Challenges included the high cost of doing business, including the cost of land and energy. Stakeholders believe that the business of agriculture could be fostered a number of ways, however. Partnering with existing research programmes or creating new and unique partnerships was seen as an opportunity, noting that Windsor has more than just automotive research available. Financial supports including grants, tax benefits, breaks on utilities such as electricity and water were seen as helpful, as was exploration of innovative funding strategies. Diversification in types of farms or commodities was explored as an opportunity, as was encouraging private sector procurement of local foods.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> None noted 	<ul style="list-style-type: none"> High cost of doing business in Ontario Cost of land, cost of energy 	<ul style="list-style-type: none"> Research: partner with programmes (e.g., University of Guelph Ridgetown Campus, University of Windsor), Windsor is not just an automotive town! Grants, tax benefits, break on utilities, electricity, and water; Innovative financing Diversification in types of farms/commodities; hazelnuts, as an example of an emerging commodity Encourage private sector procurement of local foods to drive demand

Workforce

Finally, stakeholders also considered the local agricultural workforce. The capacity of production and agriculture to create local employment was viewed as a strength, along with the knowledge that currently exists in the agricultural community. Challenges included procuring workers, in part due to a lower unemployment rate and the increasing need for skilled workers. Also noted as a challenge was transportation for agricultural workers to where they are needed. Opportunities in this area included active promotion of careers in agriculture through work with local training centres and other organizations, along with novel training solutions (e.g., prison garden). Exploring opportunities for public transportation to larger facilities was also seen as important to pursue.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> Creates local employment opportunities Knowledge within the community 	<ul style="list-style-type: none"> Transportation for workforce Expertise of workforce Unemployment rate is low, hard to find skilled workers 	<ul style="list-style-type: none"> Promoting careers in agriculture sector, including using prison gardens to train inmates in agriculture Working with local training centres and training opportunities Public transportation to bigger employers

Summary

Windsor and Essex County have many local production assets. The area has good soil and a climate conducive to production, although climate change is expected to bring both opportunities (e.g., longer growing season and reduced energy demands for greenhouse production in colder months) and challenges (e.g., increased vulnerability associated with extreme weather events and reduced moisture availability). As such, it will be important to mitigate and manage climate change proactively.

While the total amount of land being farmed locally has continued to increase, areas zoned as farmland have decreased slightly. The majority of active farmland is used for crops, most notably in Lakeshore, Kingsville and Leamington, with oilseed and grain farms most common and increasing in number. In terms of local food production, soybeans, corn for grain, and winter wheat have the highest acreage for field crops. Apples and grapes are the largest fruit crops, while tomatoes, sweet corn, green peas, and green or wax beans are top in fruit and vegetable production. Windsor and Essex County farmers also raise pigs, cattle and calves, dairy cows, sheep and lamb, turkeys, hens, and chickens, but these represent a much smaller portion of the provincial total. Very few farms report organic production, although many report transitional organic products.

The heavy regulation of farming poses challenges particularly for smaller farmers. Technology is increasingly necessary to be competitive in farming, and is used by the vast majority of local farmers. Windsor and Essex County have research partnerships that are working to support innovation in production. As well, alternative energy, such as solar panels and turbines, are common on farms locally. Herbicides and commercial fertilizers are also often used in local farming practice.

Farm operators in Windsor and Essex County and across the province are aging and decreasing in number. The need to supplement farm income is common in this region, as it is in the rest of the province. The price of farmland (tillable acre) has consistently risen in Windsor and Essex County over the past 10 years, but costs are still lower compared to most places in Southwestern Ontario. It was estimated in 2017 that as much as 25% of farmland purchased in the preceding year was not bought by local farmers. Farm tenure is mixed in this region, with ownership and rental arrangements represented.

Greenhouse production is sizeable, with Windsor and Essex County greenhouses accounting for more than half the square footage of all Ontario greenhouse space. At the same time, local greenhouses represent only 11% of all farms, suggesting that the region has a smaller number of larger operations locally. These are mainly in the Leamington and Kingsville areas. Greenhouses have the capacity to produce fresh produce all year round, but require energy inputs to do so. Cannabis is the newest local greenhouse crop in Windsor and Essex County, with advocates identifying its potential to bring in significant revenues.

Farm receipts show that farms locally are profitable. However, the presence of farms in Windsor and Essex County at the highest category of farm receipts (\$2,000,000 and over) may skew figures somewhat. Farms employed almost 9,000 full-time, part-time and seasonal

workers in 2016. Migrant workers are essential to farm production locally, but precise numbers of workers are difficult to determine. The average net cash income estimate per farm is above \$80,000 per year, but there is great variability associated with the size of the farm. Finally, Windsor and Essex County's contribution to the agri-food chain (farm, food manufacturing and retail) in Ontario was estimated at 7% of the provincial GDP in 2017.

Overall, community members are generally in favour of measures that support local farmers, particularly small scale food farmers, and believe that protecting agricultural land is necessary. Residents are also highly supportive of local food and food production, but express concern about pesticides and other potential hazards they believe are part of the food production process. Community members did not claim to have strong knowledge in the area of production, however, and believe that education was needed for children and adults.

Section 5: Processing and Distribution

While agricultural production may be the core of the food system, food processing and distribution are integral to the functioning of the system as a whole. They represent the part of the larger agri-food value chain that prepares food for a range of consumers and moves it to where it can be accessed. Over the years, technology and innovation have changed the value chain at all junctures, including advances in product development and distribution. With these advances, food processing and distribution networks have become increasingly global, providing consumers with convenient and consistent access to a variety of foods during all seasons.

Food processing and distribution play a significant role in Ontario's economy. Ontario is the second largest food processing centre in North America, with intensive supply chains that include specialized logistics, storage and transportation. It is estimated that there are close to 3,000 food and beverage processing businesses in Ontario, generating over 130,000 direct jobs, realizing \$40.7 billion in revenues and accounting for 14% of Ontario's total manufacturing revenue. It is a sector whose revenues have continued to grow, despite the recession (Food and Beverage Ontario, 2015).

At the same time, critics have argued that the growth in processing and distribution has brought with it a loss of regional supply chains or networks capable of more directly connecting producers and consumers (Berti & Mulligan, 2016). Costs associated with distributing food from small-scale producers to consumers have been perceived as a major barrier to the success of regional food systems (Mittal, Krejci & Craven, 2018). Nonetheless, compelling evidence has been provided that reducing imports and increasing regional production of these foods would alter processing and distribution to reduce pollution and to significantly increase GDP and employment (Kubursi et al., 2015).

Stakeholders identified food manufacturing and process workers, including skilled labour, as the main local human asset associated with food production and distribution (Table 47). In terms of physical assets, the manufacturing, processing and food storage facilities in Windsor and Essex County were seen as important. No natural assets were noted. Proximity to US markets was seen as a financial boon to local food processing and distribution, and local food delivery programmes were seen as a social asset.

The following sections will examine food processing and distribution in Windsor and Essex County and the larger region, considering local assets and what is available to support a regional food system.

Table 47: Production and Distribution Related Assets in Windsor and Essex County by Type and Number

Type of Asset	# of Assets	Identified Assets
Human	2	Food Manufacturing Workers Food Processing Workers
Physical	3	Food Manufacturing Facilities Food Processing Facilities Food Storage
Natural	0	
Financial	1	Proximity of US Markets
Social	1	Local Food Delivery Programmes

Processing

Food processing involves the transformation of agricultural products into food, or from one food form to another. It is possible to distinguish between primary food processing required to make foods edible and secondary food processing which turns common ingredients into food products (e.g., bread). Food processing can range from the minimal (e.g., chopping and canning tomatoes) to more intensive, multi-step processing (e.g., turning milk into cheese). For some, food processing conjures up images of “processed food.” These are associated mainly with tertiary food processing, and have been criticized for being less healthy, usually due to the presence of added sugar, salt, or trans fat.

Large scale processing of local foods can add significant value to this food and bring positive impacts to the local economy. On the other hand, small scale food processing builds relationships within a community and shortens the distance between producer and consumer. Both are important to a healthy food economy and food system.

Food Processors in Windsor and Essex County

Food processing can range from small operations to large scale industrial plants, and can include custom production, batch production or mass production. There is no centralized list of local producers in Windsor and Essex County. However, the combination of Windsor-Essex County Health Unit food inspection data, Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) lists of provincially licensed meat plants (2018b), and a scan of on-line resources identified a number of different types of processors in Windsor and Essex County (Table 48). This list mainly represents small to midsize producers. Bakeries and bakeshops are among the more numerous, as are butcher shops. Although food processing plants and other processors appear smaller in number, many are larger operations than their counterparts on this list. As

well, this list does not include some of the region’s largest food processing plants, in part because inspections of those facilities are not under the purview of the local public health unit.

Table 48: Food Processors in Windsor and Essex County by Type

Food Processor Type	Number	Percent
Bake Shop	23	18%
Bakeries	41	32%
Butcher Shops	30	23%
Food Processing Plant	13	10%
Processor	3	2%
Meat Plant	14	11%
Fishery	4	3%
Abattoirs	2	2%
Grand Total	130	

The largest food processing operations in the region, not included in Table 48, include:

- ADM Agri-Industries Limited
- Highbury Canco Corporation (formerly Heinz)
- Cavendish Farms
- Bonduelle Canada Incorporated
- Diageo Canada Incorporated
- Hiram Walker & Sons Limited
- Sun Brite Foods Incorporated

The economic reliance on these processors is most keenly felt when their local presence is jeopardized. For example, the closure of Heinz in 2014 threatened 740 jobs in the Leamington area, and concerns were raised that this may devastate the local economy (“Heinz closes Leamington plant, 740 people out of work”, November 15, 2013). Although the takeover by Highbury Canco managed to save jobs in the area, the event stands as a stark reminder of the reliance, particularly in some parts of region, on jobs in the processing sector.

Food Processing Practices

Food processing practices are complex. They are subject to a wide variety of regulations and legislation, and are assisted by innovation and technology. Concerns about food safety, particularly with the increasing diversity of imported products, are on the minds of many consumers. Recent recalls of common grocery store items like romaine lettuce brought these concerns to top of mind for many local residents who provided their views for this community food system assessment. Concerns were voiced over the accuracy of food labeling, and recent cases of purposeful mislabeling of foods as organic locally contributed to lack of consumer confidence (Wilhelm, 2017).

Regulations and legislation, with compliance supported by food inspection, are key mechanisms for ensuring food safety. Regulations applicable to the food industry in Ontario include: Food Labelling Regulations, Canadian Food Inspection System - Regulations and Codes, Fruit and Vegetable Legislation, Food Safety and Quality Act, 2001, the Milk Act, and Egg Regulations (Ontario Ministry of Agriculture Food and Rural Affairs, 2017).

Food inspection also includes, in some cases, the need to ensure that processing standards meet the needs of faith-based consumers. For example, there are independent organizations that inspect, monitor, and certify Halal (e.g., Halal Monitoring Authority, <https://hmacanada.org/>) and Kosher (e.g., Kashruth Council of Canada, <http://cor.ca/>) consumables and facilities in Canada. Food safety locally is in part the responsibility of food premise inspections conducted by the Windsor-Essex County Health Unit. Nationally, food safety is ultimately a function of the joint efforts of industry, the Canadian Food Inspection Agency (CFIA), Health Canada, Public Health Agency of Canada, provincial governments, local public health units, and consumers (Canadian Public Health Association, 2019).

Despite the importance of these regulations, regulatory frameworks can have a negative impact as well. According to the Windsor and Essex County Regional Chamber of Commerce (WERCC), local agri-food stakeholders identified increased costs, regulatory pressures, and the availability and reliability of natural gas as a barrier to growing their competitiveness. In partnership with the Ontario Chamber of Commerce, WERCC released the report *Fertile Ground: Growing the Competitiveness of Ontario's Agri-Food Sector* (Ontario Chamber of Commerce, 2016). Among the recommendations in the report, WERCC identified the following as priorities to support the agri-food sector locally in the short-term:

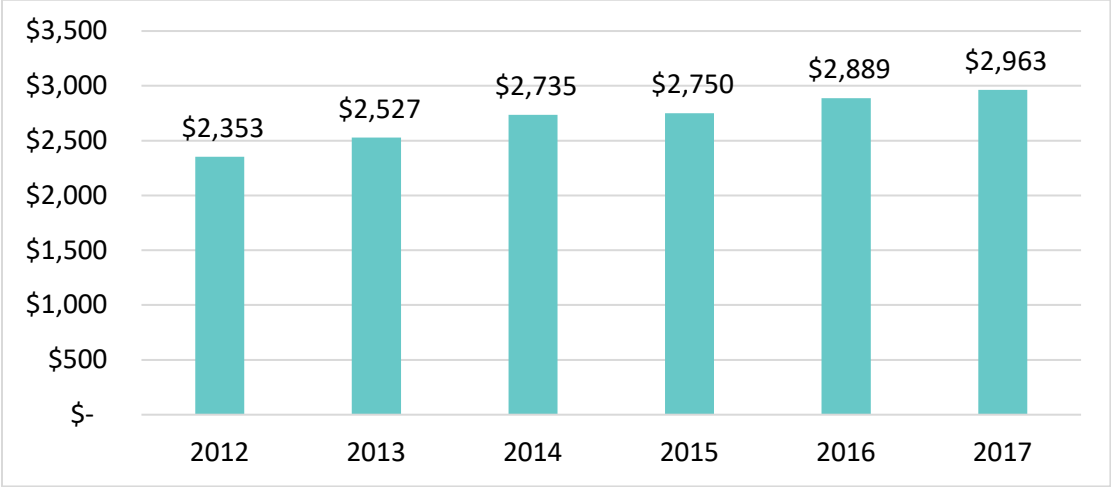
- Work with industry and all levels of government to establish a regulatory “concierge service” to assist industry in understanding, navigating and achieving compliance with relevant regulatory requirements.
- Publicly release economic impact assessments of policy initiatives that could affect the agri-food sector.
- Work with industry and post-secondary institutions to ensure that programme offerings remain responsive to the needs of agricultural producers and processors.
- Access to reliable and adequate natural gas year-round.
- Urge Canadian government to pass a PACA (Perishable Agricultural Commodities Act)-type legislation (Windsor and Essex County Regional Chamber of Commerce, 2016).

In terms of the role of technology in food processing, Ontario’s capacity to ensure food safety, quality standards and traceability is an identified asset in the agri-food sector, assisted by a strong, supporting research culture aimed at both food safety as well as product and process innovation (Province of Ontario, 2011). Locally, industry partnerships with the University of Windsor have resulted in research endeavours in food law, use of laser technology to detect bacteria in food processing, automation of food processing, and better filtering of wash water to prevent algae blooms, and more. St. Clair College is also a partner, preparing workers for careers in food processing and supporting partnerships with the agri-food sector.

Economic Contributions of Food Processing

According to the WindsorEssex Economic Development Corporation, food and beverage processing accounts for 92 companies and 3,250 workers in Windsor and Essex County. Furthermore, food and beverage manufacturing generates over \$2 billion in revenue annually and is the region’s second largest manufacturing sector (WindsorEssex Economic Development Corporation, 2019). Rising steadily since 2012, the joint economic impact of farming, food manufacturing, and retail in Windsor and Essex County in 2017 totaled \$2,963,000,000 accounting for 7% of the Ontario’s revenues in these sectors (Ontario Ministry of Agriculture, Food and Rural Affairs, 2018b) (Figure 21).

Figure 21: Economic Impact of Agri-Food Value Chain: Windsor and Essex County Gross Domestic Product (millions of chained 2007 dollars)



The local climate, long growing season, technologically-advanced growing systems, efficient cross-border logistics industry, and proximity to US markets all contribute to the economic viability of the food processing industry in Windsor and Essex County. The presence of a strong manufacturing base in other sectors also means that technology can be leveraged across sectors to improve food processing and manufacturing systems. Relatively lower service land costs and tax rates, as well as a favourable exchange rate are also incentives for investment in Windsor and Essex County. These factors taken together are offered as selling points for economic development initiatives and marketing of the Windsor and Essex County area with regard to the agri-food sector (WindsorEssex Economic Development Corporation, 2019).

Although food processing represents an important contributor to the local economy, concerns have been raised about the extent to which profits remain in the area. Obtaining precise local figures is challenging and is complicated by the fact that much of what is publicly available is focused on selling investment in this area.

Buying local is a more direct way to support the local economy and enjoy fresher foods, while also reducing pollution and environmental costs associated with transportation of imported goods (Windsor-Essex County Health Unit, 2019). Many recent local initiatives and campaigns including Grown Right Here, [W.E. Made It](#), the Local Food Map, and the WindsorEssex Economic Development Corporation [BuyWindsorEssex](#) online tool, all work to promote local foods and producers.

Data on the food processing sector was obtained from provincial level statistics (Tables 49 to 51) (Ontario Ministry of Agriculture, Food, and Rural Affairs, 2018b). The Gross Domestic Product (GDP) for food and beverage processing in Ontario has grown overall from 2007 to 2017, totaling \$13.1 billion dollars in 2017. Sales have also grown since 2007 and in 2016 totaled \$39.6 billion (Table 49).

Table 49: Ontario GDP and Sales for Food and Beverage Processing

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
GDP	11.7	11.8	11.4	11.6	11.4	11.4	11.4	11.9	12.0	12.5	13.1
Sales	33.4	34.1	34.7	35.2	36.0	36.6	38.0	38.7	38.3	39.6	

GDP – Billions of 2007 Chained \$

Sales – Revenues, Billions of \$

Food manufacturing contributed over \$10 million in Ontario's GDP in 2017 (Table 50) with the biggest change from 2016 with the most significant increase observed in fruit and vegetable preserving and specialty food manufacturing (10.2%), animal and food manufacturing (7.9%), and meat product manufacturing (7.9%).

Ontario imports more than it exports in the Agri-food area as a whole. In 2017, for every dollar of exports, there were of \$1.80 of agri-food imports (Table 51). In the larger picture, the demand driven tie to commodity markets in the agri-sector means less flexibility in meeting local demands, despite having a climate that supports local production.

Table 50: Ontario Food Manufacturing GDP, Compound Annual Growth Rate and % Change from 2016 to 2017 by Type

	GDP 2017 ¹	2012-2017 CAGR ²	% change 2016 to 2017
Food Manufacturing	\$10,469	3.7%	5.4%
Animal Food Manufacturing	\$824	7.5%	7.9%
Grain and Oilseed Milling	\$1,004	-1.0%	0.4%
Sugar and Confectionery Products Manufacturing	\$574	-4.3%	-3.6%
Fruit and Vegetable Preserving and Specialty Food Manufacturing	\$1,012	2.2%	10.2%
Dairy Product Manufacturing	\$1,066	4.7%	5.8%
Meat Product Manufacturing	\$2,710	5.3%	7.9%
Seafood Product Preparation and Packaging	\$78	-3.2%	-8.0%
Bakeries and Tortilla Manufacturing	\$1,628	3.7%	4.4%
Other Food Manufacturing	\$1,707	8.1%	6.0%

¹ Millions of chained 2007 dollars

² CAGR - Compound Annual Growth Rate

Table 51: Ontario Agri-Food Exports and Imports

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Exports (billion \$)	8.7	9.3	8.9	9.4	9.9	10.8	11.8	12.5	14.1	14.8	14.9
Imports (billion \$)	15.0	16.5	16.9	16.9	18.3	19.9	21.2	23.6	26.0	26.7	27.3

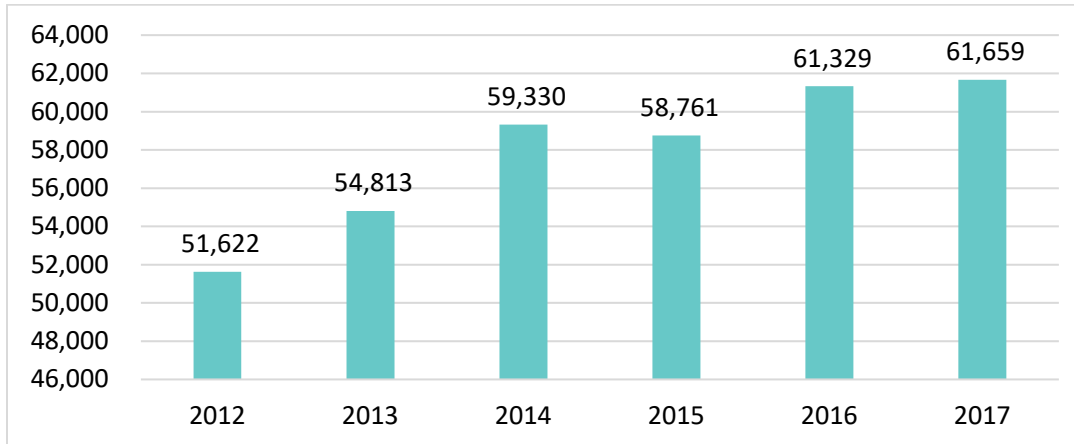
Funding support aimed at expanding local processing exists. One such example is the Southwestern Ontario Development Fund (Government of Ontario, 2019) which seeks to attract business to small communities in Southwestern Ontario or enhance existing businesses. Eligible sectors include processing (i.e., primary and secondary), with granting in business streams (including small community pilot programme) and regional streams.

Employment

The agri-business sector in Windsor and Essex County has been identified as one of the region’s most promising sectors for business and employment growth. This includes food processing and manufacturing (WorkForce WindsorEssex, 2013). At the same time, there is a shortage of workers in this sector, and Ontario’s Food and Nutrition Strategy advocates for education and training in food production and processing (Ontario Food and Nutrition Strategy Group, 2017). An employer survey conducted on behalf of Workforce WindsorEssex identified significant challenges for local agri-business employers related to both recruiting and successfully hiring new entrants for frontline positions in growing operations, greenhouses, and food processing facilities. Locally, Workforce WindsorEssex and partners in the agri-food sector work to address the gap in terms of skilled workers through ongoing employment support efforts and specific projects such as the GROW programme, which targets unemployed workers in the local area, to enhance employability and self-efficacy for employment in the agri-business sector (Workforce WindsorEssex, 2018).

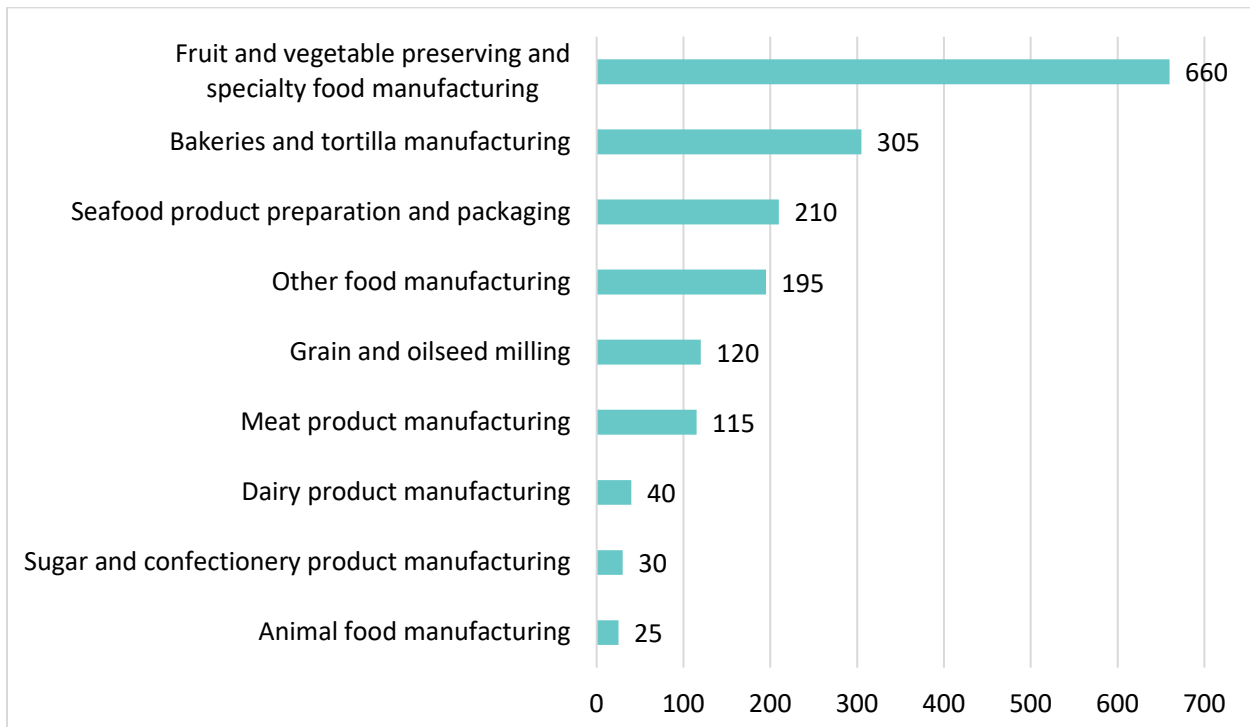
In terms of employment and its impact on the agri-food value chain locally, Figures 22 shows a total of 61,659 individuals were employed in farm, food manufacturing and retail in Windsor and Essex County in 2017, representing an increase of 10,038 individuals since 2012 (Ontario Ministry of Agriculture, Food and Rural Affairs, 2018b). This is approximately 7% of employees in these sectors across the province.

Figure 22: Employment in Farm, Food Manufacturing and Retail in Windsor and Essex County



Data from Statistics Canada provided further detail on where workers in Windsor and Essex County were employed in food manufacturing in 2016 (Figure 23). Of the 1,700 workers in the food manufacturing sector, fruit and vegetable preserving and specialty food manufacturing employed the largest number of individuals at 660, representing 39% of local food manufacturing workers. Bakeries and tortilla manufacturing followed, employing 305 (18%) workers, and seafood preparation and packaging employed 210 individuals (12%). Animal food manufacturing employed the fewest workers (25 or 1%) (Statistics Canada, 2017a).

Figure 23: Number of Workers in Food Manufacturing in Windsor and Essex County by Type of Manufacturing (2016)



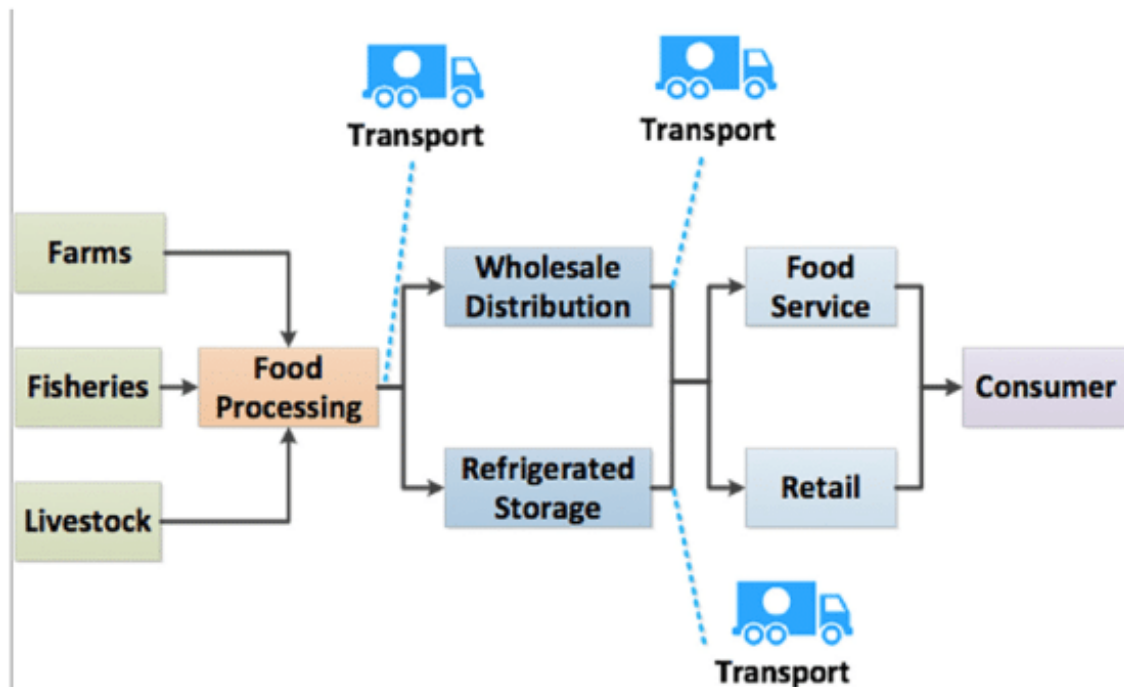
Distribution

Food distribution refers to the how food reaches consumers, whether those consumers are households, institutions, or businesses. It is closely linked to the larger food value chain. Highly centralized purchasing and distribution systems, along with consolidation of grocery stores and emphasis on economies of scale, are barriers to more local distribution of foods. The focus of this section is on the distribution supply chain that links processors to consumers of various kinds, as well as alternative food distribution programmes and strategies. Section 6 on Access and Consumption provides further information on the availability of restaurants, grocery stores, and other food access purchase points, along with community food programmes.

Food Distribution Supply Chain

Food distribution supply chains represent the processes by which food products move between producers and consumers. Figure 24 depicts a typical food distribution supply chain from producer to consumer. The exporting and importing of food from and to the region requires extensive supply chain logistics and, in some cases, lengthy travel for food products. The Windsor-Detroit border crossing is a key conduit for movement of agri-foods between the United States and Canada and is a strong facilitator of agri-trade (Seguin, Mussell, Schmidt, Sweetland, & Poon, 2013).

Figure 24: Traditional Food Distribution Supply Chain and Transport



In contrast, short food supply chains are generally characterized by a shorter distance or fewer intermediaries between producers and consumers. Shorter supply chains have the benefit of keeping a larger share of revenue in the local economy. Recent interest in alternative food chains, alternative food networks, and sustainable food chains facilitated shortening of some existing food chains.

Food Distribution in Windsor and Essex County

Food distribution systems include primary warehouse suppliers (also known as wholesalers or distribution centres) and secondary suppliers that move food from processing facilities to food retail stores and other food access points (e.g., restaurants). In cities, nearly all food is distributed to retail stores and restaurants by truck. Food distribution networks are generally fragmented, and varied with different distributors spread across various locations (Zeuli, Nijhuis & Gerson-Nieder, 2018).

Food distribution has become highly consolidated and competitive. The bulk of the food shipped from and received in Windsor and Essex County is managed by large food chains. Five major grocery chains command nearly 80 percent of the retail market share in Canada: Loblaw (29%), Sobeys/Safeway (21%), Costco (11%), Metro (Ontario and Quebec only) (10.8%) and Walmart (7.5%) (USDA Foreign Agricultural Services, 2018). All of these are present in Windsor and Essex County. Distribution centres are the nodes in the distribution chain. Loblaw operates approximately 30 distribution centres and runs the largest fleet of trucks in Canada, while Sobeys is close behind with a national network of 28 distribution centres (Sobeys Inc., 2019a). The Ontario Food Terminal is another part of the distribution chain in the province. It is the largest wholesale fruit and produce distribution centre in Canada and the 3rd largest in North America.

Long chain distribution networks have come under criticism in part for the contribution that transportation makes to pollution. Increasingly, large distributors have been pressed to consider their environmental footprint. For example, in 2016 Loblaw pledged a 30% reduction in their carbon footprint by 2030, in part through reduced emissions from changes in transportation management (e.g., use larger trailers) and switching to low carbon fuels (Loblaw Companies Limited, 2016).

The Ontario Greenhouse Vegetable Growers (OGVG) utilize marketers to sell and distribute Ontario greenhouse vegetables. According to their 2017 marketer list (Ontario Greenhouse Vegetable Growers, 2017) there were 24 markets in Windsor and Essex County, located primarily in Leamington and Kingsville (Table 52).

Table 52: Greenhouse Vegetable Marketers of Tomatoes, Peppers and Cucumbers in Windsor and Essex County in 2017

	Tomatoes	Peppers	Cucumbers
AMCO Produce Inc., Leamington	✓	✓	✓
Coppola Farms Inc., Kingsville	✓	✓	✓
Cornies Farms Ltd., Kingsville			✓
Del Fresco Produce Ltd., Kingsville	✓	✓	✓
DiCiocco Farms Sales Corp., Leamington	✓	✓	✓
Double Diamond Sales, Kingsville	✓	✓	✓
Erie James Ltd., Leamington	✓	✓	✓
Great Lakes Greenhouses Inc., Leamington			✓
Great Northern Hydroponics, Kingsville	✓		
Howard Huy Farms Ltd., Leamington	✓	✓	✓
Jem-D International, Kingsville	✓	✓	✓
Kapital Produce Ltd., Ruthven	✓	✓	✓
Lakeside Produce Inc., Leamington	✓	✓	✓
Leamington Produce Ltd., Leamington	✓		
Mastronardi Produce Ltd., Kingsville	✓	✓	✓
MCM Acres Sales Ltd., Leamington	✓	✓	✓
Mor Gro Sales Inc., Kingsville	✓	✓	✓
Mucci International Marketing Inc., Kingsville	✓	✓	✓
Nature Fresh Farms Sales Inc., Leamington	✓	✓	✓
Orangeline Farms Sales Ltd., Leamington		✓	
Policella Farms Sales, Kingsville	✓		
Pure Hothouse Foods Inc., Leamington	✓	✓	✓
TriSon Farms, Kingsville	✓	✓	✓
Westmoreland Sales, Leamington	✓	✓	✓

Food Distribution Patterns

Beyond transportation and distribution centres, import and export patterns are another way to look at the distribution and movement of agri-food products. As previously noted, Ontario agri-food trade is characterized by greater imports than exports. In 2017, the largest import trade partner was the United States, followed by the European Union, Asia (excluding Japan), Latin America, and Mexico (Table 53). The United States is also Ontario's top export partner (Ontario Ministry of Agriculture Food and Rural Affairs, 2018b).

Table 53: Ontario Import Export Figures for 2017 by Trade Partner

	Imports (2017) (Millions of Canadian \$)	Exports (2017) (Millions of Canadian \$)
Total	27,330	14,930
United States	17,507	11284
European Union	2,464	856
Asia (excl. Japan)	2,127	1575
Latin America (excl. Mexico)	2,013	150
Mexico	1,723	132
Oceania	537	97
Africa	304	136
Middle East	273	171
Other West Europe	185	4
Caribbean	114	69
Japan	48	404
Eastern Europe	34	51

Patterns of food surpluses and deficits, or differences between the amount of food produced versus consumed, also provide insight on food distribution. The relationship to distribution is relatively straightforward. In cases where food consumption outstrips production, greater reliance on food from elsewhere is assumed and distribution chains become longer. As shown in Table 54, Southwestern Ontario production was generally in a surplus situation relative to consumption needs for most common products in 2010 with the exception of grapes, strawberries, and potatoes (Kubursi, et al., 2015). Taken together, Southwestern Ontario appears to be in a good position to utilize locally produced foods to feed the region based on surplus figures. However, the rates of exporting and importing suggest this is not how local food is currently used.

Table 54: Surplus and Deficit in 2010 for Southwestern Ontario by Food Products

	Surplus	Deficit
Fruit Crops	Apples Peaches	Grapes Strawberries
Vegetable Crops	Tomatoes Peppers Carrots Dry Onions Cabbage Green Beans Sweet Corn	Potatoes
Grain and Oilseed Crops	Wheat Oats Barley Soybean	None
Livestock and Poultry Products	Beef Pork Lamb Chicken Turkey Eggs	None

Alternative Food Distribution Models

Alternative food distribution models are often predicated on shortening the food distribution chain. Examples include farmers’ markets and stands, community gardens, community supported agriculture, food reclamation projects, and food box delivery services. Farmers’ markets, stands, community gardens, and food diversion programmes, all of which are available in Windsor and Essex County, are considered elsewhere in this report.

Community supported agriculture (CSA) refers to a system where farm operation is supported by shareholders within a community who share both the benefits and risks of food production. Locally, Windsor Essex Community Supported Agriculture (WECSA) is a working cooperative farm in existence since 2008 that shares farm produce with its members (Local Harvest, 2012).

The group also supports local food access initiatives, maintains a community garden within the city limits, and operates a worker egg cooperative.

Group purchasing programmes are another option that can work to improve access to local food, while saving money and reducing the gap between producers and consumers. The Ontario Student Nutrition Program, with an early pilot in the Southwest region, is one organization that has been actively involved in exploring local food group-purchasing options (Lapalme, 2016) in partnership with MEALsource, a non-profit group purchasing organization serving the health care sector and active in encouraging sourcing local food for institutional procurement. Finally, food box delivery services can bring local produce directly from producer to consumer.

Processing and Distribution: From the Community

Members of the community provided their thoughts on food processing and distribution in both the community conversations and the online survey. Both qualitative and quantitative responses were obtained and findings are reviewed here.

Survey Findings

Local perceptions about food processing and distribution were obtained by asking survey respondents to rate their agreement with a series of statements on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree).

Respondents did not believe they were knowledgeable about local food processing, however, they did agree that food grown or produced locally should also be processed locally (Table 55). The following was also observed:

- Leamington respondents were more likely to believe they are knowledgeable about local food processing.
- LaSalle respondents were more likely to believe that food grown or produced in Windsor and Essex County should also be processed here (e.g., prepared, canned, packaged).

Table 55: Community Thoughts on Processing

Survey Items	Median Response
I think food grown or produced in Windsor and Essex County should also be processed here (e.g., prepared, canned, packaged).	Agree
I am knowledgeable about local food processing.	Neither Agree nor Disagree

In terms of food distribution, more respondents strongly agreed that food produced locally should be sold locally and that it should also be available in stores. Less agreement was noted for being able to buy local produce where they shop for food. Respondents did not endorse having knowledge of food distribution (Table 56). In terms of group differences:

- Individuals who agreed that food grown or produced here also believed it should be sold here and available in stores.
- Respondents who agreed that local produce should be available in stores also agreed that land that could be used for farming should be protected and that food grown here should be processed here.
- Those who reported being unable to buy locally grown food where they usually shop for food were more likely to agree that farmland should be protected.

Table 56: Community Thoughts on Distribution

Survey Items	Median Response
I think that food grown or produced in Windsor and Essex County should also be sold here.	1 Strongly Agree
I think that local produce should be available in stores in Windsor and Essex County.	1 Strongly Agree
I am able to buy locally grown produce where I usually shop for food.	3 Neither Agree nor Disagree
I am knowledgeable about food distribution in Windsor and Essex County.	3 Neither Agree nor Disagree

Open-Ended Feedback

Processing and distribution were less common areas of focus for open-ended comments. Only 4% of those who provided feedback spoke about processing and 7% addressed distribution. Central themes are reviewed here with illustrative quotes in italics.

Processing was a less familiar part of the food system for the majority of respondents and they said as much. The need for education were readily acknowledged.

“Don't know anything about processing and distribution”

“A lot of people don't know what happens with food before they reach the grocery stores, lack of awareness and education”

Of those who did speak to the processing sector, most agreed that it was a known asset in this area, often mentioning Leamington in connection with the food processing industry, as well as Amherstburg, and Tecumseh. At the same time, respondents felt there was room for growth and that support of local processors (e.g., wineries, delis, and local meats) and promotion of food culture was important.

“We have some well-established processors”

“Food processing is a big part of Leamington and I would like to see it growing and continue”

“Need more locally processed food and purchase of local products for processing”

“Support local producers, processors -celebrating artisanal, special products, a celebration of community, people and food, (e.g., Hiram Walker -history, prohibition tours, whiskeys, globally recognized brand)”

Concerns about too much packaging and the need for better food labelling were mentioned in relation to processing. With regard to food labelling, many felt that knowing more about where food comes from, whether or not it is local, and the declaration of potential additives would be good information to have on food labels.

“Too much packaging”

“Packaging could be cut down, more environmentally friendly (e.g., cereal in US is in a bag only, no box)”

Additional concerns related to processing included the proliferation of highly processed foods and the pollution caused by the processing industry.

“Trying to find less processed food for the kids, everything is processed, make less processed but still desirable for kids”

“Pollution that processing creates, better managed”

Also of concern for some was the possibility of food contamination during processing. For some, the sheer size of larger processing facilities was seen as an increased risk.

“The takeover of smaller businesses by large Corporations that I believe is the reason we are having more outbreaks of disease due to bigger and more complicated machines and they cannot be cleaned properly. Getting larger is not always going to bring better results.”

Similar to the area of processing, distribution was also a lesser known part of the food system for many. Indeed, most respondents identified that they wanted more access to local foods, fewer imports and fewer exports. They questioned current food distribution chains, and wondered how food that comes from far away could be less expensive than food grown locally.

“Don't understand the path from farm to table very well or what work is needed”

“We need to think more of our local product instead of buying from outside, however, if we do need to import as we can't produce all year long, it's important to make sure they are safe from pesticides...and held to the same standards as Canadian produce”

“How/why is local food the same price or more expensive as food that has been transported from another continent?”

Local food distribution systems were seen as lacking or, where present, were not necessarily accessible to all. Many questioned why larger grocers were not buying directly from local producers.

“No distribution systems”

“Some farmers are not able to distribute as there is no local source”

“Delivery to home (Lee & Maria's) great but too expensive for a family of 6, being local it should be fair/equitable and available to all”

Some acknowledged that the picture is complicated by centralized supply chains, lower offshore labour costs, legislation, and demand for off-season product variety.

“Owner of No Frills can't make changes to have more local distribution”

“Foreign produced food out-pricing local food on the shelf. Also the federal government constantly delaying the full implementation of the Safe Foods for Canadians Act. Up to date food regulations would help producers be competitive in larger markets.”

“There's always a price to pay, people want local aren't willing to pay the price, local can't compete with internationally grown produce and products that are sold at lower prices in grocery stores”

“We can't grow produce all year round so it's inevitable to buy non-local produce, right now we enjoy Mexican strawberries which we get from the grocery”

Nevertheless, respondents were firm in their desire to see distribution of local produce and products in local stores, and expressed frustration over the export of local foods.

“Want to see large stores work with farmers to bring in local food products”

“If farmers pick their produce and deliver to groceries directly it would be better in terms of quality, access and availability”

“There needs to be a better connection between farmers and consumers, we have such good produce in WEC”

“We are exporting far too much produce and not keeping it here in our local community”

“Produce doesn't seem to end up on our shelves (e.g., peaches are in season but only see ones from Mexico), we see greenhouses and farms but where is their produce?”

“Lots of products shipped away, why can’t we have access to the food we grow here?”

Finally, having access to local products and distribution channels was seen to benefit businesses as well as individual consumers. Opportunities to facilitate the use of local distribution channels were identified.

“I’m a canteen owner so have business perspective, partnering with community producers/distributors and creating an online list to easily show where to buy local, making it easier to search and find local producers”

“Business would like to have that same, one stop shop as day to day consumers for local produce, build connections with producers”

Strengths, Challenges, and Opportunities

Community stakeholders discussed strengths, challenges, and opportunities related to food processing and distribution. Themes that emerged through community discussions include: competing globally, supporting local and reducing waste. Tables that summarize group discussion reflect the thoughts and words of the stakeholders.

Competing Globally

Stakeholders considered local food processing and distribution as part of a global market. The capacity to compete globally is supported by the strength of the existing food-manufacturing sector, the geographic proximity to the border and transportation infrastructure, the existence of resources and a skilled workforce in the region, and the high standards for food processing. Identified challenges include the complexity and added costs of international trade agreements, regulations, and logistics. Competing with countries where production is less costly was identified as a challenge economically. Meanwhile, imported goods were also viewed cautiously due to the potential for different standards in processing, inspection and enforcement. Opportunities to increase competitiveness included the use of technology to make distribution and transportation more efficient, and the encouragement of consolidated institutional purchasing to drive demand for local products.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> • Region’s second largest manufacturing sector • Easy access to the border, freeways (i.e., infrastructure is there) • Resources and skilled workforce are near large manufacturing sectors • High standards for processing and distribution nationally 	<ul style="list-style-type: none"> • Local manufacturers are competing globally, market is more than local • Canada/US/Mexico free trade agreement, tariffs, regulations, logistics complicate and can be costly • Competition from low-cost countries like China and India • Increased reliance on imports means concerns about enforcement of standards; lack of transparency in processing companies 	<ul style="list-style-type: none"> • Technology to assist transportation brokers • Encourage consolidated purchasing for institutions to drive demand

Support for Local Processing and Distribution

Another area discussed by stakeholders was support for local processing and local, short-chain distribution networks. The notion of buying local produce and products was perceived to be popular, and in Windsor and Essex County, the proliferation of local producers and processors was seen as supporting a buy local sentiment. Challenges with buying local were also discussed. Current national food distribution chains that move local goods out of the community, utilize extensive transportation, and bypass smaller stakeholders were seen to be a barrier to supporting local distribution, as was a lack of understanding of current processing and distribution practices. The perception of local distribution as cost prohibitive was also noted as a challenge. Identified opportunities include education and awareness building, support for eat-local programmes, group promotion and purchasing ventures, and alternative distribution strategies. One suggestion was to conduct a feasibility study for a local distribution centre pilot programme.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> • Local and fresh is trendy • High number of processing (canning) companies and second largest sector locally 	<ul style="list-style-type: none"> • Local food sent to Toronto then back (concerns: spoilage, shelf life, increased costs, environmental impact) • Lack of understanding of the pathway between production and distribution • Large scale distribution chains mean many are missing from the process • Local distribution is cost prohibitive 	<ul style="list-style-type: none"> • Education and awareness about local processing, distribution and the importance of supporting local; strengthen eat-local programmes • Have local companies network and market together to extend promotions • Local group purchasing (e.g., local child care centres, schools and other non-profits) • Alternatives food warehouses, co-ops, community supported agriculture • Feasibility study of pilot project for local distribution centre

Reducing Waste

Finally, participants also looked at how processing and distribution connect with waste reduction, specifically through food diversion practices. Existing working relationships between processing plants and food banks were noted as a local strength in this area. Identified challenges include the habit of referring to unmarketable food as waste, and stigma associated with using unmarketable food. Providing additional education on food processing and the use of lower grade food products, and working more with processors and others to divert food waste were seen as opportunities. As well, utilizing existing successful models for food diversion and community food support programmes (e.g., Food Share) was also suggested.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none">Existing collaboration between processing plants and food banks	<ul style="list-style-type: none">Unmarketable food gets referred to as wasteStigma associated with accessing unmarketable food (e.g., at food bank)	<ul style="list-style-type: none">Educate on food gradingWork with processors to redirect “waste” to food banks and other organizationsModel after existing innovative programmes (e.g., Food Share)

Summary

Food processing and distribution play a significant role in Ontario's economy as well as that of Windsor and Essex County. Food and beverage manufacturing is estimated to generate over \$2 billion in revenue annually and is the region's second largest manufacturing sector. The industry also provides employment locally, although filling positions in the agri-food sector continues to be a challenge. Local organizations like Workforce Windsor Essex have been working to facilitate training in this area to meet local demand.

Local food processors range from the small to the very large, and certain municipalities rely quite heavily on employment in this sector. Community members reported seeing local processing as an asset that could be further encouraged. They also felt that locally grown produce should be locally processed and that there may be opportunities for more food diversion work with local processors.

The heavy regulation of food processing plants offers protections in terms of food safety but also presents challenges to competitiveness. Technology is increasingly changing the face of food processing and distribution but Windsor and Essex County, with its existing manufacturing base and research partners, is well positioned to grow through research and innovation at the local level. Windsor and Essex County also benefit from their proximity to the United States and main transportation routes within the Windsor-Detroit shipping corridor.

Food distribution supply chains are typically large and centralized, facilitated by a limited number of major grocery chains. This is the case for Windsor and Essex County as with the rest of the province. Long chain distribution networks have come under criticism for creating pollution while also increasing the difficulty to develop short chain distribution networks within regional food systems.

Provincially, Ontario imports more than it exports. Southwestern Ontario typically produces a surplus of food products (relative to consumption) suggesting that in the absence of exporting, this region can be self-sufficient with what is produced locally. Research has suggested that growing even 10% of what is typically imported locally could have a profound effect on the economy and the environment.

While residents that were surveyed believe food grown or produced here should be available here, there was some appreciation that the issue is more complicated. Alternative food distribution models are predicated on a shorter food distribution chain between producer and consumer. Examples of alternative distribution models include farmers' markets, stands, community gardens, and food diversion programmes, all of which are available in Windsor and Essex County. Group purchasing programmes are another alternative food distribution model that has the capacity to drive demand for more local products.

Section 6: Access and Consumption

This section will provide an overview of the local access and consumption data, as well as feedback from community engagement sessions and a summary of the strengths, challenges, and opportunities for this region.

When looking at the Windsor and Essex County Food System Framework, Access and Consumption make up one third of the system. The food system determines how individuals choose the food to be consumed and what foods consumers have access to. Land use decisions made by municipal or provincial governments influence food production, and therefore can affect what food is available and accessible to the local community. Production levels and supply chains influence the cost of food. In addition, the local built environment (e.g., presence of full service groceries versus small convenience stores) determines what foods are available in what neighbourhoods.

Bill 36, *the Local Food Act*, 2013 (Local Food Act, 2013, S.O. 2013, c.7) is a piece of provincial legislation that is relevant to these aspects of the food system. As described in Section 1 of this report, the Local Food Act aims to increase access to local food throughout Ontario, and encourages the use of local foods by public sector organizations. Overall, the hope is easier access to, and increased consumption of, local foods throughout the community. Similarly, the *Ontario Food and Nutrition Strategy* (2017) has three strategic directions including healthy food access, food literacy and skills, and healthy food systems (Ontario Food and Nutrition Strategy Group, 2017). The first of these strategic directions strives to ensure that Ontarians have access to, and the means to, choose safe, healthy, local and culturally acceptable foods. Food literacy and skills refers to having the capacity for healthy eating and making healthy choices.

Authors of the Dollars and Sense report estimate that by switching to an optimal diet that contains more fruits and vegetables, demand has the capacity to drive increased local food production, greater retention of local produced and processed foods, and ultimately impact gross domestic product and employment in the food sector (Kubursi et al., 2015).

Of all the local assets in the food system, the largest number identified by stakeholders by far were in the areas of access and consumption (Table 57).

Table 57: Access and Consumption Related Assets in Windsor and Essex County by Type and Number

Type of Asset	# of Assets	Identified Assets
Human	6	Farmer's Markets Dietitians Education Programmes Food Safety Programmes Health Services School Teachers/Educators
Physical	10	Farmer's Markets Food Banks Community Kitchens Community Transit Convenience Stores Farm Stands Grocery Stores Restaurants Retail Outlet (on or off-farm) Specialty Food Stores
Natural	0	
Financial	5	Emergency Meals Food Banks Food Recovery Programmes Gleaners Income Supports

Type of Asset	# of Assets	Identified Assets
Social	14	Farmer's Markets Food Banks Community Kitchens Community Meals Fairs and Festivals Meal Programmes Pick Your Own Emergency Meals Food Recovery Programmes Gleaners Health Services Recreation Programmes Schools School Lunch Programmes

Access

Access to food refers to the ability to obtain healthy foods, whether purchased or provided. Two main factors affecting food access include food environment and economic constraints. When income is not a barrier to accessing healthy food, the built environment can determine the type of food available to a person or family. For example, the types of food vendors available can be vastly different depending on geographic location. The presence or absence of a full service grocery store, convenience store, farmers' market, or farm stand can impact buying habits. Similarly, a lack of transportation, whether private or public, can be a barrier to food access, as can mobility, safety, and other factors.

Economic constraints impact access to food. Household food insecurity refers to "inadequate or insecure access to food due to financial constraints" (PROOF Food Insecurity Policy Research, 2018b). Individuals without adequate income may be forced to limit their food intake, go without eating, or turn to emergency food services for help. Recent poverty reduction initiatives at Federal (Government of Canada, 2018) and Provincial (Government of Ontario, 2014) levels have highlighted the importance of access to food and food security for overall well-being. Built environment and food security, as well as their impact on access to food in Windsor and Essex County, will be considered.

Food Access and the Built Environment

A variety of food outlets provide access to food of varying type and quality. Data provided by the Windsor-Essex County Health Unit Environmental Health Department (responsible for food premise inspection), show the wide variety of types of food premises that exist in Windsor and Essex County (Table 58). This list represents only those food premises that are inspected by the Windsor-Essex County Health Unit, and some food access points, such as farmers' markets and stands, where more than 50% of products sold are the vendors' own farm products, are exempt from the Ontario Food Premises Regulation 493 (O. Reg. 493/17: Food Premises).

Table 58: Types of Food Premises in Windsor and Essex County Based on Food Inspection Data

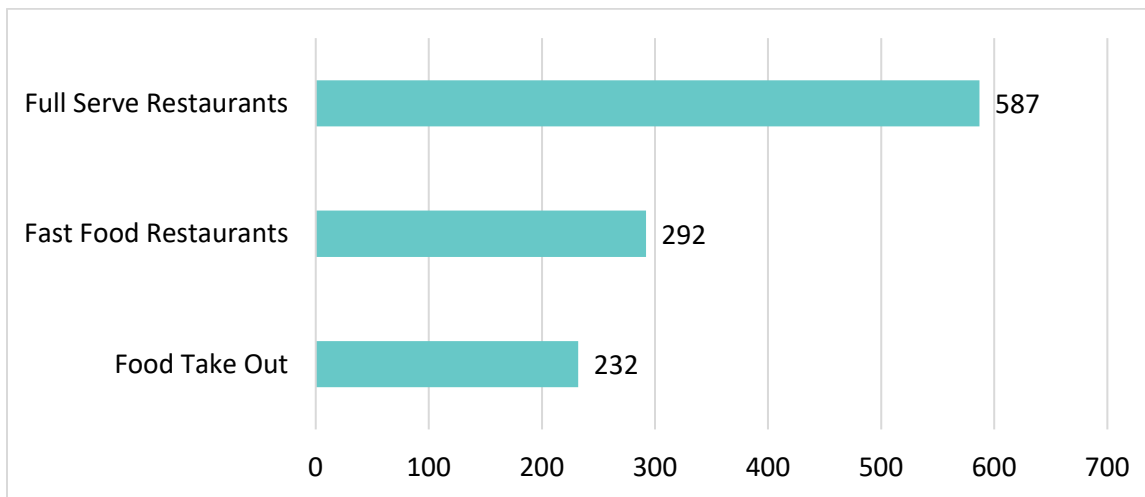
Types of Food Premises in Windsor and Essex County	
Bake Shops	Food Store (Convenience/Variety)
Bakeries	Food Take Out
Banquet Facilities	Fraternal Organizations
Bed and Breakfasts	Home Caterer
Boarding/Lodging Home/Kitchen	Hospital
Bottling Plants	Mobile Food Premises
Brew Your Own (Beer/Wine)	Nursing Homes
Butcher Shops	Private Clubs
Cafeterias (General)	Refreshment Stands
Cafeterias (School)	Religious Organizations
Catering Vehicles	Rest/Retirement Homes
Chartered/Cruise Boat	Restaurant (Fast Food)
Child Care – Food Preparation	Restaurant (Full Service)
Child Care – Catered	School Breakfast
Cocktail Bar/Beverage Room	School Nutrition Programme
Community Centre	Service Clubs
Community Kitchen	Special Event – Organization
Farmers Market	Street Food Vending Carts
Food Banks	Supermarkets
Food Depot	Vendors
Food Processing Plant	

The next sections will give closer consideration to the availability of places where residents can purchase meals (e.g., restaurants and fast food outlets) or food (e.g., grocery stores, markets, convenience stores, farmers’ markets, and stands).

Purchasing Meals

Although there are some exceptions, food take out, fast food, and full serve restaurants provide a wide variety of opportunities for food access for individuals with the means to pay. The Windsor-Essex County Health Unit food inspection data in Figure 25 provides data on the number of such facilities in Windsor and Essex County since all are subject to food inspection with varying degrees of frequency based on their risk category. As of November 2018, there were 587 full serve restaurants, 292 fast food restaurants and 232 food take out establishments on the Health Unit inspection roster.

Figure 25: Number of Full Serve, Fast Food and Take Out Food Premises on the WECHU Inspection List (November 2018)



Windsor has the highest number of food take out, fast food restaurants, and full service restaurants (701), followed by Tecumseh (90), and Leamington (85). In terms of the total number of premises per 1,000 residents for each municipality, Tecumseh has the highest ratio, with 3.87 premises per 1,000 residents, followed by Windsor with 3.23 per 1,000 residents and Leamington with 3.08 premises per 1,000 residents (Table 59).

Table 59: Number and Population Ratio for Take Out and Restaurant Premises in Windsor and Essex County in 2018

Municipality	Food Take Out	Restaurant (Fast Food)	Restaurant (Full Service)	Grand Total	Total Per 1,000 Population
Windsor	137	203	361	701	3.23
Tecumseh	20	19	51	90	3.87
Leamington	18	18	49	85	3.08
Essex	10	13	30	53	2.59
Kingsville	8	12	28	48	2.23
LaSalle	12	13	19	44	1.46
Lakeshore	12	7	23	42	1.15
Amherstburg	12	7	22	41	1.87

The proportional distribution of types of premises are fairly similar across municipalities (Figure 26).

Figure 26: Proportion of Take Out and Restaurant Food Premises in Windsor and Essex County (November 2018) by Municipality

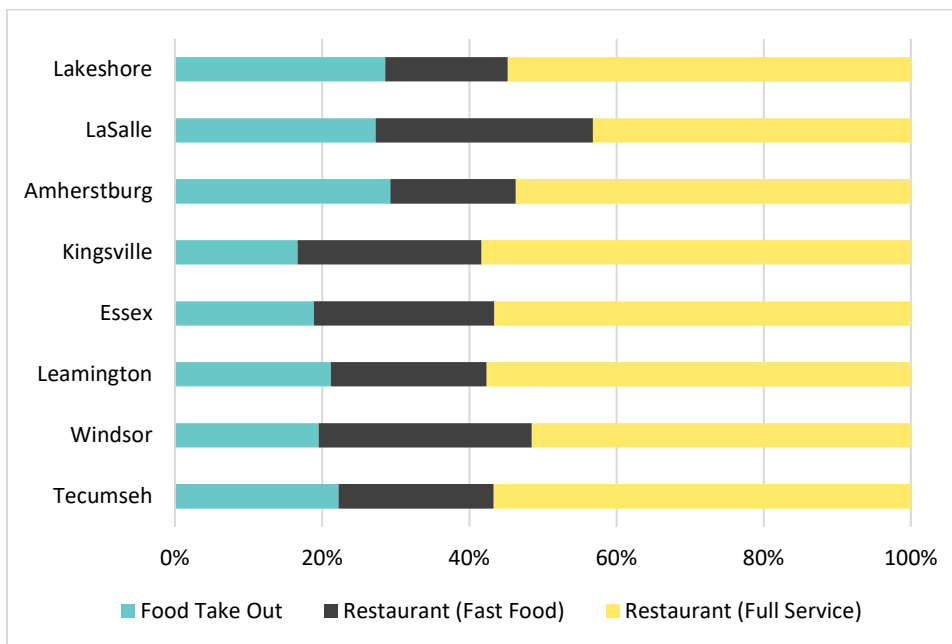
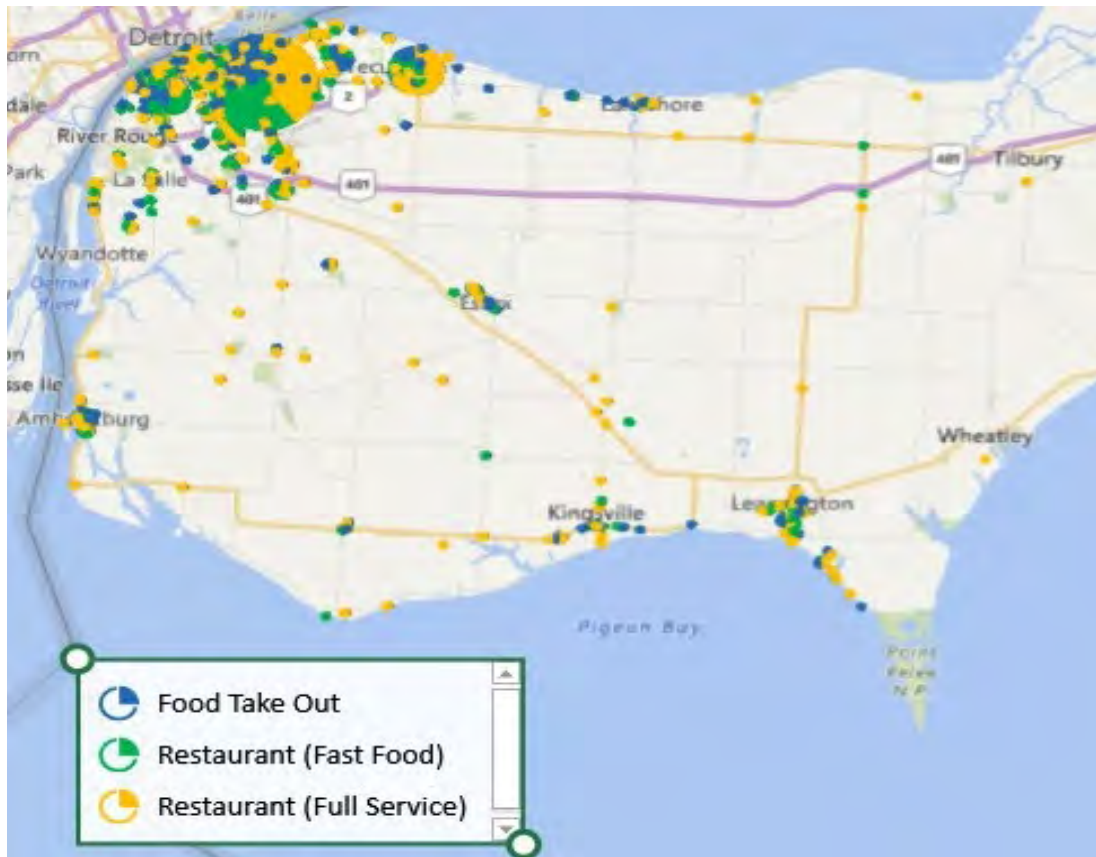


Figure 27 provides a visualization of the distribution of take out and restaurant food premises in Windsor and Essex County based on the WECHU food inspection lists in November of 2018.

Figure 27: Location of Take Out and Restaurant Food Premises in Windsor and Essex County (November 2018)



Purchasing Food

Purchasing food, as opposed to meals, typically requires access to supermarkets or grocery stores. Convenience stores, and farmers' markets and stands are also available locally to purchase food.

Supermarkets and Convenience Stores

Supermarkets are a frequent access point for food for the majority of residents. Convenience stores also act as an access point for an increasingly wide range of food products. As of November 2018, there were 324 convenience stores serving or selling food and 46 supermarkets, all of which require food inspection in Windsor and Essex County. These included national grocery (e.g., Zehrs, Metro, and Sobeys) and convenience store chains (e.g., 7-Eleven and Mac's), as well as smaller supermarkets, specialty food markets, and other establishments that have food products for sale (e.g., drug stores, dollar stores, and gas stations). As shown in Table 60, Windsor led in the overall number of supermarkets (27) and convenience stores (241), with 268 in total. Windsor also had the highest population ratio for such establishments with 1.23 per 1,000 residents, with Leamington close behind at 1.12 per 1,000 residents. Remaining

municipalities had far lower ratios, ranging from 0.7 per 1,000 for Kingsville to 0.29 per 1,000 residents for Essex.

Table 60: Number and Population Ratio for Convenience Stores and Supermarkets by Municipality (November 2018)

Municipality	Convenience Stores	Supermarkets	Grand Total	Total Per 1,000 Population
Windsor	241	27	268	1.23
Leamington	26	5	31	1.12
Kingsville	13	2	15	0.70
Tecumseh	13	2	15	0.65
LaSalle	14	1	15	0.50
Amherstburg	6	4	10	0.46
Lakeshore	7	3	10	0.27
Essex	4	2	6	0.29

There is greater variability in the relative proportion of convenience stores versus supermarkets by municipality. Data from November 2018 indicated LaSalle and Windsor both have a far greater proportion of convenience stores relative to supermarkets, while Amherstburg tended to have a greater proportion of supermarkets (Figure 28).

Figure 28: Proportion of Convenience Stores Versus Supermarkets by Municipality (November 2018)

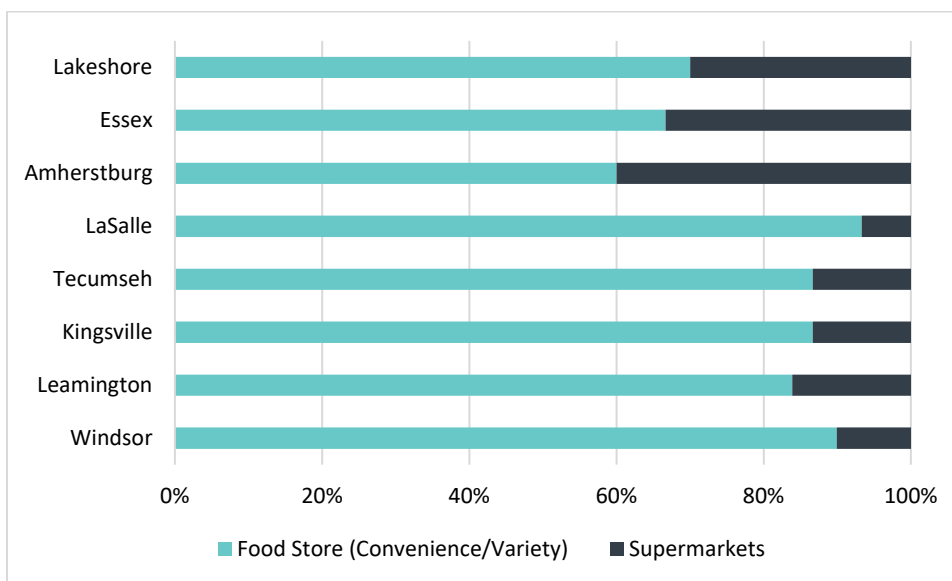


Figure 29: Map of Convenience Stores and Supermarkets in Windsor and Essex County (November 2018)

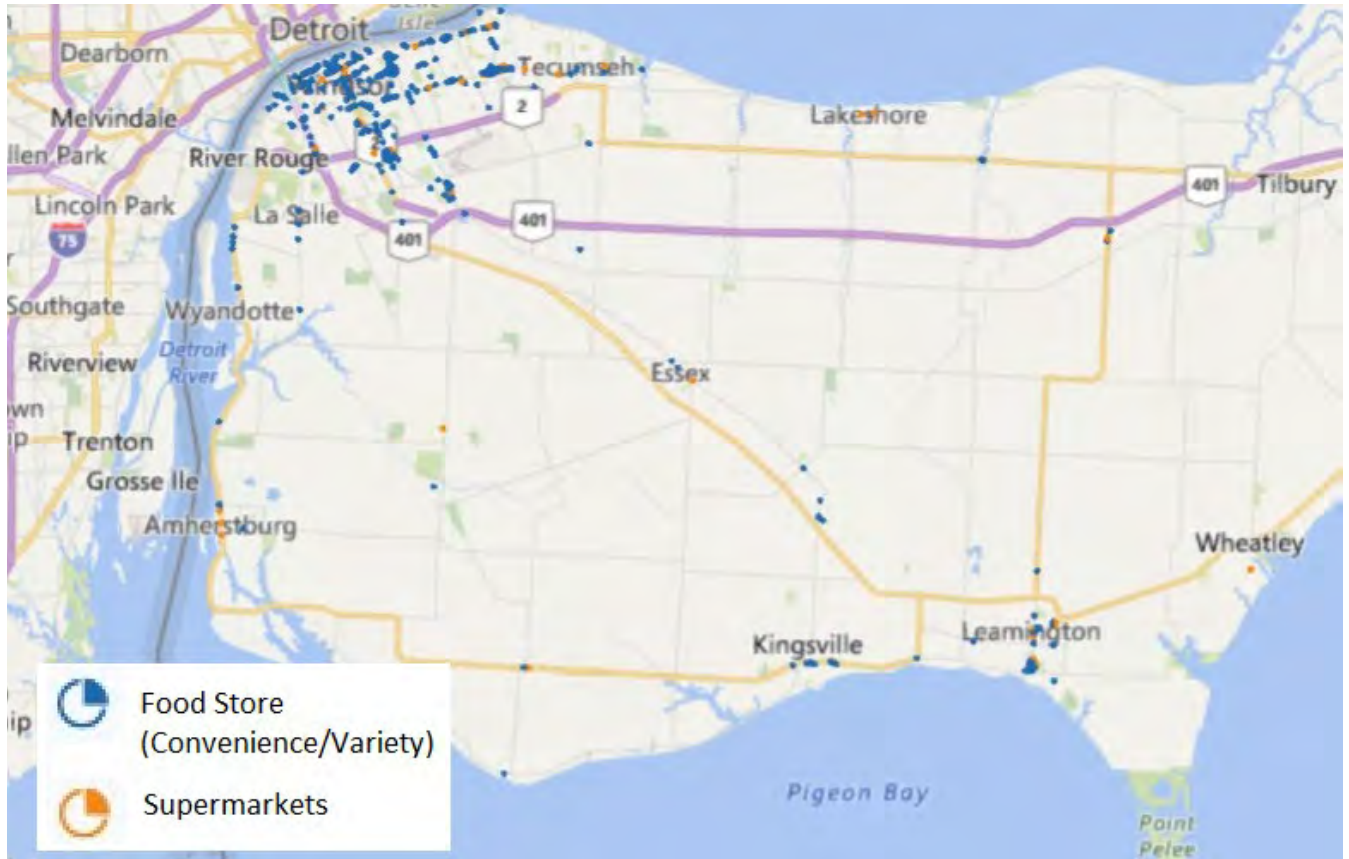
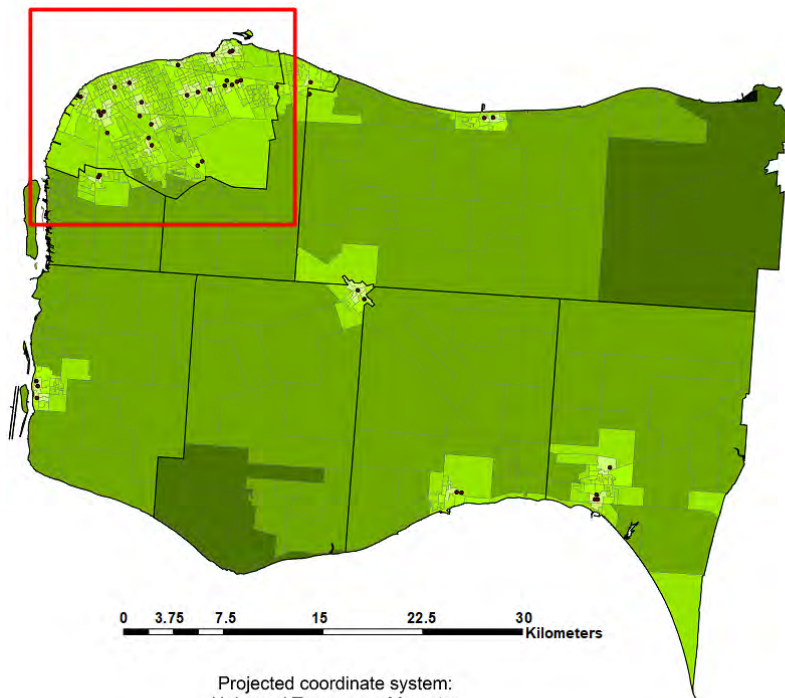


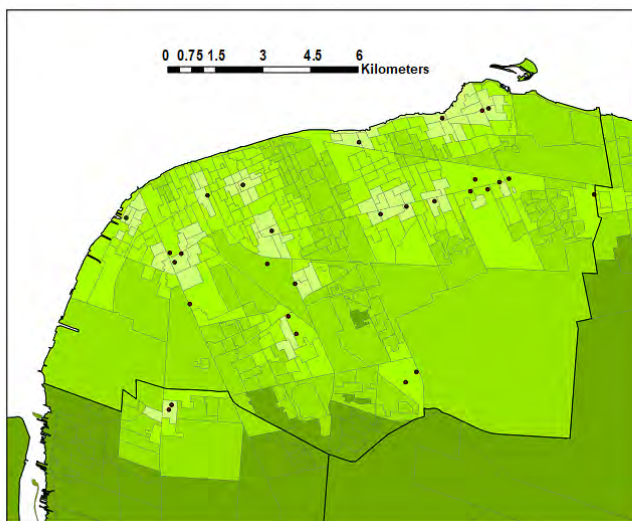
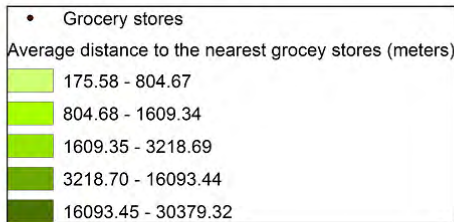
Figure 30 provides a visual sense of the location of grocery stores in 2015 in Windsor and Essex County. A distance of 1 kilometre is widely considered a reasonable walking distance for an adult in an urban setting (Apparicio, P., Cloutier, M. S., & Shearmur, R., 2007). Gradations in shading show the average distance to the nearest grocery store in metres, with lighter colours indicating smaller distances. Outside of Windsor, the average distance to grocery stores tended to increase significantly.

Figure 30: Neighbourhood Spatial Accessibility to Grocery Stores for Windsor and Essex County, 2015



Projected coordinate system:
Universal Transverse Mercator
North American Datum 1983 Zone 17N

Created by Carina Xue Luo
Leddy Library, University of Windsor



Farmers' Markets and Stands

Although seasonal in nature, farmers' markets and stands are an excellent source of local fresh fruit and vegetables. According to one national study, farmers' markets play a key role in the marketing of Canadian agricultural products, as well as contributing to farm incomes (Experience Renewal Solutions Inc., 2009). Vendors are typically primary producers, and regularly attending customers are generally supportive of the farmers' market industry and are motivated to attend by the opportunity to purchase fresh, local, in season produce. Lack of convenience and awareness were common reasons for not utilizing farmers' markets, but increasingly consumer demands and interests have become more closely aligned with support for local production and fresh, healthy food choices. In addition to offering fresh, local, and organic foods, farmers' markets in Windsor and Essex County are promoted as providing opportunities for community engagement, direct access to producers and vendors to learn about how and where food is produced, family friendly fun, and as supporting environmental sustainability (Downtown Windsor Farmers' Market, 2019).

A thorough examination of local data sources in Windsor and Essex County suggested a total of approximately 14 farmers' markets in 2018 in locations including Amherstburg, Belle River, Comber, Windsor, Harrow, Kingsville, Leamington, and Tecumseh. Markets were not readily identified in Essex, LaSalle, or Lakeshore. Also identified were 41 established farms stands in 2018, although some of these are more transitory in nature (Table 61).

Table 61: Farmers' Markets in Windsor and Essex County (2018)

Farmers' Markets in Windsor and Essex County	
Amherstburg Farmers' Market	Kingsville Night Market
Belle River Farmers' Market	Leamington Farmers' Market
Comber Farmer's Market	Olde Sandwich Towne Farmers' Market
Downtown Windsor Farmers' Market	Riverside Farmer's, Arts, Crafts and Flea Market
Ford City Twilight Market	Tecumseh Night Market
Harrow Market	The City Market Windsor
Kingsville Community Farmer's Market	Walkerville Night Market

Table 62 explores the number of farms reporting selling agricultural products directly to consumers in the year prior to the 2016 Census of Agriculture. As shown in Table 62, rates of different types of direct sales are fairly consistent from province to county. Of those farms reporting direct sales, farm gate sales, stands, kiosks, and U-pick operations were the most common ways of reaching consumers with farm products (86-90%), followed by farmers' markets (17-26%).

When considering the number of farms engaged in direct sales as a percentage of all farms in Windsor and Essex County, 8% of all farms (136) reported using farm gate sales, stands, kiosks and U-pick, and 2% (33) reported using farmers' markets. It is important to note, however, that these only represent some of the potential access points for farm products. Others are discussed under Alternative Food Distribution Models in Section 5.

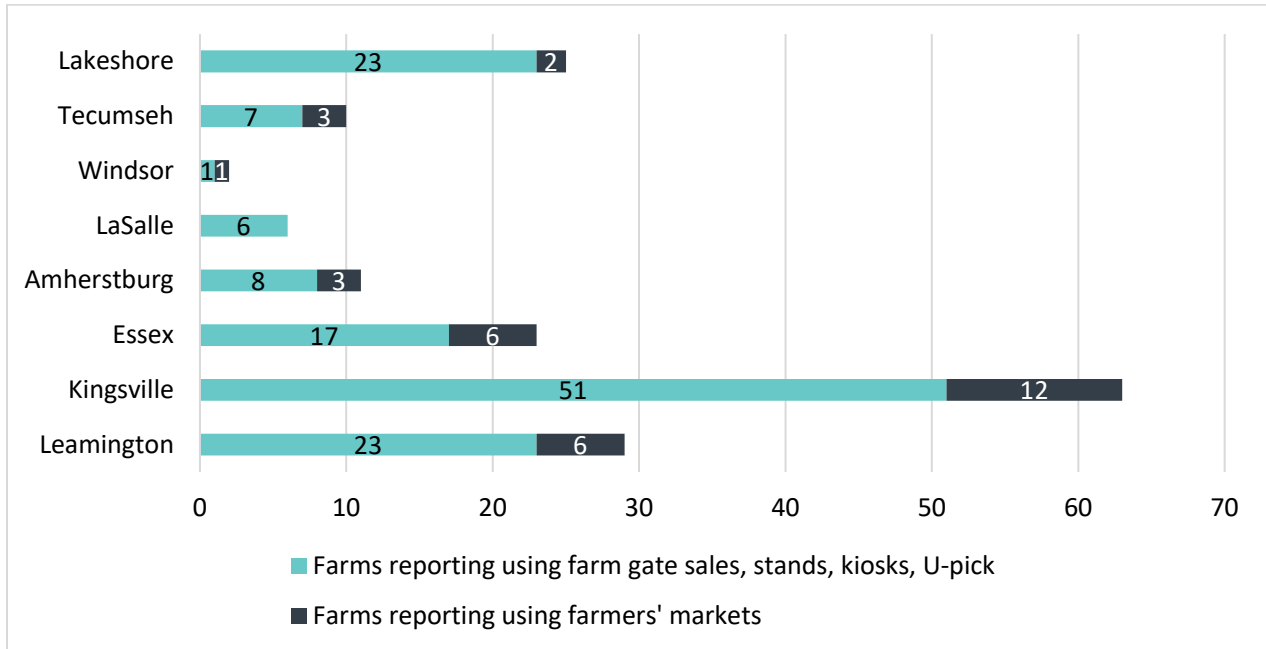
Table 62: Farms Reporting Direct Product Sales to Consumers as a Percentage of Reporting Farms and of all Farms

% of Reporting Farms in:	Ontario	Southern Ontario	Windsor and Essex County	Chatham – Kent County	% of All Farms in Ontario	% of All Farms in Windsor and Essex County
Direct sales of unprocessed agricultural products sold	97%	97%	97%	97%	15%	9%
Using farm gate sales, stands, kiosks, U-pick	90%	86%	86%	88%	14%	8%
Using farmers' markets	22%	26%	21%	17%	3%	2%
Direct sales of value-added products	12%	11%	12%	8%	2%	1%
Using Community Supported Agriculture	5%	5%	3%	4%	1%	0%
Using other methods	4%	5%	6%	7%	1%	1%

Source: Statistics Canada, 2016 Census of Agriculture

A quick look at the location of the most common access points for direct sales to consumers by municipality in 2016 (Figure 31), shows that Kingsville, Leamington, and Lakeshore report the largest number of options (Statistics Canada, 2017c).

Figure 31: Top Direct Sale Options in Windsor and Essex County in 2016 by Municipality



Growing Your Own Food

Another option for food access is growing your own. Urban agriculture, urban farming, or urban gardening is the practice of cultivating, processing, and distributing food in or around urban areas. Urban agriculture can also involve raising animals and urban beekeeping. Community gardens are one example of urban agriculture already considered in the section of this report on Production. Figures on the number home gardens in Windsor and Essex County are not available.

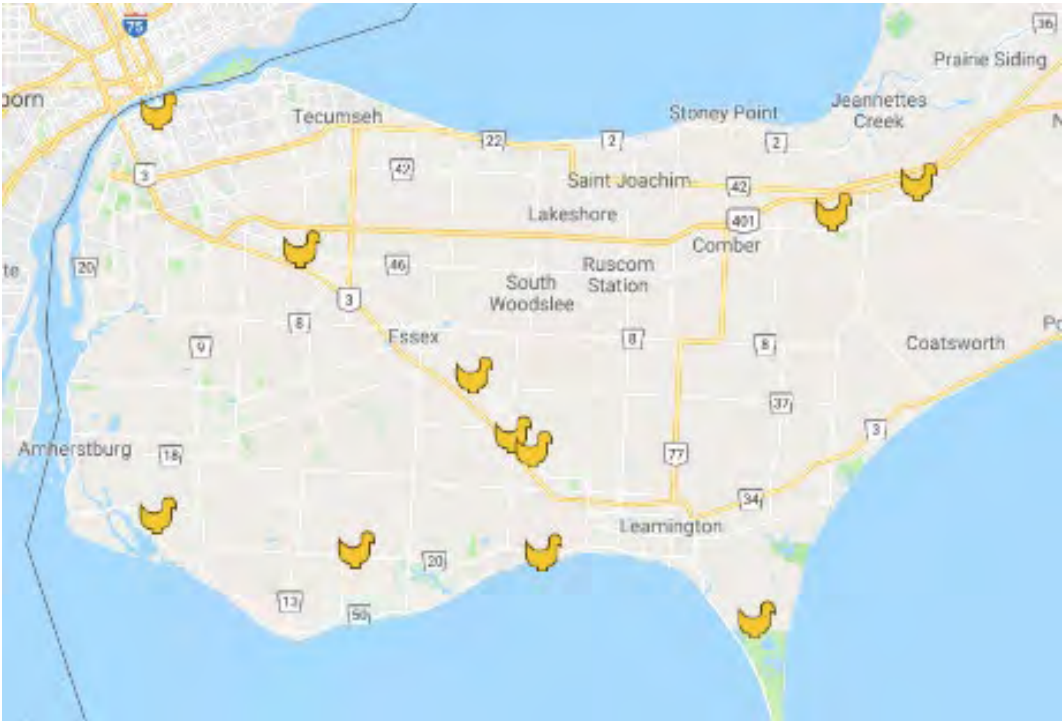
Supports for urban agriculture are available. For example, in addition to supporting community gardens, the Windsor/Essex County Community Garden Collective is also a valuable resource for backyard gardeners and other urban growers. They offer workshops such as Clueless in the Garden: A Beginner's Guide to Gardening and a Balcony Garden Workshop, as well as providing a seed-sharing programme. Other organizations work to support education on urban gardening, such as the Growing Gardeners programme at Ready Set Go.

In terms of urban agriculture, urban chickens have gained media attention in Ontario. Advocates of backyard chickens have argued that raising chickens whether for eggs or meat is a positive and healthful alternative for access. Although not allowed elsewhere in Windsor and Essex County at the time this report was written, the Tecumseh Town Council voted in favour of an interim control bylaw that, if approved, would allow local residents up to 12 chickens in their backyard for two years. Tecumseh had previously allowed a maximum of three urban chickens but amended its animal control bylaw in November 2016 to ban chickens in urban areas of the town. Council was expected to give final approval to the new bylaw in September (“Tecumseh council considers allowing urban chickens”, 2018) and the 2019 budget includes the

development of a pilot licensing programme for the keeping of urban chickens in residential areas (Town of Tecumseh, 2018).

In the absence of backyard chickens, some residents looking for free-range eggs in Windsor and Essex County make use of farm gate sales. By law, farmers cannot sell ungraded eggs beyond their farm gate and Ontario grocery stores do not sell free-range eggs, although free run eggs are available. Figure 32 shows a map of locations where free-range eggs can be purchased locally.

Figure 32: Map of Local Free-Range Egg Producers



Transportation and Food Access

Transportation, or lack thereof, is a barrier to food access for some individuals. Low income (e.g., no access to a car) is a common underlying issue. Windsor and Essex County has a range of transportation supports that include public transportation and infrastructure that supports active transportation such as cycling and walking. As previously noted, a distance of 1 kilometre is considered a reasonable walking distance for an adult in an urban setting (Apparicio, P., Cloutier, M. S., & Shearmur, R., 2007). Taxis and online ride-sharing services are other local options for transportation.

In terms of public transportation, Transit Windsor provides service to the City of Windsor. As of July 2016, the single ride fare was \$3.00, however, deals such as unlimited day passes (\$9.00), reduced rates for students and seniors 60 and over, and reductions associated with buying passes over a longer period of time (e.g., monthly), are offered. As well, children under 5 ride for free with a full paying passenger. The Where's My Bus app was launched to increase the user-friendliness of Windsor public transit. Adding the bus routes to LaSalle has also extended reach. While transportation between the city and county was previously not available, the Municipality of Leamington is establishing a bus route between Leamington and Windsor (Veneza, 2019).

The County Wide Active Transportation System (CWATS) has also expanded the ability to engage in active transportation across the city and county ([CWATS website](#)). However, buying groceries using active transportation may be an impracticality for many families. The use of public transit to purchase groceries may also present practical and economic challenges, particularly for families in lower income.

Poverty, Food Insecurity, and Access

Food access is also impacted by economic factors. When individuals or families experience poverty, food insecurity is a very real and immediate risk. A variety of initiatives in Windsor and Essex County over the years have attempted to address the issue of poverty and food security locally. The Hungry for Change report, published in 2009, documented a number of local economic stressors, and became an impetus to consider food insecurity in the region. Concerns over economic downturn, rising rates of unemployment and poverty, and even greater vulnerability for certain populations (e.g., children, seniors, and female-led lone parent families), pushed food security to the forefront. As a result, the Food Matters Committee was formed to capitalize on the momentum created by the Hungry for Change report with the aim to increase access to healthy food for all residents through cross-sectoral action.

The outcomes of the 2010 Food Matters Forum included the creation of a Food Security Steering Committee as a priority. The purpose of the committee was to develop a 10-year strategy for food security in Windsor and Essex County. As part of their early information gathering, the group launched a food accessibility survey that reached 415 members of the community. A number of the questions from that survey were repeated in the community engagement survey for this report to allow comparison over time.

A number of initiatives resulted from this early planning, including, but not limited to, the development of the Food Charter for Windsor and Essex County. A Market Dollars project was also started through the combined efforts of Pathway to Potential, Food Matters Windsor Essex, the Community Garden Collective, and the Downtown Windsor Farmers' Market with the support of Healthy Communities funding from the Ontario Ministry of Health and Long-term Care. The Market Dollars project was intended to provide lower income families and individuals with opportunities to purchase nutritious food, while also benefiting local producers and markets by promoting and supporting their products.

Despite these and other highly worthwhile initiatives, poverty and food security continue to be an issue in Windsor and Essex County. *The Cost of Poverty in Windsor and Essex County* report published by United Way Windsor-Essex County in 2014 (United Way, 2014) drew attention to higher levels of poverty in the Windsor Census Metropolitan Area compared to the both provincial and national levels, and highlighted the costs of poverty to society. More recently, the *Taking Back our Neighbourhoods* report (United Way, 2016) provided strong evidence of pervasive poverty in Windsor and Essex County from 2001 to 2011, with data suggesting that poverty had become concentrated in specific neighbourhoods. Calls for action include targeted, coordinated over-investment in these neighbourhoods to spur renewal and support for relevant resources such as food banks, after-school and youth programming, early-years programmes, community gardens, and other services that have a role in alleviating poverty or mitigating the effects of poverty. Community hubs were also identified as an important support mechanism, a finding that was voiced earlier by the Food Security Steering Committee.

Poverty is multi-faceted and a variety of risk factors, including low income, contribute to the construct of poverty. As suggested in Section 3 and Appendix E of this report, a number of demographic factors are germane to understanding poverty in Windsor and Essex County. The following provides a short summary of select relevant data for Windsor and Essex County:

- **Diversity:** The region is made up of a highly diverse population, including urban Aboriginal and New Canadians, both of whom may be at risk of poverty and food insecurity.
- **Lone-Parent Families:** The number of lone-parent families increased from 16,600 in 2001 to 20,455 in 2016. Lone-parent families represented 18% of all census families in 2016, with 80% of lone-parent families being female led.
- **Education:** In 2016, 19% of the population 15+ and 11% of those 25 to 64 had no certificate, degree or diploma.
- **Unemployment:** While unemployment rates have been decreasing since January 2011, local rates were typically higher than provincial rates, with figures in September 2018 at 7.3% for Windsor and Essex County compared to 5.7% for Ontario. As of 2019 the unemployment rate in the Windsor Census Metropolitan Area (CMA) was 5.2%.
- **Housing:** Wait lists for affordable housing increased by 31% from 2016 to 2017 and wait times were lengthy.

- **Low income:** According to after tax low-income measures (LIM-AT), rates of poverty overall have risen from 13.4% in 2005 to 16.5% in 2015, a figure significantly higher than the provincial rate of 14.1% that same year. Females and the youngest members of the community were more likely to be in low income, as were lone-parent families. Windsor has the highest rate of low income (23.3%), followed by Leamington (16.0%).

Overall, calculations of the Social Risk Index for Windsor and Essex County (Table 21) suggest that compared to the province, Windsor and Essex County was at “Somewhat High Risk.” Relative to Windsor and Essex County as a whole, Windsor was considered an area of “High Risk” and Leamington an area of “Somewhat High Risk.”

Specific indicators of food insecurity in this region, summarized from data provided in Section 3 and Appendix E of this report, include:

- **Food Insecurity:** The 2012-2014 Canadian Community Health Survey showed evidence of moderate or severe food insecurity for 1 in 10 households, 1 in 10 children, and 1 in 4 low-income households in Windsor and Essex County.
- **Cost of Healthy Food:** The cost of a nutritious food basket for a family of 4 in Windsor and Essex County rose by 22.7% from 2009 to 2018, which equates to an additional \$1,867 annually on food. Households living on Ontario Works with children have little left over after rent and healthy food costs, while single males receiving Ontario Works have insufficient funds to buy healthy food after rent is paid.
- **Emergency Food:** From 2017 to 2018, the Windsor and Essex County Food Bank Association reported an increase in the number overall visits and unique individuals served, as well as the number of seniors (65 and over) and new Canadians using food bank services.

Seniors are increasingly represented at food banks across Ontario. The Ontario Food Bank Association suggests that increases in food insecurity among seniors may be due to a decline in pensions, personal savings, and government benefits, culminating in challenges balancing income and expenses (Ontario Association of Food Banks, 2018).

In summary, available data would support the contention that poverty and food security remain a significant issue for residents of Windsor and Essex County, making access to healthy food a concern for all. Community food programmes are often the front line of support.

Community Food Programmes

There are a number of food programmes in Windsor and Essex County that help with access to food. These range from programmes with low or nominal purchase fees to those providing free food assistance, as well as other novel solutions in the form of community gardens and kitchens. It should be noted, that many of these community food initiatives also intersect. For example, community gardens and food rescue initiatives can supply produce to community kitchens.

Food Delivery Programmes

Meals on Wheels (MOW) is the main food delivery programme in the region. MOW helps those who are unable to shop for their own food or cook, by delivering nutritious, affordable meals. Clients can include seniors, people recovering from illness or surgery, new mothers, and people with disabilities, who may have short-term or long-term needs. Locally, Meals on Wheels are available through a variety of agencies (Table 63) with costs in 2018 ranging from \$6.50 to \$7.50 per meal. Currently there is coverage throughout the region. The VON programme partners with the Unemployed Help Centre (UHC) and employs a social enterprise model that offers UHC clients training in food preparation, while providing Meals on Wheels clients lower cost meals.

Table 63: Meals on Wheels Food Delivery Programs Serving Windsor and Essex County

Agency	Areas Served	Cost per Meal
Amherstburg Community Services	Amherstburg, Essex, LaSalle	\$6.50
Community Support Centre of Essex County	Lakeshore, Tecumseh, Essex	\$7.00
VON Windsor Essex, Meals on Wheels Windsor	Windsor	\$6.50
South Essex Community Council	Kingsville, Leamington	\$7.50

Student Nutrition Programmes

Given the rates of poverty and food insecurity in this region, it is no surprise that there are children who go to school hungry. Student nutrition programmes play a vital role in helping make sure that all children have access to fresh, healthy food.

The Ontario Student Nutrition Program (OSNP) in the South West Region is administered by VON Canada from their Windsor-Essex Site ([OSNP website](#)). They work in partnership with public health, school boards, and community partners across the region to deliver funding and support to school breakfast and snack programmes. In total, VON flows just under four million dollars in annual funding to support school nutrition programmes across the region. In 2015-2016, 97,836 students were served 15,776,562 breakfasts or snacks in the OSNP Southwest Region. A bulk food-purchasing programme was initiated by the OSNP in the Southwest in order to streamline food ordering and reduce costs. However, the programme was suspended as of

June 30th, 2017 due to a variety of challenges. They remain committed to exploring new options.

Local schools independently operate their own programmes with OSNP support. Depending on the school, student nutrition programmes offer food 3-5 days per week. Student nutrition programmes are operated primarily by volunteers before school starts, during scheduled class breaks, or after school. The vast majority of student nutrition programmes are located in schools (e.g., Jumpstart Student Nutrition Program). However, the United Way of Windsor and Essex County also provides some funding for student nutrition. For example, their Student Summer Community Nutrition Program runs in July and August in Windsor and helps provide meals for youth 18 years and under. According to OSNP, there are 92 OSNP funded Student Nutrition Programs in Windsor-Essex. There are two additional programmes that are third party funded (with funds flowed through VON/OSNP) for a total of 94 SNPs. Some of the 94 schools have more than one programme (primarily low income sites with a before school breakfast programme and a full school snack programme).

There is no fully funded, universally accessible student nutrition programme in Canada. However, organizations like the [Coalition for Healthy School Food](#) and [Food Secure Canada](#) have been active in advocating for a national school food programme. Student meals are also available through for-profit meal providers. While this is not feasible for many families, it should be noted that these programmes also provide a limited number of free meals for children from families in need of assistance, with students typically chosen by school administration.

Food Assistance Programmes

Food assistance programmes provide meals and emergency food for those in need. However, precise figures regarding the numbers and types of food assistance programmes are challenging to obtain. In some cases, organizations providing those services do not choose to identify themselves as doing so. Nor does the existence of food assistance programmes paint a reliable picture of need, since not all people who might benefit from food assistance programmes will choose to use them.

There is great variability among programmes and providers. One study of food assistance programmes across the country found that 44% were community service agencies, 30% were faith groups (e.g., churches, mosques), 22% were faith-based social service agencies (e.g., Salvation Army), and the remainder were stand-alone food assistance programmes or educational institutions (Pettes, Dachner, Gaetz & Tarasuk, 2016). Organizations also varied in terms of service provided (e.g., emergency versus multi-service), intended clients (e.g., universal versus targeted), extent of charitable provision (e.g., number of meals, service days, hours), and operational characteristics (e.g., government funding, dedicated funding for food, fundraising, paid staff, volunteers). One thing that programmes had in common, however, was that demand for food outstripped capacity.

This variability is evident in Windsor and Essex County as well. Data drawn from 211 Ontario records current as of the Fall of 2018 showed a range of programmes in Windsor and Essex County active at that time including those classed as community meals (15), emergency meals (6), and food banks (37), with food banks being the most common (Table 64).

Table 64: Number of Food Assistance Programmes in Windsor and Essex County (Fall 2018) by Programme Type

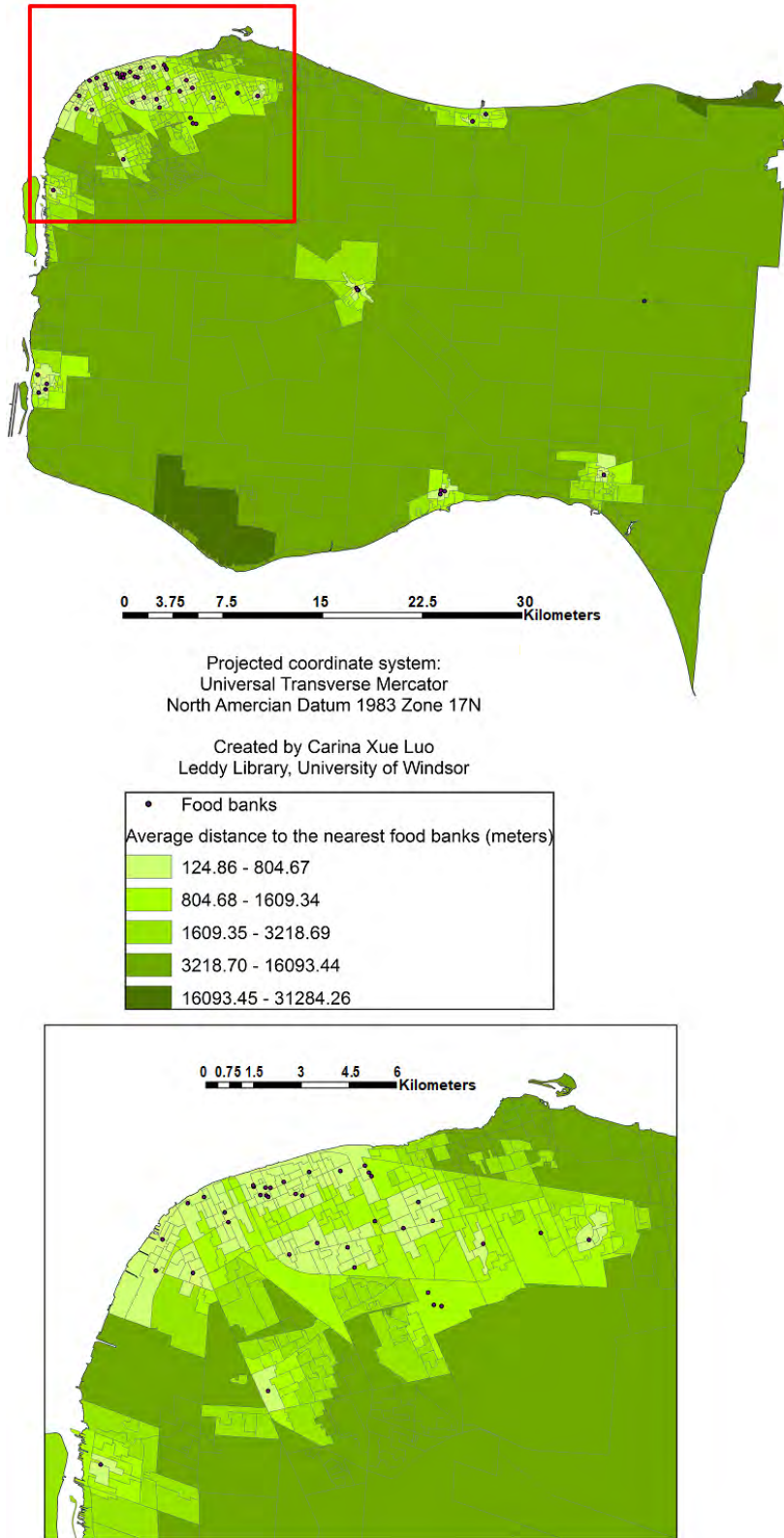
Food Assistance Programme Type	Total Number of Programmes	Number of Faith-Based Programmes
Community Meals	15	9 (60%)
Emergency Meals	6	2 (33%)
Food Banks	37	22 (60%)
Total	58	

Although the figures in Table 64 are based on the 211 listings for Windsor and Essex County in 2018 and are a good snapshot of community programmes, there are caveats to be noted. In some cases, an organization may be listed only once but may provide more than one type of food assistance programme (e.g., emergency meals and food bank). This would under-represent number of programmes. In other cases, an organization may be listed multiple times based on having multiple types of programmes. This would over-count the organizations. These numbers are probably best considered an illustration of programme numbers, rather than counts of unique organizations, and should be viewed with these caveats in mind.

Even with limitations noted, faith groups and faith-based service organizations from across the religious spectrum in Windsor and Essex County are important partners in food assistance. In fact, up to 60% of some food-assistance programmes are provided by these partners. However, as with the findings of the national study, programmes differ in terms of the extent to which services are provided and whether they only serve a specific target client group (e.g., young men, new mothers, seniors). In this way, the presence of a programme does not necessary imply full-time, universal coverage, leaving it difficult to measure the extent to which existing programmes adequately meet the needs of the community.

Food banks remain the primary source of food for individuals who have housing but experience food insecurity (Pettes, Dachner, Gaetz & Tarasuk, 2016). In Windsor and Essex County, 15 local food banks are formally affiliated with the Windsor Essex Food Bank Association (WEFBA) ([WEFBA website](#)). The Association is a community based, not for profit organization, working through affiliates to reach individuals and families who need emergency food supplies. They provide nutritionally balanced food hampers. They consider dietary restrictions, cultural traditions, and religious beliefs depending on availability of supplies. A map of food bank locations in Windsor and Essex County provided by the United Way (Figure 33) shows average distance to food banks in metres denoted by shading (lighter shading means easier access). Overall, access to food banks is better in municipal centres.

Figure 33: Neighbourhood Spatial Accessibility to Food Banks in Windsor and Essex County (2015)



Other Community Food Programmes

Other community organizations play a role in helping to increase access to nutritious foods and local foods among low-income groups. These programmes include community gardens and kitchens, as well as food rescue programmes. While the limited research on these programmes suggests very low participation rates, with little potential to impact food insecure households (PROOF Food Insecurity Policy Research, 2018a), they remain an important and passionate part of the local food system in Windsor and Essex County.

Community and school gardens provide green space and growing capabilities in urban centres. At the time this report was written, the Windsor/Essex County Community Garden Collective ([WE Garden Collective website](#)), a network of community gardens and urban agriculture projects in Windsor and Essex County, reported 33 community gardens active or in progress (Table 65) in Windsor (25), LaSalle (1), Essex (2), Tecumseh (1), Kingsville (1), Leamington (2), and Amherstburg (1). Of these, 3 are located in community schools. However, this should be taken as a snapshot in time, as the existence of community gardens is dynamic.

Table 65: Community Gardens in Windsor and Essex County

Community Gardens in Windsor and Essex County	
The Citizens Environment Alliance Garden	Vacant Lot Bio Remediation Site – 279 Drouillard
Bruce Avenue Park Community Garden	Vacant Lot Bio-Remediation Site – 981 Drouillard
Campus Community Garden	Victoria Manor Residential Community Garden
Glengarry Community Garden	Housing Information Services Seniors Community Garden
Ford City Community Garden	Gerard Court (HIS) Community Garden Site
Revitalizing Reginald Garden	Union Street (HIS) Community Garden Site
Together We Flourish	Mitchell Park Community Garden
Ray and Shirley Gould Community Garden	UNIFOR Community Garden
Windsor Residence Garden	South Merritt Park Community Garden
Ten Friends Diner	Ready-Set-Go/ Prince Edward Community Garden
First Baptist Church Community Garden	New Beginnings Youth Garden
Windsor Youth Centre Teaching Garden	Ambassador Baptist Church
Lens Avenue Greenbelt	Community Garden of Hope
LaSalle Community Garden	ACCESS Community Garden
GessWood Retreat and Camp Centre	Mill Street Neighbourhood Community Garden
Salvation Army Essex Community Garden	Cardinal Carter Catholic Secondary School
House of Shalom Community Garden	

Among many benefits, community gardens can also provide a source of healthy, fresh food that can be shared with the community. The Community Gardens on Municipal Property (City of Windsor, 2019) programme run by the City of Windsor provides a structure and process for community gardens on city-owned property. The City of Windsor provides land for use, while site preparation, materials, operation and maintenance is the responsibility of the applicant. A total of 26 recommended sites for community gardens are listed by the City of Windsor, with options in all wards. Community garden development is strongly supported by the Windsor/Essex County Community Garden Collective. The Collective actively works to maintain existing gardens and develop new ones, while providing education, mentorship, advocacy, and networking opportunities.

Community Kitchens teach skills, while helping families or individuals extend their budgets and cook nutritious meals. Locally, the Unemployed Help Centre’s Caesars Windsor Cares Community Kitchen (Unemployed Help Centre of Windsor Inc., 2018) is part of the United Way’s food security strategy (United Way Windsor-Essex County, 2017) and provides opportunities to teach cooking and preserving techniques so individuals and families can eat healthier. The Access County Community Support Services community kitchen is also part of the United Way’s food security strategy and their community kitchen helps participants learn how to turn ingredients, including those from their community garden, into low-cost meals. Table 66 shows a number of other Community Kitchens that are currently inspected by the Windsor-Essex County Health Unit (they do not necessarily provide full community kitchen services in the same way as those listed above).

Table 66: Inspected Community Kitchens in Windsor and Essex County (November 2018)

Inspected Community Kitchens in Windsor and Essex County	
AIDS Committee of Windsor	Harmony in Action
Brentwood -Refreshment Stand	Homeless Centre (Street Help)
Caldwell First Nation -Community Kitchen	New Song Church -Kitchen
Community University Partnership (CUP)	Roads to Wings
Downtown Mission -Kitchen	Unemployed Help Centre – Community Kitchen
Feeding Windsor Culinary Training Centre	Victorian Order of Nurses
First Evangelical Lutheran Church (Kingsville)	Windsor Jewish Community Centre Kitchen

Finally, food rescue programmes also work to address food insecurity, while at the same time, having an important role in waste reduction. Second Harvest is Canada’s largest food rescue organization (Second Harvest Food Rescue, 2019). They work with business and other partners to recover fresh, unsold food to protect the environment and provide hunger relief. Locally, the Plentiful Harvest Food Rescue programme diverts fresh and prepared food for packaging and

redistribution within the community and to other food banks in Ontario. They do this in partnership with the Unemployed Help Centre (UHC), where some of their fresh donations are utilized in the UHC community kitchen (Unemployed Help Centre, 2018). The Southwestern Ontario Gleaners is also active in this area. Located in Leamington, produce is donated by local growers and in turn, it is processed into dehydrated vegetable mixes and fruit snacks. Doing this allows for a longer shelf life and the capacity to ship products nationally and internationally as well as locally. More will be said about food rescue programmes when discussing waste management.

Access: Bringing it All Together

While the food environment and economic factors are both important parts of understanding food access locally, perhaps the most telling data comes from considering how these factors interact. Quite simply, access is not equal across communities. The Active Living and Healthy Eating in Windsor and Essex County Report put out by the Windsor-Essex County Health Unit (2016a) provides an excellent and relatively recent analysis of this phenomenon.

Socio-economically deprived areas with poor access to healthy foods are referred to as “food deserts” (Larsen & Gilliland, 2008). To assess food accessibility in the region, the report mapped a database of grocery stores (as of August 2015). Access was determined based on the ability for residents to walk to these grocery stores. Residents living within 1.0 km of these grocery stores (roughly a 10-15 minute walk) were deemed to have access, based on existing research by Pampalon and colleagues (2009). Material deprivation, which represents a lack of goods and conveniences that are a part of modern life (such as adequate housing, a car, or a television) was also mapped.

The resulting maps are reproduced here and shown as Figure 34 (for Windsor and Essex County) and Figure 35 (for the City of Windsor). The report concludes that many rural areas are not within walking distance of a grocery store. As well, the confluence of material deprivation and lack of walkable grocery stores was particularly notable in the following areas:

- Portions of Leamington
- Sandwich Street and Ojibway Parkway in the west end of Windsor
- Walker Road and E.C. Row Expressway
- Matchette Road and Front Road in LaSalle

The report also includes a map of grocery stores (red dot) and food banks (blue dot). Yellow shading represents a 1 km service area around a grocery store and purple shading a 1 km service area around a food bank (Figure 36). As illustrated by this map, there are areas with access to food banks but not grocery stores, as well as areas with access to grocery stores but not food banks. Overlapping areas with access to both were also present. However, generally grocery stores and food banks show different distribution patterns.

Figure 34: Material Deprivation and Walkable Access to Grocery Stores in Windsor and Essex County

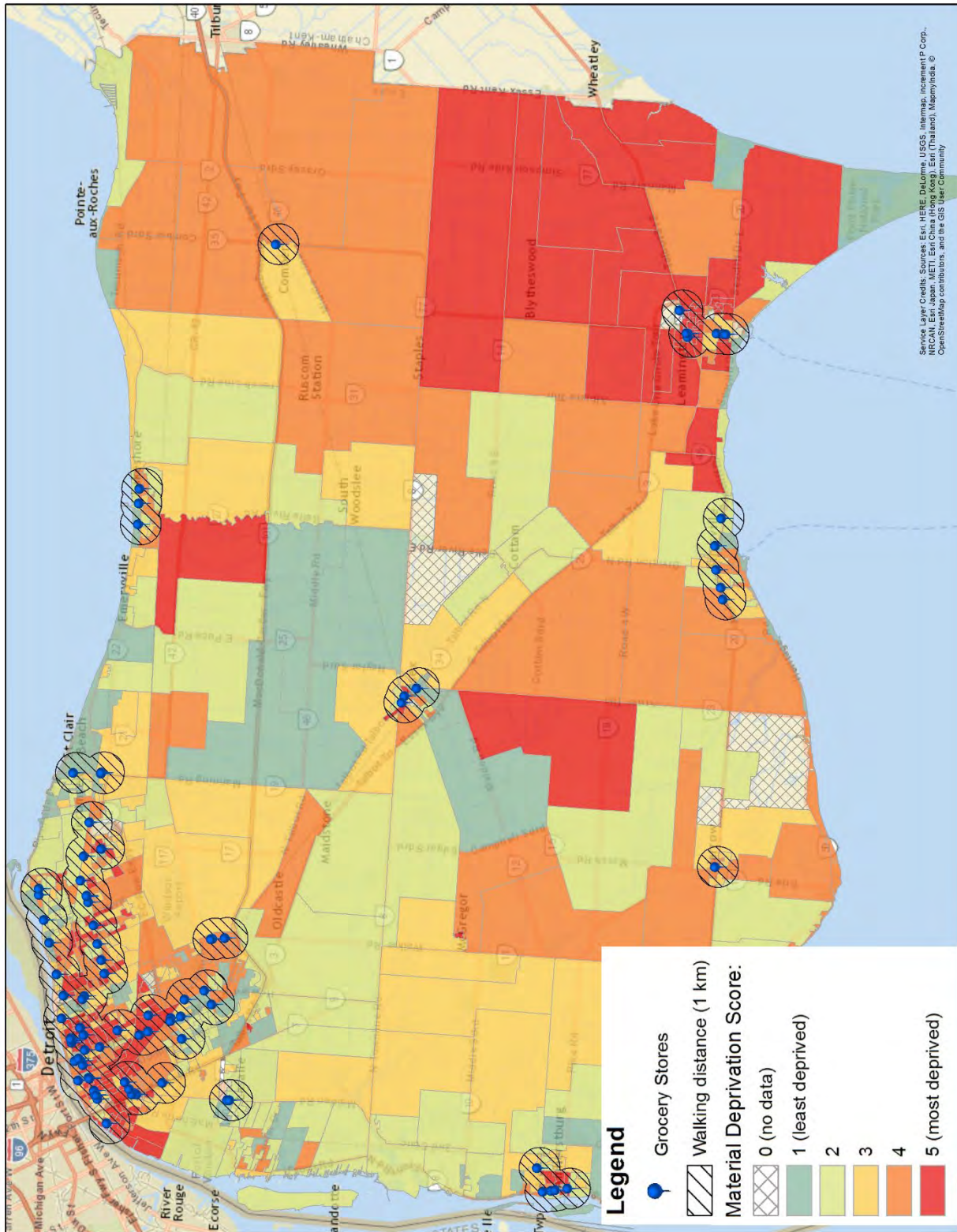


Figure 35: Material Deprivation and Walkable Access to Grocery Stores for City of Windsor

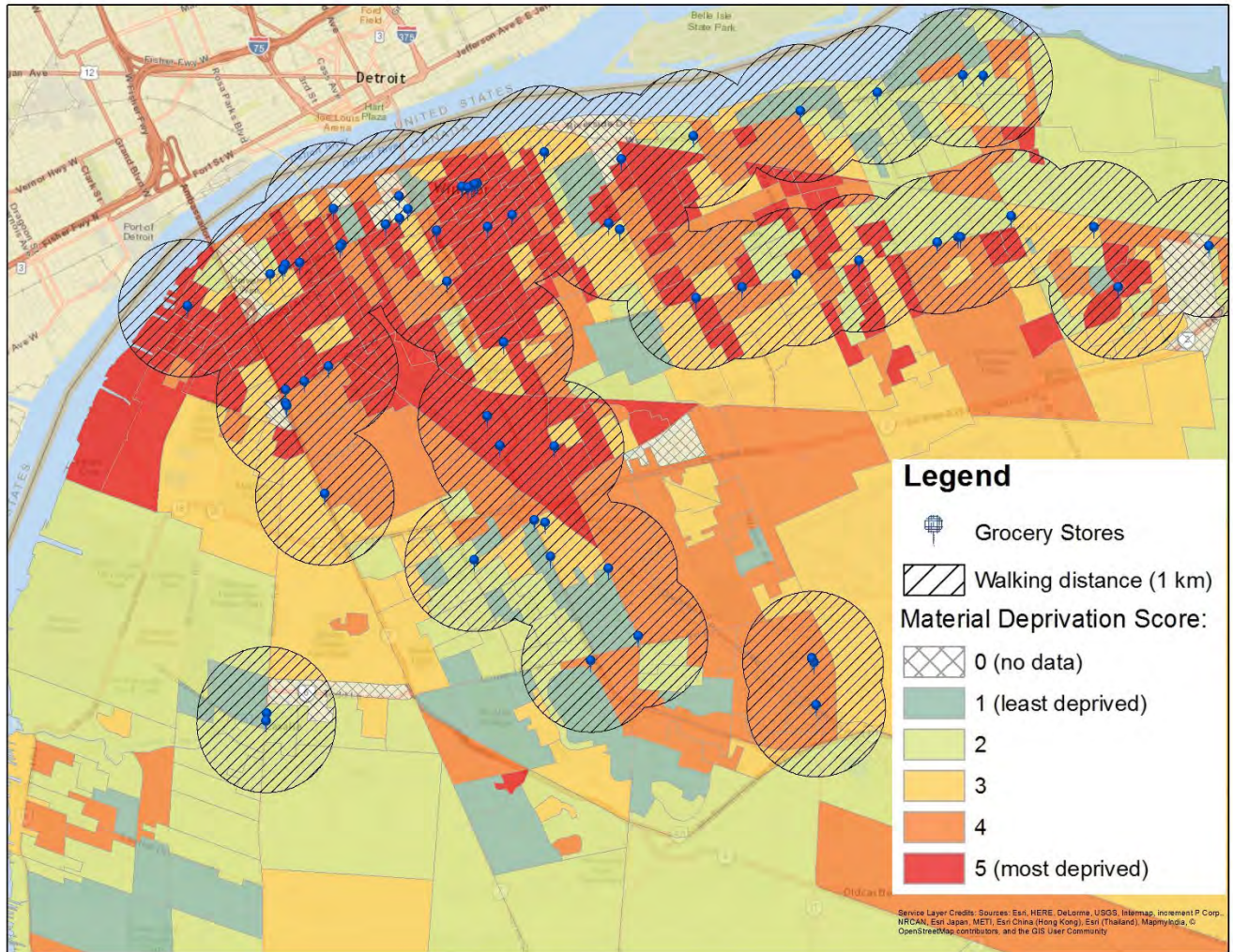
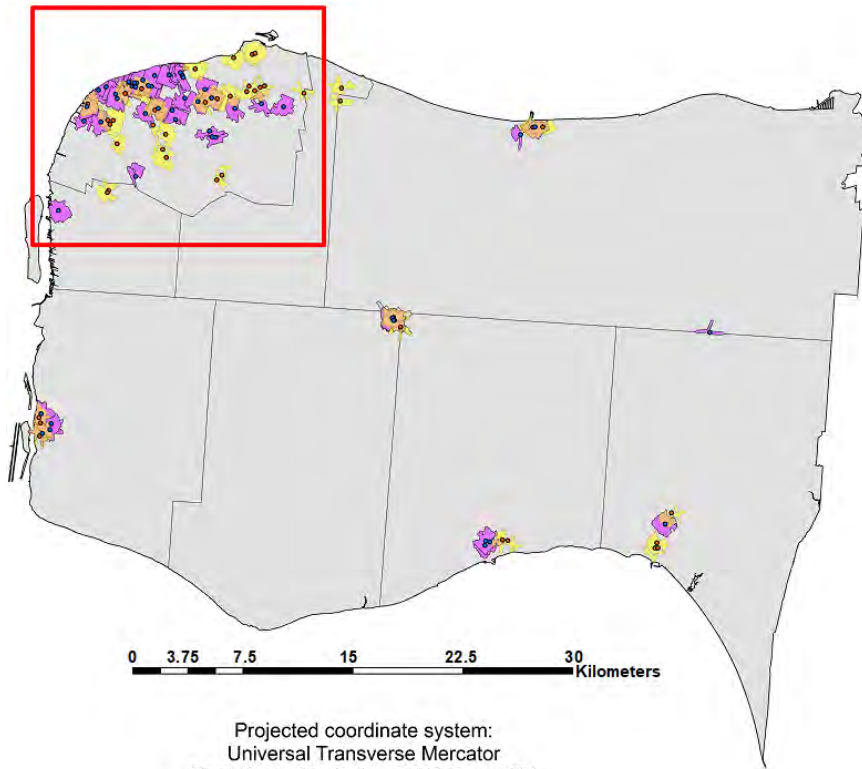


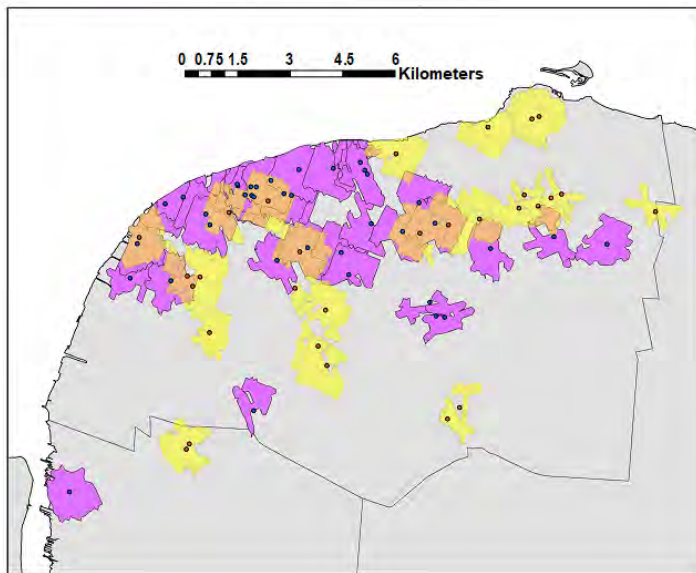
Figure 36: Service Areas of Grocery Stores Versus Food Banks



Projected coordinate system:
Universal Transverse Mercator
North American Datum 1983 Zone 17N

Created by Carina Xue Luo
Leddy Library, University of Windsor

- Food banks
- Grocery stores
- 1 km service area of grocery stores
- 1 km service area of food banks
- Municipal Boundaries



Consumption

The consumption of food is an important part of the food system. Consumption looks at what is eaten and how it is eaten, and is concerned with the nutrients that foods supply directly to the body. It is also the part of the system on which consumers have the most direct influence.

Consumer demand can influence what is sold in any type of food environment. If a particular community has an increased demand for local food, the market responds and vendors increase the availability of those choices. As well, different procurement policies for organizations can likewise affect what foods are sold or are provided for patrons of that facility.

What is consumed also has a direct impact on health. Historically, public health initiatives have focused on increasing the consumption of vegetables and fruit, fibre, and non-meat alternatives. At the same time, the public has been urged to reduce intake of sodium, saturated fats, trans fats, processed meats, and refined sugars. The much anticipated release of the revised Canada Food Guide in January 2019 represents the most recent iteration of dietary guidelines for Canadians. Based on the guidance document for health professionals and policy makers (Health Canada, 2019a), healthy eating recommendations include attending not only to what should be eaten (e.g., vegetables and fruit, whole grains, plant-based protein, healthy fats, fewer processed foods, water as a drink of choice), but also to the larger context of consumption. The latter includes being mindful of eating habits, cooking more often, developing and sharing food skills, enjoying food, and eating with others. All this, while also being a critical consumer, reading food labels, and staying aware of how marketing can influence food choice.

Food consumption is also important since there are clear linkages between dietary adequacy and health. According to the World Health Organization, a healthy diet protects not only against malnutrition, but also reduces risk of a number of non-communicable diseases such as diabetes, heart disease, stroke, and certain types of cancer (World Health Organization, 2018). To complicate matters, there is a strong relationship between health, nutrition, and food insecurity. A review of a number of Canadian studies (PROOF Food Insecurity Policy Research, 2019) shows that:

- Food insecurity has been associated with diets that are inadequate to support health in adults and adolescents
- Adults in food insecure households have poorer self-rated health, poorer mental and physical health, poorer oral health, greater stress, and are more likely to suffer from chronic disease
- Children and youth who experience hunger are more likely to have poorer health and those who faced hunger repeatedly were more likely to develop chronic conditions

The next sections consider consumption in Windsor and Essex County in terms of what residents are eating and buying, their food literacy and food safety knowledge, and initiatives that work to influence the food that residents consume.

Eating Habits in Windsor and Essex County

Rates of consumption of vegetables and fruit are generally taken as proxy measures for healthy eating and, as such, appear prominently in most research on the topic. They are also generally used as indicators for surveillance purposes. Healthy eating is specifically defined as the consumption of five or more serving of vegetables and fruits each day. Inadequate intake of vegetables and fruits is linked to an increased risk of chronic disease. The section of this report dealing with diet-related population health statistics provides a relatively comprehensive picture of eating habits of concern from a public health perspective in Windsor and Essex County. To summarize, in Windsor and Essex County:

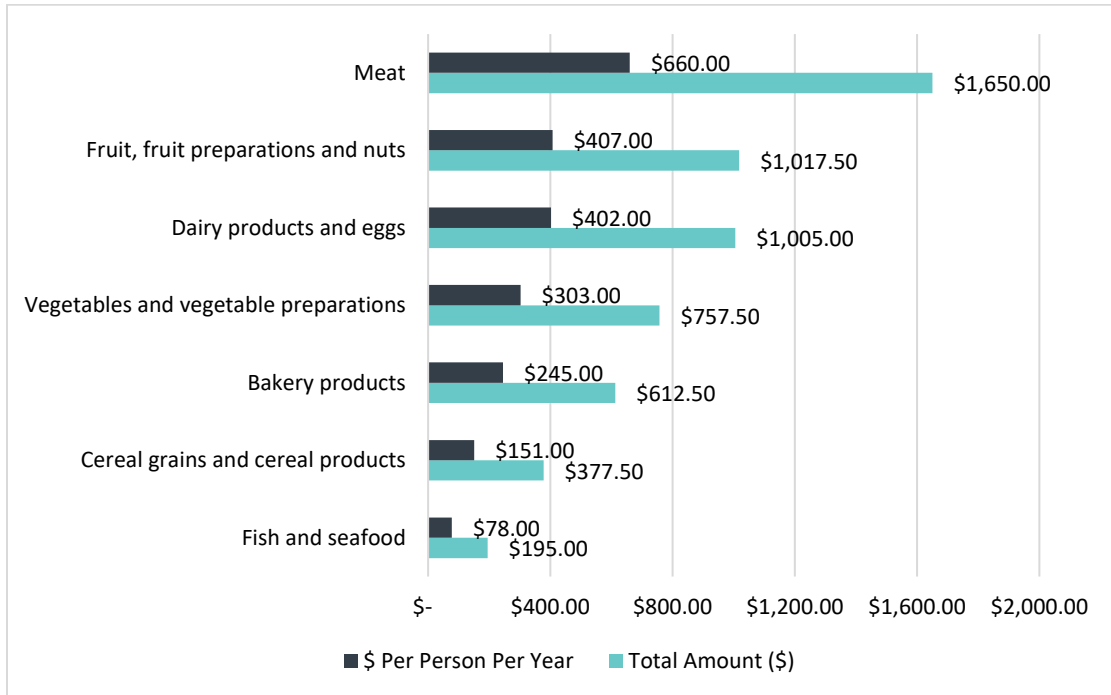
- Vegetable and fruit consumption is low, with only just over one third (34.9%) of adults consuming vegetables and fruit five or more times per day
- Households tend to spend more on junk food than fresh vegetables and fruit, with some groups more likely to do so, including low-income households
- Almost half of adults 25-44 report consuming sugar-sweetened beverages on a daily basis, but more than half were unaware that these are linked to overweight and obesity

There is little data on healthy eating for adolescents and children under 12 in Windsor and Essex County.

Purchasing Habits in Windsor and Essex County

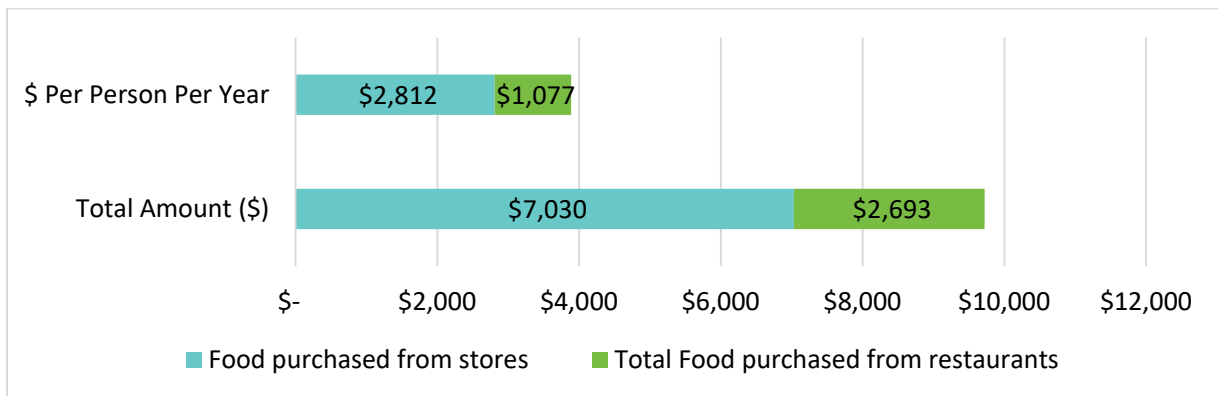
In terms of what residents of Windsor and Essex County are buying, research based on the 2015 Survey of Household Spending, estimated individual and per household expenditures on various food products in 2016 (Figure 37). Meat was the most expensive item purchased, followed by fruit, fruit preparations and nuts, dairy products, and eggs. Vegetables and vegetable preparations were estimated to cost \$303 per year for an individual and \$757 for a household (Statistics Canada, 2017d). What residents are eating is also determined by cultural and religious practices. With a diverse population in Windsor and Essex County, food outlets also cater to a range of diets. For example, halal stores and restaurants are common, as are groceries that cater to a variety of food cultures.

Figure 37: Estimated Household Cost of Consumption for 2016 in Windsor and Essex County



In 2016 residents of Windsor and Essex County were predicted to have spent 28% of their household food expenditure at restaurants, which equated to \$1,077 per year for an individual and \$2,693 per household (Figure 38) (Statistics Canada, 2017d).

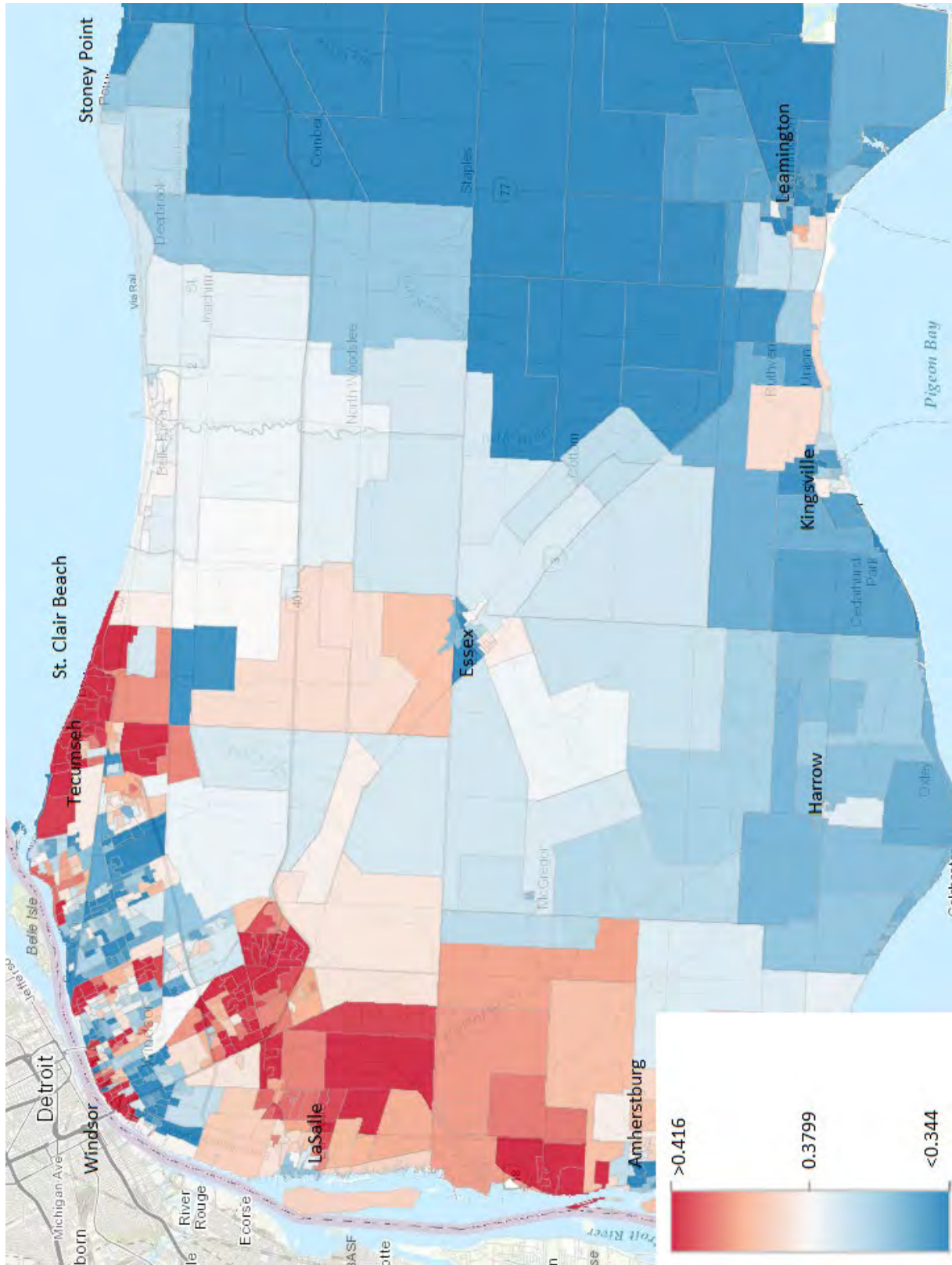
Figure 38: Estimated Expenditure at Stores and Restaurants in 2016 for Windsor and Essex County



The ratio of household spending at restaurants versus stores for 2015 was also mapped in the Active Living and Healthy Eating in Windsor and Essex County Report (Windsor-Essex County Health Unit, 2016a). As a ratio, this map shows the number of dollars spent on restaurant food for every one dollar spent at stores. On average, residents of Windsor and Essex County spent \$0.38 on restaurant food for every \$1 spent on store-bought food. Households in Tecumseh, South Windsor, Windsor's University area, LaSalle, and Amherstburg spent relatively more than average on restaurant food (indicated in red). Seven of the top 10 above-average areas were in the least deprived areas as measured by material deprivation. Households from East Windsor, West Windsor, Essex, Kingsville, and Leamington spent below average on restaurant food (indicated in blue). All of the top 10 below-average areas were in the most materially deprived areas (Figure 39).

In plain terms, less deprived areas spent more than average on restaurants while more deprived areas spent less on average. This is consistent with Statistics Canada's findings that Canadians from high-income households are more likely to eat at fast food outlets compared to Canadians from low-income households (Garriguet, 2004).

Figure 39: Ratio of Household Spending at Restaurants Relative to Stores in Windsor and Essex County in 2015



Food Literacy

Food literacy is in many ways a necessary precursor to healthy food consumption. Food literacy refers to an interconnected set of attributes organized into the categories of food and nutrition knowledge, skills, self-efficacy/confidence, food decisions, and other ecologic (external) factors. As part of the Locally Driven Collaborative Project: Measuring Food Literacy in Public Health, key attributes of food literacy were identified (Table 67).

Table 67: Categories and Key Attributes of Food Literacy

Categories and Key Attributes of Food Literacy	
Food and Nutrition Knowledge	Food knowledge Nutrition knowledge Food and nutrition language
Food Skills	Food skills
Self-Efficacy and Confidence	Nutrition literacy Food and nutrition self-efficacy Cooking self-efficacy Food attitude
Ecologic (External) Factors	Food systems Social determinants of health Socio-cultural influences and eating practices
Food Decisions	Dietary behaviour

Local data on food literacy is not available, however, a larger review by the Nutrition Resource Centre (2017) found the following trends in healthy eating and food literacy:

- Healthy Eating
 - Almost half of Canadians over 12 report their eating habits as good or excellent but only 38% of Ontarians report consuming fruits and vegetables five or more times per day
 - Almost two-thirds of Canadians self-report adjusting a recipe to make it healthier and almost half of Canadians report adjusting a recipe to make it healthier by reducing fat content or adding more fruits and vegetables.

- Food Literacy and Skills
 - The majority of adults (18-65 years old) report having more advanced cooking skills while Canadian youth report having basic or intermediate food skills
 - Most Canadians report good or very good skills in “peeling, chopping or slicing vegetables or fruits” but fewer youth report good or very good meat, chicken, or fish preparation skills
 - Overall, Canada’s Food Guide (CFG) is not well utilized by Canadians to learn about healthy eating or to aid with grocery shopping
 - A high percentage of Canadian households report the participation of children in shopping for groceries (68%) and helping to prepare meals or cook food (60%).

Greater information about local food literacy would be useful to collect going forward.

Food Safety

Another important element of the food system related to consumption is food safety. Unsafe food and food handling practices can carry harmful bacteria, viruses, parasites, or chemical substances. These practices can cause more than 200 diseases that results in hundreds of thousands of deaths world wide each year (World Health Organization, 2017). As well, food supply chains that now cross multiple national and international borders pose increased food safety risks requiring strong relationships between governments, producers and consumers. Broader scale food-safety systems and initiatives are discussed in the section on food processing and distribution. However, food safety as it relates to local prevention of food-borne illness through surveillance, inspection, and education will be considered.

Under the Health Protection and Promotion Act (HPPA), public health units have a key role in food safety and preventing food-borne illness. They are responsible for the surveillance and inspection of food premises, food handler training and certification, and investigation of reports of food-borne illnesses or outbreaks, unsafe food-handling practices, food recalls, adulteration and consumer complaints, and food-related issues arising from local conditions (e.g., floods, fires), or other situations (Ministry of Health and Long-Term Care, 2018a). Locally, the Windsor-Essex County Health Unit tracks the incidence of enteric, food-borne illnesses, typically transmitted through the consumption of contaminated food or water. As noted in Section 3, increased rates of salmonellosis, cyclosporiasis, and cryptosporidiosis were observed in Windsor and Essex County in 2015 (Windsor-Essex County Health Unit, 2017b). The Health Unit also conducts inspections of all food premises. Results are publicly released and a new disclosure website was just launched ([WECHU Inspections website](#)). The WECHU also provides a wide variety of educational materials on a range of food safety topics, offers formal food safety training through courses like Food Safety for All, and is responsible for food-handler certification courses. The Health Unit also informs the public of food recalls and allergy alerts.

The ability to reduce the risk of food-borne illnesses is in part a function of food safety knowledge. Data on the food safety knowledge of Windsor and Essex County residents was unavailable; however, provincial and national studies are informative. One Canadian study found that food safety education in Canada should focus on increasing people's awareness of

high-risk foods, targeting messaging to demographic groups as appropriate, and promoting the use of food thermometers when cooking meat and poultry (Glass-Kaastra et al., 2017). Another study of Ontario high school students found that food safety knowledge was low, yet confidence in preparing safe, healthy meals was high, making this group important to target for increased education about safe food handling (Majowicz et al., 2015). Research conducted on behalf of Health Canada from December 2017 to January 2018 (The Strategic Counsel on behalf of Health Canada, 2018) looking at public awareness, attitudes, knowledge, and behaviour related to food safety and food-borne illnesses concluded that there is a demand for more, and more detailed information on safe food handling. This was particularly true for higher risk groups. A need to reinforce less well-known or understood ways to minimize exposure to food-borne illnesses was also identified. Specific areas for focus include:

- Raising awareness of types of food more commonly associated with food-borne illness
- Emphasizing practices in the home with respect to food handling, preparation, and storage
- Developing targeted communications for at risk groups (e.g., seniors, pregnant women, parents of young children)
- Raising awareness of appropriate cooking techniques

Given these findings, attention to food safety knowledge and skills is likely to remain important to a healthy local food system.

Supports for Healthy Eating and Food Literacy

Ultimately, initiatives aimed at changing food-related behaviour through skills development or support for environments that increase availability and accessibility of healthy food are also important. These range from provincial level policies with broad impacts to smaller, local level programmes and services that help individuals or groups gain knowledge and skills to support healthy food choices.

Federal and Provincial Food Policy

A wide range of provincial policies and legislation directly or indirectly impact the food environment. These include hospital and long-term care procurement policies, university food services policies, and other policies and procedures followed by publically-funded institutions, current efforts to prohibit marketing to children (e.g., Bill S-228), income-related and social services policies and programming, and many others. A full review of all these policies would be a useful undertaking but is beyond the scope of this report.

Local Programmes

A wide variety of programmes can be found locally in Windsor and Essex County. These include programmes that are aimed at building supportive environments, as well as those geared toward skills building and education. While the following are not intended to be a comprehensive list, they do offer a sense of the breadth of local programmes that support healthy eating and food literacy. Supportive Environments Programmes include:

- **Raising the Bar:** a policy programme for licensed childcare programmes that supports participating providers to improve the quality of childcare provided to toddlers and preschoolers.
- **Take Charge:** promotes healthy environments through access to nutrition education, and healthy food and beverage options in workplaces, schools, daycares, or recreation facilities.

Local Skill Building and Education Programmes include:

- **Come on Down Let's Make a Meal:** a train-the-trainer programme that trains staff, community members or volunteers to teach a set curriculum that builds food and cooking skills in the community.
- **You're the Chef:** a six-week cooking programme for students in grades 4 to 12 run in schools, community agencies, or camps.
- **Eat4Life:** -Mindful Eating sessions offered by Family Health Teams, Community Health Centres, and Nurse Practitioner-led Clinics throughout Windsor and Essex County at different times and locations during the year.
- **Sip Smart!™ Ontario:** licensed classroom educational programme that helps teach children in grades 3 to 7 about sugary drinks and about making healthy drink choices.

As well, low or no cost education programmes, workshops, demonstrations and classes dealing with topics such as nutrition, cooking, meal preparation and budgeting in the kitchen are offered by a wide variety of organizations locally including, but not limited to:

- Aboriginal Child Resource Centre
- Access County Community Support Services
- Building Blocks for Better Babies
- Can-Am Indian Friendship Centre
- Christian Horizons
- Kingsville Community Centre
- Ready Set Go
- Recreation Programmes
- Salvation Army
- Sandwich Teen Action Group
- Unemployed Help Centre
- W5 Youth Community Connections

Dietary and Nutrition Services are also an important part of healthy eating. Local Dietitians provide a wide range of programmes and services for individuals or group at all phases of the life cycle. Examples include nutritional assessments, counseling, and education related to healthy eating, management of chronic disease (e.g., Diabetes counseling) and weight management, as well as supporting food-related skill building in a variety of contexts. Individuals seeking a Dietitian can find practitioners through the [Registered Dietitians of Windsor and Essex County](#). Grocery stores like Zehrs also now offer Nutrition Services for a fee, although these may be covered under some insurance plans. In the community, a number of community health organizations provide Dietitian services to their clients, including:

- Amherstburg Family Health Team
- Belle River VON Nurse Practitioner Led Clinic
- City Centre Health Care
- Essex County Nurse Practitioner Led Clinic
- Harrow Family Health Centre
- Leamington Family Health Team
- Sandwich Community Health
- Windsor Essex Community Health Centre
- Windsor-Essex County Health Unit
- Windsor Family Health Team

Access and Consumption: From the Community

Community engagement activities touched on access and consumption in a number of ways. The community survey posed specific questions to gauge public perceptions and practices, as well as probing for potential barriers. Community conversations allowed participants to address any part of the food system they wished, but access was a highly popular topic. The following

provides findings from the various community activities on the topics of access and consumption.

Survey Findings

Participants were asked about the extent to which they agreed with a range of statements relevant to food access. Responses were on a 5 points scale that ranged from 1 (Strongly Agree) to 5 (Strongly Disagree). As noted, with Likert scales such as these, median response is the most suitable and easy for interpretation (Institute for Computer Based Learning, 1998). Responses (Table 68) show that respondents were very unlikely to buy their food/groceries in another region, nor did they tend to report poor quality products in their local stores. In general, most did not report food access issues, indicating they can easily get to the store for groceries, usually have enough money for groceries, and have healthy and fresh options in their neighbourhood. As well, they stated they would be more likely to buy local and would be willing to pay more for it. They also agreed they would use emergency food services or community meal programmes if they needed to. Survey questions marked in bold are replicated from the food security survey completed in 2015 by the Food Security Steering Committee. Responses are consistent between the two surveys.

Table 68: Survey Responses Related to Food Access

Survey Items	Median Response
I buy my food/groceries outside of Windsor and Essex County.	Strongly Disagree
I am more likely to buy food that is grown or produced in Windsor and Essex County.	Agree
I would be willing to pay more for local produce.	Agree
I can easily get to the store where I buy most of my food/groceries.	Agree
I usually have enough money to buy food.	Agree
In my neighbourhood it is easy to buy healthy foods.	Agree
In my neighbourhood it is easy to buy fresh fruit and vegetables.	Agree
The stores in my neighbourhood sell outdated or rotten products.	Disagree
I would use emergency food services, such as food banks, if I needed it.	Agree
I would use a community meal programme, such as Meals on Wheels, if I needed it.	Agree

Looking at group differences:

- Leamington respondents were least likely to report outdated or rotten products in their neighbourhood stores.
- Those who were willing to pay more for local produce, also preferred restaurants that feature local food and were more likely to buy food grown or produced in Essex County.
- Individuals who reported having access to healthy food in their neighbourhood also indicated they could easily buy fresh fruit and vegetables, could get to the store, and had enough money to buy food.
- Respondents who indicated they would use emergency food services also reported a willingness to use community meal programmes.

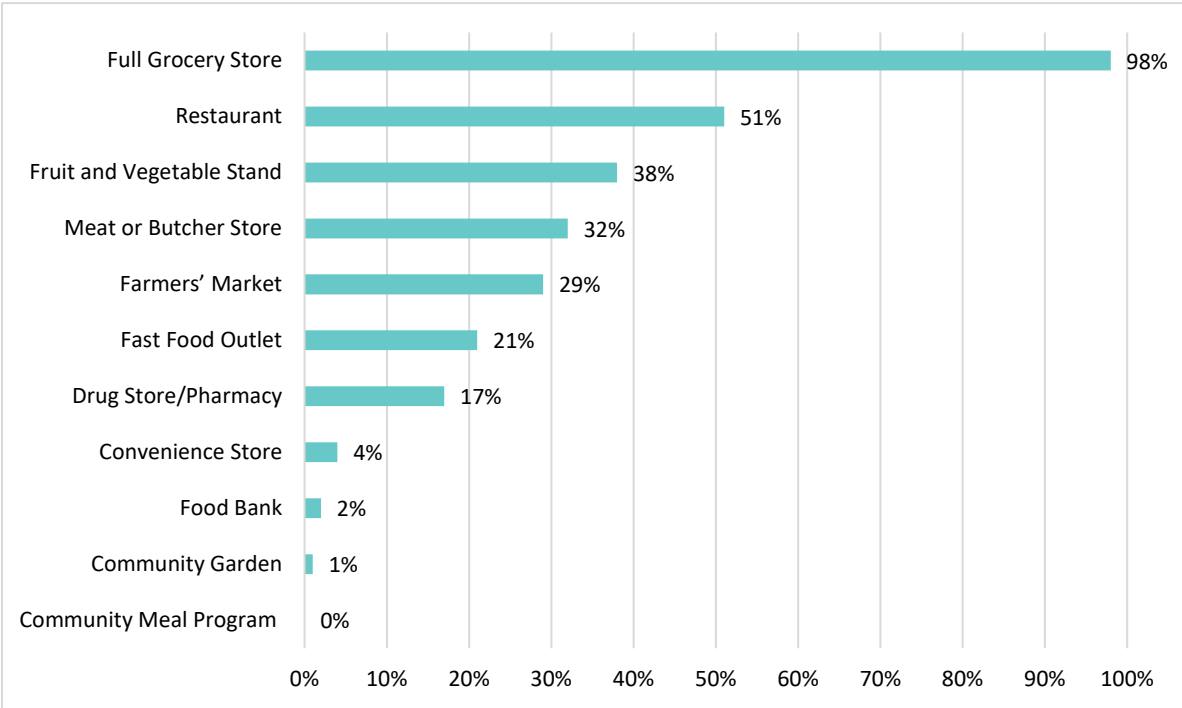
As noted earlier, respondents generally reported few barriers to access. Transportation was not a barrier, nor was safety, family responsibilities, need for assistance or work hours (Table 69). Lack of culturally-appropriate food also did not seem to be an issue. As denoted by the bold, these items were also asked on the Food Security Survey and results were consistent.

Table 69: Community Thoughts on Barriers to Access

Survey Items	Median Response
I do not have transportation to buy food.	Strongly Disagree
I do not feel safe walking to the store.	Disagree
I have to stay home with a child or another family member.	Disagree
I need to have some assistance with grocery shopping.	Strongly Disagree
I work many hours and it makes it difficult to buy food.	Disagree
The food I have access to is not culturally appropriate for my family.	Strongly Disagree

Across respondents, 98% reported using a full grocery store, 51% restaurant, and 38% fruit and vegetable stand to obtain food in the past year. Meat or butcher store and farmers’ market were also popular with 32% and 38% respectively reporting that they purchased food at these locations in the past year (Figure 40). Grocery stores were also the most common place for weekly food purchases according to the Food Security Survey.

Figure 40: Three Places Used Most to Purchase Food in Past Year

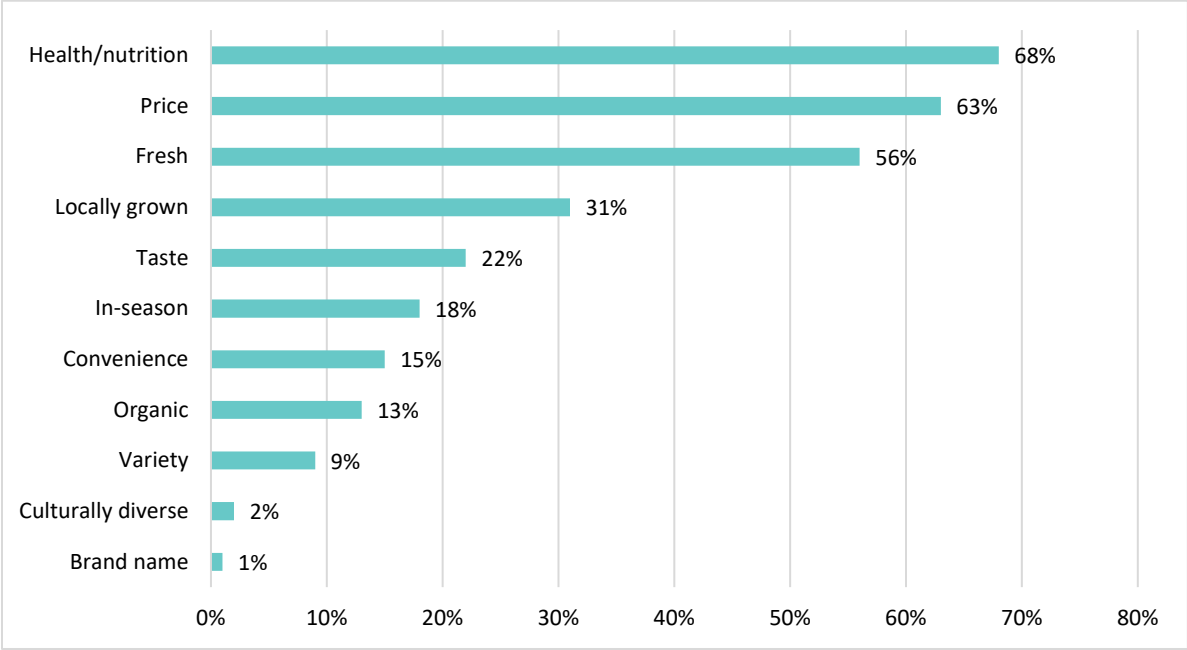


The following group differences were also noted in regard to where participants accessed food:

- **Convenience Store** users tended not to be employed full-time, were not in the highest income category, did not believe it was easy to buy healthy food in their neighbourhood, and did not always have enough money to buy food. These individuals were likely to report a secondary school education as their highest level of education.
- **Food Bank** users were more likely to report not having transportation to buy food, not feeling safe walking to the store, not having enough money to buy food, being unemployed, and having an annual household income of less than \$19,000 per year. For these individuals, price of food was a priority. They were more likely to agree that food production here is environmentally friendly and that local food should be processed here. They were less likely, however, to report composting and unlikely to use a municipal composting programme.
- **Fast Food** facility users were less likely to report going to fruit and vegetable stands.
- **Fruit and Vegetable Stand** use was more likely for residents of Essex, Kingsville, and Leamington.

Respondents were asked to identify their three top priorities when making food purchases for themselves or their family. Health/nutrition (68%), price (63%), freshness (56%), or locally grown (31%) were the top identified priorities (Figure 41). It is also interesting to note that brand was the least likely to be prioritized by respondents.

Figure 41: Three Top Priorities When Making Food Purchases for Self or Family



In looking at group differences in terms of priorities when buying food:

- **Convenience** seekers were more likely to use fast food outlets.
- **Locally Grown** produce fans were more likely to buy local food.
- **Organic** produce buyers were more likely to get food from Farmers’ Markets and indicate choosing food to reduce risk of chronic disease.
- **Culturally-diverse** product seekers were more likely to be immigrants and go to meat or butcher stores, but less likely to use fruit and vegetable stands.
- **Taste** was more likely to be a priority for Leamington-based respondents.

Finally, in terms of responses related to food consumption, respondents overall felt strongly that they knew how to prepare and store food safely and that they know where to go for information about how to buy, eat, and cook healthy food. Generally, respondents also preferred eating at restaurants with local options, choose food to reduce risk of chronic disease, have meals with others, and enjoy cooking and preparing food (Table 70). Also worth noting:

- Individuals who reported actively choosing food to reduce risk of chronic disease also indicated they know how to prepare and store food safely and in turn knew where to go for information.
- Individuals who reported not often having meals with others were more likely to shop at convenience stores and live alone.

Table 70: Community Thoughts on Consumption

Survey Items	Median Response
I prefer to eat out at local restaurants that feature local food options.	Agree
I actively choose what I eat to help reduce my risk of obesity, diabetes, and heart disease.	Agree
I know how to prepare and store food safely.	Strongly Agree
I know where to go for information about how to buy, eat and cook healthy food.	Strongly Agree
I often have meals with others (e.g., family, friends, co-workers).	Agree
I enjoy cooking meals and preparing food.	Agree

Open-Ended Feedback

Access was the most frequently discussed aspect of the food system during community conversations and in the online survey. In fact, 49% of all comments touched on access. Consumption was mentioned less frequently, appearing in only 6% of comments. Central themes are reviewed here with illustrative quotes in italics.

The most common sentiments voiced regarding access to food were that respondents wanted access to local food, while at the same time acknowledging that access to food was not a reality for all in Windsor and Essex County for a range of reasons.

“Want local and healthy food”

“Should have farm fresh food in ALL stores”

“People can't buy healthy food -cost, budget, education, and busy lifestyle”

Despite an awareness that accessibility is an issue for some, many respondents reported that stores are accessible, as are fresh vegetables and fruit, and that farmers' markets and stands are an excellent source for locally grown fresh produce.

“Good number of grocery stores where we buy our produce most of the time, go to farmers' market but seldom do since groceries are accessible”

“Grocery stores carry fresh fruit and vegetables, walk to them even during winter, I can even directly walk to farmers or stands”

“Lots of farmers as we are close to Leamington and LaSalle”

“In Kingsville but food is grown nearby... in the city you have to travel to get it”

Challenges to access to some extent revolve around seasonality of food products, although there is an overriding perception that food access is not consistent across the region and that access to fresh produce is more of a challenge in “the City.”

“Want to see more fruits and veg all year round”

“Farm fresh food not as easily available in the city”

“Try and access food stands in the county when possible, would change to stands versus the store if closer to the city”

“Should have a farmers' market in every city”

“Why does a young community like Belle River not have stores to support buying local foods”

Buying local food was seen as a good choice for health, freshness, and taste, but also as an important way to support the local economy. Others, however, mentioned the need to ensure that food advertised as local, truly is local.

“We have fresh food because it is grown here, it is healthier, lasts longer, tastes better”

“Freshness and supporting my neighbour”

“By purchasing it I am supporting the local economy”

“Won't buy non-Canadian products, want to support Canadian”

“We make a conscious point to buy local but problem is food advertised as grown here is only processed here and grown elsewhere”

While healthy food was seen as important, what people defined as healthy food varied greatly. Overall however, there was a strong perception that “healthy food” is expensive and not accessible to all.

“Organic foods are more expensive or any kind of healthy lifestyle change are just double the price, it's cheaper to eat junk food”

“Not all can afford healthy and should be accessible for those with a lower income”

Factors that were seen to contribute to cost-related barriers to food access included the increasing cost of food, low wages, larger families, and fixed incomes.

“Cost of food has gone up but wages have not, plus taxes have increased, paying too much for food especially if you have a minimum wage job”

“Prices of everything going up, last year and a half, now buy cheapest things (e.g., maple syrup too expensive), family of 6, would like to add more ‘natural’, less processed foods but also costly”

“Big family, challenging to have affordable, healthy meals -chips cost the same as apples”

“Have a fixed income (pension) so buy things on sale -wish prices were better for healthy food”

That said, at least one participant expressed relief over being in Windsor and Essex County, stating that affordability of food is an even greater issue elsewhere in Canada.

“Thankful we live in Canada. Food is inexpensive here relative to places like Toronto, although not affordable for all here either”

Some respondents related strategies for coping with the cost of food, including price shopping, buying in season, and using farmers' markets and stands. However, many agreed that particularly for individuals of families with low income, more is required to address food security. Respondents felt strongly that it was a social responsibility to ensure that basic food needs are met for all and a number expressed that it should not be an issue in Canada.

"There should be a cooperative programme to connect low-income households with local produce, it is so expensive to eat healthy so there should be incentives or grants given to farmers to provide the less fortunate with healthy foods"

"Food security shouldn't be a worry in the lives of Canadian families."

The importance of programmes to ensure food access were discussed and celebrated, including school food programmes and food banks, however, the possibility for stigma and the operational challenges faced by these programmes were also acknowledged.

"Recently we have had a tough time financially. We did rely on a foodbank twice. I was thrilled there were some fresh produce but canned goods were past due. I understand they are not bad, but it made me feel less worthy of healthy food."

"So many people need food banks but hard to access ethnic food that newcomers to the country are used to getting"

Beyond cost of food, other barriers to access were also identified, including time, transportation, and food deserts.

"Less time, multiple stops not feasible, people want convenience, one stop shopping"

"We can drive to a roadside stand but not everyone can get there."

"There should be easier transportation for people who don't have their own car"

Much of the discussion surrounding consumption pertained to making healthy choices, educating people about healthy living and teaching food skills. Generally speaking, respondents saw the value of a healthy diet but opinions on just what constitutes a healthy diet varied widely. Healthy diets were variously described as local, unprocessed, raw or organic, while unhealthy diets were equated with fast food, excess carbohydrates, processed food, salt, sugar, or artificial sweetener.

A common theme across many of the food system areas was that respondents felt there needed to be greater emphasis on education and life skills related to food consumption, especially for youth.

“Need education on healthy eating”

“Awareness and education is important, need to be involved in schools (eating, gardening, shopping, label reading), life skills”

“Potential for a collaborative farm to school programme to feed kids and promote healthy eating from a young age”

“More focus on nutrition and healthy eating in school, should be a mandatory learning and starting early (grade school)”

Education was also seen as needed specifically to address conflicting information about what one should eat or correcting misinformation.

“Conflicting information on food, need to do own research”

“Wonder about organic, is it really better? It costs more so don't buy it due to cost”

“Be more transparent about what is in our food, there are so many unknown terms that aren't consumer-friendly which makes some people afraid”

“Marketing of food, expiry dates are misleading, built on a structure of ‘buying more’ ”

Building practical food skills was seen as important and respondents suggested things like meal planning, looking for recipes online, using a slow cooker for more low cost non-meat meals, cooking at home, and canning as particularly useful skills. These were also seen to help people cope with busy lifestyles, and may be especially useful for those who lack even rudimentary food skills.

“People lack knowledge in food preparation, too busy to make healthy food, don't know how to look up programmes, everyone becoming unhealthy because they eat convenience foods”

“Running from place to place, end up making non-nutritious choices”

“Lost my wife 46 years ago, food skills are lacking because I was never taught, can make steak or pork chop but not a meal”

Finally, food skills were also seen as related to waste management, particularly in terms of using leftovers and preparing only what is needed.

"We eat leftovers at home to eliminate a lot of waste"

"Food waste at home goes to the landfill, need to cook just enough, not in excess, if family of 2 then just cook for 2"

"We are older generation so we don't waste so much food, we don't let vegetables and fruit go bad and we cook portions that we can finish"

Strengths, Challenges, and Opportunities

Community stakeholders discussed strengths, challenges, and opportunities related to food access and consumption. The following is an accounting of stakeholder feedback in these areas, organized by thematic area that emerged through the exercise. Themes related to access included grocery stores, accessing local food, and food security. Discussions related to consumption touched on knowledge of healthy eating and environmental supports for healthy eating. As previous noted, tables that summarize group discussion reflect the thoughts and words of the stakeholders.

Grocery Stores

Grocery stores are primary food access points for the community. They are also a potential source for local food. Stakeholders considered the local grocery stores and identified a greater availability of local foods and in-store supports (e.g., Dietitians) to be positive for food access and consumption. The availability of online ordering and food delivery, along with culturally-diverse foods was seen as a strength. Challenges were primarily associated with accessing local food, with stakeholders noting that local does not necessarily mean produce from Windsor and Essex County, and that many farmers ship local produce out to non-regional purchasers. Stakeholders felt promoting communication between local grocery stores and farmers or suppliers may be an opportunity to increase availability of “truly” local food in area grocery stores, along with advocating for increased retention of local food by areas farmers and potential diversification to more “world foods.”

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> • Large chains (e.g., Loblaw) are selling more locally grown food • Community resources (e.g., in store Dietitians) also promote healthy, local food • Convenience: Online ordering, grocery store pickup/delivery, food boxes • Access to culturally-diverse food and products (e.g., Halal, Kosher) 	<ul style="list-style-type: none"> • Local is not necessarily from the immediate Windsor and Essex County area (other farms in Ontario) • Farmers have large contracts with non-regional purchasers, so food is shipped out • Culturally-appropriate foods not available in all stores 	<ul style="list-style-type: none"> • Better communication between local stores and suppliers/farmers so that needs are met locally • Encourage farmers to separate some food from their lines to keep it local • Locally grown world crops

Accessing Local

In keeping with the theme of local food, stakeholders also considered other ways to increase and support access to local food. Stakeholders felt there was an interest in local food and the presence of food stands and farmers' markets in Windsor and Essex County was viewed as a strength, as was the presence of u-pick operations. The use and promotion of local produce and products in restaurants was also noted. At the same time, these types of operations are not available throughout the region and they are not one-stop shopping. As such, they may not be convenient or practical for some families. Also mentioned as a challenge is the expense of buying local when grocery stores are able to offer cheaper alternatives. Another challenge noted was potential intimidation about using farm stands and markets for those less familiar with them. Despite these challenges, stakeholders also identified a number of opportunities to promote access to local food including mobile markets, sponsored transportation, workshops and media engagement, partnership with regional food festivals, and opportunities to bring local food to public spaces. The exploration of avenues for government financial support for local food access initiatives was also mentioned.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> • Interest in locally grown food • Festivals promote local • Restaurants serve local • Food stands, Farmers' markets, other alternative food access avenues • Some farms open for apple/ pumpkin picking 	<ul style="list-style-type: none"> • Not region-wide, inconvenient • Not all foods available • Inaccessible to some due to expense, distance • Intimidating to show up to a farm to buy local food 	<ul style="list-style-type: none"> • More support for alternative ways to access food (e.g., mobile markets) • Community transportation (e.g., bus transportation to community stand) - get sponsors to support transportation • Promote local food access through workshops, media engagement, partnership with regional festivals to promote local food access • Use public spaces (e.g., parks, libraries) to promote and sell local food • Explore avenues for government financial supports

Food Security

Stakeholders also discussed food security as an element of food access. Strengths in this area include the work of Plentiful Harvest, specifically, their mobile food bank truck, and the local food banks more broadly. Both organizations work to help make food accessible to some of the most vulnerable in the community. Challenges identified include lack of year-round resourcing for the mobile food bank and the lack of fresh, local produce in donations. Opportunities to address food security include encouraging the donation of more local fresh foods or money that can be used to purchase it. Programmes that directly connect farmers and consumers struggling with food insecurity were also seen as opportunities, as well as the promotion of community-driven urban agriculture.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> • Unemployed Help Centre/ Plentiful Harvest Free operates mobile food bank • Local food banks 	<ul style="list-style-type: none"> • Mobile food bank not able to operate year round due to lack of resources; need funding and volunteers • Charities and donors do not give food banks local food, leaving users with fewer fresh, healthy options • Emphasis on quantity of food not quality when donating food to food banks 	<ul style="list-style-type: none"> • Encourage more local fruit and vegetables in food donations • Encourage donations of money not cans • Programmes that connect farmers and consumers • Community driven urban agriculture

Healthy Eating

In considering food consumption, stakeholders focused on healthy eating and identified food skills and knowledge as an important area for further attention. The proliferation of food-related information and resources was seen as a plus, as was the ability to access a Dietitian at chain stores like Loblaws. However, stakeholders felt there was an overall lack of food preparation skills to support healthy eating in the community, as well as a great deal of misinformation about what constitutes healthy eating. Lack of time, particularly for working parents was identified as a challenge to the preparation of healthy meals, as was the perception that healthy food is always more expensive than less healthful options. The cost of healthy food was seen as an issue not just for households but also for organizations making larger food purchases (e.g., childcare centres). As an additional challenge to healthy eating, stakeholders also noted the easy availability of fast food. Opportunities in this area included education related to food skills and healthy eating for adults and children, and using available resources (e.g., Canada's Food Guide). The importance of emphasizing the long-term benefits of healthy eating at individual (e.g., improved health and well-being) and societal (e.g., reduced medical costs, absenteeism) levels was also noted.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> • Lots of information available • Access to Dietitians (e.g., at Loblaw) 	<ul style="list-style-type: none"> • Lack of food prep skills and misinformation about what it means to eat in a healthy way • For working parents work, lack of time is a barrier to healthy meals • Dietitians are not in discount stores where expertise would be helpful • Belief that healthy food is always more expensive for households, organizations and institutions • Fast food and large portions are easily accessible and cheap 	<ul style="list-style-type: none"> • Education: support food skills training in school; teach people how to purchase and prepare healthy, culturally-appropriate foods quickly; food safety; nutrition labels • Comprehensive, accessible healthy eating resource (e.g., Canada’s Food Guide) • Promote the long-term benefits of healthy eating • Explore having Dietitians more available, especially at economy stores

Environmental Supports

Stakeholders considered the role of advocacy for environmental supports to promote healthy food choices. No strengths were noted by stakeholders, however, challenges to healthy choices were found in marketing and advertising of unhealthy foods and beverages, and a lack of information on the long-term costs of unhealthy eating. Opportunities identified by stakeholders were largely in the area of environmental supports for change through taxation of unhealthy foods or subsidizing healthier choices, attention to advertising and changes to the food environment.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> • None noted 	<ul style="list-style-type: none"> • Marketing and advertising of unhealthy foods and beverages (e.g., sugar sweetened beverages), or sponsored by influencers (e.g., sports teams) • Lack of information on the true cost of unhealthy food 	<ul style="list-style-type: none"> • Taxation on overly processed foods or subsidizing healthy food • Attention to advertising and restrictions on marketing of junk food, particularly to vulnerable populations (e.g., youth) • Changing the food environment (e.g., vending machines, lunch room, cafeterias)

Summary

Access and consumption are some of the more familiar components of the food system for the general public as evidenced by the number of comments in these areas during community engagement activities. Food access and food literacy are also important elements of *The Local Food Act* (2013) and the *Ontario Food and Nutrition Strategy* (2017).

In Windsor and Essex County, there are many local assets related to food access. Residents with the means can purchase meals at restaurants (i.e., take out, fast food, full service) throughout the region, although Windsor, Tecumseh, and Leamington enjoy more of these per capita than other areas. In terms of buying food, grocery stores, convenience stores, supermarkets, specialty food markets, and other types of establishments offer food access, although as with restaurants, Windsor and Leamington residents have more per capita. Survey respondents reported using full grocery stores most often to purchase food.

A relatively large group of residents also reported using farmers' markets to purchase food, of which there were 14 in 2018, along with approximately 41 farm stands. These allow seasonal access to fresh vegetables and fruit locally. Farm gate sales, stands, kiosks, and u-pick, particularly in Kingsville, Leamington, Lakeshore, and Essex, were commonly reported by farmers in the region who sell directly to consumers. However, those that do sell directly to consumers only represent a small proportion of all farms in Windsor and Essex County (8%). This may in part be due to the large number of farmers who grow grains for animal food or fuel rather than food for people. Residents interested in fresh food can also grow their own. Urban agriculture is supported locally by grass roots organizations, including the Windsor/Essex Community Garden Collective.

Overall, residents who completed the community survey did not report difficulty with food access. Health/nutrition, price, and freshness were the top priorities for food purchases. There was a strong interest in having consistent access to locally grown food, with many respondents seeing it as healthier and tastier. Buying local was also seen to support the regional economy. At the same time, not all residents felt local food was universally accessible and many reported that it was more expensive, particularly alongside less costly imported products. Capitalizing on the interest in local food and existing assets (e.g., festivals, markets, restaurants), and facilitating better access to local food were suggested as areas of focus for future food-related work.

Despite many residents reporting having access to food, others gave voice to challenges associated with food access stemming from low income and associated factors (e.g., immigration, lone parenting, lack of education, employment, housing). Poverty continues to be an issue in Windsor and Essex County with data drawing attention to areas that have entrenched and ongoing poverty. Food insecurity is present for as many as 1 in 10 households and 1 in 4 low-income households in Windsor and Essex County. For families and individuals experiencing poverty, food insecurity locally is a reality. Community food programmes with nominal or no fees (e.g., Meals on Wheels, student nutrition programmes) and those providing emergency food assistance (e.g., food bank) continue to stand in the breach, but ultimately reducing poverty is what is needed. Windsor and Essex County also has areas where poverty

and food inaccessibility overlap. Material deprivation and lack of walkable grocery stores was noted in at least four areas in the city and county. Residents that were part of the community engagement were very supportive of programmes to address food insecurity, as well as those teaching healthy eating and food skills.

Only limited information is available about the dietary habits of Windsor and Essex County residents, and less is known about those of children and youth. What is known is that residents continue to underconsume vegetables and fruit and spend more on junk food than fresh food. Meat is the most expensive item in resident's shopping carts.

Food literacy information is not available locally, but Canadian trends would suggest that youth are lacking cooking skills, although many households report involving children in shopping for groceries and preparing or cooking food. Those individuals who completed the community survey reported knowing how to prepare and store food safely, how to cook healthy food, and where to go for information. Promoting healthy eating through education, by facilitating greater access to Dietitians, and through advocacy around supportive environments were all seen as strategies of interest.

Section 7: Waste Management

The final section of this community food system assessment deals with waste management. Waste broadly construed can include food and non-food waste. Waste management activities can range from garbage collection to composting and recycling. While all of these are important, this report will focus mainly on food waste management, although other areas will be touched on.

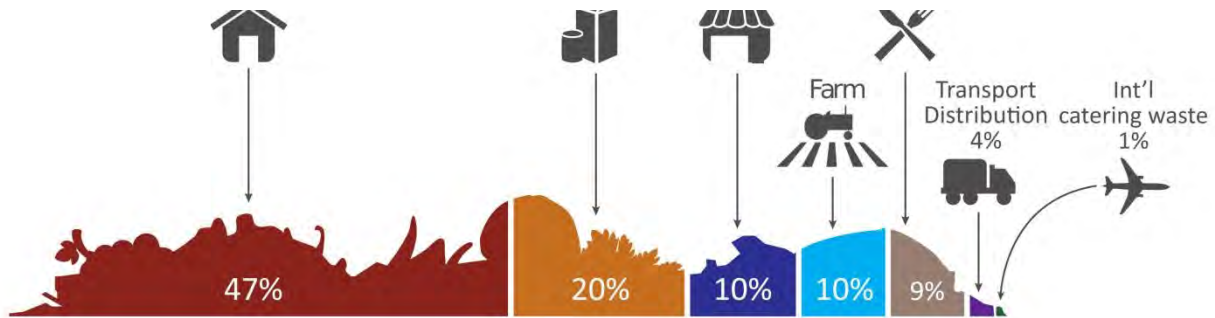
Waste management is important to the food system. It represents not only an end point for the food system, but a beginning as well, as nutrient-rich compost is used to support and improve food production. It is also intimately connected to many other parts of the food system. For example, reduction of waste, a goal for sustainable food systems, can be achieved through improved food diversion during processing, greater efficiency in food distribution systems, and development of food skills aimed at reducing unnecessary waste in the home.

Relevant Policy and Legislation

This report is timely given recent provincial policy and legislation with respect to waste management and food waste in particular. The *Waste-Free Ontario Act* (2016) and the accompanying *Strategy for Waste-Free Ontario: Building the Circular Economy* (February 2017) (Government of Ontario, 2017c) represent important strides in this area. The intent of the legislation and strategy is to tackle the problem of waste generation by increasing resource recovery and moving toward a circular economy, with the ultimate goal of a zero-waste Ontario.

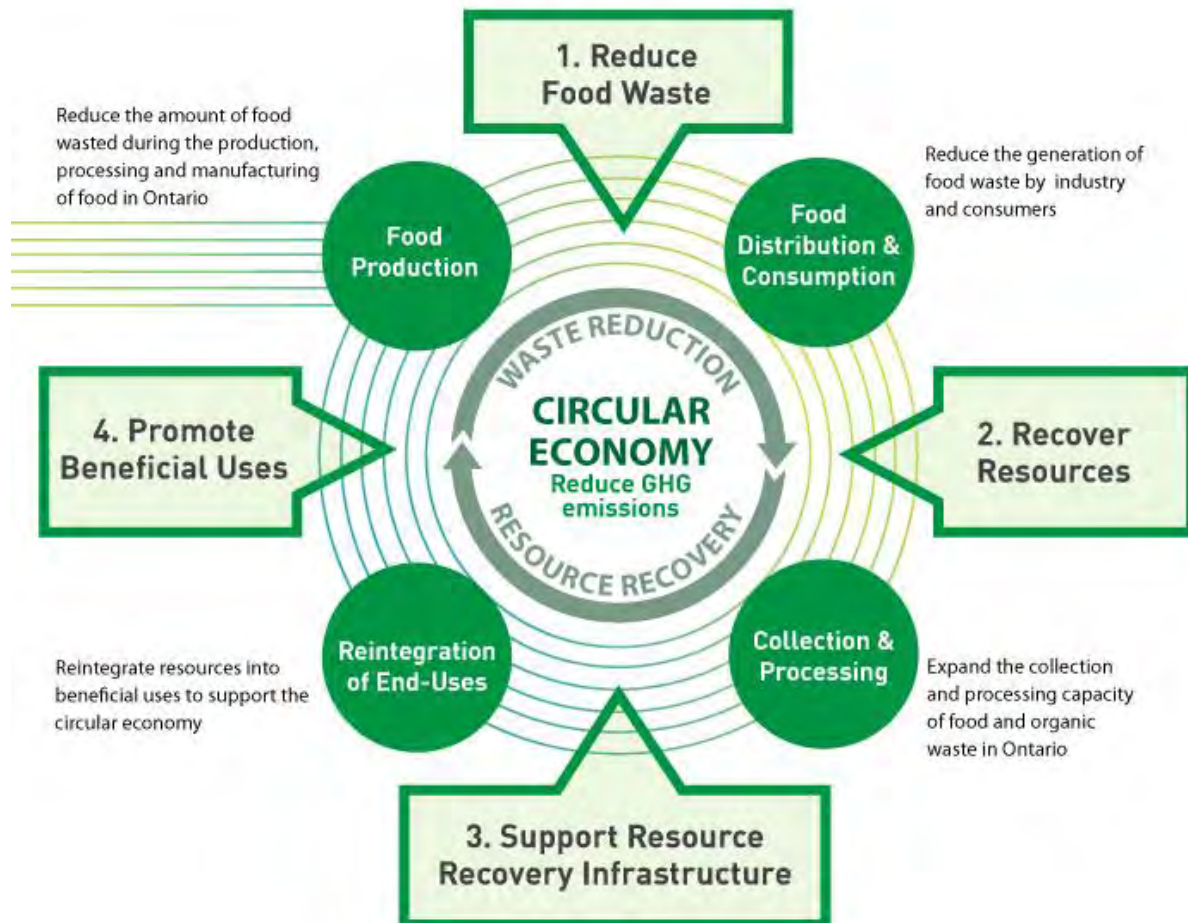
Building from this strategy, *Ontario's Food and Organic Waste Framework: Action Plan* (Government of Ontario, 2018d) lays out specific steps with regard to food and organic waste. The action plan and supporting documentation argue that Ontario's waste stream is comprised of approximately 3.7 million tonnes of food and other organic waste, such as food scraps, paper, and leaf and yard waste. According to the strategy, it is estimated that increasing Ontario's organic waste diversion rate by about 10 per cent, would reduce greenhouse gas emissions by 275,000 tonnes – the equivalent of removing almost 64,000 cars from Ontario roads each year. Across Canada, consumers are reportedly responsible for the largest share of food waste (Figure 42) when analyzed by sector.

Figure 42: Percentage of Food Wasted by Sector in Canada



The Framework proposes to achieve its vision of zero waste through reduction of food and organic waste, recovery of resources from food and organic waste, support for resource recovery infrastructure, and promotion of beneficial uses of recovered organic resources. All of this is illustrated in Figure 43.

Figure 43: Food in a Circular Economy



The full list of actions and associated timelines for implementation of the *Food and Organic Waste Framework* can be found in Appendix G. However, a number are particularly relevant for Windsor and Essex County now, based on what is known about waste management locally, but also in light of feedback obtained from the community. These include, but are not limited to, the province's plan to:

- **Develop promotion and education tools to support food waste prevention and reduction:**
 - Building knowledge including food skills, opportunities to use imperfect produce, digital tools to raise awareness and change behaviour
- **Enhance and incorporate waste reduction and resource recovery activities within schools:**
 - May include school waste audits, communications, workshops and skill building, guidelines and training to support school waste reduction
- **Support innovative approaches and tools to rescue surplus food:**
 - Including financial support to build capacity for donation from food-related businesses and distribution by social service organizations
- **Develop food safety guidelines to support the safe donation of surplus food**
- **Ban food and organic waste from ending up in disposal sites**
 - Taking into account implementation and operational challenges
- **Support resource recovery of food and organic waste in multi-unit residential buildings:**
 - Including review of the Building Code so that new construction supports recovery of food and organic waste
- **Support healthy soils with strong standards and clear requirements for the use of soil amendments, while protecting the environment and human health:**
 - Includes promotion of on and off-farm end-use of soil amendments made from recovered organic resources

Learning from other regions who may be further along in responding to the strategy may be helpful. The City of Guelph and County of Wellington have made strides toward creating the first circular food economy with their 50x50x50 by 2025 plan (City of Guelph and County of Wellington, 2018). More specifically, their goals for 2025 are to:

- Increase access to affordable, nutritious food by 50%
- Create 50 new circular businesses and collaborations
- Increase circular economic revenues by 50% by recognizing the value of “waste”

It is also useful to note that there have been corporate promises to reduce waste. For example, Loblaw Companies Limited have committed to better waste management by reducing waste to landfill through increasing organic diversion using mechanical or third-party separation (Loblaw Companies Limited, 2016). As well, in January 2019, Sobeys announced its commitment to reduce food waste in its directly owned and operated operations by 50% by 2025 (Sobeys Inc.,

2019b). These types of corporate commitments may be useful levers and create potential partnerships.

Local assets related to waste management (Table 71) identified by stakeholders include individuals who recycle, municipal waste processing facilities, organic waste management systems and landfilling.

Table 71: Waste Management Related Assets in Windsor and Essex County by Type and Number

Type of Asset	# of Assets	Identified Assets
Human	1	Recyclers
Physical	1	Municipal Waste Processing
Natural	1	Organic Waste Management
Financial	2	Landfilling Municipal Waste Processing
Social	1	Recycling

Organic Waste Management in Windsor and Essex County

Local data specific to food and organic waste management practices in Windsor and Essex County is not readily available. However, it is possible to infer a certain amount based on national and provincial data, as well as what is available locally. According to the Government of Ontario (2018e), food and organic waste come from two main sources:

- Households, where food and organic waste mainly includes:
 - Food waste (cooked or raw)
 - Surplus food (e.g., non-perishable food suitable for donation)
 - Yard and garden waste
- Industrial, Commercial, and Institutional (e.g., restaurants, grocery stores, hospitals, universities, food processors) sources, with food and organic waste including:
 - Surplus food that is suitable for donation (perishable and non-perishable)
 - Food waste (cooked or raw)
 - Food processing/manufacturing waste and by-products
 - Leaf and yard waste
 - Other sources of organic materials not listed above including biosolids

Figures from 2015 show that 55% of food and organic waste in Ontario was generated by residential sources, compared to 45% from industrial, commercial, and institutional (IC&I) sources (Ontario Ministry of the Environment and Climate Change, 2017). On the other hand, food and organic waste diversion is much higher in residential sectors (72%) compared to IC&I (28%), suggesting a need to continue efforts to engage IC&I sectors. The rates of food and

organic waste diversion residentially have been assisted by the institution of residential composting programmes. In 2017, 37 municipalities in Ontario had implemented residential composting programmes covering approximately 70% of the population of Ontario.

In 2011, over half of Canadian households (61%) reported participating in some form of composting, with 45% reporting composting kitchen waste. Table 72 shows rates for Canada, Ontario, and Windsor in 2011. Rates of overall composting and yard waste composting in Windsor were similar to that of Ontario. While Windsor appears to lag behind in kitchen waste composting, this value should be used with caution.

Table 72: Composting Habits of Canadians in 2011

	Composted kitchen and/or yard waste ⁴	Composted kitchen waste ⁴	Composted yard waste ⁵
Canada	61%	45%	68%
Ontario	75%	62%	82%
Windsor	77%	*31%	81%

Source: Statistics Canada (July 10, 2013), Composting by households in Canada

This research also showed that composting rates were found to be the highest where household incomes were greater than \$150,000, and at their lowest where household incomes were less than \$20,000.

Based on curbside residential audits, the Essex-Windsor Solid Waste Authority (EWSWA) estimates that as much as 50% of residential garbage in Windsor and Essex County is comprised of food waste. The EWSWA annual report provides the best snapshot of waste management practices in Windsor and Essex County (Essex-Windsor Solid Waste Authority, 2018). In 2017, the seven County municipalities and the City of Windsor delivered 104,150 tonnes of residential waste to the regional landfill. During the same time period, 54,726 tonnes of residential waste were diverted from the landfill via the blue and red box recycling programme, municipal hazardous or special waste programme, composting, and other waste diversion programmes. These waste diversion initiatives resulted in a 2017 residential diversion rate of 34%. The 2016 diversion rate was 35%.

⁴ As a percentage of all households.

⁵ As a percentage of households that had a lawn or garden.

To focus on residential organics, approximately 29,875 tonnes of yard waste were received by EWSWA in 2017 (Table 73), which is up 23% from 24,277 tonnes received in 2016 (Table 74).

Table 73: EWSWA 2017 Yard Waste Summary for all Sites

Material Type	Windsor Public Drop Off	Kingsville Transfer Station	Regional Landfill
Municipal Delivered	9,942	1,386	3,570
Residential Delivered	3,269	788	144
Total Residential Organics	13,211	2,174	3,714
IC&I Organics and Pallets	539	335	9,902
Grand Total (Tonnes)	13,750	2,509	13,616

Table 74: EWSWA Yard Waste Tonnage in 2016 and 2017

Material Type	2016 Tonnage	2017 Tonnage	Change 2016-2017
Municipal Delivered	14,939	14,898	(41)
Residential Delivered	4,674	4,201	(473)
Total Residential Organics	19,613	19,099	(514)
IC&I Organics and Pallets	4,664	10,776	6,112
Grand Total (Tonnes)	24,277	29,875	5,598

Organics and yard waste collected by EWSWA is composted at a temperature above 55 degrees Celsius in order to kill any pathogens or weed seeds. Once it has matured, it is tested, screened and sold for use in landscaping and for flower and vegetable gardens. In 2017, compost sales totaled \$208,884. In addition, EWSWA supports backyard composting with information and education sessions, as well as sales of backyard composters (BYC). Approximately 39,119 units have been sold since 1988 to residents of Windsor and Essex County. EWSWA estimates that 100 kg/year/BYC of organic waste is diverted from landfills with this programme, which equates to 3,912 tonnes of organic material. However, these figures do not include organic waste diversion done independently of the EWSWA programme.

The largest landfill in Windsor and Essex County is EWSWA Regional Landfill (Government of Ontario, 2018c). Located at 7700 Essex County Road 18, R.R.#3, the landfill serves the County of Essex, the City of Windsor, the Municipality of Chatham-Kent, the County of Lambton, and the County of Elgin. The total site area is 123 hectares. A full profile of the regional landfill is provided in Appendix H. Three smaller sites (Table 75) are also open and are located in Kingsville and Amherstburg (Government of Ontario, 2017b).

Table 75: Landfill Sites in Windsor and Essex County

Site Name	Site Location
Essex Landfill Number 2 The Corporation of the County of Essex Town of Kingsville	2021 Albuna Townline Road; Part of Lots 12-13, Concession 2 Essex
General Chemical Landfill General Chemical Canada Limited Town of Amherstburg	Farm Lots 2 & 3, Lots 1 & 2, Concession 2 Essex
Amherstburg Plant Honeywell Asca Incorporated Town of Amherstburg	395 Front Road North; Part of Lot 4, Concession 1 Essex

Local Response to Food and Organic Waste Framework

Although the Food and Organic Waste Framework is far-reaching, the most immediate impact locally is the proposed ban on food and organic waste in landfills to be phased in beginning in 2022. Essex-Windsor Solid Waste Authority provides waste management programmes and facilities for the residents and businesses in the county and the city (Essex-Windsor Solid Waste Authority, 2019). Windsor and Essex County does not have a municipal composting programme, nor does the Solid Waste Authority have the facilities to process organic wastes conventionally or through an anaerobic digester. However, there is one paid composting service. GreenerBins Composting ([GreenerBins Compost website](#)) started operations in 2018 and offers residential (\$30/month) and commercial (\$75/month plus bin rental) composting services, with institutional pickup to be coming soon. Response has been strong suggesting there is an appetite locally for food and organic waste composting (“U of W Student Starts Organic Waste Pickup Service”, June 21, 2018). However, paying for services is not an option for all.

In 2017, the Mayor of Windsor, Drew Dilkens, estimated that a municipal programme could cost as much as \$15 million to implement locally. However, he also noted that mandating services across the province might prove beneficial to the bottom line as an increase in providers and the resulting competition may reduce costs (“50 Per Cent of Windsor-Essex Garbage is Food”, October 2017). The precise local impacts in Windsor and Essex County will be

determined by municipal population and population density. According to the provincial policy statement (Government of Ontario, 2018b), curbside collection of food and organic waste to single-family dwellings in an urban settlement area are to be provided for any municipality with:

- More than 50,000 people and a population density greater than or equal to 300 persons per square kilometre
- More than 20,000 but less than 50,000 people and a population density greater than or equal to 100 persons per square kilometre.

A quick examination of population and population density data for the region in 2016 show that Windsor, LaSalle, Leamington, Tecumseh, and Amherstburg meet the criteria for curbside composting while Lakeshore, Kingsville, Essex, and Pelee Island do not. Given that Windsor and Essex County have a regional waste management system, universal deployment may make more sense from an organizational standpoint, but formal plans are yet to be announced.

Municipality	Pop. 2016	Pop. Density/ square km
Windsor	217,188	1,483.8
LaSalle	30,180	461.8
Leamington	27,595	105.3
Tecumseh	23,229	245.4
Amherstburg	21,936	118.2
Lakeshore	36,611	69.0
Kingsville	21,552	87.3
Essex	20,427	73.5
Pelee	235	5.6

The deadline of 2022 for beginning the transition is believed to be a tight one by City officials. The lack of a local programme is reported to be due to cost and the size of the large, local landfill. On a positive note, while organics require weekly collection, City officials believe that this may be offset by a reduction in garbage collection frequency once organics are removed (Cross, 2018).

Most recently, a 2019 statement regarding the legislation was provided by the Association of Municipalities of Ontario (AMO). Overall, AMO supports the government’s commitment to reduce and divert food and organic waste from households and businesses, particularly the inclusion of the Industrial, Commercial and Institutional (IC&I) sector in order to generate economies of scale for processing infrastructure (Association of Municipalities of Ontario, 2019). However, they note that collection and processing of food and organic waste is one of

the most costly waste diversion programmes to implement and operate. As a result, they advocated for recognition of the value of renewable natural gas and the re-application of nutrients to the soil, along with an increase in the value of these outputs as a way of helping to offset the costs to establish the programmes. Finally, AMO also emphasized the need to take into account differences between densely populated urban areas and remote or rural sparsely populated areas and their ability to implement programmes in a cost-effective manner.

Waste Management: From the Community

Community feedback related to waste management was obtained in multiple ways. The community survey posed specific questions to gauge public perceptions and practices, and both the survey and the community conversations allowed participants to address any part of the food system they wished. Waste management was a popular topic. The following provides findings from the various community activities on the topic of waste management.

Survey Findings

Participants were asked about the extent to which they agreed with a range of statements relevant to waste management. Responses were on a 5 point scale that ranged from 1 (Strongly Agree) to 5 (Strongly Disagree). In considering waste management, respondents tended to strongly agree that they reduce waste by eating leftovers and make a habit of recycling (Table 76). There is also general agreement that respondents are trying to reduce their own food waste and would use a municipal composting programme. Home composting or use of a composting service was less common. Those who did report using a compost or composting service tended to strongly agree that they try to reduce their food waste.

Table 76: Community Thoughts on Waste Management

Survey Items	Median Response
I try to reduce my food waste (e.g., bringing my own bags, buying bulk foods, using scraps to make stock).	Agree
My food often goes bad before I can eat it.	Disagree
I reduce food waste by eating leftovers.	Strongly Agree
I use a compost or composting service.	Disagree
I would use a municipal composting programme.	Agree
I make a habit of recycling.	Strongly Agree

Open-Ended Feedback

Waste management was the third most frequently mentioned part of the food system, comprising 11% of open-ended responses from community conversations and the online survey. Common themes and illustrative quotes are provided below.

Overall, many waste management comments centred on the need for a municipally-supported, local curbside composting programme. The lack of a local composting programme was noted by many, as was the availability in other regions like Peel, Guelph, Kitchener-Waterloo, Niagara, and Toronto.

“There's no comprehensive food waste programme”

“Food waste recycling needs to be city side so that more people take advantage of composting”

Pests and odour were commonly mentioned barriers to backyard composting. Regardless of whether respondents currently compost or not, a municipal compost programme was of definite interest, although some felt that widespread adoption may require incentivizing the process at least initially.

“Need to do more to promote recycling and composting, having compost bins like the ones they give out for recycling would help (give the 1st one) and make it mandatory”

“No backyard compost -but would with municipal support”

“Would like to start composting municipal programme would be good”

“Recycling/composting, try my best, would use a municipal programme, love the idea”

Respondents also had very strong feelings about food waste in the face of food insecurity, particularly those who have used or assisted with emergency food services. More than once, food waste was described as a “sin.”

“Too much waste, a ‘sin’ how we get rid of it, there are homeless who don't have and we should be using leftovers to feed people, give to those in need”

“Use food bank and believe restaurants and grocery stores in particular should donate”

A number of respondents spoke of the opportunity to divert imperfect foods from the waste stream in the service of alleviating food insecurity, with the work of the Gleaners and Plentiful Harvest being known to some.

“Could be giving away more food to the mission, etc. from grocery stores, utilize the imperfect food, don't throw it away”

“Food waste, people don't understand that tiny blemishes doesn't mean there is something wrong with the product itself”

“In North America, we waste about 40% of our food. At the farmers' markets, you can get discounts on 'ugly' veggies. We need to educate people on the equal nutrition and flavor of odd looking fruits and veggies. 'Ugly Veggies Matter!’”

Many, many respondents also spoke strongly about restaurants and grocery stores being more actively involved in food reclamation and waste diversion efforts.

“Good to minimize food waste, reduce it, particularly at restaurants, emphasize food portion size and taking food home“

“Distribute food to people who need it or sell at reduced rate, food waste at groceries is a problem, sell for reduced price so it doesn't go to waste”

“Lots of waste and grocery stores thrown out, wait too long to offer for reduced price, need to do it sooner, worked at a grocery store, it should be donated to the mission or sold at a reduced price, or use it in store for prepared meals that are sold or used in the kitchen demonstrations”

At the same time, others identified a need for more conversation about food waste in general, as well as additional measures to further reinforce a zero waste system.

“We don't talk about food waste, need resources (e.g., what to do with spoiled and not thrown out, using food creatively)”

“Infrastructure in Ontario does not allow for good recycling/food waste practices, should learn from BC and Europe -pay for garbage if more than 1 bag, have deposits on all recyclables and encourage food waste (composting) programmes -we have too much of a system that wants us to spend money and throw goods away”

Strengths, Challenges, and Opportunities

Community stakeholders discussed strengths, challenges, and opportunities related to waste management. The following is an accounting of stakeholder feedback, organized by thematic area that emerged through the exercise, specifically composting and food diversion. As previously noted, tables that summarize group discussion reflect the thoughts and words of the stakeholders.

Composting

Stakeholders considered composting as one key part of waste management. A local strength identified by stakeholders was the existence of a densely populated area that may better support a composting programme. As well, businesses like Seaciff Energy take food waste and use anaerobic digestion to create energy that in turn powers their greenhouses and contributes to the local power grid. However, the current lack of a curbside composting programme in Windsor and Essex County was identified as a challenge at the household level, as well as the lack of a large-scale composting facility in the region. Also noted as a challenge is the difficulty of composting programmes in apartments or similar buildings. One central opportunity in this area is the landfill legislation that will make diversion of organic waste from the garbage stream mandatory. Other opportunities identified by stakeholders include public education on waste management, including composting and ways to reduce food waste at home. Networking on waste management solutions, including composting, was also seen as an opportunity, as was further exploration of anaerobic digestion of food waste to make renewable energy.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> • Densely populated area means opportunities for better composting programmes • Seaciff Energy converts waste to energy 	<ul style="list-style-type: none"> • Lack of a large composting facility, cost to build • Lack of curbside composting programme like in other communities • Lack of programmes in apartments or lack of adherence 	<ul style="list-style-type: none"> • Landfill legislation to promote curbside pickup • Educate the public on proper waste management, composting • Educate the public on meal planning to reduce waste at home • Networking on waste management solutions (e.g., waste, food waste, packaging, recycling, compost) • Anaerobic digestion of food waste and sewage sludge to make renewable natural gas

Food Diversion

Stakeholders spoke at great length about the potential for food diversion as an important part of food waste management. Food products of a lower grade, while often put directly into the waste stream, are still useable and nutritious food sources that can be diverted through food rescue or similar initiatives. Local food production was seen as a support for food diversion, including greenhouse production which extends the growing season. Organizations that are already working in this area, such as the Gleaners and the Unemployed Help Centre and Plentiful Harvest, were also identified as strengths.

However, food diversion was seen as having challenges as well, including the increased labour required to separate lower grade produce for food diversion and costs associated with transportation and storage of perishable foods. Opportunities in this area include improving food diversion of naturally imperfect and lower grade food products grown locally, as well as processed and prepared foods, through coordinated initiatives with producers, processors, grocery stores, and restaurants. Stakeholders also felt that there were important opportunities to educate the public about the difference between best before and expiry dates as a means to prevent unnecessary food wastage and to promote waste management as a part of the school food skills curriculum. Linking institutions and organizations (e.g., child care centres) to hobby farms as a way to divert food waste also represents an opportunity for waste management.

Strengths	Challenges	Opportunities
<ul style="list-style-type: none"> • Many greenhouses and producers that grow locally • Community willing to be part of waste management • Unemployed Help Centre and Gleaners are already advocates on the ground level 	<ul style="list-style-type: none"> • Food deemed unmarketable is thrown in the garbage • Increased labour to separate lower grade produce for use in food diversion • Cost of transportation and storage for perishable diverted food 	<ul style="list-style-type: none"> • Make better use of naturally imperfect and lower grade products; divert food that may be thrown away (e.g., coordinate with grocers to divert food before expiry dates, coordinate with restaurants so leftover food is distributed through non-profit organizations) • Educate the public about difference between expiry and best before dates to prevent unnecessary food waste • Promote waste management as part of food literacy in school curriculum • Link child care centres with hobby farms to divert food waste or ECO Schools

Summary

The *Waste-Free Ontario Act* and *Ontario's Food and Organic Waste Framework* provide an excellent legislative grounding for local food system work on waste management. In particular, the expectation of complete diversion of organic waste from landfills by 2022 is paving the way for a local municipal composting programme if all stays on track at the provincial level.

Currently a municipal composting programme is lacking in Windsor and Essex County but community members are interested, particularly since many perceive backyard composting as unfeasible. While not all municipalities will technically be required to have curbside composting since they fall outside the stipulations for population and population density (i.e., Lakeshore, Kingsville, Essex, Pelee), many community members express hope that it will be a regional initiative.

Without a municipal composting programme as much as 50% of local household waste is organic. Industrial, commercial and institutional settings also produce organic waste. The Essex Windsor Solid Waste Authority (EWSWA) already provides landfill and yard waste services to the region but do not currently have the capacity for a regional composting programme.

In addition to supporting municipal composting and making efforts to reduce food waste at home, community engagement efforts suggest that residents feel very strongly about the importance of food diversion or rescue programmes. Such programmes take healthy but less marketable food generated through industry, groceries, restaurants and other food sources, and move it out of the waste stream to provide food to those who need it. Existing programmes like the Gleaners and Plentiful Harvest are already working locally on this but community members believe there is more that can be done.

Section 8: Gaps, Recommendations, and Limitations

As is expected, summarizing across such a broad range of information yields a very large list of recommendations to be considered for future food system work. Gaps in information have also been noted. This section will provide overall recommendations for further consideration and deliberation by the Windsor-Essex Food Policy Council.

Gaps

A number of gaps in data were noted during the course of this assessment. These would be useful areas for further study or possible data collection going forward:

- **Indigenous Engagement**
 - Given the relatively few Indigenous identified participants in the current community consultations, future Indigenous-specific engagement would be helpful.
- **Updated Food Insecurity Figures**
 - The Canadian Community Health Survey (CCHS) provides the best population level estimates of food insecurity. Data for the 2017-2018 cycle of the CCHS will be available shortly and should be used for a more recent picture of local food insecurity.
- **Information on Children and Youth**
 - Generally speaking, there is lack of reliable information on healthy eating and healthy weights for children and youth.
- **Centralized Information**
 - There are a number of places where accurate, comprehensive information was difficult to obtain (comprehensive lists of local food processors, distributors, food programmes, and community kitchens to name a few). In many cases, lists needed to be pulled together from a variety of sources. A centralized mechanism for collecting this type of data may be helpful going forward.
- **Measures of Food Literacy**
 - Little information is available about the food literacy skills of local residents. This would be helpful to assist in planning related to education and food skills.
- **Comprehensive Food Policy Scan**
 - While a number of relevant policies and legislation have been referenced in this report, a targeted and comprehensive environmental food policy scan may be useful for identifying policy supports for the food system that can be leveraged. Such a scan could also consider local municipal plans.

Recommendations

Recommendations represent the integration of themes gleaned from relevant legislation, local data and reports, community input, and stakeholder knowledge. As much as possible, they maintain the spirit and language of those who provided many of these key ideas. They also attempt to maximize the existing local food system assets, build on what has gone before, and move toward a more integrated approach to food system planning.

The largest number of recommendations pertain to Access and Consumption (26) and Production (21), which is very much in keeping with the interests voiced by the community. The choice was made to organize recommendations according to food system element (Production, Processing and Distribution, Access and Consumption, Waste Management), while retaining another category for more System-Wide recommendations.

That said, similar types of activities or strategies (e.g., diversification, education, promotion) span food system elements so it may also be useful to consider recommendations by sub-category to look for opportunities to combine activities for the sake of efficiency (e.g., education on multiple parts of the food system at one time). For ease of reference, recommendations have been provided in the latter format in Appendix I, while maintaining the original numbering system in the tables that follow. Although splitting recommendations by food system component may promote readability, it runs the risk of perpetuating a separation between components rather than taking a more integrated stance. This also stands as an argument for considering recommendations in both formats. Recommendations can be found in Tables 77 through 81.

Table 77: Production Related Recommendations

1. Production	Related Recommendations
1.1 Cross-sectoral Work	<p>1.1.1 Give producers more opportunity for community involvement; Recognize participation through an annual award</p> <p>1.1.2 Collaborate with municipalities</p>
1.2 Diversification	<p>1.2.1 Work to diversify types of farms/commodities produced locally (e.g., hazelnuts, as an example of an emerging commodity) to improve financial competitiveness; Incentives for diversifying crops</p> <p>1.2.2 Subsidize seed preservation in the region and develop region-specific strains</p>
1.3 Driving Demand	<p>1.3.1 Encourage private sector procurement of local foods to drive demand</p>
1.4 Education	<p>1.4.1 Make food production part of food skills teaching; Link “from farm to table” to the school curriculum</p> <p>1.4.2 Education to increase public demand for local food</p> <p>1.4.3 Foster use of local producers as sources of knowledge and hands on experience</p> <p>1.4.4 Consider education for new/next generation farmers that is affordable, available, accessible and uses expertise of older farmers</p> <p>1.4.5 Consider education for new/next generation farmers that is affordable, available, accessible and uses expertise of older farmers</p>
1.5 Employment	<p>1.5.1 Promoting careers in agriculture sector, including using prison gardens to train inmates in agriculture</p> <p>1.5.2 Working with local training centres and organizations to explore agricultural training opportunities</p> <p>1.5.3 Explore public transportation options to get workers to bigger employers</p>
1.6 Financial Supports	<p>1.6.1 Explore innovative financing opportunities, grants, tax benefits, break on utilities, electricity, and water to support local production</p> <p>1.6.2 Advocate for government support to incentivize more sustainable agricultural practices</p> <p>1.6.3 Financial assistance and incentives for small farmers to help counter threats associated with corporation farming, monoculture, cash crops, land use policies</p>

1. Production	Related Recommendations
1.7 Research and Innovation	<p>1.7.1 Partner with researchers (e.g., University of Guelph Ridgetown Campus, University of Windsor, St. Clair College) to learn more and explore innovation; Explore social enterprise opportunities</p> <p>1.7.2 Further research into barriers to local food production: Cost of farmland, cost of start up, regulations</p>
1.8 Urban Agriculture	<p>1.8.1 Promote community gardens and community shared agriculture, including fruit trees and bees in cities</p> <p>1.8.2 Educate community on urban gardens and reconnect them to gardening</p> <p>1.8.3 Promote roof tops for small greenhouses; Vertical farms, less foot print; Year round growing lighting systems</p>

Table 78: Processing and Distribution Related Recommendations

2. Processing and Distribution	Related Recommendations
2.1 Alternatives	2.1.1 Support for regional food warehouses, co-ops, community supported agriculture
2.2 Diversification	2.2.1 Encourage new product development and diversification
2.3 Driving Demand	2.3.1 Encourage consolidated purchasing of local products for institutions 2.3.2 Explore local group purchasing programme options (e.g., local child care centres, schools, other non-profits)
2.4 Promotion	2.4.1 Build awareness about local processing, distribution and the importance of supporting local 2.4.2 Extend promotions by having local companies network and market together
2.5 Reducing Waste	2.5.1 Educate the public on food grading and ability to use lower grade foods 2.5.2 Work with processors to redirect “waste” to food banks and other organizations 2.5.3 Model food diversion efforts after existing innovative programmes (e.g., Food Share)
2.6 Research and Innovation	2.6.1 Explore technology to assist transportation brokers 2.6.2 Feasibility study of pilot project for local distribution centre

Table 79: Access and Consumption Related Recommendations

3. Access and Consumption	Related Recommendations
3.1 Alternatives	<p>3.1.1 Support alternative ways to access food (e.g., mobile markets)</p> <p>3.1.2 Explore use of non-traditional public spaces (e.g., parks, libraries) to promote and sell local food</p> <p>3.1.3 Develop infrastructure and funding to supports food skills development (e.g., community kitchens -new or those outside the food movement that are well-funded and sustainable)</p>
3.2 Cross-sectoral Work	<p>3.2.1 Build communications between local stores and suppliers/farmers to increase access to local food</p> <p>3.2.2 Explore methods for sharing food and resources</p>
3.3 Diversification	3.3.1 Advocate for production and accessibility of more world crops
3.4 Environmental Supports	<p>3.4.1 Advocate for taxes on overly processed foods or subsidizing healthy food</p> <p>3.4.2 Advocate for controls on advertising and marketing of unhealthy food, particularly vulnerable populations (e.g., youth)</p> <p>3.4.3 Promote policy to impact food environments (e.g., lunch rooms, cafeterias)</p>
3.5 Financial Supports	3.5.1 Explore avenues for government financial supports to assist with food access
3.6 Food Security	<p>3.6.1 Encourage more donation of local vegetables and fruit, or donation of money to buy these</p> <p>3.6.2 Explore programmes that directly connect farmers and consumers experiencing or at risk of food insecurity</p> <p>3.6.3 Promote community driven urban agriculture to help address food security</p> <p>3.6.4 Explore potential supports for food banks, including access to more commercial food supports, food donations, volunteers, infrastructure, location, refrigeration</p> <p>3.6.5 Advocate for government support of poverty programmes that increase funds and infrastructure for assembly and distribution of food</p>

3. Access and Consumption	Related Recommendations
3.7 Food Skills	<p>3.7.1 Advocate for policy and programmes that support food skills (e.g., school curriculum) and educate new teachers and partners; Bring in children and youth as advocacy partners – they are invested advocates</p> <p>3.7.2 Education: support food skills training in school; teach people how to purchase and prepare healthy, culturally-appropriate foods quickly; food safety; nutrition labels</p>
3.8 Healthy Eating	<p>3.8.1 Promote Canada’s Food Guide as a comprehensive, accessible healthy eating resource</p> <p>3.8.2 Promote the long-term benefits of healthy eating</p> <p>3.8.3 Explore having Dietitians more available, especially at economy stores</p>
3.9 Income Support	<p>3.9.1 Efficient finance allocation (e.g., tax, private sector, social enterprise)</p>
3.10 Promotion	<p>3.10.1 Encourage farmers to separate some food from their lines to keep it local</p> <p>3.10.2 Explore community transportation projects (e.g., bus transportation to community stand) that connect consumers and producers, including possible sponsored transportation initiatives</p> <p>3.10.3 Promote local food access through workshops, media engagement, partnership with regional festivals</p>
3.11 Urban Agriculture	<p>3.11.1 Engage residents about urban agriculture, build capacity, share knowledge; work to increase affordable access to land, especially land with water</p> <p>3.11.2 Advocate using community champions and municipal partnership</p>

Table 80: Waste Management Related Recommendations

4. Waste Management	Related Recommendations
4.1 Composting	4.1.1 Follow landfill legislation application locally to promote curbside pickup of organic waste 4.1.2 Educate the public on proper waste management, composting, and meal planning to reduce home food waste 4.1.3 Network to identify waste management solutions (e.g., waste, food waste, packaging, recycling, composting) 4.1.4 Promote use of anaerobic digestion of food waste and sewage sludge to make renewable natural gas. Explore Seacliff Energy in Leamington as model for sustainability and solicit public buy-in
4.2 Education	4.2.1 Promote waste management as part of food literacy in school curriculum
4.3 Food Diversion	4.3.1 Make better use of naturally imperfect and lower grade products; divert food that may be thrown away (e.g., coordinate with grocers to divert food before expiry dates, coordinate with restaurants so leftover food is distributed through non-profit organizations) 4.3.2 Educate the public about difference between expiry and best before dates to prevent unnecessary food waste 4.3.3 Link child care centres or ECO schools with partners (e.g., hobby farms) to divert food waste

Table 81: System Wide Recommendations

5. System Wide	Related Recommendations
5.1 Cross-Sectoral Work	5.1.1 Work together across the food system, collaborate, work together 5.1.2 Engage with municipal partners, policy makers, new councils to support community gardens, Windsor-Essex Food Policy Council, land use planning 5.1.3 Involve new and bigger champions (e.g., the University of Windsor, St. Clair College, public/private partnerships); Institutional supports and partnerships
5.2 Financial Supports	5.2.1 Explore corporate social responsibility initiatives to raise dollars via shareholder activism
5.3 Promotion	5.3.1 Market successes, co-opt the media, to gain buy-in for partnerships 5.3.2 Food as common to all and a unifying presence in society 5.3.3 Appeal to voters – vote with your fork campaign; celebrate successes to fight apathy
5.4 Research and Innovation	5.4.1 Make use of innovation and technology, investment in R & D 5.4.2 Pilot small, innovative projects

Limitations

Food systems are large and complex entities. Any single element could be the subject of intensive research, study, and consultation. In undertaking a comprehensive food system assessment such as this one, there is a risk of under-representing key elements in the food system. Nevertheless, they continue to be useful tools if they are region-specific, as this one is, and can establish a foundation that can continue to be evaluated as the political landscape changes and as food system work progresses (Freedgood, Pierce-Quiñonez, & Meter, 2011). While the sheer scope of this report precluded a deep dive into some of the more nuanced elements of the food system, it remains a sound foundation for moving ahead with integrated food system action in Windsor and Essex County.

Timelines for this project were quite tight which made it challenging to have full engagement with the Food System Assessment Steering Committee and WEFPC members in the latter stages of generating recommendations. As such, the recommendations in this report are given with the assumption that they are a beginning and that the WEFPC, while considering them closely and weighing the evidence gained from research and community consultation, will ultimately choose from among them those recommendations that best fit their vision for short and long-term strategy in Windsor and Essex County.

It should also be noted that certain segments of the population are often typically under-represented in community engagement efforts and this project is no exception. It will be important to consider which voices were not heard as often or as clearly as it might be wished, and be attentive to those groups in the work ahead. These include, but are not limited to: Leamington area residents, individuals or families in low income or with lower levels of education, New Canadians, members of the multi-cultural community and Indigenous peoples.

Section 9: Next Steps

This report will be used to guide the next steps of integrated local food system planning. Next steps include:

- **Review and Discuss Community Food System Assessment**
 - This is a large document with a great deal of information. It speaks to a wide range of data relevant to the local food system while also giving voice to multiple (and at times conflicting) sets of thoughts and opinions from stakeholders and community members. Taking time for the group to review and discuss what is and is not contained in this report is important. This may be best achieved through one or more sessions dedicated to such discussion. It may be helpful to give attendees questions to consider as they read the report which can then be used to structure discussion. Questions might include:
 - *What did you see as the most important strengths to build on in our local food system?*
 - *Where are the most noticeable gaps in our local food system?*
 - *What can we act on relatively quickly?*
 - *What will require greater time and effort?*
- **Prioritize Recommendations for Action**
 - The previous discussion paves the way for prioritizing recommendations. The vision and mission of the WEFPC should be one guide for prioritizing recommendations. However, it may also be useful to ask the WEFPC members to specifically identify the criteria they wish to use for priority setting. Agreeing on clear criteria assists with coming to consensus around priorities, particularly when members of the group represent different sectors of the food system.
- **Set a Time Frame for Action**
 - Along with prioritizing specific recommendations for action, it will be necessary to map priorities over time. Ultimately, choosing priorities that span a five to ten year time frame is appropriate.
- **Identify Goals and Create Action Plans**
 - As the group dives deeper into priority areas, it will be important to identify short, medium, and long-term goals for priority areas and carve out concrete action plans. These are the benchmarks for judging success and the steps for moving forward. At this point, it may be helpful to consider how best to approach working in priority areas. Having separate working groups with dedicated priority areas may be helpful.

- **Annual Progress Review**

- As a last step, the group should consider the process for ensuring an annual progress review. These allow the group to consider achievements, update data and new information, and to chart course corrections as needed. They should be bound to goals and action plans. Report cards are a common way of reviewing progress and communicating achievements to the broader community.

In moving forward, this report should be used as a touchstone and resource. Rather than re-creating the wheel each time a priority project begins, relevant sections of this report should be reconsidered and utilized as a foundation to build on what has gone before.

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Appendix A: Federal Food Related Initiatives

Federal Food Related Initiatives

Agriculture and Agri-Food Canada | Canadian Agricultural Partnership

Five-year, \$3 billion investment by federal, provincial and territorial governments to strengthen the agriculture and agri-food sector in Canada.

Canadian Food Inspection Agency | Safe Food for Canadians Regulations

Safe Food for Canadians Regulations (SFCR) replaced 14 sets of regulations to modernize Canada's food safety system by focusing on prevention through more rigorous risk management and increasing the focus on traceability.

Health Canada | Healthy Eating Strategy

This strategy aims to help Canadians make healthier choices by improving healthy eating information and the nutrition quality of foods, protecting vulnerable populations and supporting increased access to, and availability of, nutritious foods (Health Canada, 2019b). For example, initiatives include:

- Updating regulations for food labels with regards to the list of ingredients and the nutrition facts table to help consumers make informed food purchasing choices
- Banning the use of partially hydrogenated oils in foods, which is a major source of industrially produced trans fat
- Working with food producers and food services to decrease sodium, since most ingested sodium come from processed foods

Revising and launching the new Canada's Food Guide in January 2019, which provides updated dietary guidance for Canadians, such as moving towards a more plant-based diet, making water the drink of choice, and underlining the importance of a balanced diet of vegetables, fruit, whole grains, and protein foods. It also emphasizes that healthy eating is more than the foods that are eaten – it includes important aspects such as sharing meals with others, eating mindfully, being aware of food marketing and the food environment, and being environmentally sustainable (Health Canada, 2019c).

Crown-Indigenous Relations and Northern Affairs Canada | Nutrition North

Engagement held in 2016 to gain input from community members and other stakeholders on how the Nutrition North program can be more transparent, cost-effective, and culturally appropriate in the face of growing demand for healthy food in the North. Engagement sessions focused on: programme sustainability/cost effectiveness, fairness and consistency, transparency, visibility (communications/outreach and engagement), and innovation.

Innovation, Science, and Economic Development Canada | Economic Strategy Table on Agri-Food

As part of a larger economic growth plan for Canada, in 2018 the Agri-Food Strategy Table proposed five areas of focus to strengthen the Canadian agri-food sector in 2018:

- An agile regulatory system
- State-of-the-art transportation and IT infrastructure network
- Developed and diversified agri-food markets
- Innovation and competitiveness through automation and digitization
- A diverse and skilled labour force

Environment and Climate Change Canada | Pan-Canadian Framework on Clean Growth and Climate Change

Developed with provinces and territories in consultation with Indigenous peoples, this framework seeks to meet emissions reduction targets, grow the economy and build resilience to a changing climate. The framework considers impacts of climate on food security.

Environment and Climate Change Canada | Federal Sustainable Development Strategy

Arising from the 2008 Federal Sustainable Development Act, and in harmony with the Pan-Canadian Framework on Clean Growth and Climate Change, this most recent iteration of the strategy builds on a vision of sustainable development achieved through low-carbon, environmentally responsible economic growth, maintaining and restoring ecosystems, and ensuring Canadians live in clean and healthy environments. Among the thirteen aspirational goals is sustainable food through innovation and ingenuity to position Canada as having a world-leading agricultural sector and food economy for the benefit of all Canadians. Seeking input for the 2019-2022 Strategy until April 2, 2019.

Fisheries and Oceans Canada | Sustainable Aquaculture Program

Beginning with an initial investment of \$70 million in 2008 and extended through an additional investment of \$54 million over five years from 2013 to 2018, this programme seeks to help address the sector's challenges to growth by streamlining regulations, improving regulatory management, increasing scientific knowledge and science-based decision making, and ensuring transparency through enhanced public reporting.

Food Policy Proposals

Food Secure Canada | From Patchwork to Policy Coherence: Principles and Priorities of Canada's National Food Policy (2017)

This discussion paper explores process principles and policy priorities for Canada's National Food Policy. Of note, is a food policy that brings coherence to the food system by encouraging: collaboration of civil society, government and private sector; coordination across government departments and jurisdictions; place-based adaptations to diverse geographies and contexts; building on sound evidence and strong principles; and innovation with support for community programmes, not simply technology.

Food Secure Canada | Resetting the Table: A People's Food Policy for Canada (2015)

A call to action that documents support and evidence of the need for a Canadian National Food Policy grounded in principles of food sovereignty.

The Canadian Agri-Food Policy Institute | Achieving What's Possible for Canada's Agri-Food Sector (2016)

The Forum on Canada's Agri-Food Future held in November 2015 identified four key challenges facing Canada's food system: securing social license; leveraging natural advantages within the global food system; complacency about adding value and; influencing rules and outcomes. Developing an agri-food strategy focused on trust was identified as a strategic driver for forward movement.

The Canadian Agri-Food Policy Institute | Canada's Agri-Food Destination (2011)

This discussion paper presents an agri-food strategy for Canada, noting falling profitability, lost opportunity, and declining relevance as challenges for the nation's agri-food industry. The strategy speaks to the opportunity for the country's agri-food industry to maximize its natural advantages of climate, geography, and skills and create a compelling food plan that is systems-based, not value chain-based.

The Canadian Federation of Agriculture | Towards a National Food Strategy (2011)

This supporting work for the creation of the National Food Strategy includes fundamental principles deemed necessary and essential to the development and adoption of a National Food Strategy, specifically food as a basic human need and right, maintaining a strong and healthy domestic food chain, and an economically, environmentally and socially sustainable food system.

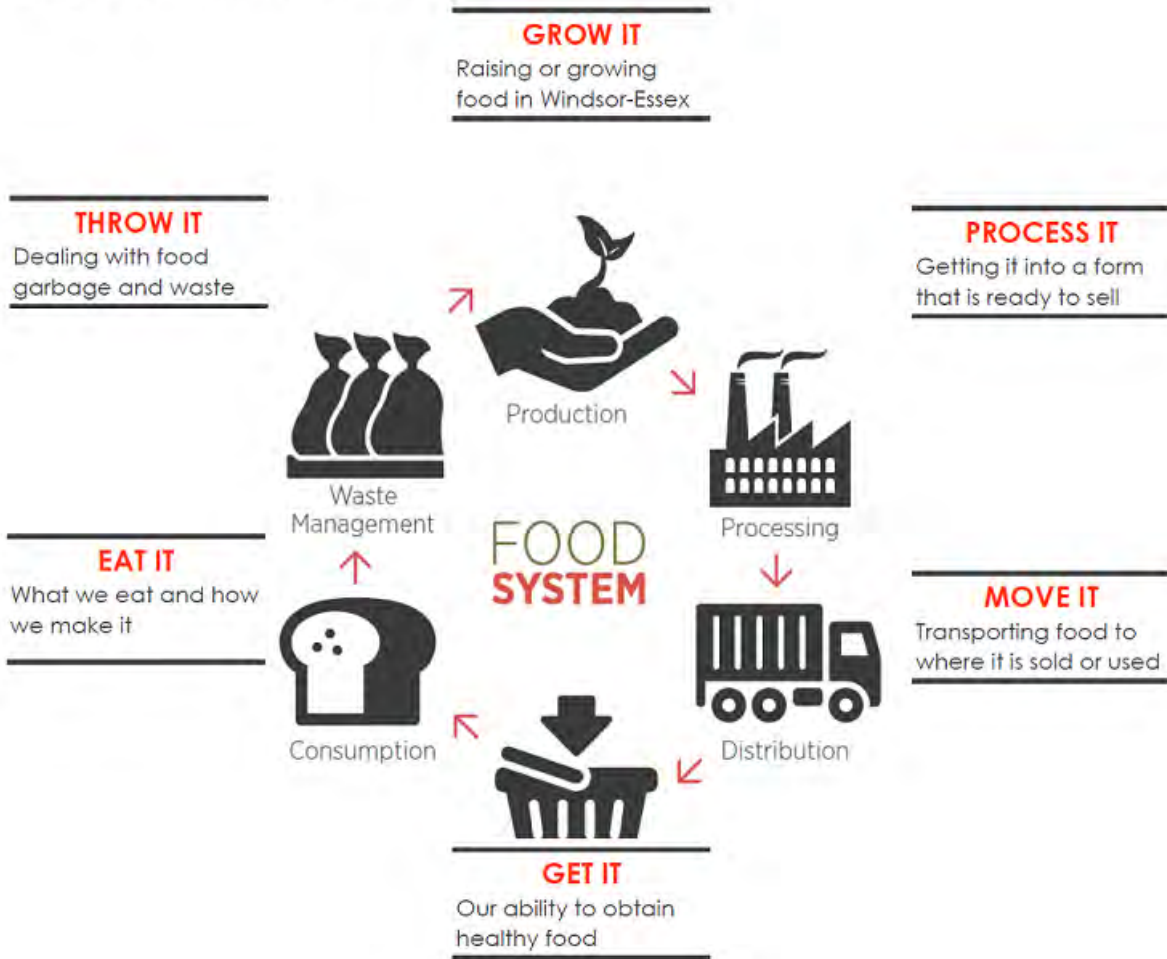
The Conference Board of Canada | From Opportunity to Achievement: Canadian Food Strategy (2014)

This report presents the Canadian Food Strategy. The Strategy's five key elements are: Industry Prosperity, Healthy Food, Food Safety, Household Food Security, and Environmental Sustainability.

Appendix B: Community Conversation Data Collection Materials

WHAT IS A FOOD SYSTEM?

A food system is more than just the food we eat. It includes how we grow, process, move, get, eat and throw out food. It also includes all the people who are part of this. You are part of the food system!



WE WANT TO KNOW...

- What is working AND what is NOT working in the Windsor-Essex food system?
- What do you think is most important to do to improve the local food system?

Community Engagement Protocol

Hi! My name is ____ and I'm with the Windsor-Essex County Health Unit. I'm wondering if you would have a few minutes to talk to me about food in Windsor-Essex County?

[Give participant laminated information Sheet and refer to it as you talk.]

The Health Unit and partners are doing a Food System Assessment for Windsor-Essex County. We want to hear from the community and are visiting all the municipalities to speak to people like you.

So what is a food system? A food system is more than just the food we eat.

[Refer to diagram on laminated sheet.]

It includes how we grow food, process it, move it around, get it in our homes, eat it and how we throw it out or what we do with food waste.

It also includes the people who are part of this. You and I both are part of the food system!

Questions

If you think about any part of the food system, based on what you know or have experienced:

- **What is working AND what is NOT working in Windsor-Essex?**

Thinking back across all the feedback that you've given **[review if needed]:**

- **If you had to pick a priority, what do you think is most important to do to improve the local food system?**

If you have no other thoughts, I'd like to ask you a few quick questions about yourself. You don't have to answer these if you don't want to.

[Ask and record demographics]

Thank you so much for taking the time to talk. If you're also interested in completing a community survey about the food system that includes a chance to win a \$100 grocery card, you can find the survey at wechu.org/foodsystem.

[Give them card and incentive if available]

[Ensure all information is complete on recording sheet and identify responses by food system element number if available.]

Notes for Administration:

1. Write down responses as comprehensively as you can on the recording sheet.
2. Review responses with participant if unsure what they mean or if you missed something.
3. If you are having a hard time getting participants to talk, refer to the probes on the other side of the page.
4. If it is busy, you can also give people sheets to fill out themselves with instructions.
5. Identify responses by food system element if able and mark priorities with a prominent "P".

General Probes

- When you think of the food you see/or buy/or eat:
 - Is there anything that really bugs you?
 - Is there anything that worries you?
 - Is there anything that you are really happy about?
 - Is there anything that you would recommend to a friend?
- Is there anything food-related that you think Windsor-Essex should be proud of?
- Is there anything food-related that you think Windsor-Essex needs to address?

System-Specific Probes

These can be used to get people talking about various parts of the food system in general. From there you can move them into talking about what is working (assets) and what is not (issues).

Production

- How familiar are you with farming and food production here in Windsor-Essex?
- Have you ever visited any local farms or greenhouses?

Processing

- Have you ever thought about how the food you see at your grocery store is processed before it gets to your table?
- What do you think happens to your food before it gets to your local store?

Distribution

- Have you ever thought about how the food at your grocery store gets to you? Where it comes from?

Access

- Can you get the food you want when you want it? How you want it?
- Is there food you can't get that you would like to get?

Consumption

- Do you think about what you eat?
- How do you feel about making meals?
- Do you ever have food go bad on you?

Waste Management

- What usually happens with food waste in your home?

Priority Setting Probes:

- If you could wave a magic wand, what food-related change would you make?
- Of all the things that you mentioned, what is the single most important issue for you?
- Is that true all over or only in your area?

Recording Sheet

Recorder _____ Date _____

Municipality _____ Location _____

Demographics	
Sex: <input type="checkbox"/> Female <input type="checkbox"/> Male <input type="checkbox"/> Other	Year of Birth: _____
Household: # of Adults _____	Food Producer: <input type="checkbox"/> Yes <input type="checkbox"/> No
1 Production 2 Processing 3 Distribution 4 Access 5 Consumption 6 Waste	
Mark Priorities with a P	
COMMENTS	#

Appendix C: Community Survey

COMMUNITY FOOD SURVEY

Introduction

This community survey is part of a local food system assessment. The assessment is being carried out by the Windsor-Essex Food Policy Council, in partnership with the Windsor-Essex County Health Unit. This project is also proudly supported by the WindsorEssex Community Foundation and Loblaw Companies Limited through their partnership with Community Foundations of Canada.

The purpose of the assessment is to learn about the food system in Windsor and Essex County so we can make improvements to the system for all residents of Windsor and Essex County. As part of the assessment, we need to know what community members think about different aspects of the food system. That is why we are conducting this survey. As a thank-you for completing this survey, you will be given the option to enter a draw to win a \$100 grocery card.

Your participation is voluntary. You can choose to stop the survey at any time. You can choose not to answer any question you do not wish to answer. All the responses you give will be strictly confidential. Your name will not be connected to your answers. The survey should take about 10 minutes to complete.

If you have any concerns or questions about the survey, please feel free to contact...Chair of the Windsor-Essex Food Policy Council, at.... If you have technical issues with the survey, please contact...at.... If you have read and understood the information just provided and would like to complete the survey, please check "Yes" below and continue with the survey.

I have read and understood the information above and decided to participate.

Yes No

TELL US WHAT YOU THINK

We want to know what you think about different aspects of the local food system. The following sets of questions will ask you about the local food system. Think about your own beliefs and experiences when you answer these questions.

Production, Processing and Distribution

These questions ask about growing food, processing it, and distributing it in Windsor and Essex County. Please indicate how much you agree with each statement.

	Strongly Agree	Agree	Neither Agree nor disagree	Disagree	Strongly Disagree	Unsure
<i>Please tell us how much you agree with each statement:</i>						
I think that food grown or produced in Windsor and Essex County should also be sold here.						
I believe local food is produced in an environmentally friendly way.						
I do not know a lot about local farming and food production.						
I think that as local farmers get older, others should be supported to start farming.						
I think it is important to provide financing and support for small scale local food farmers.						
I think there should be support to grow food in the city (e.g., rooftop gardens, community gardens, public fruit trees).						
There is a wide variety of food grown locally.						
I think it is important that land which could be used for farming is protected.						
I think food grown or produced in Windsor and Essex County should also be processed here (e.g., prepared, canned).						
I think that local produce should be available in stores in Windsor and Essex County.						
I am able to buy locally grown produce where I usually shop for food.						
I am knowledgeable about local food processing.						
I am knowledgeable about food distribution in Windsor and Essex County.						

Access and Consumption

The next section asks you about getting food and eating food. Please tell us how much you agree with each statement.

	Strongly Agree	Agree	Neither Agree nor disagree	Disagree	Strongly Disagree	Unsure
<i>Please tell us how much you agree with each statement:</i>						
I buy my food/groceries outside of Windsor and Essex County (e.g., in another region or across the border).						
I am more likely to buy food that is grown or produced in Windsor and Essex County.						
I would be willing to pay more for local produce.						
I prefer to eat out at local restaurants that feature local food options.						
I can easily get to the store where I buy most of my food/groceries.						
I usually have enough money to buy food.						
In my neighbourhood it is easy to buy healthy foods.						
In my neighbourhood it is easy to buy fresh fruit and vegetables.						
The stores in my neighbourhood sell outdated or rotten products.						
I would use emergency food services, such as food banks, if I needed it.						
I would use a community meal programme, such as Meals on Wheels, if I needed it.						
I actively choose what I eat to help reduce my risk of obesity, diabetes and heart disease.						
I know how to prepare and store food safely.						
I know where to go for information about how to buy, eat and cook healthy food.						
I often have meals with others (e.g., family, friends, co-workers).						
I enjoy cooking meals and preparing food.						

How much do you agree with the following statements?

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Unsure
<i>I sometimes have trouble buying or accessing food because:</i>						
I do not have transportation to buy food.						
I do not feel safe walking to the store.						
I have to stay home with a child or another family member.						
I need to have some assistance with grocery shopping.						
I work many hours and it makes it difficult to buy food.						
The food I have access to is not culturally appropriate for my family.						

Thinking of all the places you have gotten food in the past year, select the three that you have used most. Please check only three.

- Full Grocery Store
- Meat or Butcher Store
- Drug Store/Pharmacy
- Convenience Stor
- Food Bank
- Community Meal Programme (e.g., Meals on Wheels)
- Restaurant
- Fast Food Outlet
- Fruit and Vegetable Stand
- Community Garden
- Farmer's Market

What are your three top priorities when making food purchases for yourself and/or your family? Please check only three.

- Price
- Health/nutrition
- Convenience
- Locally grown
- In-season
- Brand name
- Fresh
- Variety
- Organic
- Culturally diverse
- Taste

Waste Management

The next questions ask you to think about what is done with food waste. Please tell us how much you agree with each statement.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Unsure
<i>Please tell us how much you agree with each statement:</i>						
I try to reduce my food waste (e.g., bringing my own bags, buying bulk foods, using scraps to make stock).						
My food often goes bad before I can eat it.						
I reduce food waste by eating leftovers.						
I use a compost or composting service.						
I would use a municipal composting programme.						
I make a habit of recycling.						

Thinking about the food system overall, please consider these questions:

What is the most important concern you have about food in Windsor and Essex County?

What is the best thing about food in Windsor and Essex County?

Do you have any other recommendations or suggestions to improve the Food System in Windsor and Essex County?

ABOUT YOU

These last questions ask about you. Remember: You can skip any question you do not want to answer and there is no way to connect your name with your answers.

Where in Windsor and Essex County do you live?

- Windsor
- LaSalle
- Tecumseh
- Lakeshore
- Essex
- Kingsville
- Leamington
- Amherstburg

What is your postal code? _____

What is your year of birth? _____

Which of the following best describes your gender?

- Female
- Male
- Identify as: _____

How many adults (18 years or older) live in your household? Include yourself if you are over 18

- 0
- 1
- 2
- 3
- 4
- More than 4
- Unsure
- Does not apply

How many children (under 18 years of age) live in your household? Include yourself if you are under 18.

- 0
- 1
- 2
- 3
- 4
- More than 4
- Unsure
- Does not apply

Peoples' ethnicity describes their feeling of belonging to a group that shares their ancestry, colour, language or religion. What is your ethnicity?

- South Asian (For example, East Indian, Pakistani, Sri Lankan)
- Chinese
- Black
- Filipino
- Latin American
- Arab
- Southeast Asian (For example, Vietnamese Cambodian, Laotian, Thai)
- West Asian (For example, Afghan, Iranian)
- Korean
- Japanese
- Caucasian/White
- Indigenous (Aboriginal, First Nations, Métis or Inuk (Inuit))
- Multi-ethnic
- Other
- Prefer not to say

What is the highest level of education you have completed?

- Primary School
- Secondary School
- College/CEGEP Diploma
- University Degree
- Postgraduate Degree
- Prefer not to say

What is the total before tax income for all members of your household?

- Under \$19,999 per year
- \$20,000 to \$29,999 per year
- \$30,000 to \$39,999 per year
- \$40,000 to \$49,999 per year
- \$50,000 to \$59,999 per year
- \$60,000 to \$69,999 per year
- \$70,000 to \$79,999 per year
- \$80,000 to \$89,999 per year
- \$90,000 to \$99,999 per year
- Over \$100,000 per year
- Prefer not to say

What is your employment status?

- Employed full-time
- Employed part-time
- Unemployed
- Retired
- Student
- Prefer not to say

How long have you lived in Canada?

- Less than 1 year
- 1 year to less than 3 years
- 3 years to less than 5 years
- 5 years to less than 10 years
- 10 years or more
- Canadian born
- Prefer not to say

THANK YOU

Thank you very much for taking the time to complete this survey. If you would like to enter a draw for a chance to win a \$100 grocery card, please fill out the information below. This information will be separated from your survey so your responses cannot be connected with your personal information.

If you are interested in entering a draw to win a \$100 gift card, please provide your contact information below. The winner will be notified in December!

Name _____














Email Address _____

Phone _____

Appendix D: Community Survey Results

Production, Processing and Distribution

2. These questions ask about growing food, processing it, and distributing it in Windsor-Essex County. Please tell us how much you agree with each statement.

Sub-questions	Resp.	% of responses						avg	med	SD
I think that local produce should be available in stores in Windsor-Essex.	555							1.17	1	0.4
I think that food grown or produced in Windsor-Essex should also be sold here.	557							1.21	1	0.52
I think it is important that land which could be used for farming is protected.	554							1.52	1	0.79
I think there should be support to grow food in the city (e.g., rooftop gardens, community gardens, public fruit trees).	558							1.52	1	0.82
I think that as local farmers get older, others should be supported to start farming.	556							1.63	1	0.82
I think food grown or produced in Windsor-Essex should also be processed here (e.g., prepared, canned, packaged, etc.).	558							1.71	2	0.85
I think it is important to provide financing and support for small scale local food farmers.	557							1.73	2	0.89
There is a wide variety of food grown locally.	555							2.33	2	1.26
I believe local food is produced in an environmentally friendly way.	556							2.84	3	1.5
I do not know a lot about local farming and food production.	558							2.9	3	1.15
I am able to buy locally grown produce where I usually shop for food.	557							2.94	3	1.32
I am knowledgeable about local food processing.	556							3.22	3	1.15
I am knowledgeable about food distribution in Windsor-Essex County.	556							3.4	3	1.09

Average: 2.16 — Median: 2 — Standard Deviation: 1.27

-  1. Strongly Agree
-  2. Agree
-  3. Neither Agree nor Disagree
-  4. Disagree
-  5. Strongly Disagree
-  6. Unsure

Access and Consumption

3. The next section asks you about getting food and eating food. Please tell us how much you agree with each statement.

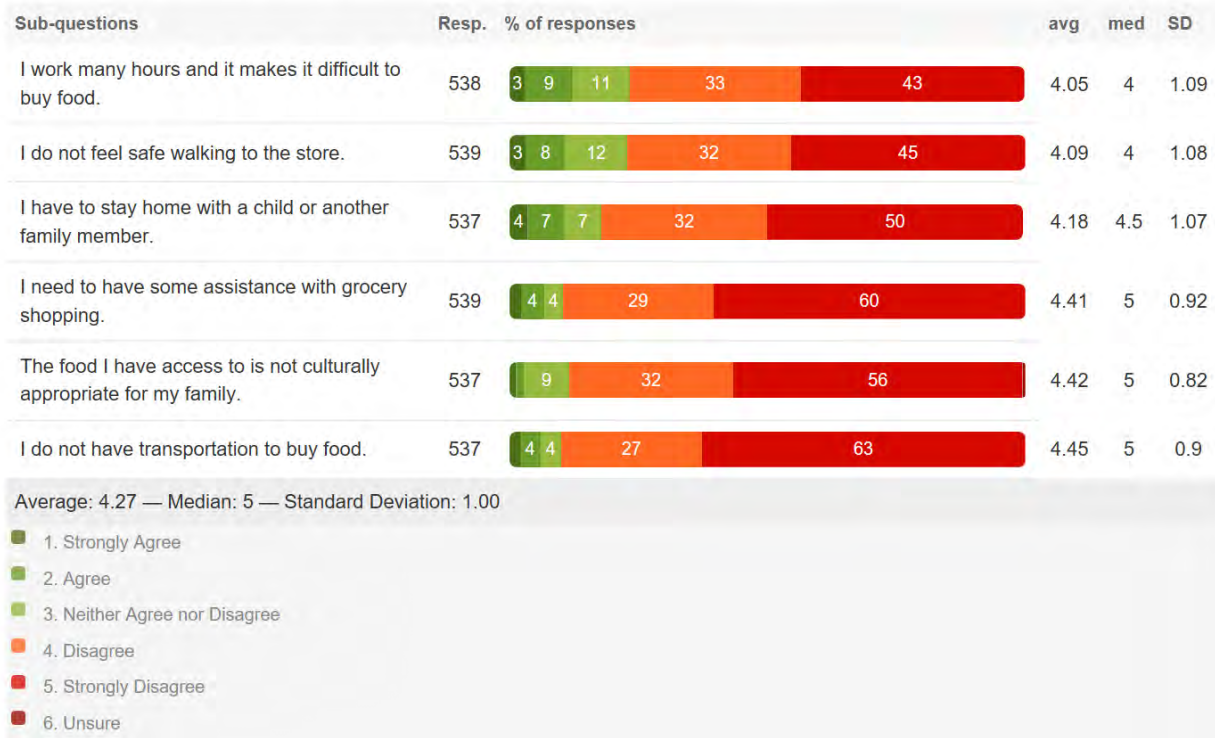
Sub-questions	Resp.	% of responses						avg	med	SD
I know how to prepare and store food safely.	542							1.48	1	0.62
I know where to go for information about how to buy, eat and cook healthy food.	542							1.66	1	0.87
I am more likely to buy food that is grown or produced in Windsor-Essex.	542							1.73	2	0.84
I can easily get to the store where I buy most of my food/groceries.	542							1.77	2	0.92
I actively choose what I eat to help reduce my risk of obesity, diabetes and heart disease.	537							1.81	2	0.91
I usually have enough money to buy food.	541							1.84	2	1.04
I often have meals with others (e.g., family, friends, co-workers).	542							1.84	2	0.97
I enjoy cooking meals and preparing food.	542							1.88	2	1.01
I prefer to eat out at local restaurants that feature local food options.	542							2.05	2	0.9
In my neighbourhood it is easy to buy fresh fruit and vegetables.	542							2.22	2	1.13
In my neighbourhood it is easy to buy healthy foods.	539							2.3	2	1.17
I would be willing to pay more for local produce.	542							2.38	2	1.2
I would use a community meal program, such as Meals on Wheels, if I needed it.	539							2.46	2	1.23
I would use emergency food services, such as food banks, if I needed it.	536							2.67	2	1.36
The stores in my neighbourhood sell outdated or rotten products.	542							3.63	4	1.16
I buy my food/groceries outside of Windsor-Essex (e.g., in another region or across the border).	542							4.36	5	0.89

Average: 2.25 — Median: 2 — Standard Deviation: 1.27

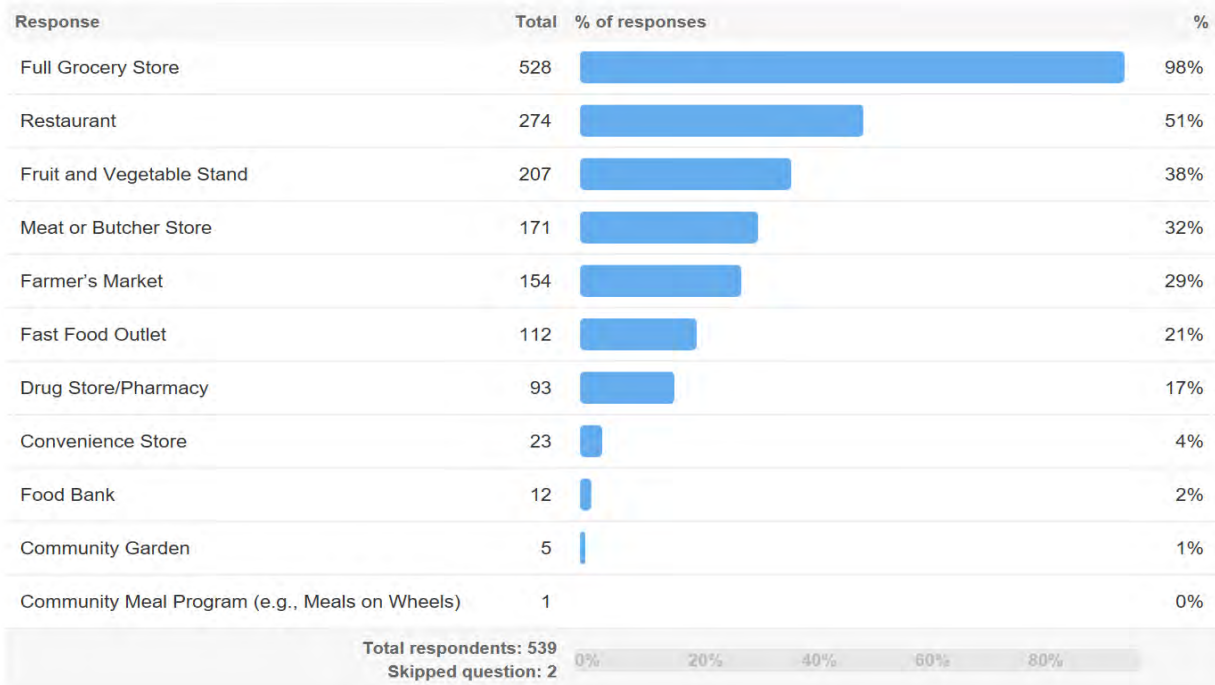
- 1. Strongly Agree
- 2. Agree
- 3. Neither Agree nor Disagree
- 4. Disagree
- 5. Strongly Disagree
- 6. Unsure

4. How much do you agree with the following statements?

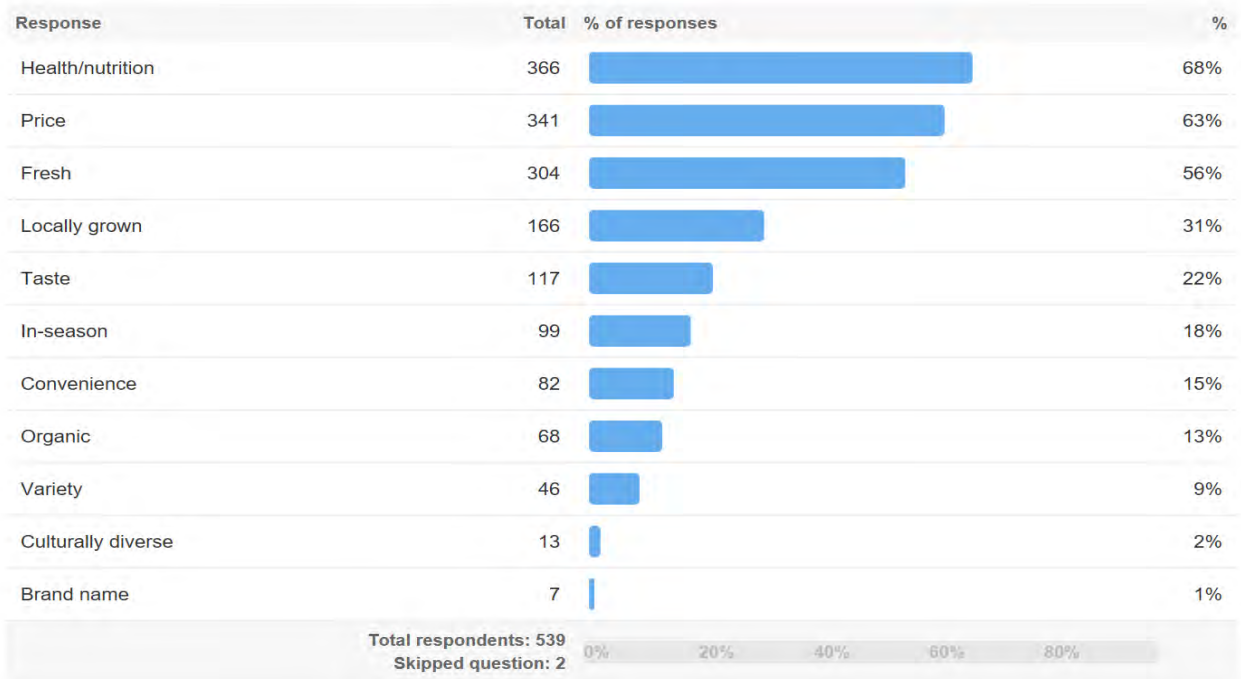
I sometimes have trouble buying or accessing food because:



5. Thinking of all the places you have gotten food in the past year, select the three that you have used most. Please check only three.

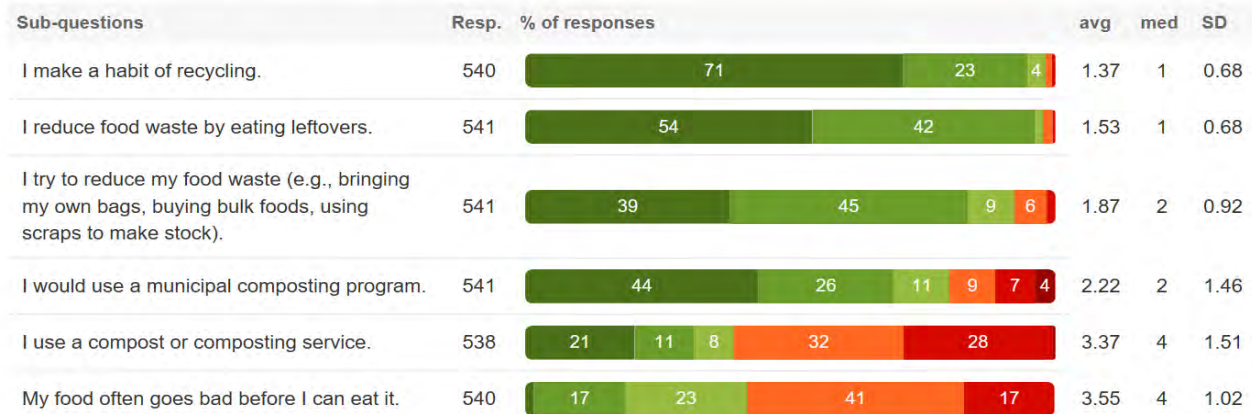


6. What are your three top priorities when making food purchases for yourself and/or your family? Please select only three.



Waste Management

7. The next questions ask you to think about food waste. Please tell us how much you agree with each statement.



Average: 2.32 — Median: 2 — Standard Deviation: 1.39

-  1. Strongly Agree
-  2. Agree
-  3. Neither Agree nor Disagree
-  4. Disagree
-  5. Strongly Disagree
-  6. Unsure

Municipality	Census Value	%	Lower CI*	Upper CI	Survey Value	%	Lower CI	Upper CI
Lakeshore	36611	9.2%	9.1%	9.3%	48	9.1%	6.9%	11.9%
Leamington	27595	6.9%	6.8%	7.0%	17	3.2%	2.0%	5.1%
LaSalle	30180	7.6%	7.5%	7.6%	34	6.5%	4.7%	8.9%
Kingsville	21552	5.4%	5.3%	5.5%	21	4.0%	2.6%	6.0%
Tecumseh	23229	5.8%	5.8%	5.9%	36	6.8%	5.0%	9.3%
Amherstburg	21936	5.5%	5.4%	5.6%	26	4.9%	3.4%	7.1%
Essex	20427	5.1%	5.1%	5.2%	33	6.3%	4.5%	8.7%
Windsor	217,188	54.4%	54.3%	54.6%	312	59.2%	55.0%	63.3%

*CI = Confidence Interval

Age	Census Value	%	Lower CI	Upper CI	Survey Value	%	Lower CI	Upper CI
15-44	146,410	44.1%	36.5%	36.8%	243	48.1%	44%	52%
45-64	115,325	34.7%	28.8%	29.0%	204	40.4%	36%	45%
65+	70,440	21.2%	17.5%	17.8%	58	11.5%	9%	15%

Sex	Census Value	%	Lower CI	Upper CI	Survey Value	%	Lower CI	Upper CI
Male	196,255	49.2%	49.0%	49.3%	130	25%	21.5%	28.9%
Female	202,695	50.8%	50.7%	51.0%	390	74%	71.1%	78.5%

Ethnicity	Census Value	%	Lower CI	Upper CI	Survey Value	%	Lower CI	Upper CI
Black	13,120	3.4%	3.3%	3.4%	1	0.2%	0.0%	1.2%
Indigenous	9,870	2.5%	2.5%	2.6%	1	0.2%	0.0%	1.2%
South Asian	11,845	3.0%	3.0%	3.1%	5	1.1%	0.5%	2.6%
Arab	18,395	4.7%	4.6%	4.8%	14	3.1%	1.8%	5.1%
Chinese	8,755	2.2%	2.2%	2.3%	3	0.7%	0.2%	1.9%
Caucasian/White	320,280	81.9%	81.8%	82.0%	418	92.3%	89.4%	94.4%
Southeast Asian	4,305	1.1%	1.1%	1.1%	3	0.7%	0.2%	1.9%
Filipino	4,065	1.0%	1.0%	1.1%	3	0.7%	0.2%	1.9%
Latin American	4,060	1.0%	1.0%	1.1%	3	0.7%	0.2%	1.9%
Korean	590	0.2%	0.1%	0.2%	0	0.0%	0.0%	0.8%
Japanese	210	0.1%	0.0%	0.1%	0	0.0%	0.0%	0.8%
West Asian	1,540	0.4%	0.4%	0.4%	2	0.4%	0.1%	1.6%

Education	Census Value	%	Lower CI	Upper CI	Survey Value	%	Lower CI	Upper CI
Primary School	62,035	19.1%	19.0%	19.3%	3	1%	0.2%	1.7%
Secondary School	100,700	31.0%	30.9%	31.2%	74	14%	11.4%	17.3%
College/CEGEP Diploma	70,380	21.7%	21.6%	21.8%	162	31%	27.1%	34.9%
University Degree	42,945	13.2%	13.1%	13.4%	157	30%	26.1%	34.0%
Postgraduate Degree	20885	6.4%	6.4%	6.5%	107	20%	17.2%	24.0%

Household Income	Census Value	%	Lower CI	Upper CI	Survey Value	%	Lower CI	Upper CI
Under \$19,999	16760	10.5%	10.4%	10.7%	26	5%	3.5%	7.3%
\$20,000-\$29,999	13415	8.4%	8.3%	8.6%	22	4%	2.8%	6.4%
\$30,000-\$39,999	13935	8.8%	8.62%	8.9%	32	6%	4.4%	8.61%
\$40,000-\$49,999	14235	8.9%	8.8%	9.1%	27	5%	3.6%	7.5%
\$50,000-\$59,999	13,190	8.3%	8.2%	8.4%	23	4%	3.0%	6.6%
\$60,000-\$69,999	11,725	7.4%	7.2%	7.5%	21	4%	2.7%	6.1%
\$70,000-\$79,999	10,530	6.6%	6.5%	6.7%	30	6%	4.1%	8.2%
\$80,000-\$89,999	9,485	6.0%	5.8%	6.1%	30	6%	4.1%	8.2%
\$90,000-\$99,999	8,310	5.2%	5.1%	5.3%	35	7%	4.9%	9.3%
Over \$100,000	47,460	29.8%	29.6%	30.1%	172	33%	29.3%	37.4%

Employment (Age 15+)	Census Value	%	Lower CI	Upper CI	Survey Value	%*	Lower CI	Upper CI
Employed	180,800	55.7%	55.6%	55.9%	354	67%	63.3%	71.3%
Unemployed	14,290	4.4%	4.3%	4.5%	33	6%	4.5%	8.7%
Not in labour force	129,240	39.8%	39.7%	40.0%	107	20%	17.2%	24.0%

*7% of respondents declined to answer this question

Immigration	Census Value	%	Lower CI	Upper CI	Survey Value	%	Lower CI	Upper CI
Immigrant	85,810	21.9%	21.8%	22.1%	79	14%	12.2%	18.3%
2011 to 2016	10,800	2.8%	2.7%	2.8%	11	2%	1.2%	3.7%

Appendix E: Detailed Demographic Profile of Windsor and Essex County

Demographic Profile of Windsor and Essex County

In order to fully contextualize the food system in Windsor and Essex County it is important to have a clear picture of the local area. More specifically, this section will focus on:

- Populations vulnerable to, or affected by, food insecurity in this region
- Economic conditions that limit access to or affordability of food
- Negative health issues relevant to the current food system

Population

According to the 2016 Census, there was a net population growth across Windsor and Essex County of 2.6% between 2011 and 2016 (see Table 82) (Windsor-Essex County Health Unit, 2017a). This increase lags behind the provincial increase of 4.6%. All municipalities experienced population growth with the exception of Leamington and Tecumseh, which had decreases in their population. The City of Windsor contains just over half (54.4%) of the region's population and is the most densely populated area with over 1,483 people per square km.

Table 82: Population and Dwelling Counts for Windsor and Essex County (Census 2016)

Municipality	Pop. 2011	Pop. 2016	Pop. % change 2011 to 2016	Pop. Density/ square km	Land area in km
Windsor and Essex County	388,782	398,953	+2.6	215.5	1,850.9
Windsor	210,891	217,188	+3.0	1,483.8	146.4
Lakeshore	34,546	36,611	+6.0	69.0	530.3
LaSalle	28,643	30,180	+5.4	461.8	65.4
Leamington	28,403	27,595	-2.8	105.3	262.0
Tecumseh	23,610	23,229	-1.6	245.4	94.6
Amherstburg	21,556	21,936	+1.8	118.2	185.6
Kingsville	21,362	21,552	+0.9	87.3	246.8
Essex	19,600	20,427	+4.2	73.5	278.0
Pelee	171	235	+37.4	5.6	41.8

In 2016, 16.7% (66,770) of the population in Windsor and Essex County was 0-14 years of age, 65.6% (261,740) were 15-64 years of age and 17.7% (70,440) were 65 and over (Table 83). School-age children (5 to 19) comprised 18% (71,820) of the population of Windsor and Essex County in 2016. The percentage of males versus females shifts with age with females outnumbering males in the older age groups. The average age in Windsor and Essex County in 2016 was 41.4.

Table 83: Age Breakdown of Windsor and Essex County Population (Census 2016)

	Total N	Total %	Males N	Males %	Females N	Females %
0 to 14 years	66,770	16.7%	34,370	51%	32,405	49%
15 to 64 years	261,740	65.6%	130,110	50%	131,635	50%
65 years and over	70,445	17.7%	31,785	45%	38,660	55%
85 years and over	9,675	2.4%	3,270	34%	6,395	66%
Average age of population	41.4		40.3		42.4	
Median age of population	42.4		41.3		43.5	

Source: Statistics Canada, 2016 Census of Population.

Population projections prepared by Statistics Canada and the Ministry of Finance Ontario (Ministry of Finance, 2018) predict overall population growth for Windsor and Essex County of 40,438 from 2017 to 2030 (Figure 44). This is largely due to a notable increase in the population 65 and over and a limited increase in the 0-14 age range. This is reflective of an aging population and a lowered birth rate (Table 84).

Figure 44: Total Population Projections for Windsor and Essex County, 2017 to 2030

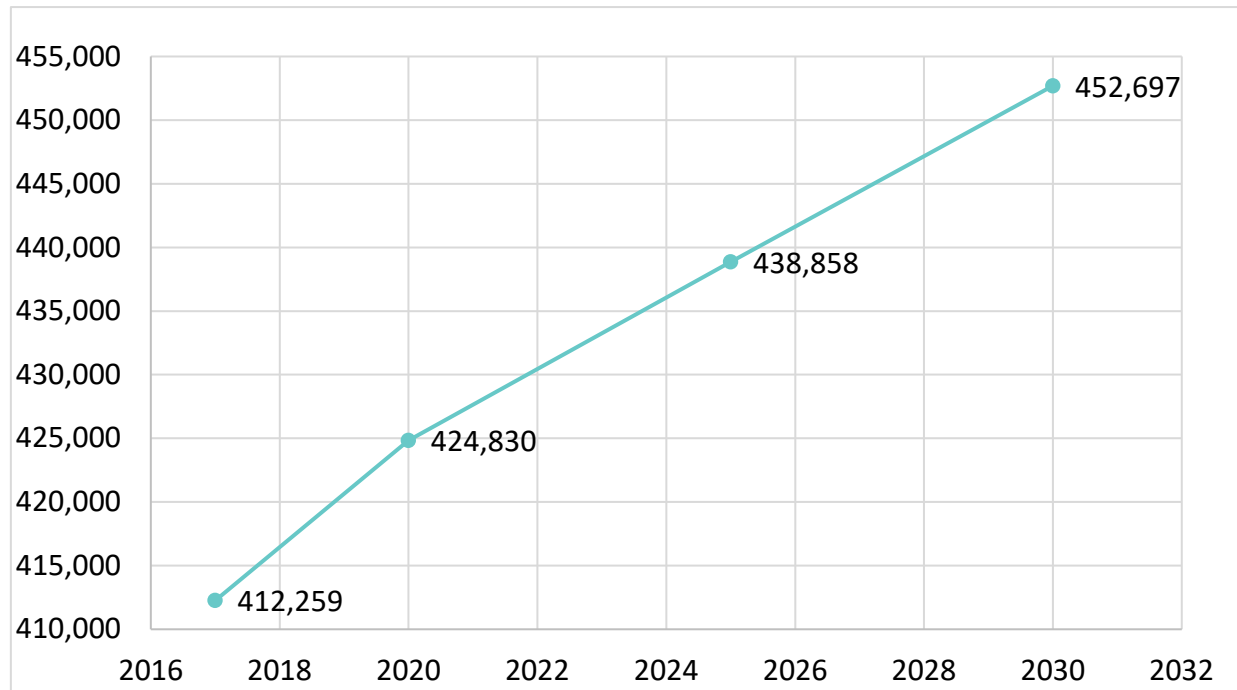


Table 84: Population Projections for Windsor and Essex County by Age Group and Total Population

	2017	2020	2025	2030	Change 2017-2030
0 to 14 years	66,803	66,533	67,157	69,405	2,602
15 to 64 years	272,321	277,024	274,933	270,294	-2,027
65 years and over	73,135	81,273	96,768	112,998	39,863
85 years and over	9,890	10,565	12,213	15,282	5,392
Total Population	412,259	424,830	438,858	452,697	40,438

Diversity

Windsor and Essex County are ethnically and culturally diverse. According to the 2016 Census, more than one fifth (22%) of Windsor and Essex County residents are immigrants to this country (Table 85). Recent immigrants are those who immigrated in the five years prior to the Census. In the case of the 2016 Census, this refers to those who immigrated between 2011 and 2016. There were 10,800 recent immigrants to Windsor and Essex County in the five years prior to the 2016 Census, representing 13% of all Immigrants in the area. The number of recent immigrants to Windsor and Essex County rose from the 2011 to the 2016 Census. In 2011, an increasing number of recent immigrants settled in the Leamington area (United Way Windsor and Essex County, 2016). The financial challenges and employment barriers faced by many newcomers affect their access to key determinants of health such as housing, education, and healthy food. On the up side, the Windsor Essex Local Immigration Partnership reports that many newcomers find employment quickly in Windsor and Essex County and greenhouse and agriculture employers depend on Temporary Foreign Workers for business viability and financial success (Windsor Essex Local Immigration Partnership, 2010).

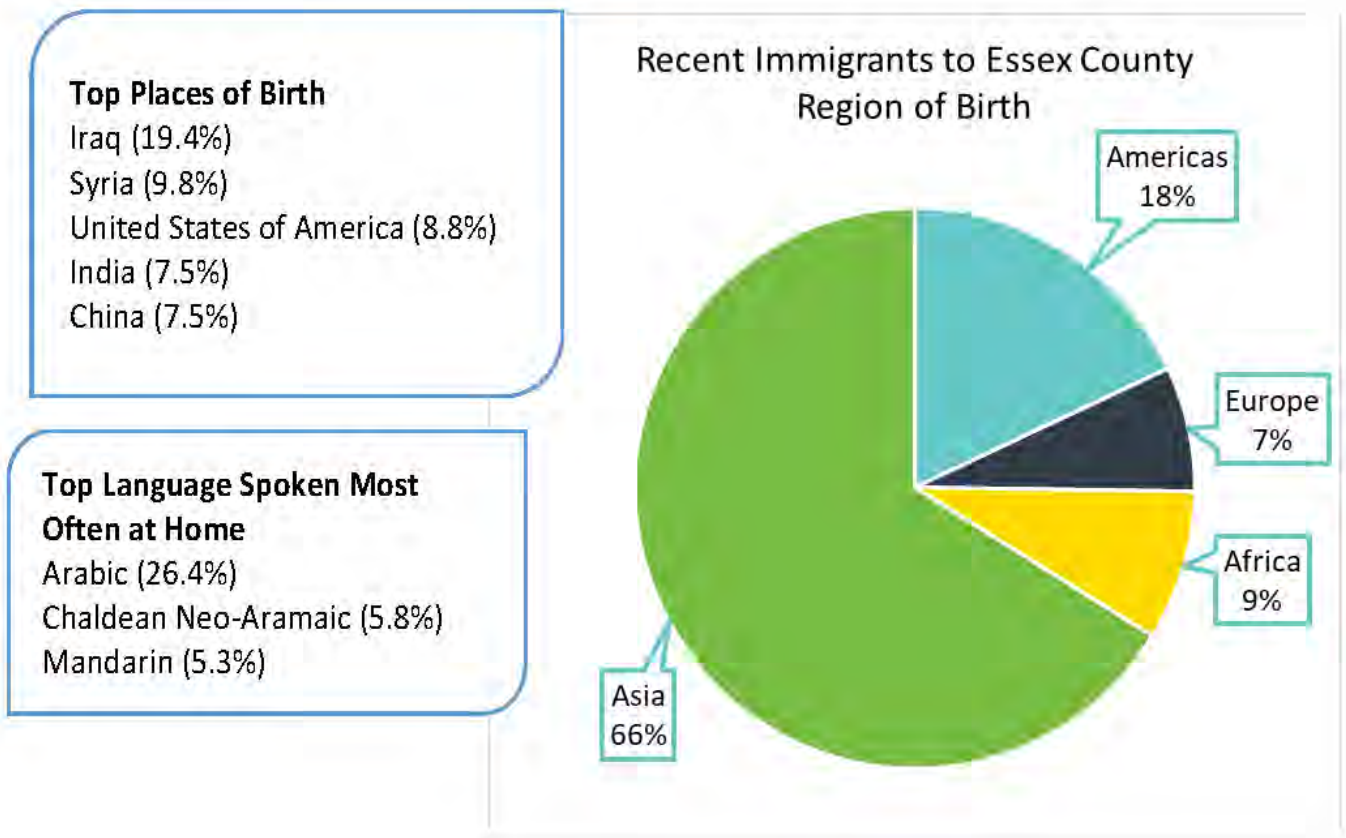
Table 85: Windsor and Essex County Immigration Statistics (Census 2016)

	Number	% of Total Population
Total Immigrants in Windsor and Essex County	85,810	22%
Immigrating between 2001 and 2005	9,170	2%
Immigrating between 2006 and 2010	9,170	2%
Immigrating between 2011 and 2016	10,800	3%

Source: Statistics Canada, 2016 Census of Population.

Newcomers to the region in 2016 were most likely to report Asia, the Americas, Africa, and Europe as their region of birth, with the most common countries of birth reported as Iraq, Syria, United States of America, India, and China. Top languages spoken at home among recent newcomers included Arabic, Chaldean Neo-Aramaic and Mandarin (Figure 45, Source: Statistics Canada, 2016 Census of Population).

Figure 45: Select Statistics on Essex County Newcomers in 2016



In terms of visible diversity, Windsor and Essex County residents of Arab, Black, South Asian, and Chinese heritage are represented, as are a range of other multicultural groups (Table 86).

Table 86: Visible Minority Population in Windsor and Essex County (Census 2016)

	Number	Percent
Total visible minority population	70,720	18.1%
South Asian	11,845	3.0%
Chinese	8,755	2.2%
Black	13,120	3.4%
Filipino	4,065	1.0%
Latin American	4,060	1.0%
Arab	18,395	4.7%
Southeast Asian	4,305	1.1%
West Asian	1,540	0.4%
Korean	590	0.2%
Japanese	210	0.1%

Source: Statistics Canada, 2016 Census of Population.

The Aboriginal population in Windsor and Essex County is another expression of the local diversity. The term “Aboriginal” is a collective term for First Nations, Inuit and Métis peoples of Canada that came into more common usage in 1982 with the Constitution Act. The term Indigenous is also commonly used (Joseph, 2016). Although differences of opinion exist, the terms “Aboriginal” and “Indigenous” will both be used for the purposes of this report, driven by the usage in documents and sources cited. For example, Statistics Canada uses the term Aboriginal. While the Truth and Reconciliation report for the province of Ontario uses the term Indigenous. As shown in Table 87, there are 9,870 residents of Windsor and Essex County who claim an Aboriginal identity, representing 3% of the local population. However, it should be noted that these figures are more affected than most by the incomplete enumeration of segments of the Aboriginal population.

As acknowledged in the Truth and Reconciliation report (Government of Ontario, 2017d), intergenerational trauma stemming from colonialism broadly and residential schools specifically have resulted in social and economic disparity of outcomes for many Aboriginal people. At the same time, the unique relationship of Aboriginal peoples to the land and food has resulted in dedicated work on Aboriginal food systems and food sovereignty (Indigenous Food Systems Network, n.d.).

Table 87: Aboriginal Population Windsor and Essex County (Census 2016)

	Number
Aboriginal identity ⁶	9,870
First Nations (North American Indian)	4,390
Métis	4,910
Inuk (Inuit)	60

Source: Statistics Canada, 2016 Census of Population.

Windsor and Essex County also has a strong Francophone community. French is spoken by as many as 38,740 individuals (almost 10% of the population) and for over 10,000 residents, French is their first official language spoken (Table 88).

Table 88: Knowledge of French Language in Windsor and Essex County (Census 2016)

Table 88a: Knowledge of Official Languages	Number	Percent
English only	348,270	88.1%
French only	430	0.1%
English and French	38,310	9.7%
Neither English nor French	8,105	2.1%

Table 88b: First Official Language Spoken	Number	Percent
English	374,515	94.8%
French	10,080	2.6%
English and French	2,560	0.6%
Neither English nor French	7,955	20%

Source: Statistics Canada, 2016 Census of Population.

⁶ According to Statistics Canada: "Aboriginal identity¹ includes persons who are First Nations (North American Indian), Métis or Inuk (Inuit) and/or those who are Registered or Treaty Indians (that is, registered under the Indian Act of Canada) and/or those who have membership in a First Nation or Indian band. Aboriginal peoples of Canada are defined in the Constitution Act, 1982, section 35 (2) as including the Indian, Inuit and Métis peoples of Canada."

Family Characteristics

Census family is defined as a married couple (with or without children), a common-law couple (with or without children), or a lone parent of any marital status, with at least one child living in the same dwelling. The average size of census families in 2016 in Windsor and Essex County was 2.9 persons. In looking at either married or common-law couple families, those with children comprised 53% of all couple census families (Table 89).

Table 89: Couple Family Characteristics in Windsor and Essex County (Census 2016)

	Number	Percent
Total couple families	90,870	
Without children	42,885	47%
With children	47,985	53%

Source: Statistics Canada, 2016 Census of Population.

In contrast, lone-parent families account for 20,455 or 18% of all census families (Table 90). The majority of lone-parent families (80%) were female-led. Almost half (41%) of lone-parent families reported having 2 or more children. The number of single parent families in the region increased from 2001 to 2011 (United Way Windsor and Essex County, 2016) and 2016 Census rates show this increase has continued. In 2017, 6.2% of all infants were born to single parent mothers in the Windsor and Essex County Health Unit area (i.e., all of Windsor and Essex County (Public Health Ontario, 2018b)).

Table 90: Lone-Parent Family Characteristics in Windsor and Essex County (Census 2016)

	Number	Percentage of Lone-Parent Families
Total lone-parent families	20,455	100%
Female parent	16,360	80%
Male parent	4,095	20%
1 child	12,010	59%
2 children	6,000	29%
2 or more children	8,450	41%
3 or more children	2,450	12%

Source: Statistics Canada, 2016 Census of Population.

Economic Factors

A variety of economic factors can have an impact on food security, largely those that correlate with poverty. These will be considered in an effort to paint a current picture of the level of economic security or lack thereof for individuals in Windsor and Essex County.

Education

Almost one fifth (19%) of Windsor and Essex County residents 15 and over reported having no certificate degree or diploma in 2016. This figure was 11% for those individuals 25 to 64 (Table 91). Compared to the province, this region tends to have relatively more individuals with a secondary diploma or equivalent, but fewer individuals with post-secondary training.

Table 91: Highest Level of Educational Attainment in Windsor and Essex County (Census 2016)

Highest Level of Educational Attainment	Number 15 and over	Percent 15 and over	Number 25 to 64	Percent 25 to 64
No certificate, diploma or degree	62,035	19%	23,580	11%
Secondary school diploma or equivalency certificate	100,700	31%	60,760	29%
Postsecondary certificate, diploma or degree	161,595	50%	122,205	59%

Source: Statistics Canada, 2016 Census of Population.

Employment

Employment participation rate is the percentage of individuals in the total population (15 and over) who are in the labour force. According to 2016 Census figures, the Windsor and Essex County participation rate is 60.2%, a figure lower than that of the province (64.7%). In contrast, the employment rate (percentage of individuals employed as a function of the total population) is 55.7%, a figure also lower than that of the province (59.9%). The unemployment rate (percentage of individuals unemployed as a function of the total labour force) in Windsor and Essex County at the time of the 2016 Census was 7.3% with 14,290 individuals reporting being unemployed (Table 92). Women are less likely to participate in the labour force or be employed in Windsor and Essex County.

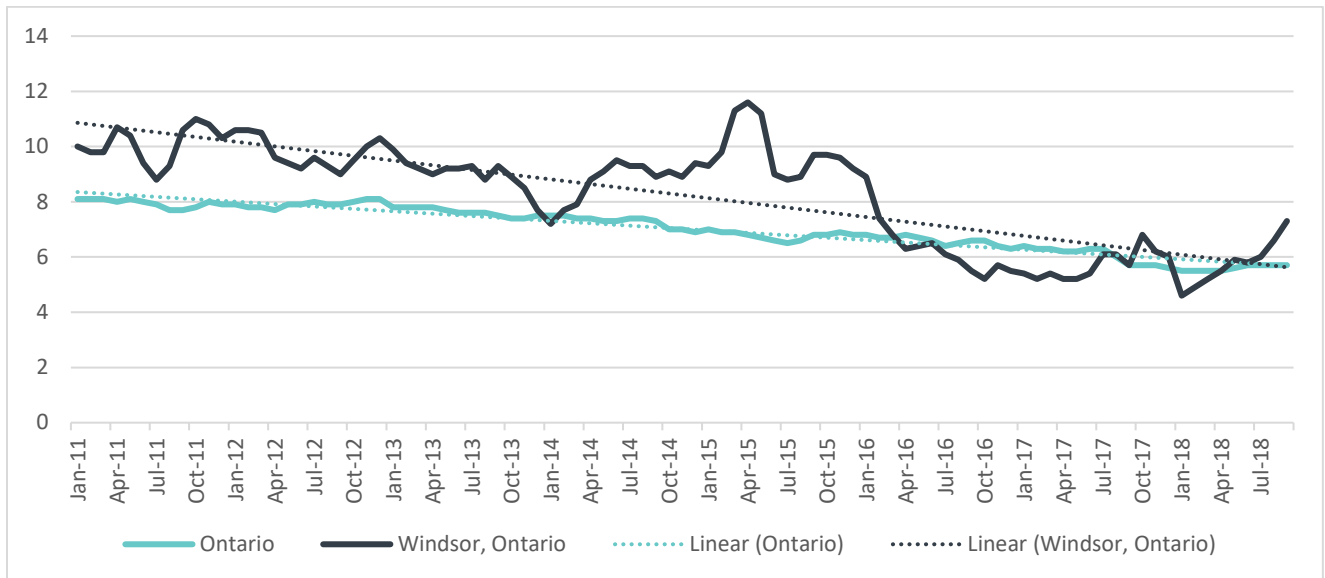
Table 92: Labour Force Data for the Population Aged 15 Years and Over in Windsor and Essex County (Census 2016)

	Total Number	Number of Males	Number of Females
In the labour force	195,090	101,860	93,230
Employed	180,800	94,415	86,380
Unemployed	14,290	7,445	6,845
Not in the labour force	129,240	56,305	72,935
Participation rate	60.2%	64.4%	56.1%
Employment rate	55.7%	59.7%	52%
Unemployment rate	7.3%	7.3%	7.3%

Source: Statistics Canada, 2016 Census of Population.

Figure 46 shows the unemployment rate (seasonally adjusted, three-month moving averages) for Ontario and the Census Metropolitan Area (CMA) of Windsor from January 2011 to December 2018. Trend lines suggest that an initial disparity in 2011 with Windsor CMA experiencing a higher unemployment rate than the province has slowly diminished over time, with the estimated value for December 2018 being 5.5% for Ontario and 5.4% for the Windsor CMA. The Windsor CMA peak unemployment rate of 11.3% occurred in March of 2015. It should be noted that the Windsor CMA includes the City of Windsor and the Towns of Amherstburg, Lakeshore, LaSalle and Tecumseh, but does not include Essex, Leamington or Kingsville. As such, it is not representative of unemployment rates for the entire region.

Figure 46: Unemployment Rates (3-month moving average seasonally adjusted) for Ontario and Windsor, CMA



Source: Statistics Canada. Table 14-10-0294-01 Labour force characteristics by census metropolitan area, three-month moving average, seasonally adjusted and unadjusted, last 5 months, <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410029401>

In addition to looking at unemployment statistics, it is also useful to consider the type of work done by those employed. The National Occupational Classification (NOC) groups the kind of work performed based on a description of the main activities of the job. Of those individuals age 15 and over who worked either part-time or full-time during the Census enumeration period, the largest percentage in Windsor and Essex County worked in sales and service occupations (24%), followed by trades, transport and equipment operators and related occupations (16%) and business, finance and administration occupations (13%) (Table 93) (Statistics Canada, 2017a).

Table 93: Occupational Statistics for Windsor and Essex County (Census 2016)

	Number	Percent
All occupations	189,680	
Management occupations	16,460	9%
Business, finance and administration occupations	24,525	13%
Natural and applied sciences and related occupations	11,480	6%
Health occupations	15,255	8%
Occupations in education, law and social, community and government services	19,215	10%
Occupations in art, culture, recreation and sport	3,620	2%
Sales and service occupations	44,590	24%
Trades, transport and equipment operators and related occupations	29,820	16%
Natural resources, agriculture and related production occupations	4,065	2%
Occupations in manufacturing and utilities	20,645	11%

Statistics Canada, 2016 Census of Population.

In looking at occupation by sex, of the 99,320 males reported by Statistics Canada the top three occupations were: trades, transport and equipment operators and related occupations (28%), sales and service occupations (18%) and occupations in manufacturing and utilities (14%). Among the 90,360 females included in the Census, the top three occupations were: sales and service occupations (30%), business, finance and administration occupations (19%), and occupations in education, law and social, community and government services (15%) (Table 94).

Table 94: Occupational Statistics by Sex for Windsor and Essex County (Census 2016)

	Male	Female
Management occupations	10%	7%
Business, finance and administration occupations	7%	19%
Natural and applied sciences and related occupations	10%	2%
Health occupations	3%	14%
Occupations in education, law and social, community and government services	6%	15%
Occupations in art, culture, recreation and sport	2%	2%
Sales and service occupations	18%	30%
Trades, transport and equipment operators and related occupations	28%	2%
Natural resources, agriculture and related production occupations	3%	1%
Occupations in manufacturing and utilities	14%	7%

Statistics Canada, 2016 Census of Population.

In terms of food security, it is also helpful to consider the typical local salaries associated with these occupations, although more will be said about incomes overall in the following section. In doing so, median income is often preferable to average income as the latter tends to be skewed by high (or low) outliers. Median income by occupation type is not readily available for all of Windsor and Essex County, although it is available for the Windsor Census Metropolitan Area (CMA). Given recent economic challenges in Leamington in particular, one might expect that its exclusion would affect the data. As a quick check, Table 95 shows the median employment income for full-year, full-time workers for Windsor and Essex County and the Windsor CMA broken down by sex. In all cases, the Windsor and Essex County value is slightly lower than that of the Windsor CMA, suggesting that the absence of Essex, Leamington, and Kingsville has had an impact on those values. However, the differences are relatively small, and as such, Windsor CMA values can be considered reasonable approximations of median income for Windsor and Essex County occupations, keeping in mind they may over-represent incomes somewhat.

Table 95: Median Employment Income in 2015 for Full-Year, Full-Time Workers for Windsor and Essex County and Windsor Census Metropolitan Area (Census 2016)

	Windsor and Essex County	Windsor Census Metropolitan Area
All	\$52,515	\$53,584
Males	\$59,696	\$60,947
Females	\$45,314	\$46,146

Statistics Canada, 2016 Census of Population.

Table 96 provides median employment incomes for individuals who worked full year, full time by occupation for the Windsor Census Metropolitan Area. Using the available data for the Windsor CMA, it would be expected that the three most common occupations in Windsor and Essex County had median full-time incomes somewhere in the range of \$33,865 to \$55,556 annually. However, in looking at differences in median income for full-year, full-time work by sex, across all occupations, males across Windsor and Essex County and within the Windsor CMA have a higher median income than their female counterparts. Approximately 19% of females are in the second highest paid occupation (i.e., education, law and social, community and government services), however 30% of females are in the lowest paid occupations in sales and service, along with 18% of males. When making a direct comparison, males employed full-time, full-year in the Windsor CMA in sales and service reported an annual median income of \$40,984 while females reported an annual median income of \$29,386, a figure \$11,598 less than that of their male counterparts (Statistics Canada, 2017).

Table 96: Median Employment Income for Full-time, Full-Year Work by Occupation Type for Windsor Census Metropolitan Area (Census 2016)

	Median income (\$)
All occupations	\$53,584
Management occupations	\$67,016
Business, finance and administration occupations	\$49,180
Natural and applied sciences and related occupations	\$77,217
Health occupations	\$62,405
Occupations in education, law and social, community and government services	\$75,309
Occupations in art, culture, recreation and sport	\$39,903
Sales and service occupations	\$33,865
Trades, transport and equipment operators and related occupations	\$55,556
Natural resources, agriculture and related production occupations	\$41,590
Occupations in manufacturing and utilities	\$51,793
<i>Bold Text represents top three occupations for all workers and for males and females</i>	
Source: Statistics Canada, 2016 Census of Population.	

Income

Income has been referred to as one of the most important social determinants of health, affecting psychological functioning and health-related behaviours, including quality of diet. It also has profound impacts on other social determinants of health, such as food security and housing (Mikkonen & Raphael, 2010). As such, both income inequality and low income are important to consider from a population health standpoint and as grounding for this comprehensive community food system assessment.

Table 97 provides data on median before and after tax incomes for a variety of family types in Windsor and Essex County (Statistics Canada, 2017). Of particular note, lone-parent families, 80% of which are female-led, report the lowest total and after-tax median incomes. While this is no doubt in part a function of having only one primary wage earner in the home, this may also be exacerbated by lack of income given the lower average median incomes of women described in the section on occupation.

Table 97: Median Annual Incomes by Family Type for Windsor-Essex County in 2015 (Census 2016)

	Median Total Income	Median After-Tax Income	Average Family Size (Number of Persons)
All Economic Families in Private Households	\$84,865	\$74,726	3
Couple economic families without children or other relatives in private households	\$76,658	\$67,708	2
Economic families with children in private households	\$112,711	\$97,045	4.1
Lone-parent economic families in private households	\$49,742	\$46,748	2.7

Source: Statistics Canada, 2016 Census of Population.

While income may not be evenly spread across families, it is also geographically varied in Windsor and Essex County. Table 98 shows the number of households and median total income of households for Windsor and Essex County and its constituent municipalities over a 10 year period (Statistics Canada, 2017b). Overall, while the number of households has increased, median total incomes have decreased, with the exception of Lakeshore. The largest decrease was seen for Tecumseh. The highest household income in 2015 was in LaSalle (\$102,259) and the lowest incomes were in Windsor (\$55,450) and Leamington (\$62,313), both of which are below the average for the County as a whole.

Table 98: Number and Median Income of Households in Windsor and Essex County and Municipalities (Census 2016)

	Number of Households in 2006	Number of Households in 2016	% change	Median Total Income/ Household in 2005	Median Total Income/ Household in 2015	% change
Windsor and Essex County	150,845	159,050	5.4	\$70,697	\$66,658	-5.7
Leamington	9,815	9,995	1.8	\$65,088	\$62,313	-4.3
Kingsville	7,450	7,975	7	\$78,497	\$77,429	-1.4
Essex	7,645	8,080	5.7	\$74,259	\$71,936	-3.1
Amherstburg	7,930	8,520	7.4	\$87,123	\$83,712	-3.9
LaSalle	9,315	10,690	14.8	\$105,653	\$102,259	-3.2
Windsor	88,465	91,630	3.6	\$60,164	\$55,450	-7.8
Tecumseh	8,500	8,885	4.5	\$106,681	\$94,519	-11.4
Lakeshore	11,630	13,185	13.4	\$96,529	\$97,064	0.6

Source: Statistics Canada, 2016 Census of Population.

Low income

A more salient measure where food security is concerned is low income. There are a range of commonly used measures of low income including:

- **Low-Income Cut-Off (LICO):** This is based on the relationship between the incomes and the consumption patterns of Canadian households and has been very widely used in Canada since the 1970s. It reflects the level at which a family spends 63.6% or more of its income on food, shelter and clothing.
- **Low-Income Measure (LIM):** The LIM is based on the distribution of household income across the Canadian population and is useful for international comparisons. It is a relative measure set at 50% of adjusted mean household income.
- **Market Basket Measure (MBM):** This measure defines low income in relation to the cost of a predefined set of goods and services (i.e., nutritious food basket, clothing and footwear, shelter costs including electricity, heat, water and appliances, transportation, and other necessary goods and services). The price of this “basket” of goods and services takes regional differences in the cost of living into account (Statistics Canada, July 8, 2016a).

There is a great debate over which measure of low income is most appropriate to use since they produce rather different results. In fact, there are pros and cons to each measure. For example, relative measures like the LIM and LICO have been criticized for not reflecting “real” poverty as expressed by the ability to meet basic needs. Relative measures like the LIM and LICO, however, are more commonly used in developed countries and may be better indicators of “quality of life” than measures like the MBM that focus more on strict requirements for goods and services that enable physical survival (Conference Board of Canada, 2011).

By way of example, Table 99 provides 2016 individual after-tax low-income measures (LIM-AT and LICO-AT) for Windsor and Essex County. Also provided is the individual Market Basket Measure for the Windsor Census Metropolitan area (this was not available for all of Windsor and Essex County). Depending on the measure used, estimates of overall individual low-income rates in Windsor and Essex County vary from 8.9% based on the LICO-AT, to 14.6% using the Market Basket Measure, and to 16.5% based on the LIM-AT. Given this wide range of estimates picking a single measure as a reference point is necessary. Previous work on low income in Windsor and Essex County are well exemplified in the United Way’s Taking Back Our Neighbourhoods report (United Way, 2016) which uses the LIM-AT for its measure of low income. This report will do so as well.

Table 99: Individual After-Tax Low-Income Measures for Windsor and Essex County (Census 2016)

Windsor and Essex County	Percent
Low-income measure, after tax (LIM-AT)	16.5%
Low-income cut-offs, after tax (LICO-AT)	8.9%
Windsor Census Metropolitan Area Market Basket Measure	14.6%

Source: Statistics Canada, 2016 Census of Population.

In 2015, 64,665 individuals or 16.5% of the population were low income compared to only 13.4% in 2005. Based on a comparison of 95% confidence intervals, the value for Windsor and Essex County is significantly higher than that of Ontario, whose low-income rate is 14.1%. As shown in Table 100, females are more likely to be in low income in Windsor and Essex County, as are the youngest members of the region.

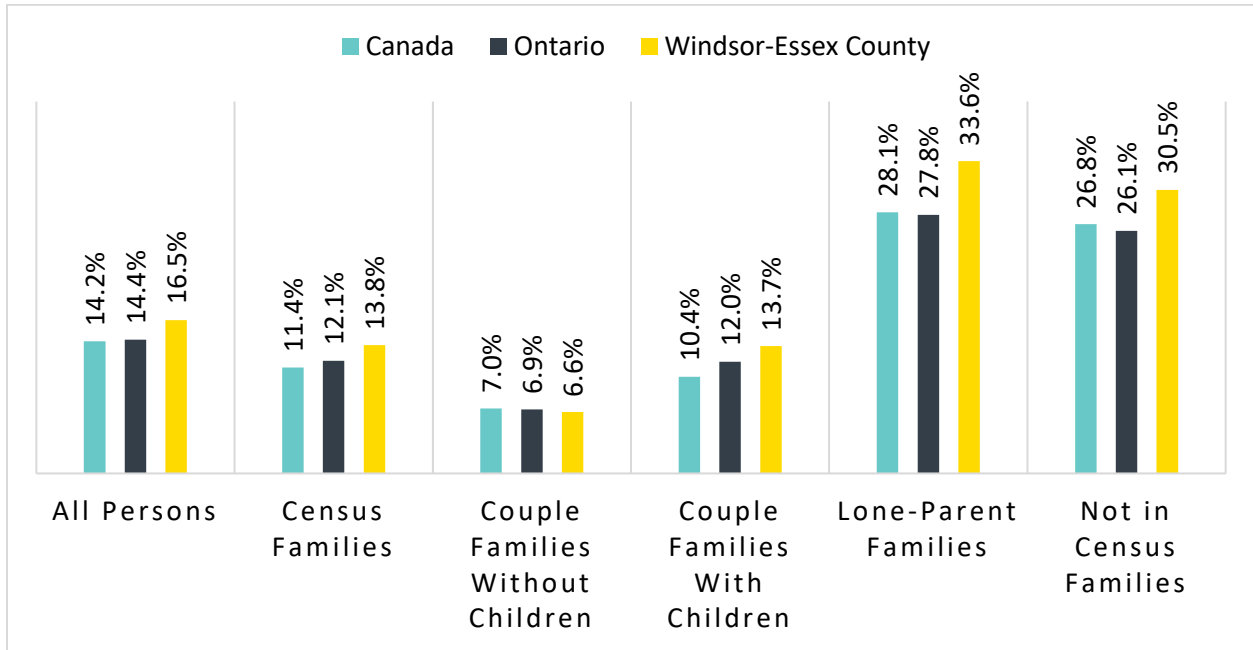
Table 100: Prevalence of Individual Low income Based on the After Tax Low-Income Measure (LIM-AT) for Windsor and Essex County by Age Group and Sex (Census 2016)

	Total	Male	Females
Overall	16.5%	15.7%	17.3%
0 to 5 years	26%	25.9%	26.3%
0 to 17 years	22.6%	22.5%	22.8%
18 to 64 years	15.9%	15.1%	16.7%
65 years and over	11.4%	8.8%	13.7%

Source: Statistics Canada, 2016 Census of Population.

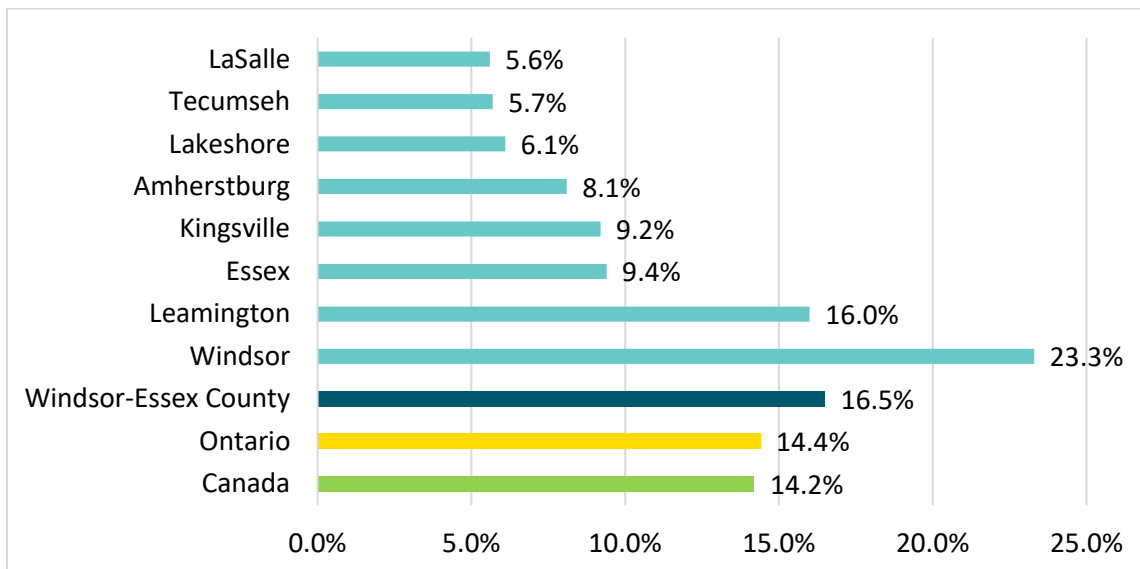
Low-income rates also vary by family type (Figure 47), with lone-parent families most likely to be in low income according to after-tax low-income measures (Source: Statistics Canada, 2016 Census of Population).

Figure 47: Individual After Tax Low-Income Measure (LIM-AT) by Family Type for Canada, Ontario and Windsor and Essex County



Regional diversity in low-income rates is also a reality for Windsor and Essex County. Figure 48 illustrates low-income rates (LIM-AT) across the region with the highest levels of low income in the City of Windsor (23.3%) followed by Leamington (16.0%). Windsor values are higher than that of the entire County (16.5%), the province (14.4%) and the Country (14.2%) Source: Statistics Canada, 2016 Census of Population).

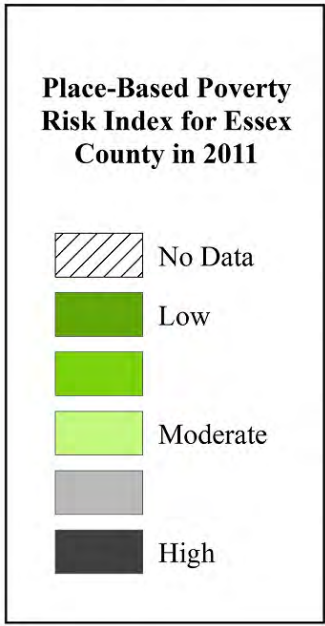
Figure 48: Individual After-Tax Low-Income Rates for Canada, Ontario, Windsor and Essex County and Local Municipalities



Although the most recent Census data were not available at the time it was published, the *Taking Back Our Neighbourhoods* report used population level data from 2001 to 2011 to provide one of the most nuanced studies of poverty in the region (United Way, 2016). This study used a multi-faceted Poverty by Place Index comprised of three sub-indices concerned with: risk populations (i.e., immigrant populations, single parent, and female-led single parent families), economic factors (i.e., income, unemployment education, and housing), and a weighted poverty measure taking into account persistent levels of low income over time. In mapping the results, the report identified areas of Windsor's core, northern portions of the Town of Leamington, and the core of the Town of Essex as areas of particular concern (Figure 49). Ultimately, the report called for over-investment in these areas to address ongoing poverty-related issues.

Although low income alone is only one element of poverty by place, the 2016 figures for low income (Figure 48), in particular the higher rates of low income in Windsor and Leamington, are consistent with the findings of the *Taking Back Our Neighbourhoods* report.

Figure 49: Placed-Based Poverty Index Map for Essex County in 2011



Map Designed by:
 Alice Grgicak-Mannion
 Courtney Spencer
 GLIER, University of Windsor

Projected Coordinate System:
 Universal Transverse Mercator
 North American Datum 1983
 Zone 17N

Data Sources:
 Census of Canada, 2011
 National Household Survey, 2011
 Statistics Canada, 2011

Use of Social Assistance

Ontario Works helps people who are in financial need. In addition to employment assistance, Ontario Works offers income support to help with the costs of basic needs like food, clothing and shelter, and health benefits for clients and their families (Ministry of Children, Community and Social Services, 2018). The City of Windsor is the Consolidated Municipal Services Manager for Windsor and Essex County. Looking at available data from Ontario Works Social Assistance Management System (2018) for Windsor and Essex County, there was an overall increase in cases (1.5%), beneficiaries (4.0%), and dependent children (6.9%) from December 2016 to March 2017, suggesting increasing needs for social supports throughout the region (Table 101).

Table 101: Ontario Works Data for Windsor and Essex County

	March 2016	December 2016	March 2017	March 2017 - % of Total Cases	March 2016 to March 2017	December 2016 to March 2017
Cases ¹	8,932	8,161	8,284	3.30%	-7.3%	1.5%
Beneficiaries ²	16,854	15,629	16,261	3.60%	-3.5%	4.0%
Dependent Children ³	6,323	5,980	6,391	3.90%	1.1%	6.9%

¹ A case refers to a single individual or a family unit on social assistance (e.g., a family on social assistance is counted as one case).

² The number of beneficiaries refers to the total number of single individuals and heads of family units on social assistance plus all their dependents (i.e., spouses, dependent children and dependent adults).

³ Dependent children refers to children under 18 years of age, who reside in the same dwelling place as the social assistance recipient.

Food Insecurity

As noted earlier in this report, food insecurity refers to having inadequate or insecure access to food. Health Canada, and by extension the Canadian Community Health Survey, uses three categories to describe food security:

- **Food secure:** None or one indication of difficulty with income-related food access.
- **Moderately food insecure:** Indication of compromise in quality and/or quantity of food consumed.
- **Severely food insecure:** Indication of reduced food intake and disrupted eating patterns.

These criteria are applied at the adult, child and household levels (Statistics Canada, June 2011).








Canadian Community Health Survey (Windsor-Essex County Health Unit, 2018a) data provided by the Windsor-Essex County Health Unit found that in Windsor and Essex County in 2013-2014⁷:

- Over 1 in 10 households (10.8%) were moderately or severely food insecure.
- Nearly 1 in 10 children (9.7%) were moderately or severely food insecure.
- Over 1 in 4 low-income households (27.4%) were moderately or severely food insecure.

The Nutritious Food Basket (NFB) is a tool used to track the cost of healthy eating in Windsor and Essex County. Locally, the weekly cost for a Nutritious Food Basket for a family of four was \$194.04 in 2018 (Windsor-Essex County Health Unit, 2018b), which represents a 22.7% increase since 2009. This means a family of four would have to spend an additional \$1,867 annually in 2018 on healthy food compared to 9 years ago in 2009 (Windsor and Essex County Health Unit, 2016a). To add additional context, *The Real Cost of Eating Well in Windsor and Essex County* report (Windsor-Essex County Health Unit, 2018b) shows the actual cost of a healthy diet for different households in Windsor and Essex County in 2018. Of note is the amount of money left over for households with children on Ontario Works and a single male on Ontario Works (Table 102) (Windsor-Essex County Health Unit, 2018b). For the latter, a single male on Ontario Works, there is insufficient money to purchase a nutritious food basket after rent is paid. In terms of impact on diet, when money is tight, people are less likely to make healthier choices, opting for more processed, less nutrient-dense foods.

⁷ Note: Ontario opted out of the food insecurity module of the Canadian Community Health Survey in 2015-2016. The module was mandatory for all provinces in 2017-2018 so newer Ontario data should be available in 2019.

Table 102: Food Security Scenarios for Families in Windsor and Essex County from The Real Cost of Eating Well in Windsor and Essex County

	Households with Children				Single Person Households		
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
	 Ontario Works	 Minimum Wage Earner	 Median Ontario Income	 Ontario Works	 Ontario Works	 ODSP	 Senior OAS/GIS
	Income						
Total Monthly Income (Including Benefits and Credits)	\$2582	\$3,603	\$7,871	\$2,363	\$810	\$1,251	\$1,694
	Expenses						
Estimated Monthly Rent*	\$1,035	\$1,035	\$1,035	\$868	\$557	\$720	\$720
Healthy Food (Nutritious Food Basket, 2017)	\$840.19	\$840.19	\$840.19	\$635.04	\$282.45	\$282.45	\$205.46
	Monthly Income Remaining for Other Expenses**						
	\$706.81 ↑	\$1,727.81	\$5,995.81	\$859.96	-\$29.45 ↑	\$248.55	\$768.54

Data from the Windsor Essex Food Bank Association indicate that food bank usage in Windsor and Essex County (Table 103) has increased from 2017 to 2018. Increases were observed in the number of seniors served (65+), visits to food banks, unique individuals served, and adults served who were new immigrants (i.e., in Canada fewer than 10 years) (Windsor Essex Food Bank Association, 2018). Approximately 51% of the food distributed by the food bank is fresh (i.e., meat, dairy, produce, bread). However, research has shown that food bank usage may be a poor indicator of food insecurity as it can be insensitive to the levels of food insecurity in the population overall (Loopstra & Tarasuk, 2015). As such, a variety of measures are required to create a full picture of food insecurity.

Table 103: Windsor Essex Food Bank Association Statistics from Jan. 1 -Nov. 30, 2018 with 2017 Comparison

	2017	2018	Difference	Increase
Number of seniors served (65+)	1,112	1,287	175	16%
Number of visits to WEFBA food banks	117,527	123,054	5,527	5%
Number of unique individuals served	21,366	22,385	1,019	5%
Number of households served	9,086	9,479	393	4%
Proportion of unique individuals served who are children under the age 18	35%	34%	-1%	-3%
Proportion of adults served who have a post-secondary education	9%	9%	0%	0%
Proportion of households reporting primary source of income as disability related benefit	30%	30%	0%	0%
Proportion of households reporting they are single parent families	21%	19%	-2%	-10%
Proportion of households reporting they live alone	46%	46%	0%	0%
Number of adults served who were new Immigrants (in Canada fewer than 10 years)	1,699	2,309	610	36%

Homelessness and Housing Insecurity

The Canadian Observatory on Homelessness describes homelessness as “the situation of an individual, family, or community without stable, safe, permanent, appropriate housing, or the immediate prospect, means and ability of acquiring it” (Gaetz et al., 2012). Homelessness can also be used to describe a range of housing and shelter circumstances, with a total lack of shelter at one end of the continuum and being insecurely housed at the other (Gaetz et al., 2012). Being insecurely housed can also be considered “at risk of homelessness.” Canada’s first ever *National Housing Strategy* (Government of Canada, 2017b) was launched in 2017 and identifies affordable housing as a cornerstone of inclusive communities. The Strategy also recognizes that certain groups face greater barriers to housing including, but not limited to: women and children fleeing domestic violence, seniors, Indigenous peoples, homeless people, people with disabilities, those dealing with mental health and addiction issues, veterans, young adults, racialized groups, and newcomers.

Housing is a key social determinant of health, however, the relationship between housing, health and food is complicated. For the purposes of this report, it is perhaps sufficient to understand that a high cost of housing and low supply of affordable housing can lead to a lack of financial resources, which in turn can result in reduced expenditures on food, food insecurity, and food bank usage (Toronto Public Health, 2016). Housing instability and food insecurity represent milder but more prevalent forms of homelessness and hunger.

In terms of gauging local housing affordability, the Canada Mortgage and Housing Corporation (CMHC) and the provinces agreed in 1986 to measure housing affordability based on whether the household spent 30% or more of its average monthly total income on shelter costs. As such, 30% is considered the threshold for housing affordability.⁸ As shown in Table 104, just over one-fifth of Windsor and Essex County residents reported spending 30% or more of their income on shelter costs in 2016, which is indicative of a lack of housing affordability for those residents. However, this figure is significantly lower than that of Ontario, where approximately 27.7% of households spend 30% or more of income on shelter costs. This may be in part a function of relatively lower real estate costs in the Windsor and Essex County area. It should also not be assumed that individuals who fall in this category are necessarily in low income, as someone above this threshold could still have housing costs in excess of the 30% income threshold.

Table 104: Housing Stress Indicators for Windsor and Essex County (Census 2016)

	Number	Percent
Spending less than 30% of income on shelter costs	124,345	79%
Spending 30% or more of income on shelter costs	33,535	21%

Source: Statistics Canada, 2016 Census of Population.

Data on social housing may be a better indicator of lack of affordable housing linked to poverty. In 2017, the Windsor Essex Community Housing Association reported a wait list for affordable housing of 4,435 households, a 31% increase from 2016, noting that wait times can be lengthy as the need for housing outweighs the availability of affordable housing in Windsor and Essex County (Windsor Essex Community Housing Corporation, 2018). The need for investments in affordable housing continues to be an issue in Windsor and Essex County, and despite City plans to build 150 affordable housing units on the east end, concerns remain that the need is far greater (“There just aren’t enough affordable places to live”, 2018).

Perhaps the best indicator of true homelessness in Windsor and Essex County comes from the Point-in-Time Count (OrgCode Consulting, 2018). Mandated by the Ministry of Housing for Consolidated Municipal Service Managers, this homeless enumeration project took place in 2018 in Windsor and Essex County. The count revealed that 197 people in Windsor and Essex County were experiencing homelessness during the registry week, including 8 families with a total of 19 dependent children. An additional 45 respondents were precariously housed or at risk of homelessness at that time. More than half of those identify as male (68%) and are between the ages of 25 and 49 (53%). More than one-fifth (22%) identify as Aboriginal. Almost

⁸ Statistics Canada (2013), Homeownership and Shelter Costs in Canada, <https://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-014-x/99-014-x2011002-eng.pdf>

half (46%) reported being homeless for six months or more. The majority reported sleeping in emergency shelters or staying with family and friends (73%).

As noted in the report, the overall number of people identified as experiencing homelessness in 2018 is relatively unchanged from the 201 people identified in the 2016 count (OrgCode Consulting, 2018). However, in the intervening two years between counts over 150 people received housing and supports, suggesting that new individuals, families and youth are experiencing homelessness in this region. While food insecurity was not explicitly addressed in the report, it should be noted that access points for the count included area food banks, emergency shelters, and other services that offer emergency meals and supplies in most cases, which further reinforces the link between homelessness, housing, and food security.

Nutrition and Health

Healthy eating is fundamental to good health, providing nourishment for the body and energy for daily activities. Healthy eating is key throughout the stages of growth and development, and is important for maintaining good health and reducing the risk of or managing various chronic diseases, such as heart disease and diabetes. Following recommendations from Canada's Food Guide is encouraged for optimal nutrition and health.

Nutrition through the Lifespan

Infant Growth and Development

Exclusive breastfeeding is recommended for all infants in the first six months of life, as it contains all the nutrients needed for healthy growth, as well as antibodies for immunity (Best Start, 2019a). Breastfeeding is encouraged for up to two years or beyond, as long as mother and child want to continue. Babies who are not breastfed have a higher risk of ear infections, lung and breathing issues, diarrhea, and sudden infant death syndrome (SIDS). Later in life, babies who are not breastfed may also experience increased risk for overweight, obesity, and other chronic diseases such as diabetes (BFI Strategy for Ontario, 2017).

Data shows that in 2016, about 88.2% of women in Windsor and Essex County who gave birth reported an intention to breastfeed either exclusively or in combination with a breast milk substitute, which is significantly lower than the provincial rate 93.7% (Public Health Ontario, 2018c).

Exclusively breastfed and partially breastfed healthy term infants are recommended to receive supplemental vitamin D (400 IU) from birth until the age of two, at which point it is assumed that adequate amounts of vitamin D can be obtained from the diet (Practice-Based Evidence in Nutrition, 2017).

Solid foods are recommended to be introduced at six months to complement breastfeeding, starting with iron-rich foods for healthy brain development and to help prevent iron deficiency anemia (Government of Canada, 2015). Nutritious, higher fat foods are an important source of energy for young children and should be encouraged. The introduction of homogenized (3.25% M.F.) cow's milk should not begin until nine to 12 months of age.

Parents and caregivers are encouraged to offer a variety of new foods prepared with little or no added salt or sugar. Different textures (starting with soft, mashed, and minced) are encouraged. Children with early experiences with nutritious foods are more likely to consume these foods and adopt healthy eating patterns for growth and development. Avoiding and delaying the introduction of foods that may cause an allergic reaction (e.g., peanuts, eggs, or fish) will not help to prevent allergies, even if there is a family history (Abrams et al., 2019). However, it is recommended that common food allergens be introduced one at a time. Honey should not be given to infants under one year of age, to prevent infant botulism (Government of Canada, 2015). Unpasteurized food products (e.g., cheese or juice) should also not be offered.

Healthy feeding behaviours are also important for growth and development. Responsive feeding, where parents and caregivers respond to a child's hunger and fullness cues, is encouraged to help build a healthy relationship with food (Government of Canada, 2015). Offering meals and snacks at about the same time each day, fosters a relaxed, positive eating environment. Share family meals to help build healthy eating habits.

Child and Youth Growth and Development

Toddlers and preschoolers continue to grow and develop, though appetites may vary from day to day. A balanced meal of vegetables and fruit, whole grains, and healthy proteins, as guided by Canada's Food Guide, should be offered without pressure or bribing for children to try (Nutrition Resource Centre, 2015). Respecting hunger and fullness cues, not using food as a reward or punishment, and letting children decide on their portions are all different ways to help establish a healthy relationship with food. Undistracted meal times and role modelling healthy eating behaviours are also important for setting a good example for toddlers and preschoolers.

Children and youth should also be introduced to age-appropriate tasks for meal planning and cooking, and opportunities to involve them in the kitchen are encouraged. This helps to build food literacy skills early in life and allows the whole family to discover and enjoy food together. Having family meals is also important for learning about family and cultural traditions about food, helps children learn about food, provides an opportunity for family members to share quality time together, and helps to build lifelong healthy habits (UnlockFood, 2018a).

Healthy eating continues to be important for children and youth. For example, peak bone mass is achieved in youth and early adulthood (16-20 in young women and 20-25 in young men), and building bone mass during childhood and adolescent years can be the best way to prevent osteoporosis later in life. A balanced diet can also help to prevent the future development of other chronic diseases including obesity, heart disease, and diabetes. Establishing healthy eating patterns during childhood and adolescence can help develop lifelong habits (Government of Canada, 2019a).

Adult Healthy Eating Recommendations

Canada's Food Guide provides general healthy eating recommendations for all Canadians, such as eating a balanced meal of vegetables and fruit, whole grains, and protein, and encouraging water as the best beverage for hydration (Government of Canada, 2019). Additionally, the guide encourages healthy eating habits and behaviours beyond nutrition, such as cooking from scratch, sharing meals with others, role modelling healthy eating for others, and creating healthy food environments that make the healthy choice the easy choice. There is strong evidence to suggest that following healthy eating guidelines recommended by Canada's Food Guide can help to prevent or manage chronic disease.

Following healthy dietary patterns, such as consuming a variety of vegetables, fruit, legumes, fish, and low-fat dairy, while decreasing the intake of fried foods, salty snacks, desserts, high-fat dairy, and sugar-sweetened beverages, was found to be beneficial for midlife cognitive function (McEvoy et al., 2019). There is some research investigating the role of alcohol on heart health, but no conclusive answer as to whether alcohol can be protective. Therefore, people are not advised to start drinking alcohol for potential health benefits, and for those who already drink, it is recommended that alcohol be consumed in moderation (UnlockFood, 2018b).

Female Healthy Eating Recommendations

Nutrients of particular concern throughout the female lifecycle include calcium, iron, folate, vitamin B12, and vitamin D (O'Connor et al., 2016). The highest prevalence of eating disorders occurs among female adolescents and therefore healthy body image and self-esteem concerns should be addressed with female adolescents. Both overweight and underweight status can lead to abnormal ovulation, impacting fertility (O'Connor et al., 2016).

Approximately half of pregnancies in Canada are unplanned, making it important for all women of reproductive age to maintain good nutrition for optimal pre-conceptual health (O'Connor et al., 2016). Generally, folic acid supplementation is recommended for all women of reproductive age, in order to reduce the risk of neural tube defects for both planned and unplanned pregnancies (Government of Canada, 2018b). Data gathered in Windsor and Essex County in 2016, however, found that folic acid use both prior to and during pregnancy were significantly lower compared to provincial rate (4.7% in Windsor and Essex County compared to 31.3% in Ontario) (Public Health Ontario, 2018).

Maternal nutrition plays an important role in the growth and development of an unborn baby. Energy requirements do not increase in the first trimester, and calorie increases in the second of third trimester are modest (about 340 to 450 kcal per day, or the equivalent of one extra snack each day) (O'Connor et al., 2016).

Folate, vitamin C, iron, protein, calcium, vitamin D, omega-3 fatty acids, choline, iodine, whole grains, and fibre are among the most important nutrients for healthy fetal growth and development (O'Connor et al., 2016). For healthy brain development, expecting mothers are recommended to consume fish twice a week, and to choose fish low in mercury, such as salmon, trout, and herring (Health Canada, 2009). Other dietary recommendations include: limiting foods high in sugar, unhealthy fat, and salt. A multivitamin specific to preconception

and pregnancy is recommended. Alcohol can cause fetal harm and there is insufficient evidence to know whether there is a safe threshold of alcohol use, therefore abstinence is recommended.

As with healthy eating recommendations during pregnancy, energy and nutrient requirements for breastfeeding are only modestly increased (O'Connor et al., 2016). In general, an increased caloric intake of about 350 to 450 kcal/day and a multivitamin should be sufficient to fulfil lactation needs. Breastfeeding mothers should continue to consume fish at least twice a week and are advised to limit consumption of fish high in mercury content, such as swordfish and shark.

After menopause, women are at increased risk for osteoporosis, therefore consuming foods rich in calcium and vitamin D is especially important for aging women. Menopausal women are also less likely to absorb naturally occurring vitamin B12, and may need to consume fortified foods. In such situations, supplementation may help if these nutrients cannot be obtained from diet alone (O'Connor et al., 2016).

Older Adult Healthy Eating Recommendations

Aging may result in a decreased appetite, decreased ability to chew and swallow, decreased sense of taste or smell, decreased sense of thirst, and decreased ability to shop or cook, which may increase vulnerability to malnutrition. Texture modifications may also be needed with concerns around trouble swallowing, biting, or chewing. Aging may increase the need for certain nutrients and minerals, while energy needs are reduced. On the other hand, unintentional weight loss is also possible.

Many studies have shown that older adults have higher rates of deficiencies for various nutrients such as B-vitamins, vitamin C, vitamin E, selenium, omega-3 fatty acids, and choline, and that nutritional deficiencies may increase the risk of or hasten cognitive decline (Davison et al., 2012). Calcium, vitamin D, and iron are other nutrients of concern. While supplements may help reverse nutrient deficiencies, possible adverse effects that may occur due to excessive supplementation may also be possible (Davison et al., 2012). Cognitive decline may also be linked to high intakes of fat and sugar, and excess calories. Therefore, a healthy balanced diet is important for healthy aging, as it can help maintain health and help prevent or manage dementia and other chronic diseases such as heart disease and diabetes.

For older adults, a healthy diet can also help to prevent, delay, and/or reduce muscle and bone loss (Government of Canada, 2019b). It is recommended that older adults eat a variety of nutrient-dense foods, or foods that are high in vitamins and minerals but not calories (Government of Canada, 2019).

Nutrition and Chronic Disease

There are several chronic conditions for which diet may contribute to the incidence, prevention, or management efforts. In general, engaging in healthy living behaviours, including healthy eating, regular physical activity, sufficient sleep, limiting alcohol, and not smoking, can all contribute to either reducing the risk of developing or managing a chronic condition.

With regards to healthy eating, enjoying a balanced proportion of foods, ideally minimally processed, is advantageous for health. Canada's Food Guide uses a healthy plate to help Canadians visualize what a balanced meal looks like: half a plate of vegetables and fruit, a quarter plate of foods that contain protein, and a quarter plate of whole grains. Canada's Food Guide also recommends limiting excess sugar, saturated fats, and salt, and cooking with fresh, frozen, or canned ingredients more often.

Over 44% of adults age 20 and over report having at least one of the following (Public Health Agency of Canada, 2019):

1. Hypertension – 25%
2. Osteoarthritis – 14%
3. Mood and/or anxiety disorders – 13%
4. Osteoporosis – 12%
5. Diabetes – 11%
6. Asthma – 11%
7. Chronic obstructive pulmonary disease – 10%
8. Ischemic heart disease – 8%
9. Cancer – 8%
10. Dementia – 7%

With the exception of asthma, chronic obstructive pulmonary disease, and osteoarthritis, nutrition and healthy eating play a role in the incidence, prevention, and/or management of these common chronic conditions.

High Blood Pressure

High blood pressure, or hypertension, occurs when the pressure or force of blood against the walls of blood vessels is elevated beyond a normal range. Affecting more than one in five people in Canada, it is one of the leading causes of death and hospitalization in Canada (Government of Canada, 2010).

Excess sodium in the diet is estimated to contribute to 30% of hypertension cases in Canada. Data from the 2004 Canadian Community Health Survey identified that as many as 90% of men and 65% of women over the age of 19 consume sodium at levels which may be harmful to health. Similar high intakes were also observed in children and adolescents (Government of Canada, 2010). Sodium is most commonly present in diets through processed foods, in salt used for cooking, and in restaurant meals.

A healthy lifestyle, including healthy eating, regular physical activity, not smoking, limiting alcohol, and limiting sodium intake can help reduce the risk of high blood pressure. Ways to limit sodium in the diet include (UnlockFood, 2018c):

- Limiting use of salt when cooking and at the table
- Choosing plain, fresh, or frozen ingredients whenever possible
- Finding low or no-salt-added canned foods and rinsing before use
- Reading the nutrition facts table to find products that contain less than 15% of the daily recommended value of sodium

The percentage of individuals age 12 and over who reported high blood pressure in Windsor and Essex County is 18.9%. This is not significantly different from the prevalence in Ontario, which is 17.4% (Public Health Ontario, 2018). Locally, 19.3% of males reported high blood pressure (18.3% provincially), and 18.3% females reported high blood pressure (16.4% provincially).

By age, approximately 4.2% of those between 20 and 44 in Windsor and Essex County reported high blood pressure; the provincial rate is 4.5%. For those between 45 and 64, 28.6% reported high blood pressure while the provincial rate was 23.5%. Finally, 46.7% of Windsor and Essex County residents age 65 and over reported having high blood pressure, while provincially, the prevalence was not significantly different at 47.2% (Public Health Ontario, 2018).

Stroke

A stroke happens when blood flow to a part of the brain stops. This can either be caused when there is a blood clot in the brain, or when a blood vessel in the brain tears. Strokes can also differ based on severity: blood vessels may only become temporarily blocked, in a condition known as a mini stroke. Stroke is the third leading cause of disability in Canada, but is highly preventable – lifestyle changes such as limiting alcohol, decreasing stress, being physically active, eating healthy foods, maintaining a healthy weight, or not smoking can all help to reduce the risk of stroke.

Self-reported prevalence of the effects of stroke is measured by the Canadian Community Health Survey. In 2015, about 1.1% of local residents reported themselves as stroke survivors who were experiencing some kind of disability (in other words, individuals living with the effects of stroke). This is not statistically different from the provincial rate of 1.2%. The sample size was too small for any analysis by gender or by most age groups, except for individuals age 65 and over: 3.8% of local residents age 65 and over reported living with the effects of stroke, which is close to the provincial rate of 3.9% (Public Health Ontario, 2018).

Heart Disease

Heart disease refers to plaque buildup in the heart's arteries, that could lead to a heart attack or heart failure (or both), and is the second leading cause of death in Canada (Government of Canada, 2017c). About 2.4 million Canadian adults age 20 and over live with heart disease.

Being smoke free, staying physically active, eating a healthy diet, and limiting alcohol use can all help reduce the risk of heart disease (Government of Canada, 2017). The early detection and management of other medical conditions such as high blood pressure, diabetes, and high cholesterol can also help reduce the risk of heart disease.

In Windsor and Essex County, approximately 4.7% residents age 20 and over have heart disease (the provincial prevalence is 4.3%) (Public Health Ontario, 2018). Approximately 5.4% males reported having heart disease (5.2% provincially) and 4.0% females reported having heart disease (about 3.6% provincially).

There was not enough data to examine the prevalence of heart disease in Windsor-Essex for individuals between the ages of 12 and 64. For older adults age 65 and over, about 19.4% of residents reported having heart disease. This is not statistically different from the provincial statistic, which was about 15.1% (Public Health Ontario, 2018).

Mood and Anxiety Disorders

The Canadian Community Health Survey captures self-reported rates for mood and anxiety disorders. Mood disorders refer to conditions where individuals have lowered or elevated mood, such as depression, bipolar disorder, mania, or dysthymia. Anxiety disorders are characterized by excessive and persistent feelings of nervousness, anxiety, or fear, and conditions include phobias, obsessive-compulsive disorder, and panic disorder (Statistics Canada, 2016b).

Approximately 8.7% of residents in Windsor and Essex County reported experiencing a mood disorder (6.1% male, 11.2% female) (Public Health Ontario, 2018). By age, about 8.6% of those between 20 and 44, 11.3% of those between 45 and 64, and 7.0% of those age 65 and over reported experiencing a mood disorder. These rates are similar to the overall prevalence of mood disorders in Ontario (Public Health Ontario, 2018).

About 8.9% of residents in the region reported experiencing an anxiety disorder (5.2% male, 12.4% female) (Public Health Ontario, 2018). By age, 10.8% of those between 20 and 44, 9.0% of those between 45 and 64, and 7.3% of those age 65 and over reported experiencing an anxiety disorder. These rates are also similar to prevalence rates in the province (Public Health Ontario, 2018).

There is evidence to suggest that a diet consisting of a high intake of fibre, high intake of vegetables and fruit, as well as a low intake of refined carbohydrates is associated with a lower prevalence of depressive symptoms in older adults (Gopinath et al., 2017). The study suggests that the consumption of foods with a high nutrient content (and fewer processed and refined foods) may help contribute to maintaining a healthy nervous system and therefore is beneficial to mental health. In support of that, other studies have found that unhealthy dietary patterns are associated with new diagnoses of depression, dysthymia, or anxiety disorders (Davison et al., 2012).

A systematic review also found that those who received dietary counselling on a variety of healthy diet interventions on depression and anxiety also found that following a balanced dietary pattern, regardless of which diet (such as DASH or Mediterranean diet), was generally helpful in improving depression outcomes (Opie et al., 2015).

Dementia

Dementia is defined as a loss of mental function that affects daily activities, and is caused by many different conditions such as Alzheimer's disease, Lewy Body disease, head trauma, and Huntington's Disease (Alzheimer Society Windsor-Essex County, 2018). Symptoms can include memory loss, behaviour changes, judgment and reasoning problems, and changes in mood and communication abilities (Government of Canada, 2018c). Currently, 564,000 Canadians are living with dementia, with about 25,000 new cases diagnosed each year (Alzheimer Society Windsor-Essex County, 2018).

The exact cause of dementia is unknown, but an unhealthy diet is considered to be a possible risk factor. Nutrients that have been studied in relation with dementia include omega-3 fatty acids, antioxidants, B-vitamins, iron, copper, and zinc (Davison et al., 2012). It is predicted that deficiencies may accelerate cognitive decline. A diet that includes fatty fish may reduce the risk of cognitive impairment, though it is uncertain whether that is due to improved omega-3 fatty acid levels in the body, vitamin D levels in the body, or both (Davison et al., 2012).

Osteoporosis

Osteoporosis is a bone disease where bone loss occurs faster than normal, causing bones to become brittle and weak. Osteoporosis can increase the risk of fractures, which is a significant cause of disability, health care costs, and premature death in Canada (Government of Canada, 2018d). It is estimated that about 10% of Canadians over the age of 40 have osteoporosis, and women are four times as likely to report the condition than men. This is because women have lower bone density in general, and also lose bone mass more quickly with age.

In addition to physical activity, adequate calcium, vitamin D, and magnesium intake is essential for healthy bones. For adults age 40 and over, calcium and vitamin D supplements may help to prevent osteoporosis (Public Health Agency of Canada, 2010). Additionally, for adults age 50 and over with low vitamin B12, the intake of vitamin B12 supplements or fortified foods is also recommended for the prevention and treatment of osteoporosis (Practice-Based Evidence in Nutrition, 2014).

A diet with too much sodium may reduce bone density, therefore it is important to limit high sodium foods such as processed foods. Excess caffeine and alcohol may also negatively affect bone health, and therefore moderate consumption is encouraged (i.e., no more than 400mg caffeine per day, and no more than 1-2 drinks of alcohol per day) (Practice-Based Evidence in Nutrition, 2017).

Diabetes

About 11 million people in Canada are living with diabetes, and more than 6 million are estimated to be living with pre-diabetes. Diabetes is a chronic disease where the body either cannot produce insulin or cannot properly use the insulin that it produces. Insulin helps to control the amount of sugar in blood. If untreated or mismanaged, high blood sugar levels can lead to damage to organs, blood vessels, and nerves (Government of Canada, 2018e).

Several factors increase the risk of diabetes, though there is no single cause of type 2 diabetes. Factors include being age 40 and over, being overweight (especially with abdominal obesity), having a family history of diabetes, having had gestational diabetes, giving birth to a baby weighing more than 4 kg (9 lb) at birth, having high blood pressure, having high cholesterol or high blood lipids, or being a member of a high risk ethnic group (Government of Canada, 2018). In addition to physical activity and not smoking, having a healthy, balanced diet, and limiting intake of sugar, unhealthy fats, and salt are some ways to help prevent or postpone type 2 diabetes. Diet is also an important way to manage diabetes and prevent complications such as blindness, nerve damage, erectile dysfunction, and stroke (Government of Canada, 2018).

The Canadian Community Health Survey conducted in 2015-2016 found that the age-standardized percentage of the population of Windsor and Essex County aged 12 and above self-reported living with diabetes was 7.4% (Public Health Ontario, 2018d). Males self-reported that they were managing diabetes more often than females: 9.2% males reported they had diabetes (8.0% provincially), while 5.6% females reported that they had diabetes (6.3% provincially).

There was not enough data to examine the prevalence of diabetes for those between the ages of 12 and 44. However, 12.8% of individuals ages 45 to 64 reported having diabetes, compared to the provincial prevalence of 10.2% (not statistically different). For individuals age 65 and up, 17.3% Windsor-Essex residents, compared with 17.9% in Ontario (Public Health Ontario, 2018).

Cancer

Cancer is a collection of diseases resulting from genetic mutations that lead to abnormal cell growth. The risk of developing cancer increases dramatically with age, and based on Canadian Cancer Statistics, almost 1 in every 2 people (45% Canadian women and 49% Canadian men) will develop cancer during their lifetime. It is the leading cause of death in Canada (Public Health Agency of Canada, 2018).

As a complex disease, there are many factors that contribute to its development, and many, such as aging or family history, is beyond individual control. Diet, however, can both contribute to the cause and prevention of cancer. Examining dietary patterns and cancer trends around the world, the World Health Organization (2014) has identified that excess body fat increases cancers of the esophagus, colon, pancreas, endometrium, kidney, and postmenopausal breast cancer, stating that the reduction of sugar-sweetened beverages is a priority in efforts to decrease risk factors for obesity. Additionally, red meat, especially processed meats, were identified by the World Health Organization to be associated with colorectal cancer.

A diet rich in vegetables and fruit as well as whole grains was not found to be as strongly protective against cancer as previously predicted, however, is still vital for general health and well-being, as they continue to play a role in helping reduce the risk of diabetes and cardiovascular diseases (World Health Organization, 2014). Engaging in healthy behaviours such as healthy eating, physical activity, reducing alcohol consumption, and getting vaccinated against HPV and Hepatitis B can help to prevent up to 50% of all cancers.

In Windsor and Essex County, prostate, breast and lung cancers are among the most prevalent and rates of new cancer cases have increased from 1986 to 2012, particularly among males (Windsor-Essex County Health Unit, 2016b). In looking at age-standardized incidence of cancer in Windsor and Essex County (Table 105), available 2013 data from Public Health Ontario data are provided. In 2013, overall cancer rates in Windsor and Essex County were significantly higher than the provincial rates, although rates were not significantly different in 2010 or 2011. Rates of prostate cancer were significantly higher in 2013 locally compared to the province, but this was not the case in 2010, 2011 or 2012. Incidence of colorectal and breast cancers were not significantly different from that of the province. Lung cancer incidence in Windsor and Essex County was not significantly different from the province in 2013, but was higher locally in 2010 and 2011.

Table 105: Age-Standardized Incidence of Cancer in 2013 for Windsor and Essex County

	Rate (per 100,000 population)	Cases	Relation to Ontario
All Cancers	581.0	2,473	Significantly Higher
Colorectal	62.4	269	No Difference
Prostate	137.2	275	Significantly Higher
Breast (Female)	149.8	3321	No Difference
Lung	67	289	No Difference

Source: Public Health Ontario (2018). Public Health Snapshots

Windsor-Essex County Health Unit data suggests that between 2000 and 2009, 1,924 cancer deaths in Windsor and Essex County could have been prevented by modifying risk factors or health behaviours (Windsor-Essex County Health Unit, 2016b).

Obesity

Obesity is where excess or abnormal body fat accumulation impairs health, and is a chronic disease that is often progressive. A complex disease, obesity is affected by many different factors, including the environment, genes, emotional health, diet, exercise, sleep, medical conditions, and responses to certain medications. It is a leading cause of other chronic diseases including type 2 diabetes, heart disease, high blood pressure, stroke, arthritis, cancer, and other health problems (Canadian Obesity Network, 2017).

Weight bias and stigma may also negatively impact the health of those living with obesity, and may also increase morbidity and mortality (Canadian Obesity Network, 2017). Inequities may arise from weight stigma, for example decreased access to employment, healthcare, and education, as individuals are stereotyped as lazy, unmotivated, or lacking self-discipline (Canadian Obesity Network, 2017).

Body Mass Index, or BMI, is a useful population surveillance tool used to track population weight trends over time. However, it is a crude measurement tool and is not suitable to clinically diagnose an individual with obesity. Additional tests and measures need to be conducted by a qualified health professional for a clinical diagnosis.

There is no local surveillance data for childhood obesity, however, the Canadian Health Measures Survey of 2013 found that about a quarter (26.0%) of Canadian children between 5 and 11 were overweight or obese. A study conducted locally by the University of Windsor in 2010-2011 found that 42.0% of children (grade 7) from a sample of 26 schools in Windsor and Essex County were carrying excess weight, which is greater than the Canadian average of 34.0% (Woodruff et al., 2011).

Surveillance data is available for adolescent BMI from the Canadian Community Health Survey, though small sample sizes restricted the ability to analyze the data by demographics (e.g., age) and socioeconomic factors (e.g., income). Overweight and obesity were experienced by approximately one quarter (26.1%) of youth in Windsor and Essex County, compared to the provincial average of 24.2% (Windsor-Essex County Health Unit, 2016a). Across Ontario, 32.2% of male youth experienced overweight or obesity, while 18.1% of female youth experienced overweight or obesity.

About 2 in 3 (66.5%) adults aged 20 and above were classified as overweight or obese from the CCHS 2013-2014 cycle, which was significantly higher than the provincial average (Windsor-Essex County Health Unit, 2016a). The percentage of males with excess weight is significantly greater than the percentage of females with excess weight. Stratified by age, the percentage of adults between 20 and 44 who carry excess weight (58.1%) is significantly lower than the percentage of adults between 45 and 64 (80.1%) and the percentage of older adults 65 and up (71.5%). Overall, adult obesity in Windsor and Essex County is higher than the provincial average. Overall, marital status, highest level of household education, and household income was not linked to the prevalence of overweight or obesity.

The Impact of Food Insecurity on Health

Household food insecurity is defined as the uncertainty or inability to acquire sufficient food because of financial constraints (Gundersen et al., 2018). Three levels of severity exist in terms of food insecurity: those who are *marginally food insecure* worry about running out of food and may limit food selection due to cost. Those who are moderately food insecure may compromise their quality or quantity of their food due to a lack of money. Finally, those who experience *severe food insecurity* may miss meals, reduce food intake, and even go days without food due to cost (PROOF, 2017).

Household food insecurity is measured every two years in Canada, using an 18-item questionnaire through the Canadian Community Health Survey (CCHS). In the 2013-2014 CCHS cycle, about 1 in 10 households (10.8%) in Windsor and Essex County self-reported being moderately or severely food insecure, and nearly 1 in 10 children (9.7%) are moderately or severely food insecure. Of households with low income, more than 1 in 4 (27.4%) reported being moderately or severely food insecure.

Academic literature strongly suggests that food insecurity negatively impacts the physical, mental, and social health of families and individuals, and is a major problem in Windsor and Essex County. For example, academic literature has identified that food insecurity is associated with negative health impacts such as the increased risk of diabetes, hypertension, dyslipidemia, cardiovascular disease, depression, poor sleep, and iron deficiency (Gundersen et al., 2018). In terms of mental health, the severity of household food insecurity is related to the severity of poor mental health, in that significantly higher levels of food insecurity are associated with a higher risk of negative mental health outcomes in Canadian adults (Jessiman-Perreault et al., 2017). There is also data to suggest that chronic physical and mental health conditions may increase the risk of household food insecurity (Tarasuk et al., 2013).

Food insecurity is also associated with higher health care costs, such as inpatient hospital care, physician services, and home care costs (Tarasuk et al., 2015). More recently, research conducted on data from Ontario has shown that food insecurity is positively associated with all-cause mortality; in other words, those who are food insecure are more likely to die (Gundersen et al., 2018).

Research has identified that most mothers, regardless of socioeconomic status, initiated breastfeeding with their newborn: 91.6% for those with food security, and 88.8% of those with marginal food insecurity, 83.3% of those with moderate food insecurity, and 86.0% of those with severe food insecurity (Orr et al., 2018). However, mothers in food insecure households were less able to adhere to six months of exclusive breastfeeding (as recommended by Health Canada) compared with women with food security. Exclusive breastfeeding was stopped after two months for almost half of women experiencing any level of food insecurity. This is in stark contrast to half of women with food security stopping only after four months (Orr et al., 2018).

In Ontario, roughly 1 in 6 (17%) children under the age of 18 live in households experiencing food insecurity, and food insecurity is especially prevalent in single mother households (Tarasuk et al., 2016). Other characteristics associated with childhood food insecurity include immigrant

status, maternal age at child's birth, family income, maternal and paternal education, prenatal tobacco exposure, maternal and paternal depression, and negative parenting (Melchoir et al., 2012).

Food insecurity and hunger is associated with poorer general health in children, as well as higher rates of emotional and psychological stress (Kirkpatrick et al., 2010). Depression, anxiety, hyperactivity, and inattention were more prevalent for children who experienced food insecurity, but after taking into account factors such as immigration status and family income, the only statistically significant relationship was between food insecurity and hyperactivity or inattention (Melchoir et al., 2012). Exposure to severe food insecurity in childhood can later increase the risk of developing conditions such as asthma, depression, and suicide ideation in adolescence and early adulthood (Kirkpatrick et al., 2010).

In Canada, the prevalence of food insecurity experienced by Canadians above the age of 65 is halved compared to Canadians below the age of 65. This is predicted to be a result of Old Age Security that Canadians are able to access at the age of 65, helping to decrease rates of food insecurity for low-income older adults (McIntyre et al., 2016).

Foodborne Illness

According to the Canadian Public Health Association, most foodborne illnesses in Canada are a result of improper food handling, cooking and storage (Canadian Public Health Association, 2019). However, outbreaks from commercial sources also occur and have the potential to affect a large number of people. For example, recalls of romaine lettuce due to E. coli contamination were ongoing during the time of this food system assessment and were mentioned by members of the public ("Canadians warned to not eat romaine lettuce after 18 sickened", November 21, 2018). Also noted by the Canadian Public Health Association, large scale farming and food processing, along with having access to foods from around the world has increased opportunities for contamination and make it harder to trace the source of a foodborne illness. The 2015 Infectious Disease Report by the Windsor-Essex County Health Unit provides the most up-to-date information regarding foodborne illness prevalence locally (Windsor-Essex County Health Unit, 2017b).

Enteric disease refers to illness caused by bacteria, viruses or parasites, transmitted primarily through the consumption of contaminated food or water. In 2015, there were 219 cases of enteric illness in Windsor and Essex County. There were 84 reported cases of salmonellosis in 2015. The number of new cases (incidence) of salmonellosis has steadily increased since 2006, and in 2015 the number of cases was greater than the five-year average. The top risk factors reported by salmonellosis cases between 2011 and 2015 include consumption of raw fruits (80.0%), consumption of chicken/chicken products (67.6%), consumption of eggs or food containing eggs (53.3%), and contact with animals (51.2%).

In recent years, the incidence of cyclosporiasis and cryptosporidiosis has also increased locally. Incidence of both of these diseases were higher than their historical average in 2015, with similar increases observed in Ontario. The top risk factors for cryptosporidiosis reported by cases between 2011 and 2015 included contact with animals (64.3%), travel outside of the

province in the last 12 days (50.0%), and consumption of raw unwashed fruits/vegetables (50.0%). The top risk factors for cyclosporiasis reported by cases from 2011 to 2015 include: consumption of raw fruits (87.5%); consumption of spinach (77.8%); consumption of raw vegetables (62.5%); travel outside of the province in the 2 to 14 days prior to illness (60.0%); consumption of strawberries (55.6%); and consumption of romaine lettuce (55.6%).

Appendix F: Essex County Agriculture Statistics Summary

Essex County at a Glance -2016	Windsor and Essex County	Province	Percent of Province	Percent from 2011
Farms, 2016 Census (number)				
Total	1,630	49,600	3.29	3.10
Under 10 acres	131	3,051	4.29	0.77
10 to 69 acres	663	12,625	5.25	11.43
70 to 129 acres	283	10,742	2.63	-6.91
130 to 179 acres	114	4,592	2.48	-0.87
180 to 239 acres	89	4,282	2.08	-11.00
240 to 399 acres	129	6,008	2.15	-0.77
400 to 559 acres	61	3,093	1.97	-4.69
560 to 759 acres	52	1,990	2.61	33.33
760 to 1,119 acres	56	1,593	3.52	12.00
1,120 to 1,599 acres	20	801	2.50	-25.93
1,600 to 2,239 acres	18	457	3.94	0.00
2,240 to 2,879 acres	7	168	4.17	75.00
2,880 to 3,519 acres	4	88	4.55	33.33
3,520 acres and over	3	110	2.73	50.00
Land Use, 2016 Census (acres)				
Land in crops	328,174	9,021,298	3.64	6.70
Summer fallow land	186	15,885	1.17	50.00
Tame or seeded pasture	2,114	514,168	0.41	29.30
Natural land for pasture	1,449	783,566	0.18	-8.12
Christmas trees, woodland and wetland	9,057	1,542,637	0.59	1.52
All other land	9,238	470,909	1.96	5.59
Total area of farms	350,218	12,348,463	2.84	6.59
Greenhouse Area, 2016 Census (square feet)				
Total area in use	84,114,866	158,511,328	53.07	26.72

Essex County at a Glance -2016	Windsor and Essex County	Province	Percent of Province	Percent from 2011
Farm Capital Value, 2016 Census (farms reporting)				
Under \$200,000	68	2,142	3.17	-16.05
\$200,000 to \$499,999	310	7,433	4.17	-22.31
\$500,000 to \$999,999	447	12,500	3.58	-0.67
\$1,000,000 and over	805	27,525	2.92	23.66
Total Gross Farm Receipts, 2016 Census (farms reporting)				
Under \$10,000	277	9,536	2.90	4.53
\$10,000 to \$24,999	293	8,376	3.50	8.52
\$25,000 to \$49,999	242	6,755	3.58	1.68
\$50,000 to \$99,999	214	6,263	3.42	-8.15
\$100,000 to \$249,999	216	7,022	3.08	5.88
\$250,000 to \$499,999	121	4,707	2.57	1.68
\$500,000 to \$999,999	107	3,689	2.90	4.90
\$1,000,000 to \$1,999,999	51	2,019	2.53	-17.74
\$2,000,000 and over	109	1,233	8.84	23.86
Farms by Industry Group, 2016 Census (number of farms)				
Beef cattle ranching and farming	21	6,786	0.3%	90.91
Dairy cattle and milk production	9	3,439	0.3%	-30.77
Hog and pig farming	6	1,229	0.5%	-14.29
Poultry and egg production	13	1,816	0.7%	-7.14
Sheep and goat farming	10	1,097	0.9%	11.11
Other animal production	95	5,902	1.6%	13.10
Oilseed and grain farming	1,106	16,876	6.6%	7.27
Vegetable and melon farming	85	1,856	4.6%	-3.41
Fruit and tree nut farming	50	1,362	3.7%	-28.57
Greenhouse, nursery and floriculture	186	2,050	9.1%	-10.14
Other crop farming	49	7,187	0.7%	4.26

Essex County at a Glance -2016	Windsor and Essex County	Province	Percent of Province	Percent from 2011
Major Field Crops, 2016 Census (acres)				
Winter wheat	56,829	1,080,378	5.3%	-15.44
Oats for grain	461	82,206	0.6%	179.39
Barley for grain	37	103,717	0.0%	12.12
Mixed grains	0	92,837	0.0%	-
Corn for grain	61,973	2,162,004	2.9%	16.22
Corn for silage	1,398	295,660	0.5%	-10.50
Hay	5,370	1,721,214	0.3%	-18.17
Soybeans	182,926	2,783,443	6.6%	13.95
Potatoes	1,697	34,685	4.9%	2.48
Major Fruit Crops, 2016 Census (acres)				
Total fruit crops	x	51,192	-	-
Apples	1,182	15,893	7.4%	-13.72
Sour Cherries	x	2,121	-	-
Peaches	157	5,232	3.0%	-40.30
Grapes	1,068	18,718	5.7%	-10.03
Strawberries	31	2,915	1.1%	-40.38
Raspberries	13	680	1.9%	-13.33
Major Vegetable Crops, 2016 Census (acres)				
Total vegetables	8,582	135,420	6.3%	-1.06
Sweet corn	1,192	22,910	5.2%	-23.34
Tomatoes	4,154	15,744	26.4%	-9.97
Green peas	703	16,268	4.3%	23333.33
Green or wax beans	686	9,732	7.0%	12.09

Essex County at a Glance -2016	Windsor and Essex County	Province	Percent of Province	Percent from 2011
Livestock Inventories, 2016 Census (number)				
Total cattle and calves	4,092	1,623,710	0.3%	-14.89
Steers	455	305,514	0.1%	65.45
Beef cows	475	236,253	0.2%	-7.95
Dairy cows	1,067	311,960	0.3%	-16.25
Total pigs	7,772	3,534,104	0.2%	-40.14
Total sheep and lambs	1,359	321,495	0.4%	-62.96
Poultry Inventories, 2016 Census (number)				
Total hens and chickens	65,582	50,759,994	0.1%	-73.18
Total turkeys	72,111	3,772,146	1.9%	-

**Appendix G: Actions and Timelines for the Ontario Food and Organic
Waste Framework**

	Action	Currently Underway	Short-term (2018-2020)	Long-term (2021-beyond)
1.	Province to work with partners to develop promotion and education tools to support food waste prevention and reduction		✓	
2.	Province to enhance and incorporate waste reduction and resource recovery activities within schools		✓	
3.	Province to work with the Government of Canada on preventing food waste	✓		
4.	Province to work with partners to support innovative approaches and tools to rescue surplus food	✓	✓	
5.	Province to develop food safety guidelines to support the safe donation of surplus food		✓	
6.	Province to support research aimed at reducing and recovering food and organic waste	✓	✓	
7.	Province to develop data collection mechanisms for measuring progress in waste reduction and resource recovery of food and organic waste		✓	
8.	Province to amend the 3Rs Regulations to include food and organic waste and increase resource recovery across the Industrial, Commercial and Institutional (IC&I) sector		✓	✓
9.	Province to ban food and organic waste from ending up in disposal sites		✓ (consulting 2018-2019)	✓ (phased-in beginning 2022)
10.	Province to support resource recovery of food and organic waste in multi-unit residential buildings			✓
11.	Province to develop best management practices to support effective use of public waste receptacles		✓	
12.	Province to review existing approval processes and requirements for resource recovery systems using a modern regulator approach		✓	
13.	Province to require standardized training for owners and operators of resource recovery systems that undertake composting and anaerobic digestion		✓	

	Action	Currently Underway	Short-term (2018-2020)	Long-term (2021-beyond)
14.	Province to review its D-Series Land Use Compatibility Guidelines to support the development of resource recovery systems		✓	
15.	Province to support healthy soils with strong standards and clear requirements for the use of soil amendments, while protecting the environment and human health	✓		
a)	Province to review regulatory approaches related to soil amendments		✓	
b)	Province to promote the on and off-farm end-use of soil amendments made from recovered organic resources		✓	✓
c)	Province to promote the use of soil amendments as part of the Agricultural Soil Health and Conservation Strategy		✓	✓
16.	Province to support development of renewable natural gas including consideration for linkages to food and organic waste		✓	✓
17.	Province to support green procurement practices, including the use of end-products, such as compost and digestate	✓	✓	

**Appendix H: Essex-Windsor Solid Waste Authority Regional Landfill
Specifications**

Site Profile	
ECA Number:	A011101
ECA Issue Date:	11/5/1982
MOE Region:	Southwestern
MOE District:	Windsor
Certificate of Approval Issued to:	Essex -Windsor Solid Waste Authority (EWSWA)
Site Name:	EWSWA Regional Landfill -Essex Windsor
Operation Status:	Open
Landfill Type:	Municipal
Site Location:	7700 Essex County Road 18, R.R.#3; Part of Lots 14-16, Concession 7
Site Municipality:	Town of Essex
Site County/District/Region:	Essex
Site Approval Conditions	
Total Site Area:	123 Ha
Footprint:	65 Ha
Total Approved Capacity:	12800000 Cubic Metres
Fill Rate:	275000 Tonnes/ Year
Service Area:	County of Essex, the City of Windsor, the Municipality of Chatham-Kent, the County of Lambton, and the County of Elgin.
Contaminant Attenuation Zone:	
Approved Waste Types:	Non-Hazardous Solid Domestic, Institutional, Commercial or Industrial
Air Emission Monitoring:	
Groundwater Monitoring:	Annual
Surface Water Monitoring:	Annual
Landfill Gas Monitoring:	Semi-Annual

Site Profile	
Engineered Features	
Natural Attenuation:	
Liners:	
Cover Material:	Yes
Leachate Off Site Treatment:	Yes
Leachate On Site Treatment:	Yes
Landfill Gas Management (P):	Yes
Landfill Gas Management (F):	Yes
Landfill Gas Management (E):	Yes
Financial Assurance:	
Required to Collect Landfill Gas:	Yes
Landfill Gas Collected:	Yes
Most Recent Annually Reported Figures	
Estimated Remaining Capacity (ERC):	8281900 Cubic Metres
ERC Date Last Determined:	31/12/2011
ERC Methodology:	Direct Survey (GPS, Total Station)
Total Waste Received (TWR):	224572 Tonnes
TWR Methodology:	Weighed
Last Reporting Year:	2011

Appendix I: Recommendations by Sub-Area

Alternatives	
Processing and Distribution	2.1.1 Support for regional food warehouses, co-ops, community supported agriculture
Access and Consumption	3.1.1 Support alternative ways to access food (e.g., mobile markets) 3.1.2 Explore use of non-traditional public spaces (e.g., parks, libraries) to promote and sell local food 3.1.3 Develop infrastructure and funding to supports food skills development (e.g., community kitchens, new or those outside the food movement that are well-funded and sustainable)

Composting	
Waste Management	4.1.1 Follow landfill legislation application locally to promote curbside pickup of organic waste 4.1.2 Educate the public on proper waste management, composting and meal planning to reduce home food waste 4.1.3 Network to identify waste management solutions (e.g., waste, food waste, packaging, recycling, composting) 4.1.4 Promote use of anaerobic digestion of food waste and sewage sludge to make renewable natural gas; Explore Seaclyff Energy in Leamington as model for sustainability and solicit public buy-in

Cross-Sectoral Work	
Production	1.1.1 Give producers more opportunity for community involvement; Recognize participation through an annual award 1.1.2 Collaborate with municipalities
Access and Consumption	3.2.1 Build communications between local stores and suppliers/farmers to increase access to local food 3.2.2 Explore methods for sharing food and resources
System Wide	5.1.1 Work together across the food system, collaborate, work together 5.1.2 Engage with municipal partners, policy makers, new councils to support community gardens, Food Policy Council, land use planning 5.1.3 Involve new and bigger champions (e.g., the University of Windsor, St. Clair College, public/private partnerships); Institutional supports and partnerships

Diversification	
Production	<p>1.2.1 Work to diversify types of farms/commodities produced locally (e.g., hazelnuts, as an example of an emerging commodity) to improve financial competitiveness; Incentives for diversifying crops</p> <p>1.2.2 Subsidize seed preservation in the region and develop region-specific strains</p>
Processing and Distribution	2.2.1 Encourage new product development and diversification
Access and Consumption	3.3.1 Advocate for production and accessibility of more world crops

Driving Demand	
Production	1.3.1 Encourage private sector procurement of local foods to drive demand
Processing and Distribution	<p>2.3.1 Encourage consolidated purchasing of local products for institutions</p> <p>2.3.2 Explore local group purchasing programme options (e.g., local child care centres, schools and other non-profits)</p>

Education	
Production	<p>1.4.1 Make food production part of food skills teaching; Link “from farm to table” to the school curriculum</p> <p>1.4.2 Education to increase public demand for local food</p> <p>1.4.3 Foster use of local producers as sources of knowledge and hands on experience</p> <p>1.4.4 Consider education for new/next generation farmers that is affordable, available, accessible and uses expertise of older farmers</p> <p>1.4.5 Education and support for farmers to understand and use best management practices</p>
Waste Management	4.2.1 Promote waste management as part of food literacy in school curriculum

Employment	
Production	<p>1.5.1 Promoting careers in agriculture sector, including using prison gardens to train inmates in agriculture</p> <p>1.5.2 Working with local training centres and organizations to explore agricultural training opportunities</p> <p>1.5.3 Explore public transportation options to get workers to bigger employers</p>
Environmental Supports Access and Consumption	<p>3.4.1 Advocate for taxes on overly processed foods or subsidizing healthy food</p> <p>3.4.2 Advocate for controls on advertising and marketing of unhealthy food, particularly vulnerable populations (e.g., youth)</p> <p>3.4.3 Promote policy to impact food environments (e.g., lunch rooms, cafeterias)</p>

Financial Supports	
Production	<p>1.6.1 Explore innovative financing opportunities, grants, tax benefits, break on utilities, electricity, and water to support local production</p> <p>1.6.2 Advocate for government support to incentive more sustainable agricultural practices</p> <p>1.6.3 Financial assistance and incentives for small farmers to help counter threats associated with corporation farming, monoculture, cash crops, land use policies</p>
Access and Consumption	<p>3.5.1 Explore avenues for government financial supports to assist with food access</p>
System Wide	<p>5.2.1 Explore corporate social responsibility initiatives to raise dollars via shareholder activism</p>

Food Diversion	
Waste Management	<p>4.3.1 Make better use of naturally imperfect and lower grade products; divert food that may be thrown away (e.g., coordinate with grocers to divert food before expiry dates, coordinate with restaurants so leftover food is distributed through non-profit organizations)</p> <p>4.3.2 Educate the public about difference between expiry and best before dates to prevent unnecessary food waste</p> <p>4.3.3 Link child care centres or ECO schools with partners (e.g., hobby farms) to divert food waste</p>

Food Security	
Access and Consumption	<p>3.6.1 Encourage more donation of local vegetables and fruit, or donation of money to buy</p> <p>3.6.2 Explore programmes that directly connect farmers and consumers experiencing or at risk of food insecurity</p> <p>3.6.3 Promote community driven urban agriculture to help address food security</p> <p>3.6.4 Explore potential supports for food banks, including access to more commercial food supports, food donations, volunteers, infrastructure, location, refrigeration</p> <p>3.6.5 Advocate for government support of poverty programmes that increase funds and infrastructure for assembly and distribution of food</p>

Food Skills	
Access and Consumption	<p>3.7.1 Advocate for policy and programmes that support food skills (e.g., school curriculum) and educate new teachers and partners; Bring in children and youth as advocacy partners – they are invested advocates</p> <p>3.7.2 Education: support food skills training in school; teach people how to purchase and prepare healthy, culturally-appropriate foods quickly; food safety; nutrition labels</p>

Healthy Eating	
Access and Consumption	<p>3.8.1 Promote Canada’s Food Guide as a comprehensive, accessible healthy eating resource</p> <p>3.8.2 Promote the long-term benefits of healthy eating</p> <p>3.8.3 Explore having Dietitians more available, especially at economy stores</p>

Income Support	
Access and Consumption	3.9.1 Efficient finance allocation (tax, private sector, social enterprise)

Promotion	
Processing and Distribution	<p>2.4.1 Build awareness about local processing, distribution and the importance of supporting local</p> <p>2.4.2 Extend promotions by having local companies network and market together</p>
Access and Consumption	<p>3.10.1 Encourage farmers to separate some food from their lines to keep it local</p> <p>3.10.2 Explore community transportation projects (e.g., bus transportation to community stand) that connect consumers and producers, including possible sponsored transportation initiatives</p> <p>3.10.3 Promote local food access through workshops, media engagement, partnership with regional festivals</p>
System Wide	<p>5.3.1 Market successes, co-opt the media, to gain buy-in for partnerships</p> <p>5.3.2 Food as common to all and a unifying presence in society</p> <p>5.3.3 Appeal to voters – vote with your fork campaign; celebrate successes to fight apathy</p>

Reducing Waste	
Processing and Distribution	<p>2.5.1 Educate the public on food grading and ability to use lower grade foods</p> <p>2.5.2 Work with processors to redirect “waste” to food banks and other organizations</p> <p>2.5.3 Model food diversion efforts after existing innovative programmes (e.g., Food Share)</p>

Research and Innovation	
Production	<p>1.7.1 Partner with researchers (e.g., University of Guelph Ridgetown Campus, University of Windsor, St. Clair College) to learn more and explore innovation; Explore social enterprise opportunities</p> <p>1.7.2 Further research into barriers to local food production: Cost of farmland, cost of startup, regulations</p>
Processing and Distribution	<p>2.6.1 Explore technology to assist transportation brokers</p> <p>2.6.2 Feasibility study of pilot project for local distribution centre</p>
System Wide	<p>5.4.1 Make use of innovation and technology, investment in R & D</p> <p>5.4.2 Pilot small, innovative projects</p>

Urban Agriculture	
Production	<p>1.8.1 Promote community gardens and community shared agriculture, including fruit trees and bees in cities</p> <p>1.8.2 Educate community on urban gardens and reconnect them to gardening</p> <p>1.8.3 Promote roof tops for small greenhouses; Vertical farms, less foot print; Year round growing lighting systems</p>
Access and Consumption	<p>3.11.1 Engage residents about urban agriculture, build capacity, share knowledge; Work to increase affordable access to land, especially land with water</p> <p>3.11.2 Advocate using community champions and municipal partnership</p>



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