



Guelph-Wellington Food Environment Assessment

Nutritious Foods Workstream
January 2022



Land acknowledgement

The City of Guelph and Wellington County are situated on the ancestral and traditional territories of the Mississaugas of the Credit, the Six Nations of the Grand River, and Saugeen Ojibway Nation Territories. Today, this area is home to many Indigenous peoples from across Turtle Island.

Much can be learned about sustainable food systems from the traditional and present-day knowledge and lived experiences of Indigenous people. We acknowledge that many barriers and inequities related to food access are rooted in colonialism. Increasing access to nutritious foods for everyone in Guelph–Wellington requires us to reflect on our history and how colonial systems continue to maintain and create inequities. We must also listen to all voices and experiences and take action to dismantle oppressive systems and structures.

Commitment to incorporating all voices

The Food Environment Assessment brings together past research and local data to provide a snapshot of food access in Guelph–Wellington. We applied a Western approach to looking at the complex issue of food access and this approach does not capture the perspectives and experiences of everyone in Guelph–Wellington.

With this in mind, the Food Environment Assessment is intended to be a launching point for further conversations and community engagement. We want to understand how the information presented in this report is experienced in people's lives and what actions (e.g., programs, services, policies, etc.) will be useful to, and welcomed by, community members. We welcome your feedback and participation as we move forward to take meaningful action to increase access to nutritious foods in Guelph–Wellington.

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To all the past and present members of the Nutritious Food Workstream, thank you for your guidance, insight, enthusiasm, and dedication to ensuring perspectives are heard. Organizations that currently sit on the Workstream include:

City of Guelph – Smart Cities Office

County of Wellington – Ontario Works

Guelph Community Health Centre

Guelph Family Health Team

Guelph Neighbourhood Support Coalition

Guelph Wellington Ontario Health Team

Guelph Wellington Seniors Association

Innovation Guelph

North End Harvest Market

Ontario Ministry of Food and Agriculture

The SEED

Toward Common Ground

University of Guelph – Community Engagement Scholarship Institute and Guelph Family Health Study

Wellington–Dufferin–Guelph Public Health

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Introduction



Introduction

Food environments

We make an average of 200 decisions about food every day – about what, where, when, and how much to eat.¹ Consider: What did you eat for breakfast – and why did you choose those foods? Did you eat lunch at a dining table or at your desk? What time was supper served? And did you save room for dessert?

Most of these decisions are made without us being aware of them. They are instead shaped by our **food environments** – the physical, social, economic, cultural, and political factors that impact food availability, affordability and accessibility.² Nutritious foods are the foods that should be consumed regularly as part of a healthy eating pattern. They include unprocessed and minimally processed vegetables and fruits, whole grains, proteins foods, and water.³

Having our food decisions influenced by our food environments is not necessarily a bad thing – imagine having to make 200 more conscious decisions every day! The issue is that our food environments often do not support nutritious food choices.⁴ Rather, they favor choosing ultra-processed foods. While unprocessed and minimally processed foods come from plants and animals with minimal alterations (such as fresh vegetables, pearled barley, and pasteurized milk), ultra-processed foods are formulations of industrial ingredients and other substances derived from foods.⁶ Ultra-processed foods usually contain excess salt, sugar, and/or saturated fat, and overconsumption of these foods can increase our risk for chronic disease.⁶

There are multiple dimensions of the food environment:

- The **community food environment** refers to the geographic location, type, and accessibility of food outlets. Accessibility includes features like proximity to a public transit route, hours of operation, and whether there is a drive-thru option.^{6,7}
- The **consumer food environment** refers to aspects within food retail outlets that influence food purchasing, such the availability of nutritious foods, nutrition information, and marketing factors like product, promotion, placement, and price.^{7,8}
- The **organizational food environment** refers to the consumer food environment within places such as schools, workplaces, childcare centres, and health care settings.⁷
- The **food information environment** refers to food marketing and promotion.^{7,9}
- The **food policy environment** refers to the government policies (including municipal, provincial, and federal policies) that influence other dimensions of the food environment, such as mandating food and nutrition education in schools, menu requirements in childcare settings, and regulating food advertising.¹⁰

Our ability to acquire, select, purchase, prepare and eat nutritious foods is shaped by our surroundings and the influence of the food environment.

Food access

There are four aspects of food access: 1) Physical access; 2) Economic access; 3) Food skills and nutrition knowledge; and 4) Marketing, promotion, and celebration of food. Each aspect is defined below. For everyone to have access to nutritious foods that support nutritious choices, all four aspects of food access must be supported.

Physical access

Physical access refers to the number and kinds of food retail outlets where people live, work, learn or play. It includes the location of food retail outlets and the ease of reaching those outlets, the availability of nutritious foods within those outlets, and how those outlets can adapt to individual needs.^{11,12}

Economic access

Economic access refers to the cost of food and a person's ability to afford that cost.^{11,12}

Absolute affordability is defined as how much it costs a person to follow a nutritious eating pattern compared to their household income. Relative affordability is the cost of a food product compared to a more nutritious alternative.

Nutrition knowledge and food skills

Nutrition knowledge includes the facts and information acquired through experience or education related to food and nutrition. For example, the capacity to distinguish between nutritious and less nutritious foods, understand where food comes from, and understand the nutrients in food and how these can affect health. Food skills are the techniques related to food purchasing, preparation, handling, and storage, such as chopping, measuring, cooking, reading recipes, and food safety.¹³

Marketing, promotion, and celebration of food

Food marketing and promotion refers to any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal, or consumption of foods. It comprises anything that acts to advertise or otherwise promote a food.¹⁴ Celebration of nutritious foods occurs when nutritious foods are promoted widely and favorably. This can occur through commercial and non-commercial communications, like social norms, food traditions, or community events.

A glossary of more key terms related to nutrition, food processing, food environments, and food access is included in Appendix A.

A food environment assessment (FEA)

Our Food Future is an Infrastructure Canada funded Smart Cities Initiative of the City of Guelph and County of Wellington aimed at creating a regional circular food economy.¹⁴ One of the primary goals of Our Food Future is to increase access to affordable, nutritious foods

by 50% by 2025. The Nutritious Foods Workstream is a group of health and social service organizations that meet frequently and complete activities in pursuit of this goal.

To increase access to nutritious foods, the Nutritious Foods Workstream decided we first needed to:

- Understand the local food environment and how it impacts access to nutritious foods.
- Appreciate the barriers that make nutritious food choices difficult.
- Explore the existing actions that are working to make nutritious food choices easier.
- Identify opportunities to collaborate with our community and support community-led actions to increase access to nutritious foods for everyone.

To gather all this information, the Nutritious Foods Workstream completed a food environment assessment – a collection of past research and local data that provides a snapshot of food access in Guelph–Wellington. A variety of methods were used to gather information, including:

- Spatial mapping of retail food outlets and community agriculture spaces.
- Audits of the availability, affordability, and promotion of nutritious foods in grocery stores, convenience stores, and recreation settings.
- Scans of food access programs, education programs, and community agriculture spaces.
- Engagement with Guelph–Wellington residents through surveys, focus groups, and interviews.

Two additional projects about food access in schools and municipal policies related to food access are underway and will be released at a later date. For details about methodology, see Appendix B.

Next steps

The assessment provides a baseline that will help us measure the impact of future actions intended to increase access to nutritious foods. We will continue to leverage local strengths and focus on addressing the complex barriers to food access in our community. The assessment will guide the development of a Food Security Action Plan that will outline actions (i.e., projects, programs, services, policies, etc.) the Nutritious Foods Workstream will fund and launch to increase access to affordable, nutritious foods. While planning actions, the following principles will be considered:

- Develop actions that address multiple aspects of food access
- Recognize barriers to food access
- Evaluate effectiveness and impact
- Encourage circularity and sustainability

Our vision is to create a food environment where everyone has physical and economic access to nutritious foods, is equipped with the knowledge and skills to consume nutritious

foods, and lives in a community where nutritious foods are promoted and celebrated. Ultimately, we want to create changes that are sustainable, far-reaching, and replicable.

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Overview: Key highlights and insights for action

From June 2020 to September 2021, the Nutritious Foods Workstream of the Guelph–Wellington Our Food Future initiative completed the initial phase of a Food Environment Assessment. The Assessment brings together local data and past research to provide a snapshot of food access in Guelph–Wellington. Many research projects and collaborations were formed to gather information including spatial mapping, surveys, focus groups, interviews, audits, and document review. What we learned to date is summarized in an infographic (Appendix D) and presented in detail in the subsequent chapters.

Key highlights

Availability and exposure

Highly-processed foods are widely available and promoted in our community. Strategies to reduce exposure and availability of these foods in various settings may be beneficial.



80% of food-related advertisements within 500 metres of schools promote highly-processed foods like fast food meals, ice cream and sugary drinks



In grocery stores, for every display of vegetables and fruit there are approximately **3** displays of highly-processed foods



Like many settings, in rec centres **100%** of food available in vending machines are sweet and salty snacks and **95%** of beverages are sugary drinks because this is what patrons are buying. Rec centre managers have added nutritious options in the past and are interested in testing new strategies



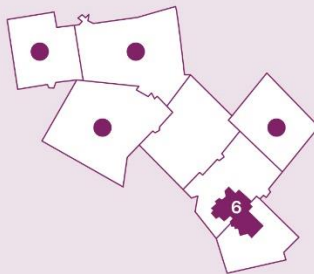
Managers of grocery and convenience stores expressed interest in modifying product placement and implementing subsidy programs

Ease of access

Certain neighbourhoods and townships have minimal access to nutritious foods, while other areas are saturated with opportunities to purchase less nutritious options. Residents may be choosing highly-processed foods due to convenience — and some think it would be helpful to get food closer to home.



Less nutritious retail food outlets (e.g., convenience stores) are found more frequently across Guelph-Wellington than nutritious outlets such as grocery stores



4 townships in Wellington County and **6 neighbourhoods** in Guelph have been identified as geographic priorities for engagement and actions to improve access



60% of grocery stores offer online shopping



People who live in rural areas of Wellington County need to travel further to get to nutritious foods

Food insecurity

Residents agree income-focused actions such as guaranteed basic income, living wages and higher social assistance rates would be helpful to address food affordability and food insecurity. Efforts to expand emergency food services that offer greater autonomy may also be beneficial.



1 in 8 (12%) Guelph-Wellington households are food insecure and almost **two-thirds (63%)** of them reported this was a new experience since the pandemic began



1 in 7 (14%) of Guelph households and **1 in 10 (10%)** Wellington County households are food insecure



Fewer than 25% of food insecure households access emergency food services to meet their immediate needs

Food purchasing and waste

Residents are throwing away nutritious foods while not necessarily following healthy eating patterns. Further education about highly-processed foods, protein foods, and the application of food skills to reduce food waste may be beneficial.



Households throw away **25%** of the edible food they buy from retail food outlets — namely fruits, vegetables, grains and plant-based protein



Residents are purchasing a **greater proportion of animal-based proteins** compared to plant-based

Local programs

There is a lot of food-related programming and infrastructure to leverage and build off in Guelph-Wellington.



39 food access programs, **24 food skills and education** programs, and **57 community agriculture** spaces were identified in Guelph-Wellington

Insights for action

The work of the Nutritious Foods Workstream will culminate in a Food Security Action Plan for Guelph-Wellington. Although the Action Plan will be released in early 2023, many actions to increase access to nutritious foods have already been implemented and will continue to be implemented before the end of the calendar year.

A list of potential actions to increase access to nutritious foods have been identified through several methods:

- A series of literature reviews completed by students at the University of Guelph.
- A food insecurity survey of a representative sample of 600 Guelph–Wellington residents.
- A survey of 95 Guelph–Wellington residents at increased risk of food insecurity.
- Interviews with grocery and convenience store managers and staff from municipal recreation departments.
- Consultation with Guelph–Wellington residents who have experience planning and implementing food access interventions.
- Consultation with the Nutritious Foods Workstream.

The findings from these sources and will be used to plan interventions and inform additional engagement activities. The Nutritious Foods Workstream will also engage residents and stakeholders in the planning process to ensure potential actions are effective, acceptable, and equitable.

Principles when planning interventions

On September 15, 2021, a group of Guelph–Wellington residents who have experience planning and implementing food access interventions participated in a virtual discussion about their perceptions and recommendations for actions (hereafter referred to as the “subject matter expert consultation”). The following general principles for planning food access interventions were noted during this consultation:

- **Think the intervention through from beginning to end.** Factor in the funding and resources needed, time for grant writing and reporting, etc. – or focus on sustainable funding sources.
- **Think at the Guelph–Wellington scale – and bigger.** What works in a pilot project or for a small section of the community may not work for all of Guelph–Wellington. Build from the learnings of pilot projects and promising practices identified in the literature, but consider how it would translate across Guelph–Wellington. Food insecurity is such a pervasive problem, each intervention only resolves the issue of economic access temporarily. The Our Food Future project represents one of our best opportunities to resolve the issue on a greater scale.
- **Think circular.** Use and build from resources and infrastructure. For example, provide opportunities for high school students that need volunteer hours, find ways to use bumper crops from home gardeners, and bring interventions to people (such as at a prenatal class) rather than expect people to come to the intervention.

- **Consider financial sustainability.** A lot of interventions rely on grant funding which limits long-term effectiveness. Consider ways to make the project last, such as through social enterprise.
- **Focus on where the energy is.** Understand where there are opportunities and readiness for partnerships and collaboration. Frame actions in ways that are mutually beneficial. This may mean something different for each type of stakeholder (public sector, private sector, community sector, and citizens).

In July 2021, a literature review was completed by students with the Community Engaged Scholarship Institute on facilitators to accessing nutritious foods (hereafter referred to as the “CESI Student Project”).¹ This review noted that **mixed methods interventions are most effective**. Use a combination of education, policy, community engagement, and food provision (or reduction of physical and economic barriers).

Potential interventions

In Spring 2021, students of an undergraduate course on food security (NUTR 3110) at the University of Guelph completed literature reviews about interventions to improve food access.²⁻⁵ Each aspect of food access (physical access, economic access, nutrition knowledge and food skills, and marketing, promotion, and celebration of food) was explored in a separate review. The findings from these reviews are summarized in Tables 1–4. After each table are additional considerations identified through community outreach mentioned above (i.e., surveys, interviews, consultations, and the CESI Student Project).

While the interventions have been organized by aspect of food access, many interventions address (or could be designed to address) multiple aspects of food access.

Physical access

Table 1. Interventions to increase physical access to nutritious foods, identified by a literature review completed in Spring 2021 by students of the NUTR 3110 course at the University of Guelph.

Intervention	How it may increase access	Considerations
Community gardens	<ul style="list-style-type: none"> • May benefit new Canadians by cultivating a sense of community, growing familiar foods, and participating in cultural traditions. 	<ul style="list-style-type: none"> • Limited evidence for the benefit to other populations.
Farmers’ markets	<ul style="list-style-type: none"> • Allow local producers to sell directly to consumers. • Can be established in a variety of spaces with little 	<ul style="list-style-type: none"> • May have less variety of foods (can’t fulfill entire shopping list at the market). • May be more expensive.

	<ul style="list-style-type: none"> • permanency, planning, or investment. 	<ul style="list-style-type: none"> • Hours are more restricted than grocery stores.
Mobile food vending (e.g., a fresh produce bus)	<ul style="list-style-type: none"> • Flexible location which can increase reach and accessibility. • Can target children and youth. 	<ul style="list-style-type: none"> • High initial cost and needs sustainable funding.
Vending machines	<ul style="list-style-type: none"> • Can provide nutritious food options in settings with limited options, such as recreation settings. • Increasing availability does increase sales, even when less nutritious options are available. 	<ul style="list-style-type: none"> • Nutritious options tend to be perishable; if they do not sell, they may be wasted, and it may not be profitable.
Nutritious foods in convenience stores (e.g., Healthy Corner Stores)	<ul style="list-style-type: none"> • Would be most successful in communities without a grocery store within walking distance or with other transportation constraints. 	<ul style="list-style-type: none"> • May put a burden on store owners; would need support with planning or financial assistance.
Food hubs to expand the distribution and availability of local foods	<ul style="list-style-type: none"> • Allow producers to sell products in lower income communities without the infrastructure costs associated with traditional farmers' markets. • Can sell directly to institutions like schools, hospitals, LTC homes, and childcare centres. 	<ul style="list-style-type: none"> • Challenges include developing an appropriate site and achieving economic sustainability.
Food subscriptions (e.g., Groceries from the SEED)	<ul style="list-style-type: none"> • Eliminate the challenge of transportation. • Has been done successfully in school settings. 	<ul style="list-style-type: none"> • Challenges include infrastructure and economic sustainability.

Additional considerations identified through community outreach:

- Train the trainer. Have store owners train each other (e.g., how to keep produce fresh).

- Need to consider how people can pay for the food. Rural areas don't have all banks, so getting cash from an ATM may be a challenge. Consider setting up an agency account with a local bank that people can draw funds from.
- Quality and quantity of food available in various settings needs to be considered. For example, can we portion sizes be reduced. Need to also foster healthy attitudes about eating and acknowledge special occasion foods (i.e., like choosing fries when at a hockey game).
- Better transportation options can help increase access to food. However, residents may not be able to afford transportation options and may not own a personal vehicle. Bringing food closer to where residents live may be helpful
- Farmer in residence may help community gardens address small problems before they become bigger challenges.
- Local grocery store managers indicated they would be interested in collaborating with community partners to implement actions.
- Convenience store owners report that their customers visit their store to buy snack foods; interventions in these stores would need to also focus on changing consumer attitudes related to these stores.
- Pharmacy owners may be interested in promoting food access programs, but not likely a good location for an intervention.
- Local hospitals may be good locations for nutritious foods to be available, but competing priorities often overshadow food access. Need to find champions in the setting (e.g., dietitians, food service).
- Revenue systems in municipal recreation settings may act as barriers to change (e.g., vending machines provide considerable revenue for municipalities).
- In local recreation settings efforts to increase nutritious food options in concessions have not been successful in the past; the foods do not sell, even though they are requested by patrons. Interventions in these settings have also been limited by grant funding.
- Concessions that are run by private vendors could be an opportunity because the City chooses the contracts. The Indigenous chef behind Nish in Toronto took over the canteen last summer at Crawford Lake Conservation Area in Milton – this made it a destination.
- Geddes Street Market in Elora may be a good partner or example. It is a corner store that sells primarily vegetables and fruit, prices comparable to Zehrs. Owner is interested in promoting nutritious foods.
- Vending machines in subway system in New York may be a good example. They are stocked twice a week and leftovers are sold at a local grocery store. New machines can track perishability. Need to consider factors like location, feasibility of moving stock from machine to machine.

Economic access

Table 2. Interventions to increase economic access to nutritious foods, identified by a literature review completed in Spring 2021 by students of the NUTR 3110 course at the University of Guelph.

Intervention	How it may increase access	Considerations
Price offset and reduction	<ul style="list-style-type: none">• Pricing discounts of 20–25% applied to vegetables and fruit can increase the total amount purchased.• More effective when combined with nudging.	<ul style="list-style-type: none">• Needs consideration for financial sustainability and feasibility.
Taxes and subsidies	<ul style="list-style-type: none">• Applying discounts to nutritious foods can increase purchasing, particularly for those with economic barriers.• Higher taxation of less nutritious foods can deter purchasing.	<ul style="list-style-type: none">• Money saved when buying subsidized nutritious foods may be spent on more the expensive and less nutritious foods.
Food vouchers (e.g., Fresh Food Rx, Market Bucks)	<ul style="list-style-type: none">• Individuals that receive food vouchers do have increased intake of those foods.	<ul style="list-style-type: none">• Often focused on vegetables and fruit, which does not increase access to other nutritious foods like whole grains and plant-based proteins.
School food programs	<ul style="list-style-type: none">• Can reduce financial strain on parents and improve food insecurity in households, as well as for individual students.	<ul style="list-style-type: none">• Requires a lot of funding, infrastructure, and stakeholder support.
Local food production	<ul style="list-style-type: none">• Local food environments can offer food at lower and more stable prices.• Benefits the environment and local economy.• Food hubs that connect farmers directly to consumers cut costs of food and make food available to purchase any time.	<ul style="list-style-type: none">• Would need consideration for the food production, distribution, and retail sectors.

Universal basic income	<ul style="list-style-type: none"> • Ensure everyone has sufficient income to cover basic needs, including foods. 	<ul style="list-style-type: none"> • Large-scale policy likely out of the scope of this project.
Housing status	<ul style="list-style-type: none"> • Ensuring affordable housing can free up income for people in poverty to cover the cost of food. 	<ul style="list-style-type: none"> • May be out of the scope of this project.
Food charity	<ul style="list-style-type: none"> • Some people do not have any money for food. • Providing money or gift cards may be more effective when providing emergency food relief. 	<ul style="list-style-type: none"> • Not an effective approach to addressing food insecurity. • Many barriers to accessing these programs, such as inaccessibility, ineligibility, and stigma. • Providing money or gift cards may be more effective when providing emergency food relief.

Additional considerations identified through community outreach:

- Rural Wellington peer support workers (upcoming initiative) could be employed for various food access program initiatives in the County.
- Among local residents, income-based solutions (e.g., guaranteed annual income, increased social assistance rates, gift cards, and living wages) were the highest-rated option among a list of actions that could help residents access nutritious foods.
- Improved accessibility and availability of foods at food charity programs was also noted as something that would help food insecure individuals; however, income-based solutions were more highly rated (note that, while most survey respondents had accessed charitable food programs, the sample included clients of these programs).
- “Double up bucks” in New York State, Michigan is an example of a food voucher program. Using a card, people can get double the vegetables and fruit with every purchase, up to \$20 a day.
- Local food voucher program in Wellington County called Market Bucks had good uptake, but people with limited transportation to farmers’ markets sometimes refuse the vouchers (e.g., they can’t get a ride or borrow a car). Also, some farmers’ markets are small and have a lot of non-food vendors.

- Sliding scale markets by The SEED are effective overall at offsetting cost for low-income individuals, but some market locations are not profitable. Need about 200 participants per market to offset all program costs.
- Local grocery store managers reported they would be interested in implementing pricing strategies, such as a subsidy program, to lower the cost of nutritious foods.
- Woodstock grocery donation program, Operation Sharing (Food for Friends), is a food voucher example that uses gift cards to support autonomy. Families and individuals in need of emergency food assistance receive a specially designed food card in pre-determined denominations as an alternative or supplement to the food bank. Individuals can use these cards to do their grocery shopping at any of the participating grocery stores in Woodstock and Ingersoll. Program is funded through the donation of quarters by the public at local businesses. This method of providing food assistance is vital for those with special diets or serious health issues. In Guelph-Wellington, donations from grocery stores to food banks stay within the community. A program like in Woodstock addresses some of the challenges with traditional food charity and the public may trust it more as it is more transparent.
- Chit systems in store have been seen. People write down what they can't pay for and come back to pay later.
- For Guelph Wellington Seniors Centre food service, challenges include distribution to isolated/highest need individuals, resident preferences for less nutritious options, and residents' inability to cook/reheat at home.
- Garden gleaning and donations of home garden crops is a local production example. May have food safety concerns and requires infrastructure. Previous small scale fruit gleaning project in Guelph (Apple Seed Collective) needed a lot of attention.
- Subsidized housing properties have land that could be used for community gardens and growing food

Nutrition knowledge and food skills

Table 3. Interventions to increase access to nutrition knowledge and food skills, identified by a literature review completed in Spring 2021 by students of the NUTR 311O course at the University of Guelph.

Intervention	How it may increase access	Considerations
School-based programs	<ul style="list-style-type: none">• Programs in schools, particularly cross-curricular programs, are likely the most effective.	<ul style="list-style-type: none">• Need to engage families and ensure children can practice knowledge and skills at home.• Requires a lot of resources and stakeholder support (i.e., school community, parents).
Food safety programs	<ul style="list-style-type: none">• Identified in the literature as a gap in knowledge.	<ul style="list-style-type: none">• Need to consider the barriers to practicing safe food handling, not just a lack of knowledge (e.g., laziness, inconvenience, time, financial resources).
Cooking programs	<ul style="list-style-type: none">• Can lead to sustained behaviour change.• Programs provide social support and social interaction.	<ul style="list-style-type: none">• Need supportive infrastructure and there are limits on reach.
Digital education programs	<ul style="list-style-type: none">• Can reach a broad audience.	<ul style="list-style-type: none">• Would need consideration of best practices for nutrition education to ensure effectiveness.

Additional considerations identified through community outreach:

- School programs often face resource limitations. Recommendations for effective school-based interventions include incorporating culturally appropriate nutrition education; offering teaching professional development opportunities on the topic of nutrition; developing written school nutrition policies; actively engaging families and community members.
- For women, blogs have been a successful knowledge translation tool that allows for interaction between users and nutrition professionals.

- The University of Guelph's Guelph Family Health Study ran online classes related to food skills and food waste (had to pivot from in-person classes due to pandemic). Food was delivered to participants' homes and this program worked well because participants were in their own space, using their own tools.
- Opportunities to grow food and recipes/ideas for low-cost nutritious meals were highly rated options for the public that would help increase their access to nutritious foods. However, individuals at increased risk of food insecurity rated these two options much lower.

Marketing, promotion, and celebration of food

Table 4. Interventions to increase marketing, promotion, and celebration of nutritious foods, identified by a literature review completed in Spring 2021 by students of the NUTR 3110 course at the University of Guelph.

Intervention	How it may increase access	Considerations
Point of purchase marketing techniques (e.g., product placement, nudging, etc.)	<ul style="list-style-type: none"> • Improves convenience and encourages choosing nutritious foods. • Can facilitate education. 	<ul style="list-style-type: none"> • May be especially effective in institutional food service settings, such as hospital or workplace cafeterias.
Social media and social marketing (e.g., text messages, e-mails, YouTube videos, sponsorship)	<ul style="list-style-type: none"> • Nudging can encourage nutritious choices. • Can facilitate education. • May be especially effective at targeting youth and young adults. 	<ul style="list-style-type: none"> • Consumers may be more likely to choose nutritious foods if they are marketed for having a lesser environmental impact than when marketed for health benefits.
Menu placement and labelling	<ul style="list-style-type: none"> • Health star ratings, traffic light labelling, and other types of labelling encourage people to choose more nutritious foods. • Making nutritious foods more prominent on menus can also influence choices. 	<ul style="list-style-type: none"> • Labelling based on taste may be more effective than labelling based on nutritional quality.

Additional considerations identified through community outreach:

- In addition to health benefit as a motivator, could focus on environmental and community benefits of a nutritious eating pattern
- The University of Guelph's Guelph Family Health Study is working on "nudging" interventions to reduce household food waste for families enrolled in the study
- In recreation settings, food could be marketed in a way that connects to the activities occurring there (e.g., nutritious foods as "fuel"). Marketing for nutritious options needs to target children.
- Grocery store managers reported they would be interested in implementing product placement and promotion strategies, such as modifying store layout.
- An example of a digital tool is the SmartAppetite app (London, Ontario) which connects eating suggestions, recipes, and local vendors.

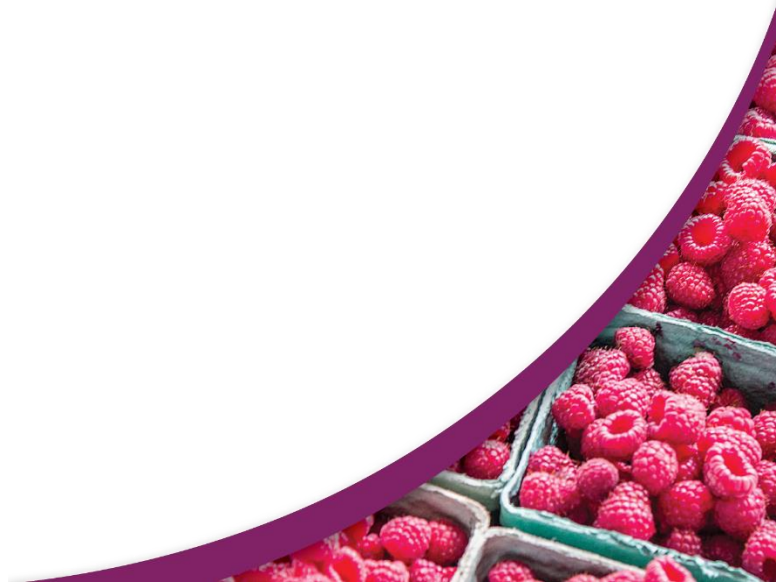
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Section 1:

Physical Access

“Physical access refers to the number and kinds of food retail outlets where people live, work, learn or play. It includes the location of food retail outlets and the ease of reaching those outlets, the availability of nutritious foods within those outlets, and how those outlets can adapt to individual needs.”^{11,12}



1.1

Community food environment



1.1 Community food environment

Key Highlights

Across Guelph–Wellington there is a greater number and wider distribution of less nutritious retail food outlets (e.g., convenience stores and limited-service restaurants) compared to grocery stores, markets, and other sources of nutritious foods. Many areas in Guelph–Wellington are not within a short walking distance to a grocery store and few are near a budget-conscious grocery store. People who live in rural areas of Wellington County need to travel further to get to nutritious food outlets. Given the distribution of less nutritious retail outlets, residents may be choosing highly processed foods due to convenience and exposure.

There are many options for online grocery shopping in Guelph–Wellington, with 60% of grocery stores offering the service as well as 3 virtual grocery stores. Mapleton, Minto, and Wellington North have few options for online grocery shopping and the cost of delivery is higher for orders to these townships. Having access to the Internet may be a barrier to accessing online grocery services – particularly for people with low incomes or living in rural areas.³⁵ Food delivery apps can increase geographic access to retail food outlets, offering delivery from retailers up to 11.4 km away. These retailers tend to be restaurants and convenience stores, which could impact eating patterns by increasing the access to less nutritious retail outlets. In Guelph, residents could order from as many as 200 retailers. Fewer retailers are available in Wellington County, with Mapleton, Minto, and Wellington North not serviced at all. For areas that do not have local restaurants available, the cost of delivery is significantly higher.

Certain neighbourhoods and townships have minimal access to nutritious foods, while other areas are saturated with opportunities to purchase less nutritious options. Four townships in Wellington County and six neighbourhoods in the City of Guelph have been identified as geographic priorities for engagement and interventions based on proximity to retail outlets, density of outlets, and ON-MARG ranking. Spatial maps provide a birds-eye view, and it is worth exploring whether access is indeed challenge for residents of these areas to determine what types of interventions would be helpful and welcomed.

Perceptions of residents may be more strongly related to dietary behaviors than the objective spatial measures we reviewed³⁶. Some people may shop at stores near their workplace or school. Others may base their decisions on their food and nutrition knowledge or values. Future interventions should be multi-faceted and consider personal experiences and motivators of residents.

Background

The **community food environment** includes the geographic location, type, and accessibility of food outlets.¹² The community food environment matters because geographic access to food can affect our food purchasing and eating patterns. For example, if the nearest grocery store is a 30-minute walking distance and there is no public transit or safe bicycle routes, a person may rely on buying food from a variety store nearer to their home with fewer nutritious choices.

There are several geographic terms commonly used to describe community nutrition environments.

- A **food desert** is a neighbourhood with poor geographic access to nutritious foods. For example, a neighbourhood without a grocery store.³
- A **food swamp** is a neighbourhood with an overabundance of less nutritious foods. A neighbourhood without a grocery store but with several fast-food restaurants and convenience stores may be considered a food swamp.³
- A **food mirage** is a neighbourhood that appears to have good geographic access to nutritious foods, but the food is not affordable.³
- A **food haven** or **food oasis** is a neighbourhood with the best possible geographic access to nutritious foods.⁴

More recently, food access advocates have identified that these geographic terms are problematic for reasons such as^{5,6}:

- These terms have been coined and attributed to a community by outsiders (e.g., researchers). Many people living in these areas do not, and never would, refer to their community as a food desert, swamp, or mirage.
- These terms overlook the history, resilience, and strengths of a community. A desert, for example, suggests a place is devoid of food and food culture, which couldn't be further from the truth.
- These terms are stigmatizing. Deserts, swamps, and mirages are not a place most people want to live.
- These terms imply that physical barriers to accessing nutritious food are naturally occurring, but this is not true. Food access issues are rooted in systemic issues.

The purpose of assessing the community food environment is to identify potential barriers to accessing nutritious foods, support conversations with residents to gain a deeper understanding of their experiences related to food access and identify effective actions to increase food access. Use of the four geographic terms defined above does not support the purpose of the Food Environment Assessment. Additionally, given the criticisms of these terms (outlined above) and their potential to do harm, the Nutritious Foods Workstream has committed to not use these terms when describing the community food environment in Guelph-Wellington.

Findings

Proximity to retail food outlets in Guelph-Wellington

Retail food outlets are locations where food is sold, such as grocery stores, farmers markets, convenience stores, and restaurants. **Nutritious** retail food outlets offer primarily nutritious foods, although ultra-processed foods may also be available. Nutritious retail outlets include grocery stores and markets. **Less nutritious** retail food outlets, such as convenience stores and limited-service restaurants, offer primarily ultra-processed foods.

The absolute distance from a nutritious retail food outlet is generally not associated with food purchasing or eating patterns.⁹⁻¹¹ That is, whether a grocery store is one block or twenty blocks away may not impact food choices, per se. People choose stores based on a variety of factors, including cost, quality of food available, availability of specialty food items, proximity to workplace, school, or frequented bus route, and neighbourhood safety.^{10,12,13} However, in neighbourhoods without convenient access to outlets that sell nutritious foods, people must travel farther to shop for nutritious foods. The time and costs associated with transportation can pose a barrier for many people – particularly people with limited financial and transportation resources.^{4,14-16}

In November and December 2020, a representative sample of 600 Guelph-Wellington residents was surveyed about their experiences with food access and food insecurity during the COVID-19 pandemic. Among respondents who noted that accessing nutritious food was challenging, only a third (33%) said that transportation was a barrier. In the Spring of 2021, a sample of 95 Guelph-Wellington residents at increased risk of food insecurity were also surveyed about their experiences with food access and food insecurity during the COVID-19 pandemic. Over half (58%) of respondents in that sample said that transportation was a barrier. As one respondent shared, “I hate taking the bus with bags of things.... And when there is a lot of people I won't get on [because of COVID-19]. And then my transfer runs out, so I need more money for the bus... its [sic] just hard.”

While specific barriers to accessing nutritious foods may differ depending on financial resources, solutions to increasing access may be effective for multiple groups. About half of respondents to both surveys said that being able to get food closer to where they live, and more transportation options would be helpful to access nutritious foods.

Using data from Wellington-Dufferin-Guelph Public Health, municipal business registries, and a review of locations on Google Maps, nutritious and less nutritious retail food outlets in Guelph-Wellington were mapped using geographic information system (GIS) software. The map reflects all outlets identified as of July 30, 2021.

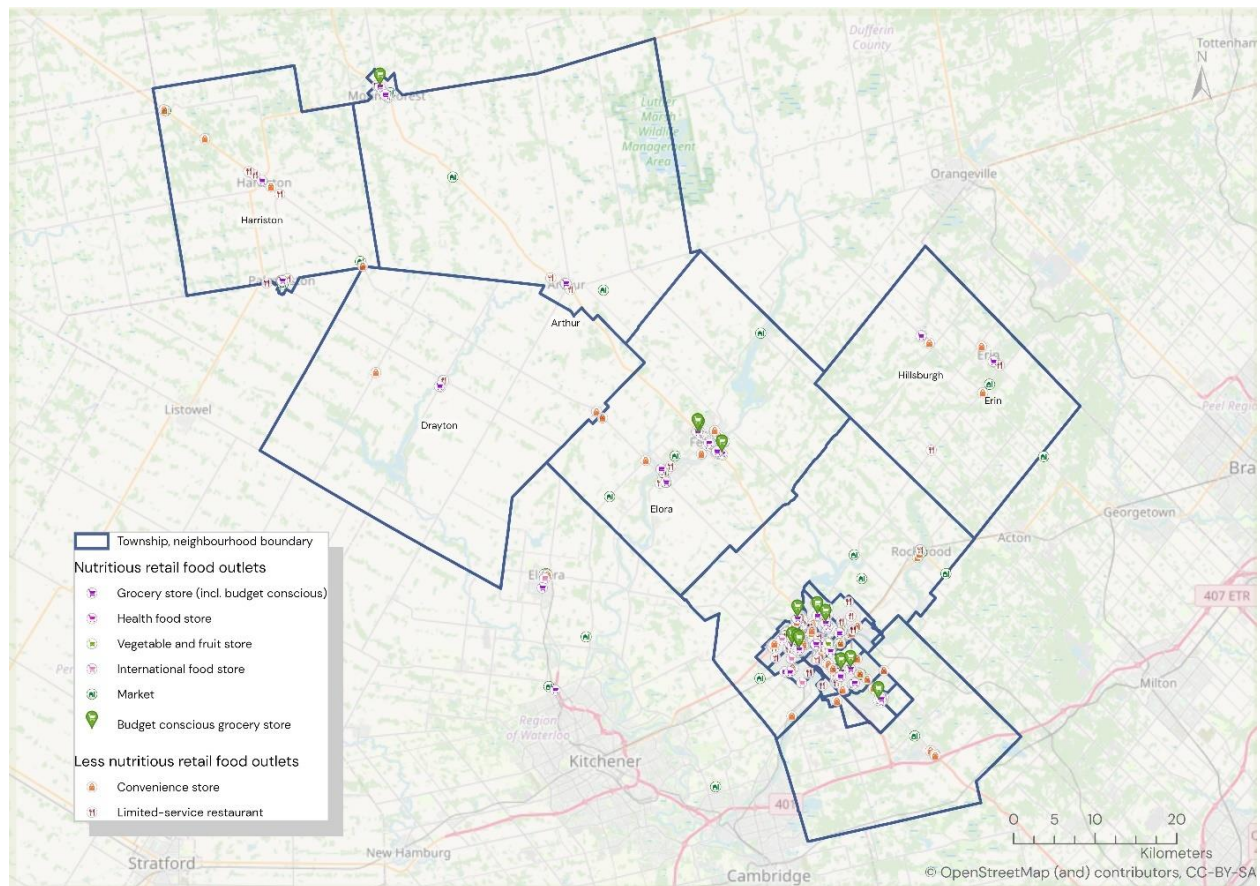
Nutritious retail food outlets included grocery stores, international food stores (that sold fresh vegetables and fruit), health food stores (that sold fresh vegetables and fruit), vegetable and fruit stores, and markets (including farmers' markets, seasonal markets, farm stores, and country markets). Online retail food outlets (such as online grocery stores and markets), and food subscription services (such as community supported agriculture) were excluded.

Less nutritious retail food outlets were defined as convenience stores (which included variety stores, gas stations, dollar stores, and non-mass merchant pharmacies) and limited-service restaurants. Non-mass merchant pharmacies were excluded because they did not sell food (see Chapter 3: Consumer food environment).

Figure 2.1 shows the retail food outlets in Wellington County included in the map. Note that there are significantly more outlets located in Guelph than in the County townships. Further, the outlets in the townships are primarily located within municipalities. As such, people who live

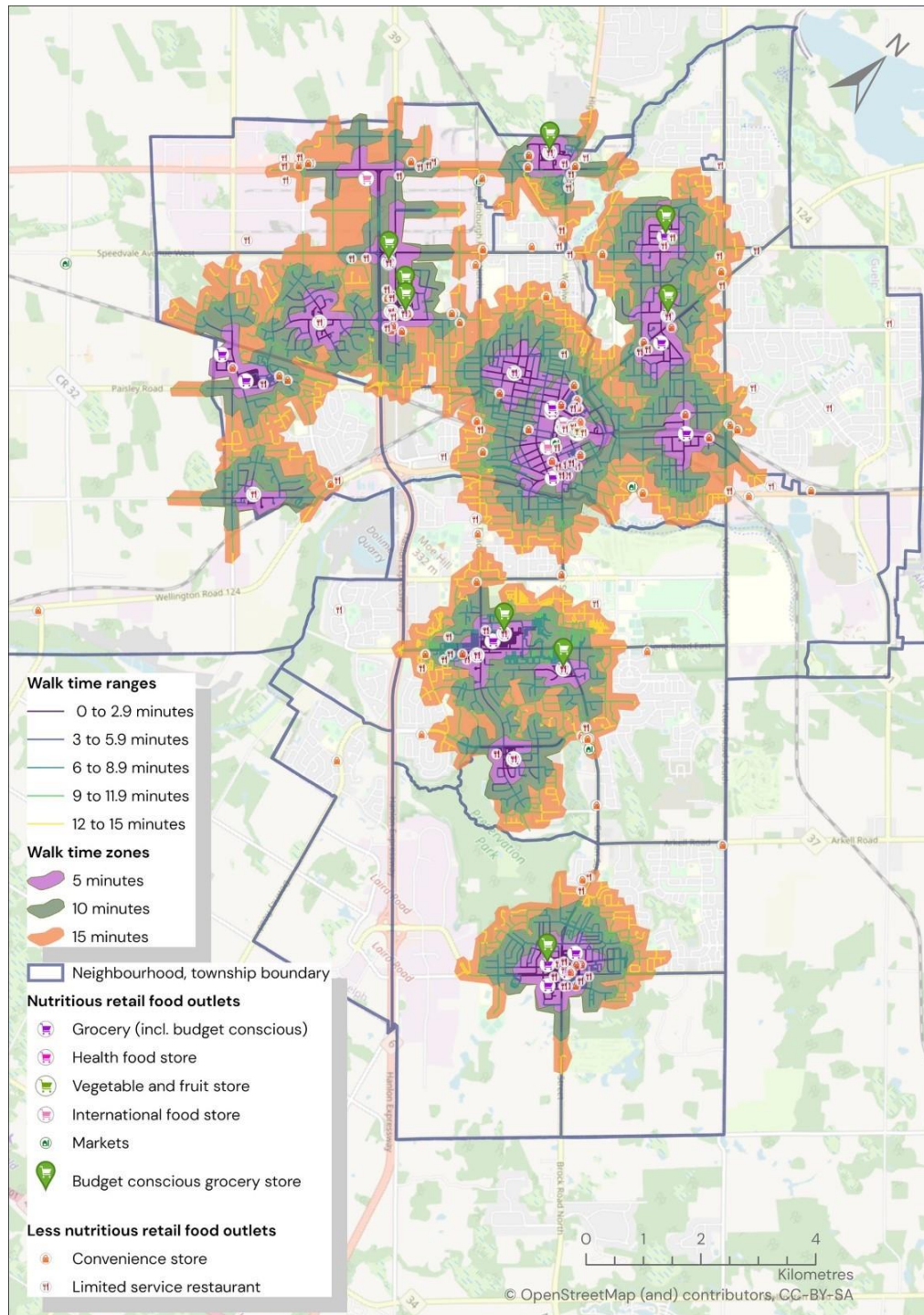
in rural and remote areas of Wellington County would need to travel into these areas to access outlets like grocery stores and restaurants.

Figure 2.1 Nutritious and less nutritious retail food outlets in Wellington County



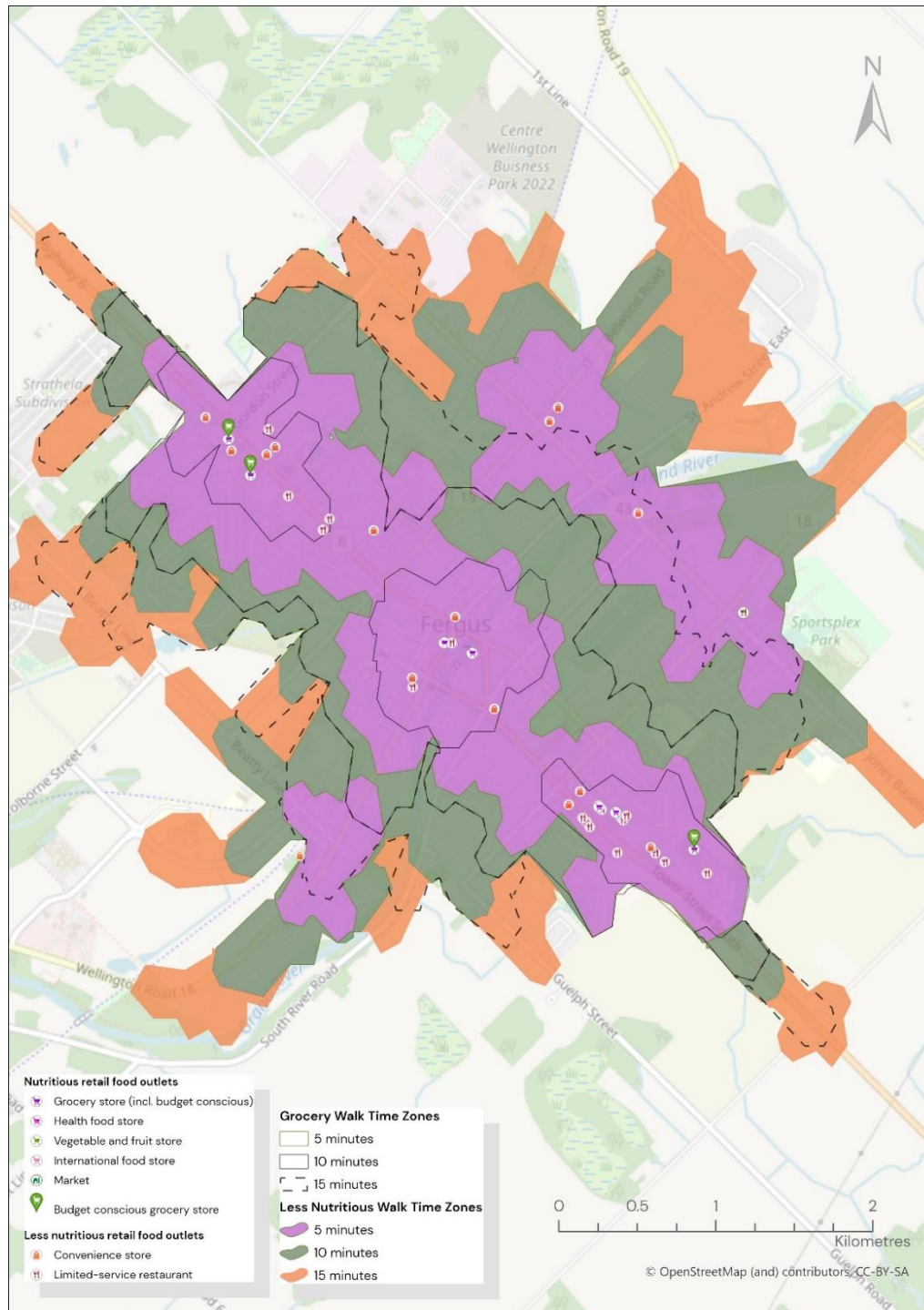
While people living within populous areas like municipalities may have greater access to grocery stores and other retail food outlets, there are pockets within these areas that may have limited access. Figure 2.2 shows walk times around nutritious retail outlets (excluding markets) in Guelph. Areas shaded purple are within a 5-minute walking distance; areas shaded green are within 10 minutes; areas shaded orange are within 15 minutes. As can be seen in the map, neighbourhoods in the east end of the city (Brant and Grange Hill East), university district, and south end of the city have many areas that do not have grocery stores within a close walking distance.

Figure 2.2 Walk times to nutritious retail food outlets in Guelph



Similarly, some areas within Wellington County municipalities that may have limited access to nutritious retail food outlets. Figure 2.3 shows walk times around nutritious retail outlets (excluding markets) in Fergus. As with Guelph, all residents in Fergus may not live within a close walking distance of a grocery store or other source of nutritious foods.

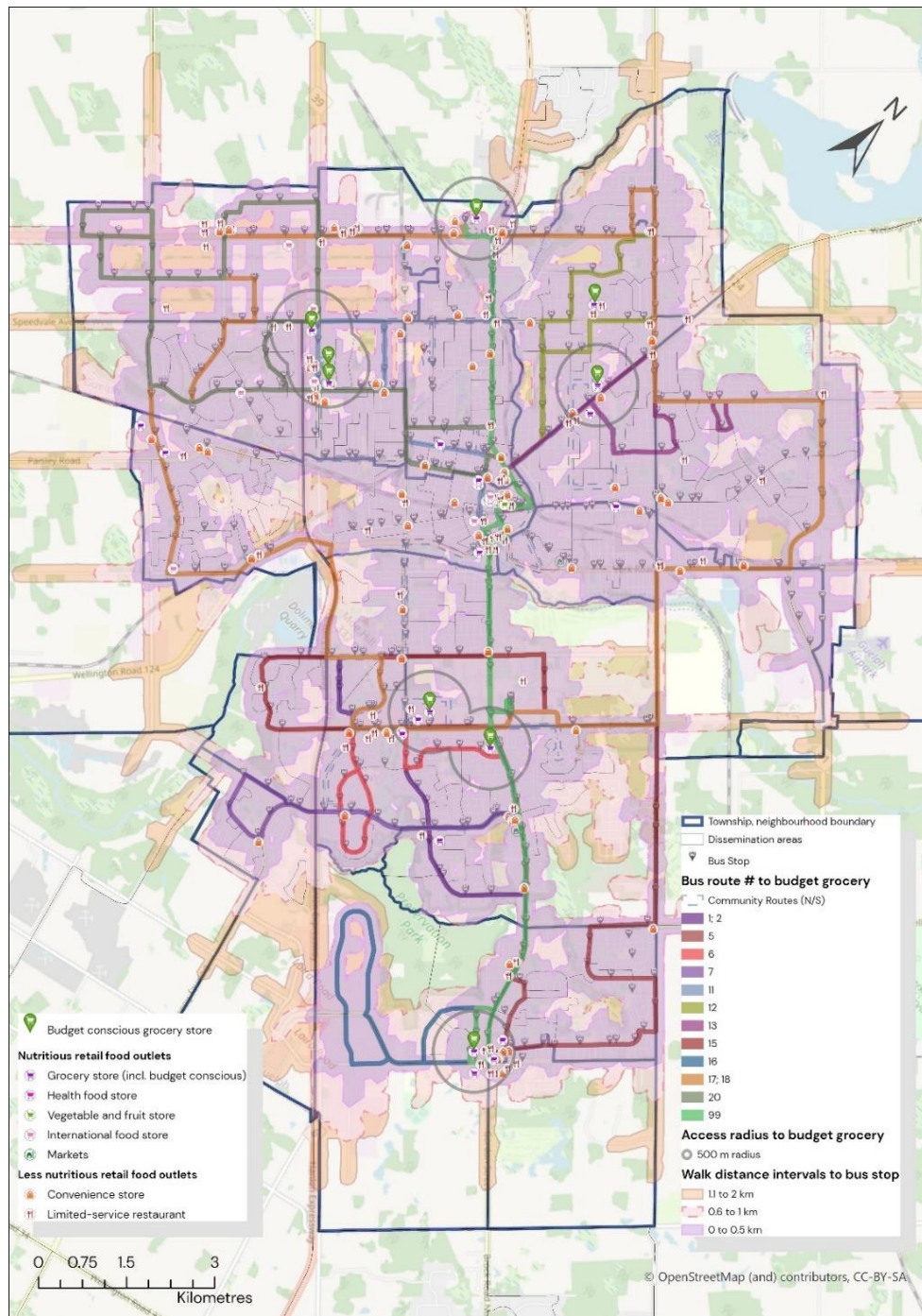
Figure 2.3 Walk times to nutritious retail food outlets in Fergus



In Guelph, public transit can increase access to nutritious retail outlets, particularly for people who do not have a personal vehicle. Figure 2.4 shows retail food outlets (excluding markets) within 500 metres (about a 5-minute walk) and 1 kilometre (about a 10-minute walk) of a bus stop. The distance is based on road networks, as opposed to a straight radius. Transit routes, as of September 2021, are also shown. Note that all outlets are within 500 metres of a Guelph

Transit bus stop. However, not all residents may live within a close walking distance to a bus stop. As such, people may need to walk longer than 10 minutes total to a grocery store. This map also does not consider bus travel time or transfers. The total time needed to travel to a grocery store for some residents may be considerably more than 10 minutes.

Figure 2.4 Areas in Guelph within a 500 metre and 1 kilometre walking distance from a Guelph Transit bus stop



Proximity to affordable retail food outlets

Food affordability is the cost of food relative to the amount of income available for food (also known as purchasing power).¹⁰ Canadian data suggest that food price is the most important determinant of food purchasing for low-income households and those experiencing food insecurity.¹⁰ Budget-conscious grocery stores that offer lower prices than average may be more affordable for people living in low-income households. However, given that not all grocery stores are budget-conscious, people who shop at these stores may be more likely to travel farther from home.¹³

In Figures 2.1 through 2.4, budget-conscious grocery stores are indicated with a green upside-down teardrop icon. These stores are marketed as budget-conscious or “discount” grocery stores. A previous study of grocery store affordability in Guelph confirmed that the cost for nutritious foods at these stores was generally lower than other stores.¹⁷ For budget-conscious stores in Guelph-Wellington that were not included in that previous study, data collected from audits conducted in August 2021 (see Chapter 3: Consumer food environment) was used to confirm that their costs were generally lower.

As can be seen in the maps, there are few neighbourhoods in Guelph-Wellington have close access to a budget-conscious grocery store. Notably, Fergus and Mount Forest are the only two municipalities in Wellington County with a budget-conscious grocery store. There is a wholesale grocery store in the west end of the City of Guelph which sells food in bulk quantities at lower unit prices. However, this format of food buying may not be accessible for all residents. For example, it may be difficult to transport bulk quantities of food for people who do not have a personal vehicle.

Interestingly, all budget-conscious grocery stores in Guelph are located within a 500-metre walking distance from a bus stop (see Figure 2.4 above). Public transit may help to increase access to affordable, nutritious foods for residents that do not live near a budget-conscious grocery store. However, depending on where they live, some residents may still need to transfer routes to get to one of these stores which can be a challenge when shopping for groceries.

While this data shows the general price differences between stores, it does not consider sales, coupons, and other promotions that could make other types of grocery stores more affordable. In July 2021, eight Guelph-Wellington residents participated in a focus group pilot study.¹⁸ While the pilot was primarily exploring effective methods of engaging residents, part of the discussion focused on how they typically access food. Participants of the focus groups noted that they frequently use grocery flyers to plan shopping lists around sales. While coupons were not a common tool, many used grocery apps for discounts and loyalty points.

Density of retail food outlets in Guelph-Wellington

Compared to proximity, the number of nutritious retail food outlets compared to less nutritious outlets in a particular geographic area (for example, a neighbourhood or town) may better predict food purchasing and eating patterns. Neighbourhoods with an abundance of convenience stores and limited-services restaurants, which primarily offer ultra-

processed foods, may influence people to make less nutritious choices, even if that neighbourhood offers access to more nutritious outlets, as well.^{9,19–21} The less nutritious outlets “crowd-out” the more nutritious options.

In general, there is a greater number and wider distribution of less nutritious retail food outlets (such as convenience stores and limited-service restaurants) in Guelph–Wellington as compared to nutritious outlets. Figure 2.5 shows the walk times around both nutritious and less nutritious retail food outlets in Guelph. Note that more areas in Guelph are located within a 5-minute walking distance to all types of outlets, as compared to just grocery stores (refer to Figure 2.2 above).

Figures 2.5 and 2.6 illustrate the access (within 1 kilometre) to nutritious retail food outlets (grocery stores, vegetable and fruit stores, and markets) compared to less nutritious retail outlets (convenience stores and limited-service restaurants) in Guelph–Wellington dissemination areas. The darkest areas are within 1 kilometre of many outlets; the lightest areas are within 1 kilometre of few outlets. With regards to the colours, pink areas are within 1 kilometre of more nutritious retail food outlets, compared to less nutritious; the blue areas are within 1 kilometre of fewer nutritious retail food outlets, compared to less nutritious. Only a few areas in Wellington County have comparatively greater access to nutritious retail food outlets.

Figure 2.6 Ratio of access to nutritious to less nutritious retail food outlets in Guelph–Wellington dissemination areas

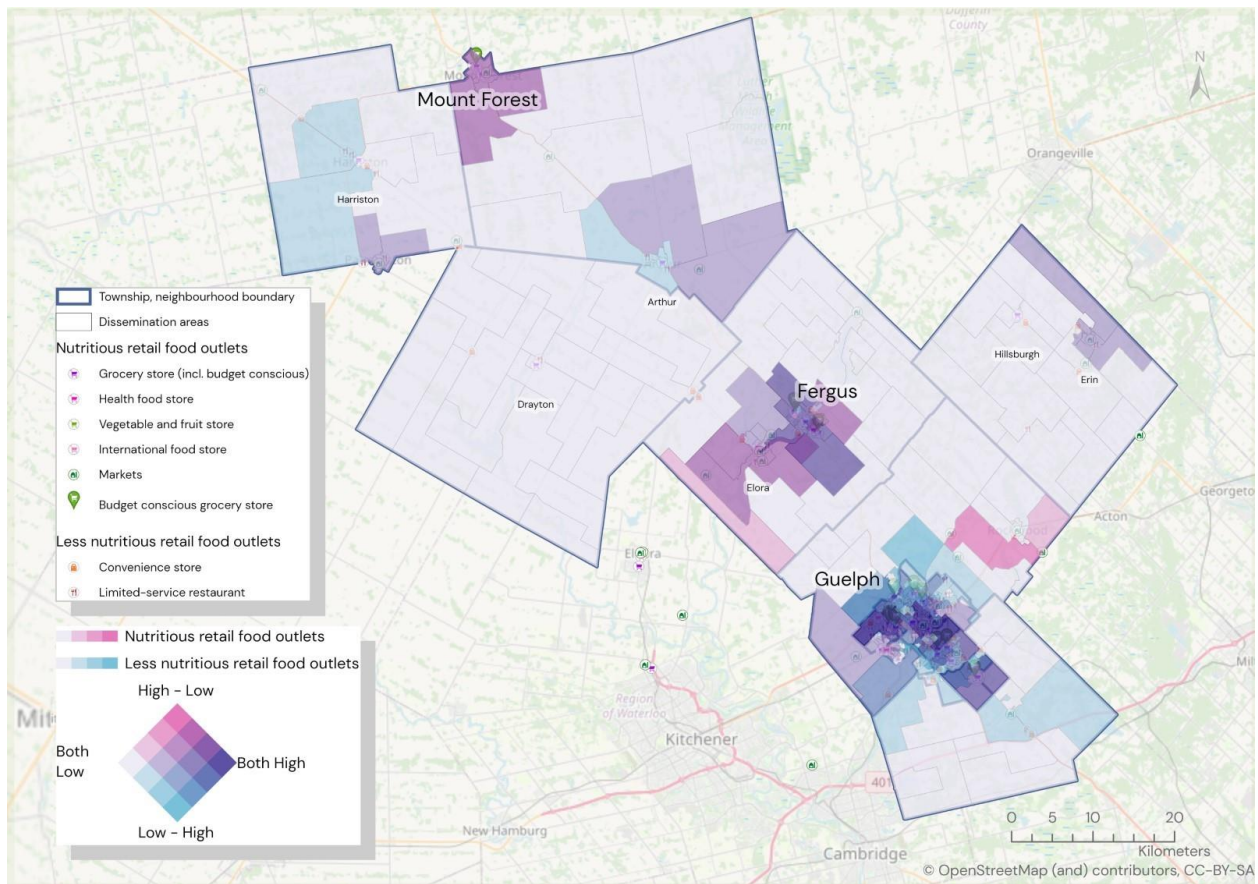
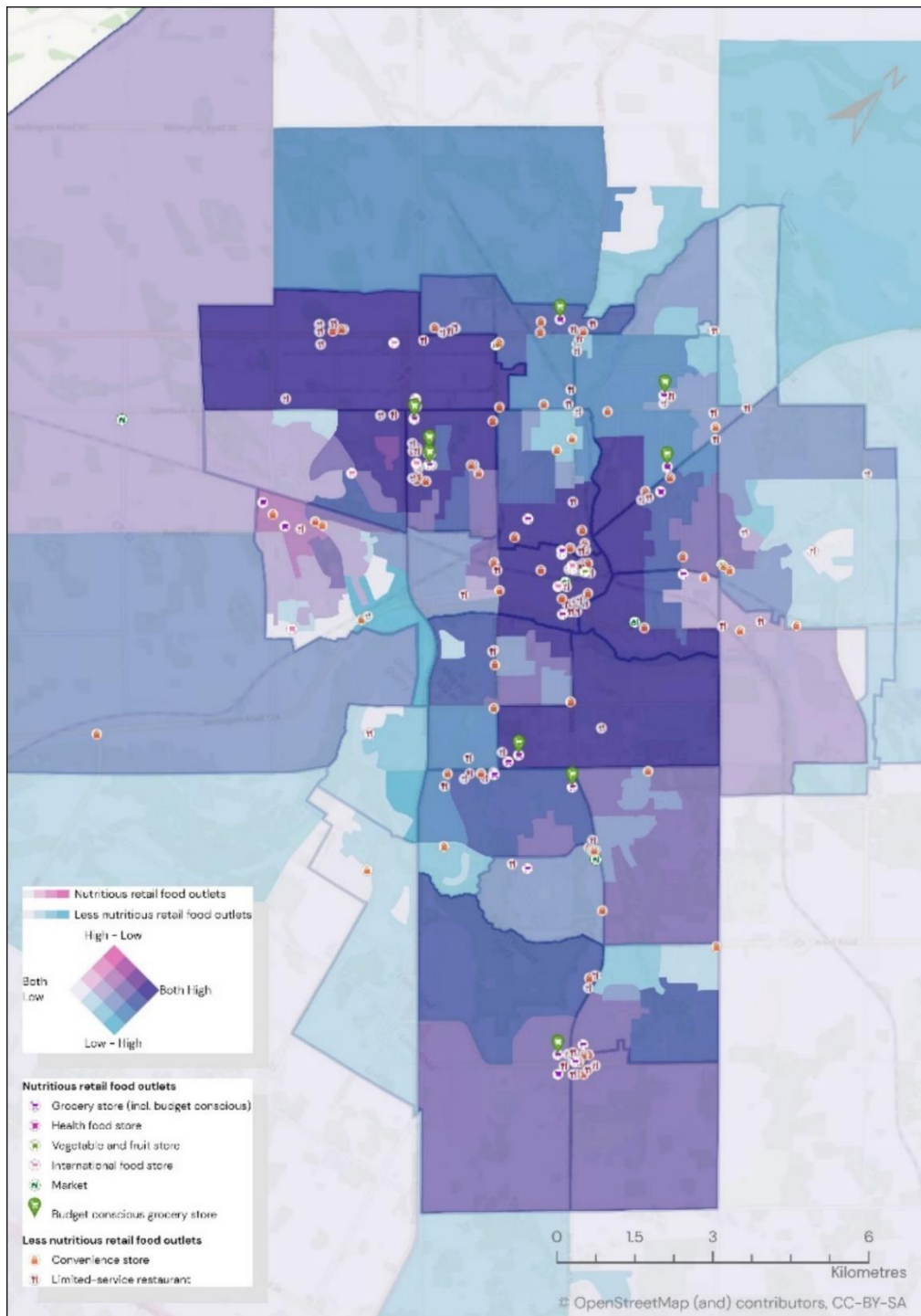
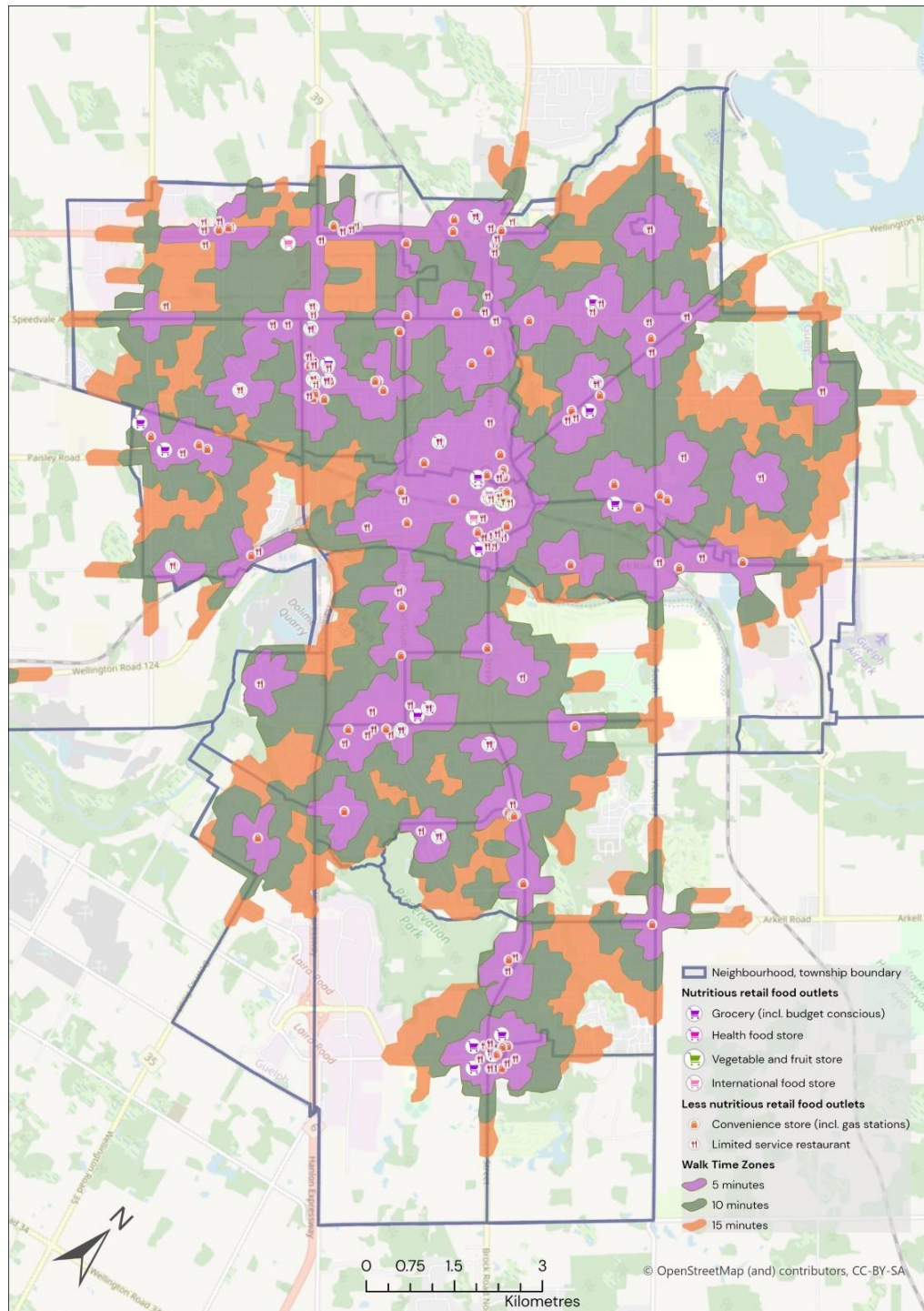


Figure 2.7 Ratio of access to nutritious to less nutritious retail food outlets in Guelph dissemination areas



Convenience stores and limited-service restaurants tend to be concentrated in the same areas as grocery stores. However, these less nutritious retail food outlets are also located in areas without close access to a grocery store. That is, there are more areas in Guelph that are near convenience stores and limited-service restaurants than are near grocery stores.

Figure 2.8 Walk times to nutritious and less nutritious retail food outlets in Guelph



Relationship between the community food environment and health equity

Health equity is the absence of unfair or avoidable differences in health among groups of people.²² Health equity implies that everyone should have a fair opportunity to attain their full health potential and that no one should be disadvantaged from achieving this potential.

Health inequities are socially determined. That is, differences are caused by systems, policies, and social norms that provide greater advantages (or disadvantages) to some groups of people.²² The social determinants of health are non-medical factors that influence health outcomes and can influence health equity in positive and negative ways. For example, educational attainment, income, housing, and social inclusion.

Access to retail food outlets has frequently been understood in the context of health equity and the social determinants of health. In the United States, neighbourhoods at higher risk of health inequities tend to have less access to nutritious retail food outlets – and greater access to less nutritious outlets.²³ In contrast, neighbourhoods in Canada at higher risk of health inequities tend to have greater access to both nutritious and less nutritious retail food outlets.^{4,11,13,24–31} However, these neighbourhoods may also have a greater proportion of less nutritious outlets compared to nutritious outlets.^{24,31} This suggests that populations at greater risk of health inequities may also face greater risk to their nutritional health by virtue of the type of retail food outlets in their community.

Other aspects of the community food environment

There are other aspects of the community food environment beyond proximity and density that are important to consider when understanding 39 to nutritious food access, such as limited store hours and difficulty leaving home.

During the COVID-19 pandemic, many people limited their trips outside of the home. Among respondents to both surveys about food access during the COVID-19 pandemic (described above), isolating due to the pandemic was the top barrier reported. Other challenges included stores closing or hours changing due to the pandemic, difficulty leaving home due to disability or being a single parent, not having anyone to help with getting food, and living in a rural or remote location.

Online grocery shopping in Guelph–Wellington

Online grocery shopping can help to overcome some geographic barriers to accessing nutritious food, such as transportation and time. Prior to the COVID-19 pandemic, online grocery shopping was not a common way to purchase foods in Canada. However, as people stayed home to limit their risk of exposure to the COVID-19 virus, the use of these services increased.³²

In July 2021, a scan of 34 grocery stores in Guelph–Wellington was completed to determine the availability and cost of online grocery shopping services.

Availability of online grocery shopping

Of the 34 grocery stores in Guelph–Wellington, 3 independent grocery stores and 17 grocery stores from 8 chains offered online shopping (approximately 60% of both independent and chain grocery stores). It should be noted that many stores introduced curbside pickup and delivery services during the COVID-19 pandemic, to support customers who were self-isolating or limiting their trips outside of the home. It is unclear whether these services, or the demand

for them, will continue once the pandemic is over and people feel more comfortable returning to in-person shopping.

Most stores offer both delivery and curbside pickup (see Table 2.1). Three chain grocery stores (from two chains) only offer non-perishable foods for online orders.

Table 2.1 Number of independent grocery stores and grocery chains in Guelph–Wellington that offer delivery and curbside pickup

Type of online grocery service	Number of independent grocery stores offering the service	Number of chain grocery stores offering the service
Delivery only	0	2 (from 2 chains)
Pickup only	1	5 (from 2 chains)
Both delivery and pickup	2	10 (from 4 chains)

There are also three virtual grocery stores that provide service within Guelph–Wellington:

- **Groceries from The SEED** is an independent grocery store in Guelph that offers free delivery within Guelph. Groceries from The SEED also offers curbside pickup once a week from its warehouse in Guelph.
- **MrsGrocery.com** is an independent grocery store that sells food from local growers, producers, and businesses. They offer delivery throughout Guelph–Wellington.
- **Voilà by Sobeys** is the online grocery store from the Sobeys chain which allows customers to order grocery for curbside pickup and delivery. There are no Sobeys or Sobeys-owned stores in Guelph–Wellington that offers curbside pickup. However, Voilà by Sobeys also offers delivery from their warehouse in Vaughan, Ontario to addresses in Guelph, Guelph/Eramosa, Puslinch, and Erin.

Turn-around time from when the order is made to when customers have their groceries is 1–2 days for most stores with deliveries being made every day. Only two independent stores offer delivery twice a week.

Townships in Wellington County have fewer options for grocery delivery services, particularly Mapleton, Minto, and Wellington North (see Table 2.3). Only two independent grocery stores and one chain grocery store deliver to these three townships. Further, the chain grocery store that delivers to these townships only offers delivery of non-perishable foods. Due to fuel costs, both stores charge an additional fee when delivering to these townships.

It should be noted that two of the grocery chains that deliver to Guelph–Eramosa only deliver to Guelph addresses within that municipality. Rockwood addresses, for example, would not be serviced.

Table 2.3. Number of independent grocery stores and grocery chains offering delivery to the City of Guelph and townships in Wellington County

City or township	Number of independent grocery stores offering delivery to that area ^a	Number of grocery chains offering delivery to that area ^b
City of Guelph	4	12 (from 6 chains)
Centre Wellington	2	10 (from 4 chains)
Erin	2	9 (from 5 chains)
Guelph–Eramosa	3	9 (from 5 chains)
Mapleton	2	1 (from 1 chain)
Minto	2	1 (from 1 chain)
Puslinch	2	3 (from 3 chains)
Wellington North	2	1 (from 1 chain)

^a Includes Groceries from The SEED and MrsGrocery.com.

^b Includes Voilà by Sobeys.

Affordability of online grocery shopping

The cost of delivery varies from \$3 to \$15 plus HST, except for Groceries from The SEED which offers free delivery. Some stores offer same-day delivery for an additional \$5 to \$10. Only two stores waive the delivery fee for orders over a certain amount (one for \$50 and one for \$60). And four chain stores have a minimum order amount, ranging from \$10 to \$50.

Curbside pickup is free at most stores. Two grocery chains offer the service for \$3 plus HST. As with delivery, curbside pickup is more limited in Wellington County. Of the 15 grocery stores in Wellington County, only 5 offer curbside pickup – 4 in Fergus and 1 in Mount Forest.

Food delivery apps

Third-party food delivery apps are online platforms through which food from multiple restaurants can be ordered for delivery by a single delivery service provider. These apps can widen geographic access to food by as much as 10 kilometres.³³ However, these apps favor increased access to less nutritious retail food outlets, such as limited-service restaurants and convenience stores. Furthermore, full-service restaurants become more like fast-food restaurants in that food is purchased before it is eaten. As a result, restaurant delivery apps could lead to poor dietary outcomes by increasing the access to less nutritious retail food outlets.^{9,19–21}

In July 2021, data was collected from three third-party food delivery apps to determine the number of retailers available to residents of Guelph–Wellington, the extent to which these apps might increase physical access to retail food outlets, and the average cost of delivery. Three

addresses from each of the six Guelph wards and seven townships in Wellington County were used in the assessment. In townships with more than one municipality, addresses from up to three different municipalities were used.

Availability of food delivery

All three apps offered service to Guelph, Guelph/Eramosa, and Puslinch. The retail food outlets available to order on these apps were primarily restaurants with a handful of convenience stores and specialty food stores.

Only two apps provided the total number of retailers available. Guelph addresses had the most retail food outlets available, with one app offering delivery from 202 outlets (see Table 2.4). Fewer retail food outlets were available to addresses in Wellington County, and some apps only delivered to specific municipalities within townships. For example, one app delivered from 98 retail food outlets to Ponsonby but did not deliver to Elora or Fergus. None of the food delivery apps offered delivery to Mapleton, Minto, or Wellington North.

Table 2.4 Average number of retail food outlets available on Skip the Dishes and Door Dash to addresses in the City of Guelph and townships in Wellington County

Food delivery app	Guelph	Puslinch	Guelph/ Eramosa	Centre Wellington	Erin
App 1	202	105	71	98 ^a	44 ^b
App 2	147	50	77	14 ^c	0

^a Delivery to Ponsonby, but not Elora or Fergus.

^b Delivery to Ballinafad, but not Erin or Hillsburgh.

^c Delivery to Elora and Fergus, but not Ponsonby.

Distance of food delivery

App 2 (refer to Table 2.4 above) provided the distance from the delivery address to available retail food outlets. Distance ranged from 0.1 km to 11.4 km. In Guelph, the average distance to a retail food outlet was 3.53 km (see Table 2.5). The distance was significantly higher in Guelph/Eramosa and Puslinch ($p < 0.0001$) because there were no local retail food outlets available. That is, delivery was only available from outlets in Guelph.

Note that App 2 delivered to Centre Wellington addresses from local retail food outlets. As a result, distance was lower. Were distance measurement available for App 1, it is likely that the distance from retailer would have been higher because only Guelph outlets offered delivery through that app. Further, the average distance was likely higher in Erin compared to Guelph, too, because the available outlets on App 1 were located in Georgetown.

Table 2.5 Average distance from retail food outlets available on App 2 to addresses in the City of Guelph and townships in Wellington County

Food delivery app	Guelph	Puslinch	Guelph/ Eramosa	Centre Wellington
App 2	3.53 km	7.04 km	9.01 km	3.24 km

Affordability of food delivery

The cost of delivery from retail food outlets available on App 1 and 2 ranged from \$1.99 to \$8.99. Delivery cost on App 3 could not be determined because that app did not provide a comprehensive list of available retailers. In Guelph, the average delivery cost was \$4.07 (see Table 2.6). The cost of delivery to addresses in Wellington County is significantly higher ($p < 0.0001$), likely due to the greater distance from retailers and associated cost of fuel and time.

One exception is Centre Wellington, where the average cost of delivery was comparable to Guelph. App 2 offered delivery to Elora and Fergus from retail outlets within those municipalities, which would limit the travel time and cost of delivery. When only App 1 was considered, which delivers to Ponsonby from retailers in Guelph, the average cost of delivery (\$5.42) was significantly higher than in Guelph (\$4.08) ($p < 0.0001$). Both Guelph/Eramosa and Erin also had significantly higher average delivery costs than Puslinch ($p < 0.0001$).

Table 2.6 Average cost of delivery from retail food outlets available on App 1 and 2 to addresses in the City of Guelph and townships in Wellington County

Food delivery app	Guelph	Puslinch	Guelph/ Eramosa	Centre Wellington	Erin
App 1 and 2	\$4.07	\$4.69	\$5.55	\$3.95	\$5.69

Limitations

Nutritious and less nutritious retail food outlets were defined using a binary approach, which does not account for variations between stores. However, findings from the retail food outlet audits completed in August 2021 found that grocery stores in Guelph–Wellington consistently offered a variety of nutritious foods (see Chapter 3: Consumer food environment). Nutritious foods were less consistently available (or not available at all) in convenience stores and ultra-processed foods were more prominent.

Datasets including retail outlets and their locations in Guelph–Wellington may be outdated. Multiple secondary data sets were used to generate an initial list of food retail outlets, the most recent from 2019. Thus, there were likely outlets that have since closed or moved, and new outlets that have opened. While the data was reviewed and compared to current Google Maps food delivery app data, there is potential that some were missed. Still, previous studies have shown that community food environment measures (such as proximity and density) are highly correlated with ground-truthed data.³⁴

Not all types of retail food outlets were included in our working definition of “retail food outlets”. For example, online grocery stores, markets, food subscriptions, farm-gate food stands, and farm stores were excluded. Farm gate food stands and farm stores may be a primary way that many people access nutritious foods, particularly in rural and remote areas of Wellington County.

Section Key Terms

A glossary of key terms related to nutrition, food processing, food environments, and food access is included in Appendix A.

Nutritious foods are the foods that should be consumed regularly as part of a nutritious eating pattern. They include unprocessed and minimally processed vegetables and fruits, whole grains, proteins foods (with an emphasis on plant-based protein foods), and water.⁷

Unprocessed foods come from plants or animals without any industrial processing.⁸ Spring and tap water are also included.

Minimally processed foods are unprocessed foods altered in ways that do not add any new substance (such as salt, sugar, or fat) but often involve the removal of parts of the food.⁸ Processing techniques typically preserve the food and extend its duration, aid its use, preparation, and cooking, and improve its palatability.

Ultra-processed foods are formulations of industrial ingredients and other substances derived from foods, plus additives.⁸ The purpose of ultra-processing is to create products that are convenient (durable, ready-to-eat, -drink, or -heat), attractive (hyper-palatable), and profitable (cheap ingredients). Excess consumption of ultra-processed foods is associated with excess consumption of sodium, sugar, and saturated fat and an increased risk of chronic disease. Overconsumption of these foods should be avoided.

The **community food environment** refers to the geographic location, type, and accessibility of food outlets. Accessibility includes features like proximity to a public transit route, hours of operation, and whether there is a drive-thru option.^{1,2}

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1.2 Municipal recreation settings



1.2 Municipal recreation settings

Key Highlights

Municipal recreation settings have the potential to promote and enable health behaviours among a large proportion of the community. However, the foods available in these settings are primarily ultra-processed foods, such as pizza, hot dogs, fried foods, sweet and salty snacks, and sugary drinks. In rec centres 100% of food available in vending machines are sweet and salty snacks and 95% of beverages are sugary drinks because this is what patrons are buying. The availability and prominence of ultra-processed food, and the fact they are offered in combination with physical activity, can negatively influence the food preferences and eating patterns of patrons, particularly children. While this assessment focused on recreation settings, the findings may also reflect the food environment within other institutional settings with concessions, cafeterias, and vending, such as workplaces and hospitals.

Increasing access to nutritious foods in recreation (and other institutional) settings may face challenges related to cost-effectiveness and sustainability. Previous interventions have been unsuccessful due to low popularity among patrons and resource limitations. Rec centre managers have added nutritious options in the past and are interested in testing new strategies. Any actions to increase access to nutritious foods must be preceded by consultation with patrons to better understand their expectations for food service within recreation settings. Further, this consultation should consider Guelph patrons and Wellington County patrons separately, as concessions appear to be more popular in the County.

Vending poses a unique challenge because foods need to be shelf stable. Most of the possible vending offerings are ultra-processed. This means that traditional snack and drink vending machines may not have a place in a nutritious food environment. Removing drink machines could be an alternative, given that water fountains and water bottle filling stations are prevalent in recreation settings. However, this could result in considerable loss of revenue for municipalities and may not be widely accepted among patrons. It's worth considering what culture we want to promote in these settings, considering entertainment and the enjoyment of food as well.

Finally, the food made available by the recreation setting itself is not the only food to consider. The food brought in by clubs and teams for fundraisers, as well as food trucks and other catering, contribute to the food environment within recreation settings and can influence eating patterns of patrons. Interventions may consider addressing these sources of food, such as through policy or education.

Background

Municipal recreation and sport settings promote health by offering a space for people to access physical activities and gather as a community for events. However, the foods available and promoted within these settings are often ultra-processed foods, such as pizza, hot dogs, fried foods, sweet and salty snacks, and sugary drinks, which undermine efforts to promote

health.¹⁻⁵ The greater availability of ultra-processed foods – or absence of nutritious choices – can negatively influence food purchasing and eating patterns.

Children may be particularly vulnerable to the effects of these food environments.⁶ Food attitudes, preferences, and behaviors established in childhood may track through to adulthood.⁷⁻¹¹ Recreation settings are frequented by children, which can expose them to food and food marketing that skews their preferences and eating patterns toward ultra-processed foods. The marketing that occurs in recreation settings, such as advertisements and sponsorships, can also influence food preferences.^{12,13} Furthermore, when food is promoted in combination with physical activity it can lead children (and adults) to perceive it as more nutritious.¹³

Findings

Food environment in Guelph–Wellington recreation settings

To understand the availability and prominence of nutritious foods in municipal recreation settings, the recreation department staff at the City of Guelph and five of the seven townships in Wellington County were interviewed to collect information about the number of concessions and vending machines in municipal arenas and indoor sports complexes (arenas) and outdoor parks. When available, concessions menus and vending inventory were also collected.

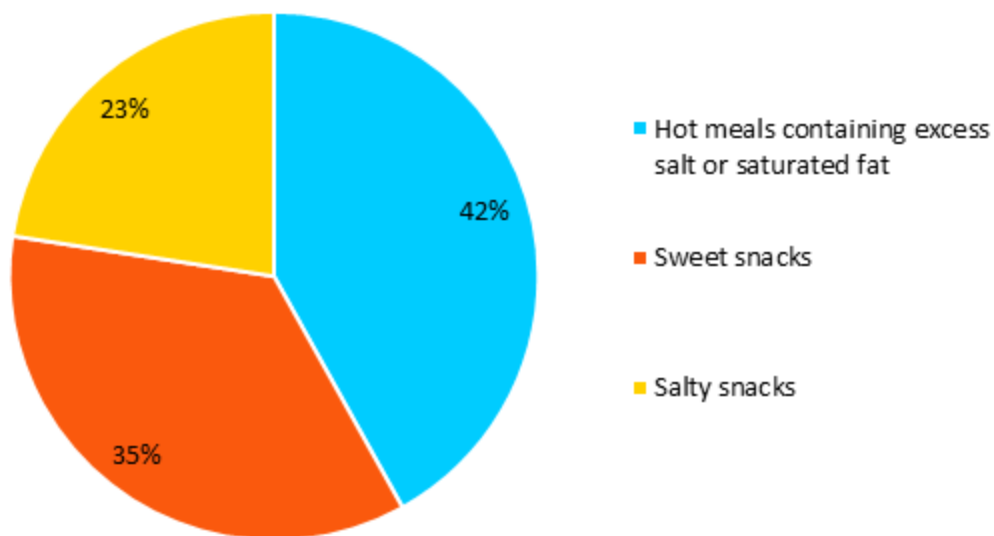
Concessions

In Guelph, the Sleeman Centre is the only arena with concessions that only operate during paid admission events. The full-service restaurants at the Sleeman Centre and Evergreen Seniors Community Centre have been excluded from this assessment because they are not concessions. There are also two outdoor parks with concessions in Guelph: Riverside Park and David E. Hastings Stadium. These are contracted to independent operators by the City of Guelph and the Guelph Royals baseball club, respectively.

In the Wellington County townships that were interviewed, all arenas have concessions. There is also one outdoor concession at the Moorefield Ball Park in Mapleton township and another at the Rockmosa Park in Guelph/Eramosa township. There may be other outdoor concessions in the townships that were not interviewed. Like the outdoor concessions in Guelph, the Moorefield concession is contracted out by the township to an independent operator.

All recreation department staff that were interviewed described the concessions menus at arenas and outdoor parks as mostly fried foods, sweet and salty snacks, and sugary drinks. Three arenas in three municipalities shared their menu of which 100% of the food offerings were ultra-processed. Nearly half of menu offerings were hot meals that contain excess salt and/or saturated fat, such as pizza, hot dogs, chicken fingers, and french fries (see Figure 5.1). The remaining offerings were sweet snacks, such as ice cream, chocolate bars, and candy, and salty snacks like chips and popcorn.

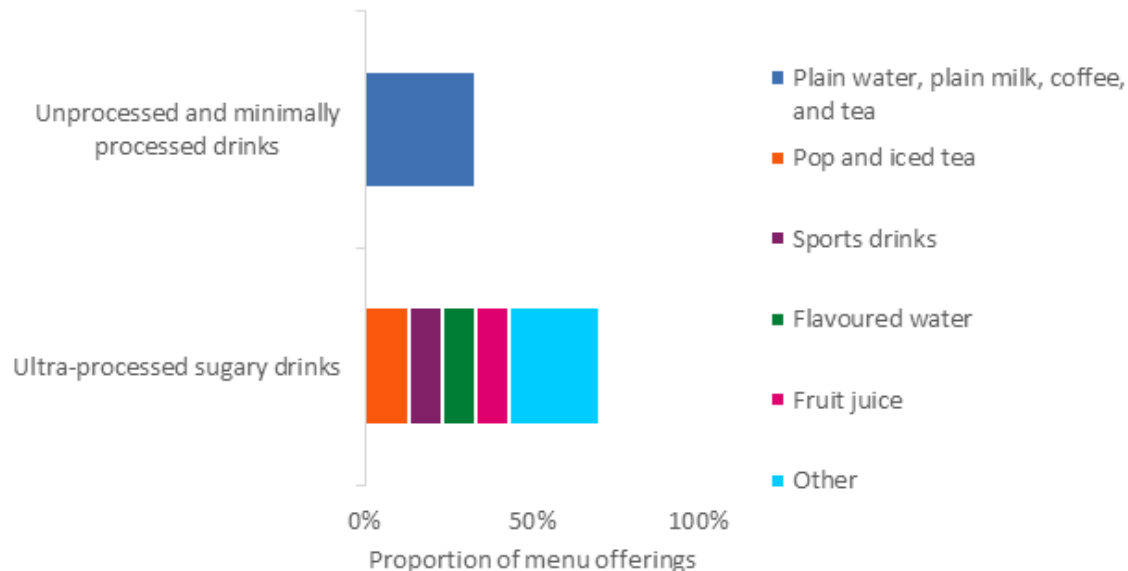
Figure 5.1 Type of concession foods available at three arenas in Guelph–Wellington and their proportion of all menu offerings



- **Hot meals** include pizza, hot dogs, sausages, french fries, poutine, and chicken fingers.
- **Sweet snacks** include ice cream bars, chocolate bars, candy, cotton candy, and butter tarts.
- **Salty snacks** include popcorn and chips.

Of the drinks offered on the three concession menus that were analyzed, only 29% were unprocessed or minimally processed, including plain water, plain milk, coffee, and tea (see Figure 5.2). The remaining 71% of drinks were ultra-processed sugary drinks, which primarily included pop, iced tea, flavoured water, sports drinks, and fruit juice. This data does not show the difference in the variety of choices of nutritious drinks compared to ultra-processed drinks. For example, there are multiple flavours of pop, flavoured water, and sports drinks while there are significantly fewer nutritious drink options. If all the varieties of each type of drink were compared, the proportion of ultra-processed drinks would be far greater.

Figure 5.2 Type of concession drinks available at three arenas in Guelph–Wellington and their proportion of all menu offerings



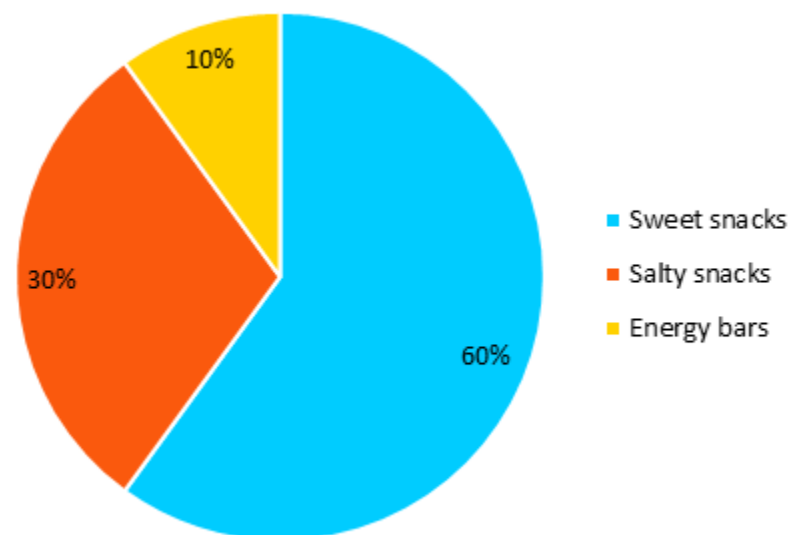
Other includes chocolate milk, hot chocolate, sweetened coffee drinks, and slushies.

Vending

In Guelph and the Wellington County townships that were interviewed, vending machines are present in all arenas. Drink machines are more common than snack machines, but both types are present in most facilities.

As with concessions, recreation department staff reported that the offerings in vending machines are primarily sweet and salty snacks and sugary drinks. One municipality also shared their vending inventory, which better illustrates the difference in variety of ultra-processed compared to nutritious food choices. Of the 42 snack items on the inventory, 100% were ultra-processed. These were primarily sweet snacks, like chocolate bars, candy, and cookies, followed by salty snacks like potato chips. Interestingly, energy bars comprised 10% of the snack items offered. Energy bars tend to be marketed as nutritious foods to consume during or after physical activity. However, they are considered ultra-processed foods and usually contain added sugars.

Figure 5.3 Type of snacks available in the vending machines of one municipality in Guelph-Wellington and their proportion of all vending offerings

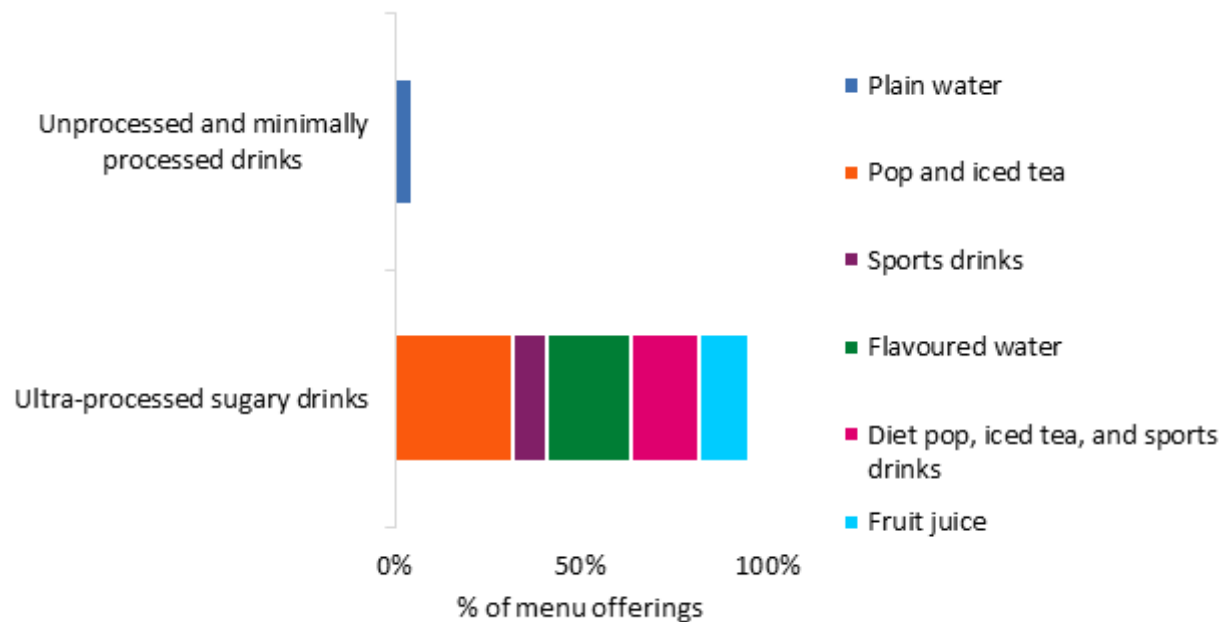


- **Sweet snacks** include chocolate bars, candy, and cookies.
- **Salty snacks** include chips and pretzels.

The analysis of drink offerings in vending machines showed that, like drinks offered at concessions, there are more nutritious options as compared to food. However, the vending inventory provided information about variety of flavours which better illustrates the prominence of ultra-processed sugary drinks in recreation settings. Of the 22 drinks on the vending inventory, only 1 (plain water) was unprocessed. The remaining included pop and iced tea, flavoured water, sports drinks, and fruit juice (see Figure 5.4).

Interesting to note is the presence of fruit juice and 0-calorie drinks, such as flavoured water and diet pop and sports drinks, which contribute more than two-thirds of the ultra-processed drinks (67%). These drinks are often marketed as a more nutritious alternative to sugary drinks. As with the inclusion of energy bars in snack machines, the prevalence of 0-calorie drinks and fruit juice could mislead community members to believe these drinks are part of a nutritious eating pattern, especially considering they are being offered in combination with physical activity.

Figure 5.4 Type of drinks available in the vending machines of one municipality in Guelph-Wellington and their proportion of all vending offerings



Advertising

Recreation department staff also described the advertising present within their recreation settings. Most advertising is limited to rink boards, which are purchased by businesses to promote their products or brand. Food-related advertising is minimal, and most often promotes a local restaurant rather than a specific food, such as pop or ice cream.

In the Sleeman Centre, in addition to rink boards, Coca-Cola branding exists on all concessions. While Coca-Cola does produce bottled water, the majority of the company's products are ultra-processed sugary drinks like pop and flavoured water. The constant exposure to this branding (particularly among children) may shift preferences and consumption toward sugary drinks over nutritious drinks like plain water and milk.¹⁴

Barriers and opportunities to increasing food access

During the interviews, municipal recreation leaders also shared their experiences and perspectives on increasing the availability of nutritious foods in recreations settings. While most have tested the idea through pilots, the main barrier they identified is that nutritious food choices in recreation settings are not cost-effective or sustainable.

Most recreation department staff described scenarios where they received requests from patrons to include more nutritious choices at concessions. However, when they changed the menus, the nutritious choices did not sell. One arena had included more nutritious concession items, such as chili, grilled cheese, apples, bananas, sliced carrots and cumpers, and milk. However, most patrons continued to buy less nutritious fare which led to considerable food waste. Another recreation setting piloted a vending machine that sold re-useable water bottles. This project was successful, due in part to the shelf-stability of re-useable water

bottles (that is, water bottles do not need to sell quickly) but was funded by a one-time grant and has since been stopped.

In general, recreation department staff noted that concessions were not a considerable source of revenue for municipalities. Interestingly, the Victoria Road and West End Recreation Centres in Guelph had concessions in the past, but they have since closed. These concessions sold traditional concession fare, but they did not generate sufficient or consistent revenue to keep operating. In comparison to concessions, recreation department staff shared that vending machines generate considerable annual revenue. They also require fewer resources than concessions, such as staff.

Many recreation department staff also noted that patrons will bring their own food to activities and events, such as restaurant take-out. As such, patrons may not rely on concessions as a primary source of food. Instead, concessions may be accessed out of convenience or because they are enticed by the sight or smell of the food. Moreover, during events at recreation settings, many clubs and teams bring their own food. For example, they may bring a barbecue, sell snacks as a fundraiser, or hire food trucks.

Limitations

Due to the COVID-19 pandemic and related restrictions, concessions have not been offered in any municipal recreation setting in Guelph-Wellington since March 2020. And many settings have also removed their vending machines or have not regularly stocked them. As such, the data presented in this section reflects the food environment in recreation settings before the COVID-19 pandemic. Thus, the potential effects of the availability and prominence of food in these settings are not influencing food choices right now. Furthermore, as recreation settings re-open post-pandemic, it is possible that the food environment will not look the same.

With the pandemic, it was also not possible to complete in-person audits of the food environment in municipal recreation settings. In-person audits would have provided greater information about the variety and prominence of foods available. Such audits would also have provided greater information about food marketing within the settings. For example, the prevalence of food-related rink board advertisements and the types of foods promoted in them.

Section Key Terms

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Unprocessed foods come from plants or animals without any industrial processing.¹⁵ Spring and tap water are also included.

Minimally processed foods are unprocessed foods altered in ways that do not add any new substance (such as salt, sugar, or fat) but often involve the removal of parts of the food.¹⁵ Processing techniques typically preserve the food and extend its duration, aid its use, preparation, and cooking, and improve its palatability.

Ultra-processed foods are formulations of industrial ingredients and other substances derived from foods, plus additives.¹⁵ The purpose of ultra-processing is to create products that are convenient (durable, ready-to-eat, -drink, or -heat), attractive (hyper-palatable), and profitable (cheap ingredients). Excess consumption of ultra-processed foods is associated with excess consumption of sodium, sugar, and saturated fat and an increased risk of chronic disease. Overconsumption of these foods should be avoided.

The **consumer food environment** refers to aspects within food retail outlets that influence food purchasing, such as the availability of nutritious foods, nutrition information, and marketing factors like product, promotion, placement, and price.^{16,17}

Food marketing and promotion refers to any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal, or consumption of foods. It comprises anything that acts to advertise or otherwise promote a food.¹⁸

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1.3

Community agriculture



1.3 Community agriculture

Key Highlights

Community agriculture spaces may increase access to nutritious foods among communities that share in the harvest. Community gardens, farms, and food forests also offer opportunities for teaching, learning, employment, and community.

57 community agriculture spaces were identified in Guelph–Wellington. Only 8 (14%) were located in Wellington County and some neighbourhoods in Guelph have limited access to agricultural spaces, particularly in the south end of the city. It may be worth exploring opportunities to build community agriculture spaces in areas that do not have close access, and in locations beyond parks and community organizations (e.g., outdoor spaces at workplaces or supported housing complexes)

While the scan of community agriculture focused on gardens, farms and forests, there are also residential gardens, bumper harvests and orchards present in the community. Finding ways to support and link these spaces to the community food system could also increase food assets.

Background

Community agriculture is the practice of growing vegetables, fruit, herbs, flowers, and livestock by a community or to be shared with a community. Community and pollinator gardens, community farms, and food forests are all examples of community agriculture.

Community agriculture can increase access to nutritious foods both for participants and the community at large.¹ Depending on the type, community agriculture can provide low-cost or free nutritious food to participants who help to grow or harvest the food. In some cases, this food may be donated to food access programs or given to community members experiencing food insecurity. Community agriculture also enables participants to learn about and practice growing food, and to better understand their food system.

Beyond food access, community agriculture can provide health, social, and environmental benefits, such as:

- Encouraging physical activity for all age groups and abilities.^{2,3}
- Promoting the mental health and wellness of participants.⁴
- Creating a safe, welcoming space and social gathering place for the community.¹
- Helping to improve the local environment by preserving and expanding green space and by encouraging people to act as environmental stewards.¹

Community agriculture may be especially beneficial to people who have recently immigrated to Canada by providing an opportunity to grow familiar foods and fostering a sense of community and cultural identity.^{5,6}

Important to note is that community agriculture, regardless of the type or how the food is distributed, is not a solution to food insecurity – that is, not having enough money to buy food.

Instead, income-based solutions, such as guaranteed annual income and living wages, are needed to effectively address food insecurity.^{7,8}

Findings

Community agriculture spaces in Guelph-Wellington

From April through July 2021, a scan of community agriculture spaces and resources in Guelph-Wellington was completed. These were identified through an Internet search and consultation with Nutritious Foods Workstream members. A total of 57 community agriculture spaces were identified, of which 49 were in Guelph:

- 19 traditional community gardens
- 9 communal gardens
- 2 community farms
- 5 food forests
- 13 pollinator gardens

Only 8 community agriculture spaces were identified in Wellington County:

- 3 traditional community gardens (2 in Guelph/Eramosa just north of Guelph and 1 in Fergus)
- 4 communal gardens (3 in Fergus and 1 in Elora)
- 1 community farm in Hillsburgh
- 0 food forests
- 1 pollinator garden in Elora

Community agriculture spaces and resources in elementary and secondary schools are discussed in Chapter 11. It is important to note that many spaces where food is grown and harvested as a community may not have been identified through the scan. This scan was completed in the middle of a growing season; new spaces may have since been established.

During the COVID-19 pandemic, community agriculture continued with restrictions on capacity and physical distancing. The Guelph Enabling Garden, however, did opt to grow only non-edible flowers during the pandemic.

Traditional community gardens

A traditional community garden invites people to rent a plot to grow and harvest their own fruits, vegetables, herbs, or flowers. Some traditional community gardens also have shared plots that people can garden as a team and share or donate the harvest.

Most traditional community gardens identified through the scan were in a public park or school and managed by a neighbourhood group. A few were managed by churches or community organizations and located on or near their space.

The number of plots available in these community gardens ranged from 4 to more than 50. Most had between 10 and 20 plots, and generally ranged from 50 to 100 square feet (4.5 to 9 square metres). Both in-ground and raised beds are common. Plots that are wheelchair accessible or at a height for people sitting were uncommon.

All but four gardens rented plots for free, on a first come first serve basis. Three gardens rented plots for \$15 to \$25 a growing season; however, one garden (the St. James Community Garden in Fergus) would refund this fee after 3 hours of volunteer labour in the garden. The Ignatius Farm Community Garden plots cost considerably more to rent (\$35 to \$205) but are much larger than most community gardens, ranging from 100 to 1000 ft² and do not require a three-year commitment.

There was no eligibility for renting plots in any of the traditional community gardens in Guelph-Wellington. However, for gardens managed by neighbourhood groups or community organizations, preference was often given to people residing within the neighbourhood.

Communal gardens

In a communal garden, people garden as a team. Some of the food they grow may be shared with or donated to local community groups or organizations.

In comparison to traditional community gardens, most communal gardens identified in the scan were managed by a church or community organization, and they grew food for their own food access programs or to donate to programs serving their community. A few communal gardens were managed by neighbourhood groups to grow food for people experiencing food insecurity in their community. While most communal gardens are open to anyone who wants to participate, they are often targeted to the members of the communities served by the organization that manages the garden, such as residents of a neighbourhood or parishioners.

Most communal gardens ranged from 100 to 400 ft². However, some were much larger. The North Riverside Neighbourhood Group Garden, for example, was about 3000 ft². Few gardens were accessible by wheelchair or at a height for people sitting.

Community farms

Community farms are much like communal gardens except they function as a social enterprise. That is, they support education and skill-development of participants while generating profit to sustain the program through selling the harvest.

Two of the community farms identified in Guelph-Wellington support youth education and skill development. The West Willow Village Neighbourhood Group Cooperative Youth Farm is targeted toward high-school aged youth. Participants can volunteer with the garden and earn a summer school entrepreneurship credit. The youth lead the growing and harvesting and sell their produce at local markets, sharing the profits among the volunteers. The Guelph Youth Farm is targeted to youth and young adults who are out of work and school, as part of The SEED's youth employment program. This farm is also led by the participants who share profits and make operational decisions about growing, harvesting, and selling the food.

The third community farm, Everdale, is a production farm focused on providing hands-on food and farming education to the community. They offer a range of programs, including team building, school groups, a summer camp, and a farmer training program. Through these

programs, community members share in growing and harvesting. Everdale's harvest is sold to community members through shares or provided to community food access programs.

Food forests

Sometimes called a "community orchard", a food forest is a mixture of fruit trees and shrubs maintained by a group of volunteers, where everyone (including local wildlife) is welcome to enjoy the fruit. While they can provide access to nutritious, affordable food, food forests are frequently used for education purposes.

Pollinator gardens

Pollinator gardens feature plants and flowers that provide nectar and pollen resources for bees and other insects. They can also provide food and habitat for other wildlife. Pollinator gardens support community agriculture by enabling pollination of plants. They also offer inspiration to residents and community gardeners looking to plant their own pollinator habitats.

Many traditional community gardens and communal gardens have also planted pollinator gardens within their spaces.

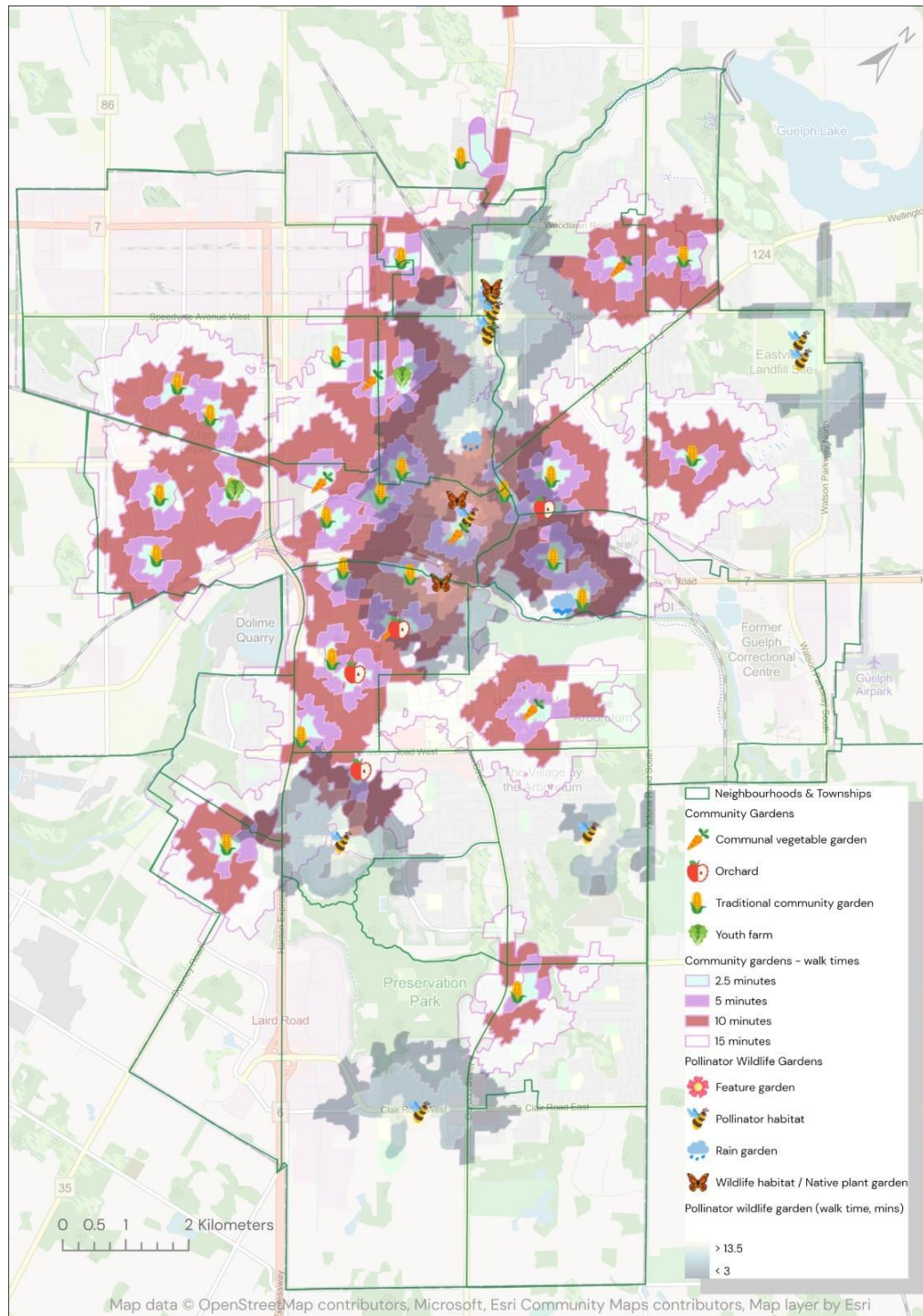
Physical access to community agriculture in Guelph-Wellington

Being within a close walking, biking, or public transit distance from a community garden or farm can help people to access these spaces. Much like living, working, or attending school near a grocery store or market can facilitate access to nutritious foods. Figure 9.1 shows a map of community agriculture spaces in Guelph as well as walk times. The purple-shaded areas around the community gardens, farms, and orchards are within a 5-minute walk of the agriculture space; the red-shaded areas within a 10-minute walk.

As can be seen in the map, there are several areas in Guelph that may not have close access to a community garden, which could impact those residents' ability to participate in the space. Notably, neighbourhoods in the northeast of the city (Grange Hill East, Waverley, and Brant) and south of Stone Road have limited access to community gardens. The University neighbourhood also has limited access; while there is one communal garden in the neighbourhood, it is run by the University of Guelph's Child Care and Learning Centre and its use is limited to staff and students as an educational tool.

Although access to pollinator gardens appears limited, many community gardens do also have pollinator gardens. Further, residential homes and businesses may have also planted pollinator gardens which can provide ecological benefits and be a source of learning and inspiration for residents.

Figure 9.1 Walk times to community agriculture spaces in Guelph



Community agriculture resources

In addition to the community gardens, forests, and farms in Guelph–Wellington, there are several resources that support people to grow food, whether at home or in community agriculture spaces.

The **TreeMobile** (a project of Transition Guelph) provides food-bearing trees and plants at very low cost to anyone in the Guelph area each Spring.

The **Guelph Tool Library** is a library for borrowing tools. Members can borrow a wide variety of tools, including gardening and landscaping tools, for a period of one week. Annual membership is \$60 for the first year and \$50 thereafter. Subsidized memberships are available for people facing financial insecurity.

The **Guelph Seed Library** lets community members “borrow” vegetable, herb, and flower seeds. Participants can take a package or a number of seeds, grow them, and save a similar quantity or more to give back to the seed library for the next year.

The **Urban Composting Field School**, a project of Our Food Future’s Food from Home = Food for Home project, designs and implements composting systems in community gardens. The Field School also provides workshops to community gardeners about composting.

The **Urban Sugaring Project** allows maple tree owners to work together to produce syrup. Participants rent a kit (a bucket, tree tap, and instructions) for \$10 and return the collected sap to a central location. The sap is pooled and boiled down by volunteers to syrup and redistributed back to the participants.

The **vegetaBALES kit** from Pfisterer Farm is a complete outdoor gardening kit that includes everything needed to grow a variety of vegetables. Targeted to people learning to garden or who have limited growing space, the kit requires no weeding, minimal time, and creates an instant raised growing area. Each kit is made from a recycled agricultural by-product and is 100% compostable.

Limitations

Community agriculture is one example of how people might grow or harvest their own food – and access education to support this activity. However, there are many ways that people engage in growing and harvesting food that does not occur within a community agriculture space. For example, growing food in a home garden, accessing education through friends, family, and social media groups, or harvesting wild food. When considering the role that growing food has in relation to food access, the varied ways in which this occurs needs to be considered.

To date, most community agriculture spaces in Guelph–Wellington have not been evaluated for their impacts on food access. It is unclear the extent to which community agriculture improves access to affordable, nutritious food in Guelph–Wellington – and whether these impacts are distributed equitably across Guelph–Wellington. This information would be valuable to guide policy making and investment decisions around community agriculture.

Section Key Terms

A glossary of key terms related to nutrition, food processing, food environments, and food access is included in Appendix A.

Nutritious foods are the foods that should be consumed regularly as part of a nutritious eating pattern. They include unprocessed and minimally processed vegetables and fruits, whole grains, proteins foods (with an emphasis on plant-based protein foods), and water.⁹

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Section 2:

Economic Access

“Economic access refers to the cost of food and a person’s ability to afford that cost.^{11,12} Absolute affordability is defined as how much it costs a person to follow a nutritious eating pattern compared to their household income. Relative affordability is the cost of a food product compared to a more nutritious alternative.”



2.1

Food insecurity



2.1 Food insecurity

Key Highlights

Food insecurity, also called household food insecurity, is not having enough money to buy food. Individuals and families living on low incomes struggle to pay the rent, other basic living costs (such as utilities, phone, childcare, clothing, medication, transportation) **and** food.³ Based on our 2020 representative survey of Guelph–Wellington residents, 1 in 8 households experience food insecurity. People with lower incomes or fewer financial assets are at increased risk of food insecurity. This lack of income is the root cause of food insecurity, and a barrier for many Guelph–Wellington residents to access nutritious foods. Many residents agree that actions to increase their income, such as guaranteed annual income, a living wage, and higher income assistance rates, would be most helpful to increase their access.

The COVID–19 pandemic led some people to experience food insecurity for the first time, for reasons such as job or income loss and increased food prices. Of the food insecure households, 63% reported this was a new experience since the pandemic began. Other households were experiencing food insecurity prior to the pandemic (or unrelated to the pandemic). This suggests that income solutions and protections, while important when responding to large–scale economic crises, should not disappear once we have recovered from the pandemic.

The systemic racism and oppression that fuels income inequality must be examined and addressed. In Guelph–Wellington, racialized individuals are at higher risk of food insecurity (as is the case throughout Canada). Without realizing the connection between racism, oppression, and food insecurity, any actions taken to increase economic access to nutritious foods could increase inequities.

Background

Economic access to food is a relationship between the cost of food and a person's ability to afford that cost (or your purchasing power).^{1,2} If nutritious food costs more than the amount of income available for food, then you do not have economic access to food. Economic access is closely related to food insecurity.

"Food insecurity, also called household food insecurity, is not having enough money to buy food. Individuals and families living on low incomes struggle to pay the rent, other basic living costs (such as utilities, phone, childcare, clothing, medication, transportation) **and** food."³

Food insecurity has a tremendous impact on health. People living in food insecure households tend to have poorer eating patterns, with lower intake of nutritious foods like vegetables and fruits.⁴ Adults living in food insecure households are more likely to suffer from chronic diseases such as diabetes, hypertension, and mood and anxiety disorders.⁵ Food insecurity also makes it difficult for people to manage existing health conditions, such as diabetes and HIV, and to afford prescription medication.⁵

Exposure to food insecurity during childhood and adolescence can have a serious and lasting impact on physical and mental health, leading to greater risk of depression, social anxiety, and suicidal thoughts as teenagers and young adults.⁵

Why households are food insecure

Households are **not** food insecure because they do not have enough food.⁸ Or because they spend too much of their income on discretionary purchases. Or because they do not shop for food with a budget. Or because they do not have adequate food skills. Or because they...

Households are food insecure because they do not have enough income.

A variety of factors can contribute to this lack of income⁸:

- Precarious work and low wages
- Lack of affordable housing
- Lack of affordable childcare
- Inadequate income assistance levels
- Mental and physical health challenges
- The increasing cost of living

Systemic racism and oppression

While anyone can be food insecure, racialized people are more likely to experience food insecurity. Across Canada, nearly 30% of Black and Indigenous households are food insecure compared to 11% of White households.⁸ We cannot address food insecurity without confronting the racism and oppression fueling income inequality.¹⁰

Findings

Prevalence of food insecurity in Guelph–Wellington

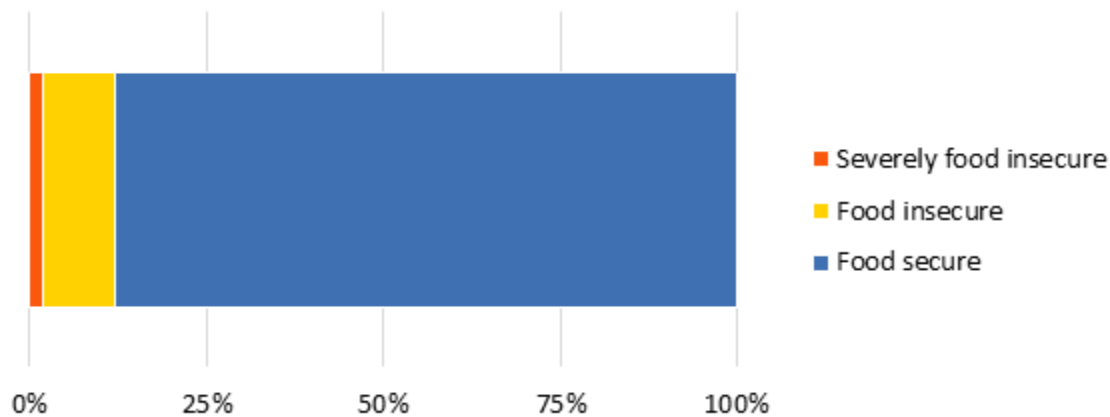
In November and December 2020, a representative sample of 600 Guelph–Wellington residents were surveyed about their experiences with household food insecurity. Food insecurity was measured using the six-item Household Food Security Survey Module short form¹¹ with the addition of asking people whether, “In the past 30 days, you and other household members worried food would run out before you got money to buy more”. Food insecurity was defined as experiencing one or more of the seven items (six from the survey module and the additional item) in the past 30 days. Severe food insecurity was defined as having experienced five or more of the seven items.

In March and April 2021, an additional 95 residents at increased risk of food insecurity were also surveyed using the same questions. This group of residents was considered a convenience sample, meaning the findings may not be reflective of all Guelph–Wellington residents at increased risk of food insecurity.

Results of the two surveys showed that 1 in 8 Guelph–Wellington households experienced food insecurity in the past 30 days (see Figure 6.1). This may be an underestimation because using the 30-day timeframe as a reference point tends to obtain a lower prevalence of food insecurity than using a 12-month timeframe.¹² Residents’ experiences ranged from worrying

food would run out before there was money to buy more, to going hungry because there was not enough money for food.

Figure 6.1 Food insecurity status in the past 30 days prior to data collection (which occurred between November 17 and December 6, 2020) of a representative sample of Guelph-Wellington residents



Households at increased risk of food insecurity

Food insecurity does not affect all households equally. Results suggest that Guelph-Wellington residents living in food insecure households were more likely to:

- Be under 55 years of age
- Be single, separated, divorced, or widowed
- Be racialized
- Rent their home
- Have an annual income less than \$40 000
- Be precariously employed, or not employed

Results also showed that more Guelph households (13.8%) experienced food insecurity compared to Wellington County households (9.8%).

Post-secondary students in Guelph-Wellington are also at increased risk of food insecurity. In a survey of undergraduate and graduate students at the University of Guelph, 23% of respondents reported living in a food insecure household, nearly half of whom were severely food insecure.¹³ Students who worked or relied on financial loans were more likely to report living in a food insecure household. Having to cover the ever-increasing costs of rent and tuition may contribute to the increased prevalence of food insecurity in this population.^{13,14}

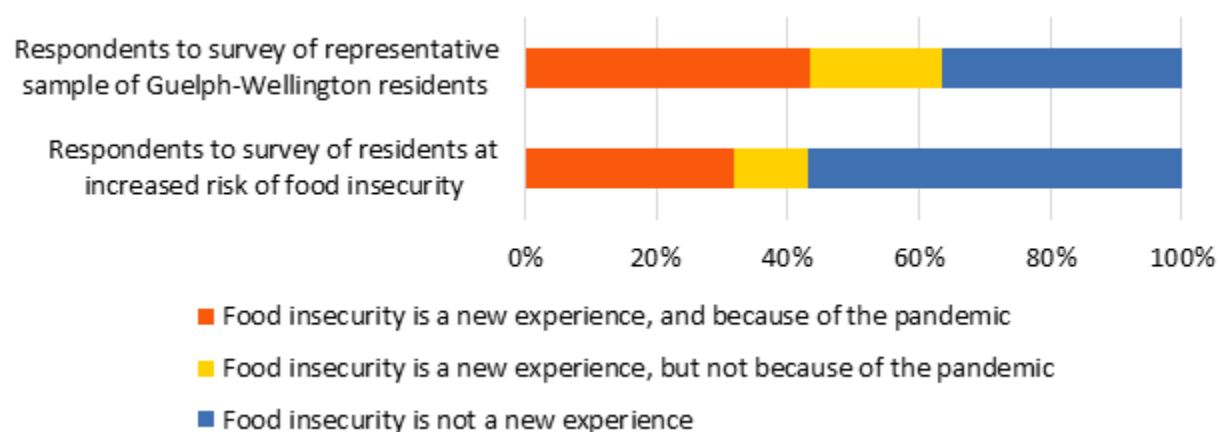
Food insecurity and the COVID-19 pandemic

Two-thirds of food-insecure Guelph-Wellington households (63.4%) reported this was a new experience that was not present before the COVID-19 pandemic (see Figure 6.2). And another two-thirds of those respondents (68.5%) believed their household was experiencing food

insecurity because of the pandemic. Reasons for this included job or income loss, increasing food prices, and inconsistent food supply.

In comparison, more than half of the respondents at increased risk of food insecurity (56.9%) reported that food insecurity was **not** a new experience for their household since the start of the pandemic – meaning that they were experiencing food insecurity prior to the pandemic. However, among those who reported that food insecurity was a new experience, most (74.2%) believed it was because of the pandemic.

Figure 6.2 Proportion of survey respondents for whom living in a food insecure household was not a new experience since the start of the pandemic



Barriers and opportunities to food access

In both surveys (Guelph-Wellington residents and residents at increased risk of food insecurity), respondents were asked about the barriers they faced to accessing nutritious foods. Only 7% of Guelph-Wellington residents reported it had been challenging to get nutritious foods to meet their household's needs. In comparison, half (50.5%) of the respondents at increased risk of food insecurity reported it had been challenging to get nutritious food.

While most respondents who had found it challenging had also reported living in food insecure households, some respondents did not live in a food insecure household and the barriers they experienced extended beyond income (see Figure 6.3). With that in mind, not having enough money for food was the third most common barrier to accessing nutritious foods for reported by Guelph-Wellington residents. For respondents at increased risk of food insecurity, not having enough money for food was the second most common barrier to accessing nutritious food.

Further, when people were asked what would help their household to access nutritious foods, income-based solutions, such as guaranteed annual income, a living wage, and higher income assistance rates, were the highest-rated options by respondents – particularly among people at higher risk of food insecurity (see Figure 6.4). Interestingly, respondents receiving income assistance were more likely to report that higher income assistance rates would be helpful. Any

income-based actions to increase access to nutritious foods should therefore be tailored to the specific income challenges faced by different populations.

Figure 6.3 Barriers that survey respondents (who reported it had been challenging, in general, to get nutritious foods) agreed or strongly agreed made it challenging

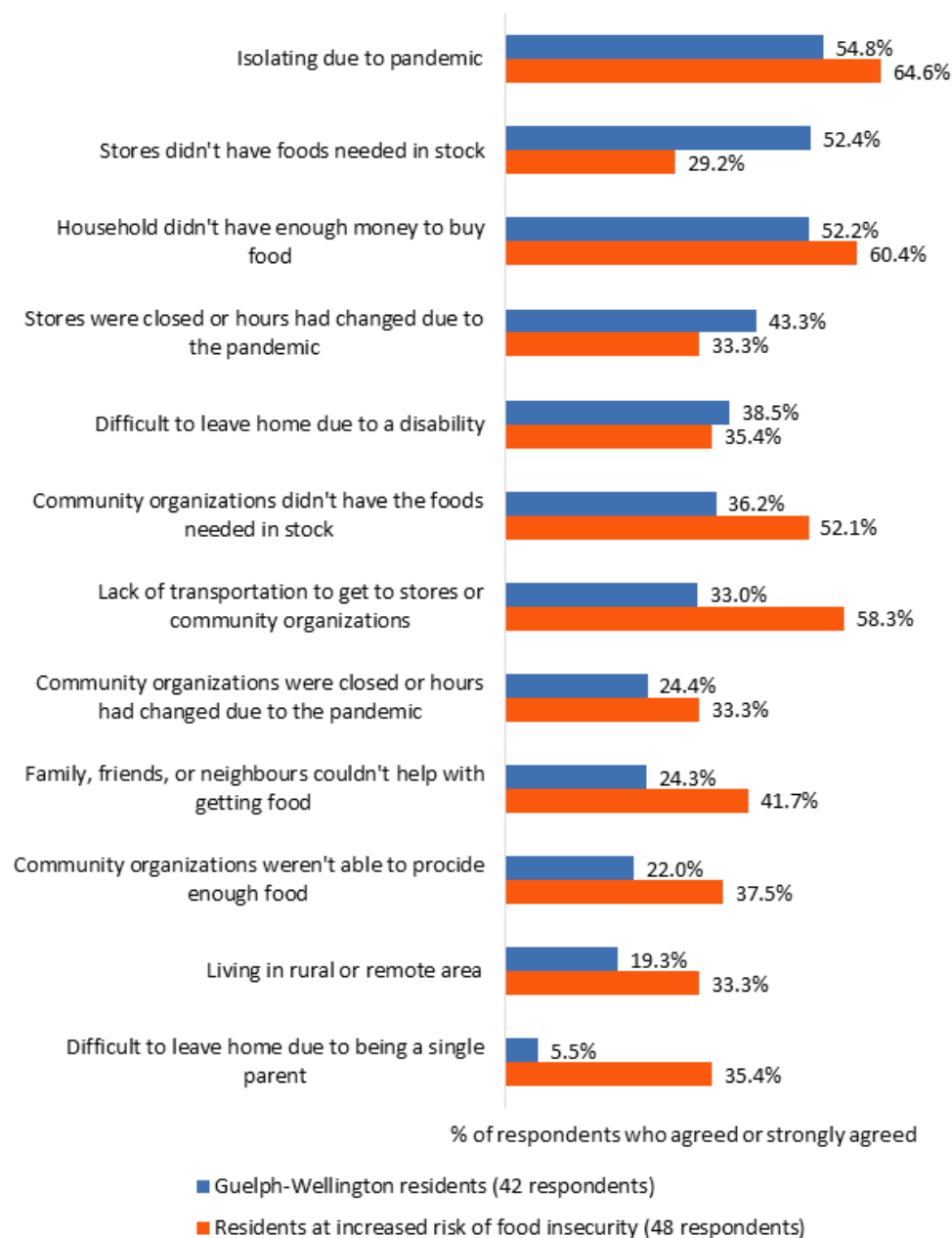
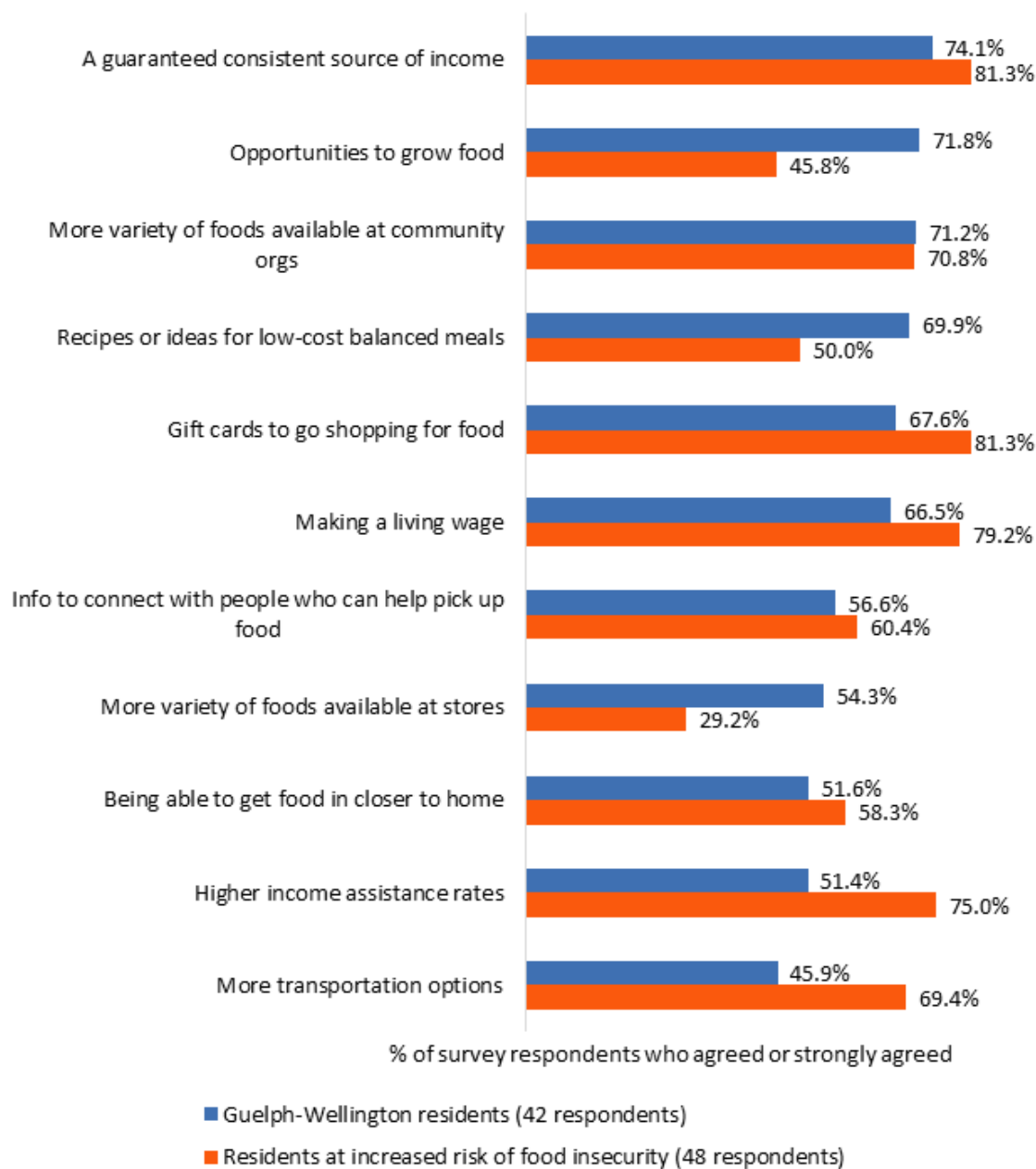


Figure 6.4 Options that survey respondents (who reported it had been challenging, in general, to get nutritious foods) agreed or strongly agreed would help their household get nutritious foods to meet needs



Nutritious Food Basket

The Nutritious Food Basket is a survey tool that measures the cost of a 'basket' of nutritious foods. The foods included in the 'basket' reflect nutrition recommendations and typical food purchasing patterns of individuals and families at the time when the data is collected. It is used to measure affordability and accessibility of nutritious foods by relating the cost of the 'basket' to the income of individuals and families.¹⁵

The most recent Nutritious Food Basket measure in Guelph-Wellington was completed in 2018 by Wellington-Dufferin-Guelph Public Health.¹⁶ The foods included in the 'basket' were based on the 2007 version of Canada's Food Guide¹⁷ and purchasing patterns reflective of the 2004

Canadian Community Health Survey results.¹⁸ Note that the cost is representative of Wellington and Dufferin counties, including the City of Guelph.

In 2018, the cost of the Nutritious Food Basket in Guelph–Wellington for a reference family was \$210.09 per week. A reference family includes a male and female, each aged 31–50 years, a male child aged 14–18 years, and a female child aged 4–8 years.¹⁵

Table 6.1 shows four income scenarios illustrating the amount of income remaining for other expenses after rent and food. When households have adequate incomes, they can afford rent, nutritious foods, and have sufficient money left over for other basic expenses like phone bills, transportation, child care, household items, clothing, and school supplies. A family of four with a median income, for example, would have \$5 716.31 (monthly) available after paying for rent and food.

It is more challenging for low-income households to afford nutritious foods. Households reliant on minimum wage and particularly income assistance have considerably less money left over for basic expenses beyond rent and food. A single person on Ontario Works fares the worst of these scenarios, needing an additional \$247.10 to cover the cost of rent and food – and even then, they would not have any income available for other expenses.

This is not to say that households with higher incomes cannot be food insecure. All households have unique financial constraints that could impact their ability to afford nutritious foods. Medical and education expenses, for example, and unexpected expenses like major auto repairs, could quickly use up those remaining funds.

Table 6.1. 2018 Nutritious Food Basket scenarios

Income and expenditures	Family of four, median income (after tax)	Family of four, full-time minimum wage earner	Family of four, Ontario Works	Single person, Ontario Works
Total income	\$7 871	\$3 603	\$2 582	0
Rent	\$1 200	\$1 200	\$1 200	51
Food	\$909.69	\$909.69	\$909.69	06.10
Funds remaining	\$5 761.31	\$1 493.31	\$472.31	247.10

Source: Wellington–Dufferin–Guelph Public Health. (2018). Nutritious Food Basket for WDG 2018. <https://www.wdgpulichealth.ca/nutritious-food-basket-wdg-2018>

Limitations

The survey of Guelph–Wellington residents was administered over the telephone with an interviewer. For any survey administered with an interviewer, respondents may provide answers that could be considered socially desirable. For example, in this survey some respondents may not have wished to portray themselves as being food insecure or having food access challenges and may have therefore under-reported their experiences.

In the survey of the random sample of Guelph–Wellington residents, as with any probability sample, some groups within the population are systematically less likely to answer surveys. Sub-populations that may be under-represented include people who do not wish to participate in surveys and people who do not have regular access to a cell or landline phone or who do not have a permanent place of residence.

In the survey of residents at increased risk of food insecurity, some groups may have been more likely to be recruited or respond to the survey due to their relationship with the organization administering the survey or other eligibility criteria. As such, there may have been some groups that were under-represented and who may have different experiences than those who responded, such as:

- People who became a client of a social service organization more recently, who may have been less likely to respond to the survey or be asked to participate by the organization.
- People who were not a client of a social service organization.
- People who were not able to complete the survey because it was only available in English.

The cost of the Nutritious Food Basket and rent, as well as estimated income for each income scenario, were based on 2018 data. The absolute and (possibly) relative values of each have likely changed and do not reflect 2021 values. Average rental costs, for example, have increased since that time.¹⁹ As has the cost of food.²⁰ However, it is expected that 2021 values would show the same inequity in the ability to afford the Nutritious Food Basket among households reliant on minimum wage and income assistance, considering that income assistance levels and minimum wage have not increased beyond the rate of inflation.^{21,22}

Section Key Terms

A glossary of key terms related to nutrition, food processing, food environments, and food access is included in Appendix A.

Nutritious foods are the foods that should be consumed regularly as part of a nutritious eating pattern. They include unprocessed and minimally processed vegetables and fruits, whole grains, proteins foods (with an emphasis on plant-based protein foods), and water.⁶

Unprocessed foods come from plants or animals without any industrial processing.⁷ Spring and tap water are also included.

Minimally processed foods are unprocessed foods altered in ways that do not add any new substance (such as salt, sugar, or fat) but often involve the removal of parts of the food.⁷ Processing techniques typically preserve the food and extend its duration, aid its use, preparation, and cooking, and improve its palatability.

Economic access refers to the cost of food and a person's ability to afford that cost.^{1,2} Absolute affordability is defined as how much it costs a person to follow a nutritious eating pattern compared to their household income. Relative affordability is the cost of a food product compared to a more nutritious alternative.

Food insecurity, also called household food insecurity, is not having enough money to buy food. Individuals and families living on low incomes struggle to pay the rent, other basic living costs (such as utilities, phone, childcare, clothing, medication, transportation) **and** food.³

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2.2

Food access programs



2.2 Food access programs

Key Highlights

39 food access programs were identified in Guelph–Wellington. The sheer number of emergency food providers in Guelph–Wellington – and the thousands of households they support monthly – highlights the magnitude of food insecurity in Guelph–Wellington. Especially considering fewer than 25% of food insecure households access emergency food services to meet their immediate needs.

Emergency food programs are essential to meet the immediate needs of people who are food insecure. At the same time, they may not be meeting the needs of all Guelph–Wellington residents who are food insecure. First, these programs rely primarily on donation. As a result, a variety of nutritious foods that meet the dietary and cultural needs of clients is not always available. Second, while these programs strive to offer a choice-based model (albeit limited by the COVID-19 pandemic), people experiencing food insecurity may still prefer to buy their own food, such as with gift cards or at a free or low-cost market. As such, it may be worth exploring ways to reduce reliance on donated food and support greater autonomy among recipients of food access programs.

Emergency food programs are not a solution to food insecurity. In the long term, there needs to be a focus on income-based solutions so that people have enough money in their pockets to afford nutritious foods that meet their unique needs.

Other types of food access programs, such as free or low-cost markets, collective kitchens, and voucher programs offer greater autonomy to people. These may also be more sustainable approaches that can be accessed by all households facing economic barriers to nutritious food access, beyond just those experiencing food insecurity. However, of the seven free or low-cost markets, collective kitchens, and voucher programs identified in the scan, six are in Guelph – the majority of which target specific populations experiencing food insecurity. It may be worthwhile to implement similar programs in Wellington County, as well as programs that reduce the cost of nutritious foods for all people experiencing economic barriers.

Background

Food access programs provide food for free or at low cost, such as sliding scale markets and emergency food services. Some also provide opportunities for food and nutrition education.

The most common type of food access programs are emergency food programs, such as food banks or free meal programs. These programs, which often rely on donations, frequently face resource limitations to provide sufficient and nutritious foods to meet the diverse needs of their clients.¹ Of course, additional resources would only help those people accessing emergency food services in the first place. There are many people who do not access these services for reasons unrelated to supply. This may be due to barriers such as limited operating hours or a lack of transportation.¹ Others may resist accessing these programs because,

despite the best intentions of staff, they feel accessing emergency food programs undermines their dignity.^{1,2}

Findings

Emergency food providers

In October 2020, a representative sample of 600 Guelph–Wellington residents was surveyed about their experiences with food access and food insecurity during the COVID–19 pandemic. Among respondents who reported living in a food insecure household, less than a quarter (22%) had accessed food or meals, at no cost, from a community organization.

In April 2021, a sample of 95 residents at increased risk of food insecurity were also surveyed. Among residents at increased risk of food insecurity, half of those who experienced challenges to accessing nutritious food reported that food access programs did not have the food needed in stock and 38% reported these programs could not provide enough food to meet their needs (see Figure 7.1). While many respondents (70%) at increased risk of food insecurity agreed or strongly agreed that more variety of food at emergency food programs would increase their access to food, a greater proportion (81%) agreed or strongly agreed that gift cards to go shopping for food would be helpful (see Figure 7.2). Interventions that allow people to select and buy their own food may be more effective than working to increase the quantity and variety of food available and emergency food programs.

Figure 7.1 Barriers that 48 survey respondents at increased risk of food insecurity (who reported it had been challenging, in general, to access nutritious foods) agreed or strongly agreed made it challenging

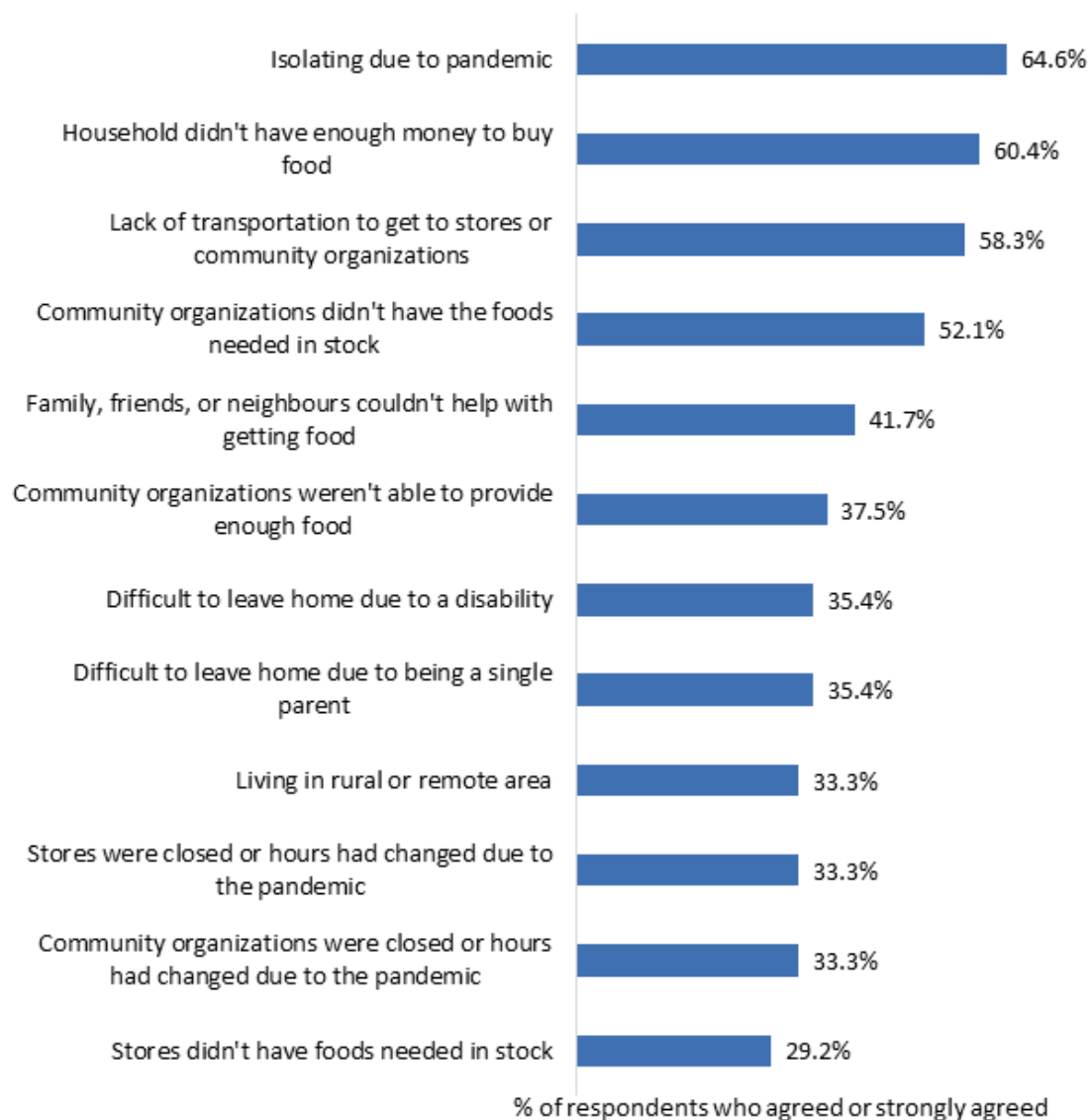


Figure 7.2 Options that 48 survey respondents at increased risk of food insecurity (who reported it had been challenging, in general, to access nutritious foods) agreed or strongly agreed would help their household to access nutritious foods



Even with adequate resources and addressing the many barriers to access, emergency food services only offer short-term relief of food insecurity. They are not a solution to food insecurity – that is, not having enough money to buy food. Instead, income-based solutions, such as guaranteed annual income and living wages, are needed to effectively address food insecurity.^{2,3} Other types of food access programs that reduce the retail cost of nutritious foods may also be effective. For example, sliding-scale markets, good food box programs, and collective kitchens all increase economic access to food without relying on donations.

Community-based food access programs in Guelph-Wellington

From April through July 2021, a scan of food access programs offered by community organizations in Guelph-Wellington was completed. Programs were identified through an Internet search and consultation with Nutritious Foods Workstream members. A total of 39 programs were identified:

- 29 food banks and pantries
- 2 meal programs
- 5 free or low-cost markets
- 2 collective kitchens
- 1 prenatal nutrition program
- 2 voucher models

Programs that target children and youth, such as breakfast programs, are discussed in Chapter 11. It is important to note that the number of food access programs and the services they offer can change based on resources, community need, and public health measures related to the COVID-19 pandemic. This list reflects findings from the scan as of July 2021, which may not accurately reflect programs that are currently being offered.

Food banks and pantries

Food banks and pantries provide free food or food vouchers to people experiencing food insecurity. In general, food banks provide service to a large geographic area (such as a municipality), require proof of eligibility, and can only be accessed once or twice per month. As part of the scan, the Guelph Food Bank noted that they provide food to about 1600 households each month. The food banks in Wellington County noted that they serve about 50 to 250 households each month. In general, food pantries (also called food cupboards) service small geographic areas (such as a neighbourhood or parish boundary) and provide food as needed. There are 10 food banks in Guelph-Wellington. There are 17 food pantries in Guelph-Wellington which serve from 5 to 300 households each month.

Most food banks and pantries offer a variety of nutritious foods, including vegetables and fruit, whole grains, dairy, meat, and plant-based proteins. While most food banks and pantries are also able to provide cultural and diet-specific foods to meet their clients' needs, these foods are not always available. Some food banks are linked through networks, allowing them to share supply which helps them to better meet client needs. In contrast, food pantries are more vulnerable to supply changes and may not always be able to offer a variety of nutritious foods – particularly vegetables, fruit, and other fresh foods.

In general, food banks and pantries offer a self-serve and choice-based model. That is, people can make choices about which foods they get. For example, people can choose one protein food from a selection of many. This is intended to enable people to access food in a more dignified and personal way.

Only one food bank and two food pantries are open in the evening (after 5 p.m.) and none operate on the weekend. This could be a barrier to people accessing these programs. However,

several of the pantries also operate by appointment and may offer evening or weekend timeslots.

Meal programs

Meal programs provide prepared meals to individuals and families experiencing food insecurity. There was one free meal programs identified in the scan. The Royal City Mission, located in downtown Guelph, offers lunch and supper meals. There are no limits to who can access this program, nor how frequently.

While not a program aimed at addressing economic barriers to food access, Meals on Wheels is worth noting. This program delivers hot and frozen meals to older adults and adults with disabilities throughout Guelph-Wellington, thereby addressing physical barriers to getting groceries and preparing food faced by this population.

Free or low-cost markets

At most markets, people can shop for a variety of foods. People choose what they want from the foods available at the market and buy them. At a free or low-cost market, people still shop for food, but they pay less than they would in an average grocery store or get their items for free.

Three free markets and one low-cost market were identified in the scan, all providing service within Guelph. The North End Harvest Market and Silvercreek Community Market are free markets that target all residents experiencing food insecurity. Guelph Wellington Seniors Association Food Markets specifically target older adults experiencing food insecurity, although anyone is welcome.

The low-cost market, Groceries from The SEED, uses a sliding-scale or pay-what-you-choose model and is intended to be accessed by all Guelph residents. Members who pay full price for groceries enable people who has less income available for food to pay up to 75% off grocery store prices. The program is working to expand into Wellington County.

Collective kitchens

In a collective kitchen, groups of people prepare food together in large quantities which is then divided to take home. Costs are kept low through bulk-buying and batch cooking. These programs also provide an opportunity for social interaction and to learn and share food skills.

There are two collective kitchens in Guelph, both in the Brant Neighbourhood. They operate monthly, and 5 to 12 households participate.

Prenatal nutrition programs

Prenatal nutrition programs provide food to pregnant people experiencing food insecurity or who face other challenges that put their health at risk. One prenatal nutrition program was identified in the scan: Pregnancy to Parenting (P2P), offered by the Guelph Community Health Centre. The program is open to pregnant people in Guelph facing challenges that could put their health at risk, such teen pregnancy, substance use, and social isolation. The program

provides grocery vouchers to participants, in addition to food and nutrition education, counseling, and support.

Other types of food access programs

Two other programs in Guelph–Wellington aim to increase economic access to nutritious food using a voucher model:

- The **Fresh Food Rx** program from The SEED is a pilot project with primary health care in which physicians prescribe vegetables and fruit to their patients who are experiencing food insecurity. These prescriptions can be redeemed at Groceries from The SEED.
- The **Market Bucks** program from the County of Wellington provides vouchers that can be redeemed at participating Farmers' Markets throughout Wellington County. These Market Bucks are issued to County residents from various community organizations.

Food access programs and the COVID-19 pandemic

In October 2020, social service providers from 22 community organizations in Guelph–Wellington were surveyed about providing services to people experiencing food insecurity.

Some organizations reported that demand increased during the pandemic, due to new clients and more food needed, more frequently, by current clients. They believed the increased demand for emergency food was primarily due to changing life circumstances caused by the pandemic (for example, job loss, eviction, and inability to access other social services). Some organizations also noted that the increased promotion of food access programs during the pandemic may have led to greater demand.

Other community organizations reported that demand decreased or stayed the same. Or they were unsure if demand changed because they were offering a new or different service due to the pandemic. They believed the decreased demand was due to:

- Income assistance from the government which helped people who were experiencing food insecurity.
- More emergency food service options, which meant less demand for each individual service.
- Post-secondary students, who are at increased risk of food insecurity, were no longer living in Guelph–Wellington since on-campus learning was suspended.
- People were less willing to access in-person emergency food services due to risk of exposure to the COVID-19 virus.

Service providers also noticed that households needed different food and services than before, such as gift cards, contactless delivery, household supplies (e.g., toilet paper and cleaning supplies), fresh food, and cultural foods.

Community organizations adjusted their food access programs in response to changes in need, as well as to ensure safety protocols regarding the pandemic. For example, to allow for physical distancing, the Royal City Mission's meal program started offering take-away meals. Similarly, the Brant Collective Kitchen transitioned to preparing meal kits for participants to

pick up and prepare at home. There have also been new programs developed in response to changes in need, such as Groceries from The SEED and the Senior Pandemic Food Delivery Program from HOPE House.

Adapting to changes in need and implementing safety protocols required more resources, such as funding, outdoor spaces and larger indoor spaces, transportation, and volunteers. In some cases, programs have become more limited in the types of services they are able to offer and, as a result, the benefits they provide. Many food banks and pantries have been unable to offer their self-serve and choice-based model, instead offering pre-packaged hampers. Other programs have been on hold indefinitely during the pandemic. Both Guelph and Wellington County used to have Good Food Box programs which have been on hold during the pandemic. The SEED also used to offer pop-up sliding scale markets in Guelph, which have also been on hold. Groceries by The SEED does address some of the same needs previously met by these programs.

Limitations

There may have been other food access programs in Guelph-Wellington that existed prior to the COVID-19 pandemic that were not included in this report. However, the scan of programs was completed in the Spring and Summer of 2021. This made it challenging to identify programs that are on hold, given that they are not being promoted within the community. Given the impacts that the pandemic continues to have on food access programs, any interpretation of programs in Guelph-Wellington should be based on those that are currently offered. Some programs that are on hold may not re-start when circumstances allow, depending on resources or community need.

Section Key terms

A glossary of key terms related to nutrition, food processing, food environments, and food access is included in Appendix A.

Nutritious foods are the foods that should be consumed regularly as part of a nutritious eating pattern. They include unprocessed and minimally processed vegetables and fruits, whole grains, proteins foods (with an emphasis on plant-based protein foods), and water.⁴

Unprocessed foods come from plants or animals without any industrial processing.⁵ Spring and tap water are also included.

Minimally processed foods are unprocessed foods altered in ways that do not add any new substance (such as salt, sugar, or fat) but often involve the removal of parts of the food.⁵ Processing techniques typically preserve the food and extend its duration, aid its use, preparation, and cooking, and improve its palatability.

Economic access refers to the cost of food and a person's ability to afford that cost.^{6,7} Absolute affordability is defined as how much it costs a person to follow a nutritious eating pattern compared to their household income. Relative affordability is the cost of a food product compared to a more nutritious alternative.

Food insecurity, also called household food insecurity, is not having enough money to buy food. Individuals and families living on low incomes struggle to pay the rent, other basic living costs (such as utilities, phone, childcare, clothing, medication, transportation), and food.⁸

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Section 3:

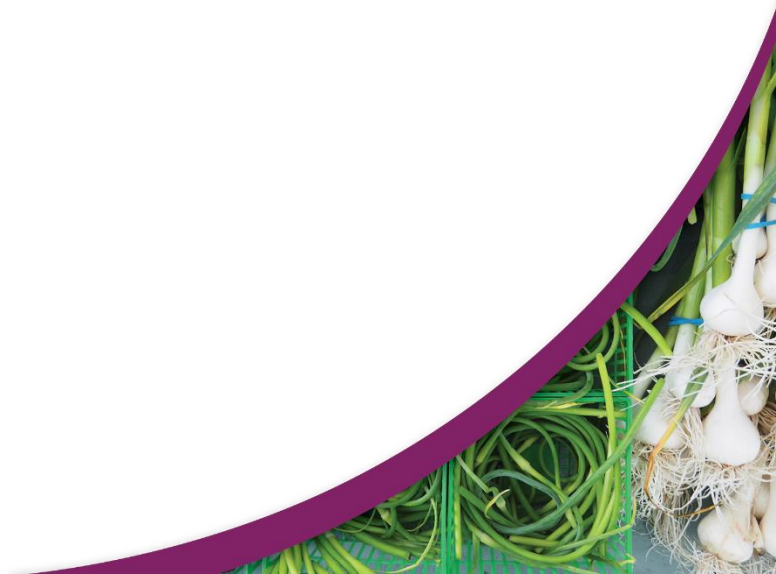
Nutrition Knowledge and Food Skills

“Nutrition knowledge includes the facts and information acquired through experience or education related to food and nutrition. For example, the capacity to distinguish between nutritious and less nutritious foods, understand where food comes from, and understand the nutrients in food and how these can affect health. Food skills are the techniques related to food purchasing, preparation, handling, and storage, such as chopping, measuring, cooking, reading recipes, and food safety.¹³”



3.1

Knowledge and skills



3.1 Nutrition knowledge and food skills

Key Highlights

Nutrition knowledge and food skills are necessary to navigate food environments and follow a nutritious eating pattern. While there is limited information about the current knowledge and skills of Guelph–Wellington residents, findings from our focus group pilot and the Guelph Family Health Study suggest there may be opportunities for further education. In particular, residents may need greater knowledge about food processing, protein foods and the application of food skills.

24 food and nutrition education programs were identified in Guelph–Wellington. All programs identified in the scan follow best practices (i.e., experiential learning, based on theories of behaviour change, facilitated by or the content was developed by a person with food or nutrition expertise, etc.). Programs currently offered by health and community organizations are often one-time classes and designed to target specific groups – meaning reach is limited. Increasing the number and capacity of these programs is not likely a feasible option. Also, traditional education programs may not be the most effective approach to increasing knowledge and skills for everyone. People learn from a variety of sources and interventions could instead consider residents' preferred methods of learning and provide education through existing channels.

Background

Food and nutrition knowledge includes the facts and information acquired through experience or education related to food and nutrition.¹ Food and nutrition knowledge includes the capacity to distinguish between nutritious and less nutritious foods, understand where food comes from, and understand the nutrients in food and how these can affect health. **Food skills** are the techniques related to food purchasing, preparation, handling, and storage, such as chopping, measuring, cooking, reading recipes, and food safety.¹

What we know about food and nutrition, and the skills we have to select and prepare foods, can influence our food purchasing and eating patterns by influencing the foods we have access to. Being able to afford fresh vegetables and fruit at a nearby grocery store does not necessarily mean we have access to vegetables and fruit if we do not know how to store, prepare, and enjoy eating them. Similarly, our knowledge and skills can help us to make more nutritious choices. For example, being able to plan and prepare nutritious foods can help us rely less on processed and ultra-processed foods.²

Findings

Food and nutrition knowledge and food skills in Guelph–Wellington

Information about the food and nutrition knowledge and food skills of Guelph–Wellington residents is limited. A focus group pilot was conducted in July 2021 by the Nutritious Foods Workstream and Community Engaged Scholarship Institute⁵. Although the pilot size was small

and not generalizable, it's findings as well as research conducted by the Guelph Family Health Study do provide some insights.

The focus group pilot primarily explored effective methods of engaging residents about their perspectives and experiences related to food access, while also including food and nutrition knowledge and food skills, as part of the discussion. The focus group had a total of eight participants; thus, it was not a representative sample of Guelph–Wellington residents, or any specific demographic group, and the findings cannot be generalized beyond the participants.

The Guelph Family Health Study explored food knowledge and skills among Guelph families with young children. The Guelph Family Health Study is a longitudinal study looking at the health habits of families, including eating, physical activity, sleep, and screen time.⁶ Similar to the focus group pilot, the Guelph Family Health Study participants are not representative of Guelph–Wellington residents in general. Nor is this research representative of specific demographic groups. However, the Guelph Family Health Study does reflect the perspectives and experiences of some families in Guelph.

With these limitations in mind, generalized conclusions cannot be drawn from the focus group pilot or Guelph Family Health Study about food and nutrition knowledge and food skills in Guelph–Wellington. Instead, the findings offer a starting point for further exploration when planning interventions to increase access to nutritious foods.

Food and nutrition knowledge

In late 2019, the Guelph Family Health Study ran focus groups with 40 parents exploring their perceptions of the 2019 Canada's Food Guide.⁷ Findings from this study, and from the focus group pilot (conducted with 8 participants in July 2021), suggest that while participants were aware of general nutrition recommendations, there may have benefited from more specific guidance on protein foods and food processing. If it is found that these findings apply more broadly to the Guelph–Wellington population then interventions and messaging to address this knowledge gap should consider cultural food traditions, individual nutrition needs, and the diversity of eating patterns, as well as the environmental benefits of choosing nutritious foods.

Most parents in the Guelph Family Health Study reported that they were aware of Canada's Food Guide, having seen images of the recommended food choices and eating habits through media, work, and their children's schools. In the focus group pilot, all participants agreed that Canada's Food Guide displays a balanced plate of nutritious foods. Vegetables and fruit were perceived as having the highest nutritional value and participants noted that less nutritious meals could be made more nutritious by adding vegetables and fruit. Fibre-containing foods and nuts were also noted as nutritious foods, as well as meat in moderation.

Participants of the focus group pilot were also aware of the general nutrition concerns related to processed and ultra-processed foods. One participant noted that "in general ... nutritious foods are those least manipulated from their origin, and do not contain, or at least minimally, excess fat". Foods such as simulated meat, cheese, and cereal were noted as having

some nutritional value despite containing excess salt, sugar, and fat. Some participants also felt that frozen and canned vegetables and fruit were less nutritious than fresh.

Many parents in the Guelph Family Health Study felt there was insufficient guidance related to plant-based proteins. They felt that more guidance related to what plant-based proteins are, how to choose and to prepare them, and the nutritional quality of the protein itself, would be helpful. For example, one parent raised concern about pairing plant-based proteins to make a complete protein (with all essential amino acids). There was also concern among parents about the (apparent) exclusion of milk and milk products from the Food Guide recommendations. Given how prominent dairy had been in previous food guides and health marketing, and the understanding of their importance in child growth and development, there was confusion as to how (if at all) these foods should be consumed and whether this would lead to nutrient deficiencies.

Parents of the Guelph Family Health Study reported that they liked that the Food Guide includes recommendations about eating habits, such as cooking more often, being mindful when eating, and enjoying food and eating. They appreciated, too, that the Food Guide focused on eating patterns that are good for the environment, in addition to promoting good nutrition. Similarly, participants of the focus group pilot spoke enthusiastically about processed and comfort foods to enjoy in moderation, such as bacon and pancakes, suggesting that these foods have a place in a nutritious eating pattern.

However, some parents of the Guelph Family Health Study felt that there was a lack of cultural representation in Canada's Food Guide. Rather than a one-plate-serves-all approach, parents thought that the recommendations and images used should be tailored to reflect diverse cultural backgrounds and experiences. Additionally, participants of the focus group pilot noted how nutrition is very much influenced by personal factors such as lifestyle and health conditions. One participant noted that "depending on your health and nutrition goals, you may view some of these foods as more nutritious than others". Another described choosing foods to accommodate food allergies, which could be a challenge for meeting some recommendations as they have been communicated.

Food skills: Cooking

In 2017 and 2018, 130 parents from the Guelph Family Health Study self-reported their mechanical and conceptual food skills.⁸ Mechanical food skills include techniques used to prepare foods, such as using a knife, peeling a vegetable, boiling water, and grilling. Conceptual food skills include planning meals, following recipes, and cooking from basic ingredients.⁹ On average, parents of the Guelph Family Health Study rated themselves as confident to very confident in their mechanical and conceptual food skills. Parents with higher-rated conceptual food skills had higher-quality diets. The same association was not found between mechanical food skills and diet quality. It is possible the conceptual food skills better support the application of food and nutrition knowledge. For example, being able to plan and prepare a nutritious meal may support nutritious eating patterns better than being able to do each individual preparation task separately.

Food skills may be learned from a variety of sources and settings. Participants of the focus group pilot noted that they learned to cook from family members growing up or their spouse later in adulthood. Others learned from online platforms, such as YouTube, or cooking shows on television. Multiple participants also noted that they try to cook at home every day. Typically, participants cooked dinner every night and lunches varied from one to five times a week. For most participants, lunch was a sandwich, salad or leftovers and dinner included meat, vegetables, and a grain or starchy vegetable.

The food that is prepared at home is influenced by a variety of individual factors. Many participants of the focus group pilot planned their meals around flyers for inspiration or on seasonal foods and seasonal cooking methods, such as barbecuing. They were also influenced by recipes from online videos, social media, newspaper, and television shows. Time, preference, and desire to follow a nutritious eating pattern, either for nutrition or environmental benefit, also influenced what food participants prepared at home.

Food skills: Growing and harvesting foods

There is limited information about Guelph–Wellington residents' knowledge and skills related to growing or harvesting food for personal use. However, opportunities to grow food, and the knowledge and skills to support these opportunities, may be an effective way increase residents' access to nutritious foods.¹⁰ In October 2020, a representative sample of 600 Guelph–Wellington residents was surveyed about their experiences with food access and food insecurity during the COVID-19 pandemic. Of the 7% of respondents who indicated accessing nutritious foods was a challenge, 72% agreed that opportunities to grow their own food would help them to access nutritious foods. This was the second highest rated option, next to a consistent source of income (that is, the greatest number of respondents agreed that a consistent source of income would be helpful).

However, any actions to increase access to nutritious foods must acknowledge that one intervention will not be effective or acceptable for everyone in Guelph–Wellington. For example, opportunities to grow food may not equitably benefit people experiencing economic barriers to food access. In the spring of 2021, a sample of 95 Guelph–Wellington residents at increased risk of food insecurity was also surveyed about their experiences with food access and food insecurity during the COVID-19 pandemic. When respondents who found it challenging to access nutritious foods were asked what would help them, opportunities to grow food and recipes for low-cost, balanced meals were the second and third lowest-rated options.

Food and nutrition education programs: Best practices

Food and nutrition education programs include programs or courses offering training in food and nutrition education or food skills, such as cooking classes or curriculum. Most of the evidence related to the effectiveness of education programs at increasing food and nutrition knowledge and food skills (and subsequent changes to food purchasing and eating patterns), has focused on children and youth. However, many of the strategies that are effective for children and youth are likely to also be effective for adults.^{11,12}

Strategies that may be effective, based on recent literature reviews¹¹⁻¹³, are listed below. Regardless of the strategies used, food and nutrition education programs alone may not lead to sustainable, long-term behaviour change¹¹, further supporting the need for nutritious food environments – in addition to knowledge and skills – to enable people to make nutritious food choices.

Strategies that may support effective food and nutrition education programs

1. **Base the program on a theory of behaviour change.** Social cognitive theory has been used for many successful programs, which includes personal (e.g., knowledge, attitudes), behavioural (e.g., skills, confidence), and environmental (e.g., social norms, food access) factors to explain behaviour. However, other theories of behaviour change may be effective, depending on the target population and objectives of the program.
2. **Tailor the program to the culture and experiences of participants.** This strengthens the lessons by allowing participants to relate.
3. **Incorporate experiential and active learning techniques.** Activities like sensory activities, food skills activities, and gardening classes have been shown to increase knowledge retention and influence behaviour change.
4. **Include opportunities to work together and share a meal.** The sense of ownership and pride over growing or preparing food is enhanced when shared with other participants.
5. **Offer at least 4–6 weeks with post-program follow-up.** Programs lasting multiple sessions may be more effective at leading to behaviour change, as they allow time to learn and practice new knowledge and skills.
6. **Enlist stakeholders to plan and develop programs.** This is important for the success and sustainability of the program. Stakeholders may include participants and community groups or organizations.
7. **Ensure the facilitator is trained to facilitate the program.** This includes the ability to teach the content, but also to apply theories of learning and model the behaviour outside of the lesson.

Food and nutrition education programs in Guelph-Wellington

From April through July 2021, a scan of food and nutrition education programs offered by health and community organizations in Guelph-Wellington was completed. Programs were identified through an Internet search and consultation with Nutritious Foods Workstream members. A total of 23 programs were identified:

- 4 programs focused on general knowledge related to nutrition and nutritious eating patterns
- 3 programs focused on knowledge related to prenatal, infant, and young child nutrition
- 9 programs focused on cooking skills
- 8 programs focused on food growing skills

Programs that target children and youth within elementary and secondary schools are discussed in Chapter 11. The total number of programs include those that were being offered, as well as some on hold during the COVID-19 pandemic. There may be others on hold that were

not identified during the scan, as well as programs that had been created or re-started since July 2021.

Most food and nutrition education programs in Guelph–Wellington focused on food skills (cooking and growing) and offered hands-on activities to reinforce lessons. Cooking programs, for example, were planned around preparing and sharing a meal as a group. Due to the size limitations of kitchens and the need to ensure safety of participants, these programs were often limited to about 5–12 participants.

With regards to growing food, most programs were targeted to children and youth and many functioned as a social enterprise. That is, participants grow food to sell at markets and other retail food outlets. Putting Down Roots, a program for newcomer youth offered by Immigrant Services Guelph–Wellington, also includes an opportunity for participants to then teach their newly acquired knowledge of gardening to their community. There were only two organizations identified in the scan (the Julien Project and the Guelph Seed Library) that offered general education workshops to people interested in growing food for personal consumption.

While many of the education programs were only offered as single sessions, most changed their topic each session. The Wandering Chefs program offered by the Guelph Community Health Centre, for example, was a weekly drop-in program. Topics changed week-to-week and were informed by participant feedback. Participants might therefore have attended more than once with benefits similar to a longer-term program. Moreover, the programs that focused on food and nutrition knowledge were all offered by Family Health Teams. Lessons might have been reinforced for patients of Family Health Teams through regular patient visits.

All education programs identified in the scan were either facilitated by, or the content was developed by, a person with food or nutrition expertise. For example, a registered dietitian or certified cook.

Food and nutrition education programs during the COVID-19 pandemic

Several food and nutrition education programs have been put on hold or are being offered virtually because of restrictions and safety precautions during the COVID-19 pandemic. Most of the knowledge programs (including the prenatal, infant, and young child programs) have transitioned to the virtual environment.

Notably, only two cooking programs continue to be offered in a virtual environment. Offering cooking programs in a virtual setting may present challenges for facilitating education. It may be more difficult to engage participants in active learning activities, and not all participants may have access to the space and tools needed to prepare food. However, virtual programs with a hands-on cooking component allow participants to apply skills in their own space, which may increase their effectiveness.

In contrast, programs about growing food have been less effected by pandemic restrictions, likely because they are held outdoors. While knowledge-based programs have moved online, the hands-on programs have continued in-person.

Limitations

As noted previously, data from the focus group pilot provides some ideas about the state of food and nutrition knowledge and skills in Guelph–Wellington, the sample size was small and not representative of the diversity of Guelph–Wellington residents and experiences. The Guelph Family Health Study participants are also not representative of all residents.

There may have been other food and nutrition education programs in Guelph–Wellington that existed prior to the COVID–19 pandemic that were not included in this report. The scan of programs was completed in the Spring and Summer of 2021 and this made it challenging to identify programs that were on hold because they were not being promoted within the community. Additionally, some programs that are on hold may not re–start when circumstances allow, depending on resources or community need. Given the impacts that the pandemic had and continues to have on food access programs, any understanding of program trends and gaps in Guelph–Wellington are based on those that are currently offered.

Furthermore, this scan does not consider all methods of gaining knowledge and skills. As noted by participants of the focus group pilot, food and nutrition knowledge and food skills are gained in many ways. Family and digital media were all sources noted by participants. Many private businesses, such as grocery stores, also offer education programs. Health professionals may be another source of education, particularly for people needing knowledge and skills for managing illness, such as diabetes, allergy, or digestive disorders. Pregnant people and parents or caregivers of infants and young children may also gain knowledge and skills through interactions with health professionals. A scan of food and nutrition programs, while helpful to understand the types of resources that are available, may not be that helpful in understanding what resources (if any) are needed to increase access to knowledge and skills in Guelph–Wellington.

Section Key Terms

A glossary of key terms related to nutrition, food processing, food environments, and food access is included in Appendix A.

Nutritious foods are the foods that should be consumed regularly as part of a nutritious eating pattern. They include unprocessed and minimally processed vegetables and fruits, whole grains, proteins foods (with an emphasis on plant–based protein foods), and water.³

Unprocessed foods come from plants or animals without any industrial processing.⁴ Spring and tap water are also included.

Minimally processed foods are unprocessed foods altered in ways that do not add any new substance (such as salt, sugar, or fat) but often involve the removal of parts of the food.⁴ Processing techniques typically preserve the food and extend its duration, aid its use, preparation, and cooking, and improve its palatability.

Ultra–processed foods are formulations of industrial ingredients and other substances derived from foods, plus additives.⁴ The purpose of ultra–processing is to create products that are

convenient (durable, ready-to-eat, -drink, or -heat), attractive (hyper-palatable), and profitable (cheap ingredients). Excess consumption of ultra-processed foods is associated with excess consumption of sodium, sugar, and saturated fat and an increased risk of chronic disease. Overconsumption of these foods should be avoided.

Food and nutrition knowledge includes the facts and information acquired through experience or education related to food and nutrition.¹ For example, the capacity to distinguish between nutritious and less nutritious foods, understand where food comes from, and understand the nutrients in food and how these can affect health.

Food skills are the techniques related to food purchasing, preparation, handling, and storage, such as chopping, measuring, cooking, reading recipes, and food safety.¹

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3.2

Eating patterns and household food waste



3.2 Eating patterns and household food waste

Key Highlights

Research shows Canadians may be overconsuming ultra-processed foods. Likewise, estimates of household food purchasing suggest Guelph–Wellington residents may not be following a nutritious eating pattern. While Canada’s Food Guide recommends that plant-based protein foods be consumed more often, residents are purchasing (and likely consuming) a greater proportion of animal-based proteins compared to plant-based.

Households in Guelph–Wellington buy about 83.5 kilotons of food every year from retail food outlets (excluding restaurants). Interestingly, they throw away almost 25% of the edible food they buy – namely fruits, vegetables, grains and plant-based proteins. This suggests there could be barriers in the home that lead people to throw away nutritious foods, such as not knowing how to prepare certain foods, improper storage, lack of planning, etc.

While more research is needed to better understand eating patterns, interventions that develop food skills and knowledge may help residents actually prepare and consume the foods they are buying, promote a nutritious eating pattern, and shift attitudes so that people value nutritious foods and prioritize preventing food waste. Further education about highly-processed foods, protein foods, and the application of food skills to reduce food waste may be beneficial

Background

Eating patterns

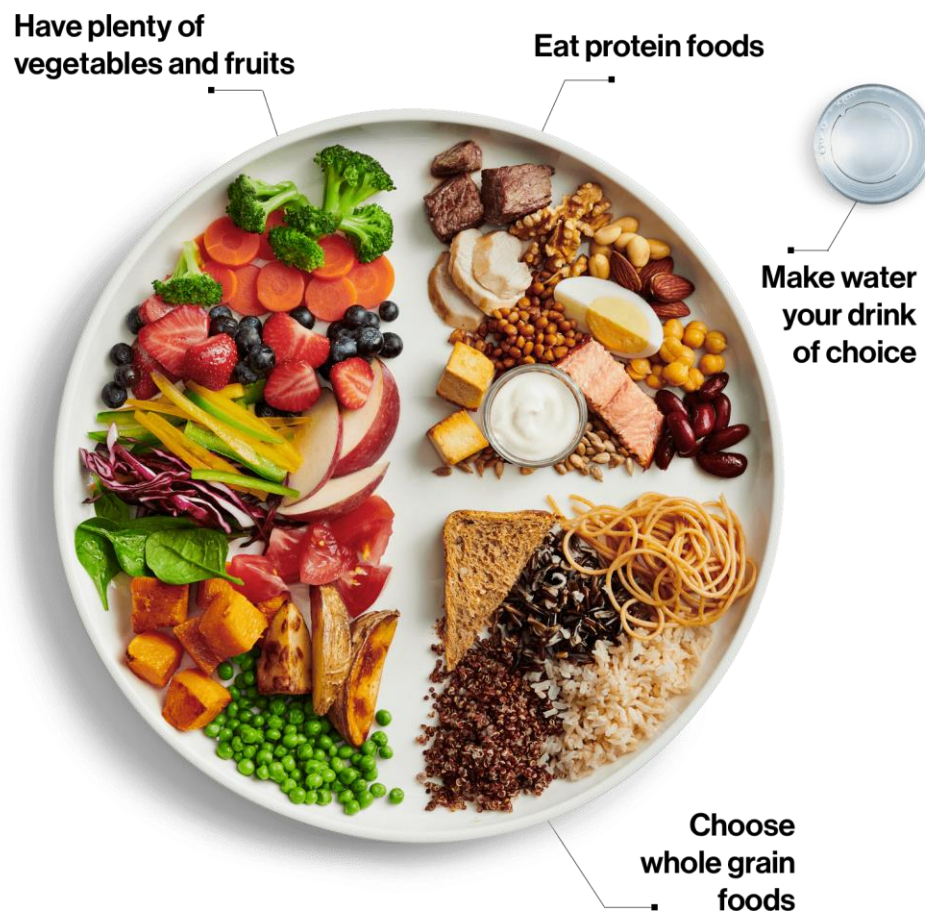
A **nutritious eating pattern** that provides adequate and well-balanced amounts of carbohydrates, protein, fat, vitamins, and minerals, is a cornerstone of good health. Eating patterns that lead to nutrient deficiencies, excesses, or imbalances can increase risk for disease and impair mental and physical development.¹

Canada’s Food Guide was created by Health Canada to help Canadians make healthy food choices.² The Food Guide recommends nutritious foods to consume regularly, and less nutritious foods to limit or avoid. Nutritious foods include unprocessed and minimally processed vegetables and fruits, whole grains, proteins foods (with an emphasis on plant-based protein foods), and water (see Figure 1.1). Canada’s Food Guide also provides recommendations for buying, preparing, and eating foods to help Canadians navigate their food environment and support them to choose nutritious foods.

Based on the most current Canada's Food Guide released in 2019, recommendations for a nutritious eating pattern are as follows³:

1. Eat a variety of nutritious foods each day.
2. Be mindful of your eating habits.
3. Cook more often.
4. Enjoy your food.
5. Eat meals with others.
6. Use food labels.
7. Limit highly processed foods.
8. Be aware that food marketing can influence your food choices.

Figure 1.1 Nutritious foods to consume regularly, as recommended by Canada's Food Guide, 2019²



Although today's Canada's Food Guide is regarded as a helpful resource, it is not perfect. We must acknowledge two prominent concerns. First, the original Food Guide (Canada's Food Rules, published in 1942) was largely based on unethical nutrition experiments conducted on Indigenous people, including students at residential "schools".⁴ These experiments, and other oppressive systems and structures in Canada, have led to many of the barriers and inequities related to nutritious food access that are experienced by Indigenous people. Second, the Food Guide's recommendations may be unattainable for many Canadian for various reasons such as a lack of safe drinking water, insufficient income to afford food, or the inability to access traditional foods in traditional ways.

Processed foods

Processed foods include any foods that have been altered in some way during preparation. Practically all foods have been processed – frozen carrots, a loaf of bread, pasteurized milk, sauerkraut, and dinosaur-shaped chicken nuggets are all examples of processed foods. As such, consumption of processed foods is not itself an issue. However, some processed foods have excess salt, sugar, and/or saturated fat added to them, and regular consumption of these foods can negatively impact health.⁶

The NOVA classification system groups all foods according to their level of processing.⁵ This system helps us understand the purpose of processing, and which processed foods should be limited for a nutritious eating pattern. Table 1.1 provides a definition of the groups with examples of each.

Depending on how they are prepared and used in dishes and meals, processed foods can be part of a nutritious eating pattern when eaten in moderation. Ultra-processed foods, however, are usually of poor nutritional quality and contain excess salt, sugar, and/or saturated fat.⁵ Excess consumption of ultra-processed foods is associated with an increased risk of chronic disease, such as cardiovascular disease, type 2 diabetes, and cancer. Consumption of these foods should be avoided.

Table 1.1 NOVA classification system of processed foods^{5,7}

NOVA group	Definition	Examples
Unprocessed or minimally processed foods	<p>Unprocessed foods come from plants or animals without any industrial processing. Spring and tap water are also included.</p> <p>Minimally processed foods are unprocessed foods altered in ways that do not add any new substance (such as salt, sugar, or fat) but often involve the removal of parts of the food.</p>	<ul style="list-style-type: none"> • Fresh, dry, or frozen vegetables, fruits, grains, and protein foods (such as meat, fish, eggs, and milk). • Foods made up from two or more unprocessed or minimally processed foods (such as pasta).
Processed culinary ingredients	<p>Foods extracted and refined by industry from food constituents (such as sugars, fats, and oils) or obtained from nature (such as salt). These foods are not or normally not consumed by themselves; their main purpose is to be used in the preparation and cooking of foods.</p>	<ul style="list-style-type: none"> • Sugars, fats, oils, salt, and starches. • Foods consisting of two or more processed culinary ingredients (such as salted butter).
Processed foods	<p>Foods made by adding fats, oils, sugars, salt, and other culinary ingredients to minimally processed foods.</p>	<ul style="list-style-type: none"> • Simple breads and cheeses. • Canned fruit in syrup. • Canned meat and fish in brine or oil. • Salted or sugared nuts.
Ultra-processed foods	<p>Formulations of industrial ingredients and other substances derived from foods, plus additives.</p>	<ul style="list-style-type: none"> • Some meat and meat substitutes (such as nuggets and plant-based patties). • Sweetened milk products (such as ice cream and some yogurts). • Commercial bread. • Sugary drinks. • Potato chips and sweets.

Data from the 2015 Canadian Community Health Survey collected through 24-hour diet recalls suggests that Canadians, in general, are consuming nearly half of their daily energy from ultra-processed foods (see Figure 1.3).⁸ Consumption of ultra-processed foods is highest among children, particularly adolescents.

Figure 1.3 Proportion of total daily energy intake (kcal) by NOVA food groups, Canadian population 2 years and older, 2015⁸

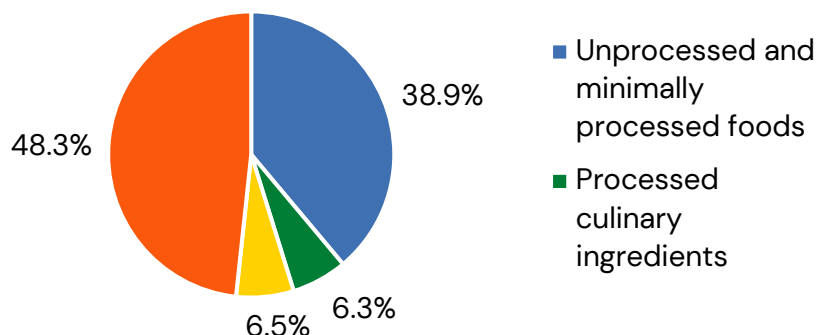


Table 1.2 shows the contribution of various foods within each NOVA group to the overall energy intake of Canadians. It is interesting to note that ultra-processed roots and tubers (e.g., potato chips), grains (e.g., commercial breads and sweetened baked goods), and sugar-sweetened foods and drinks (e.g., fruit drinks) contribute considerably to the overall intake of ultra-processed foods.

Table 1.2 Proportion of total daily energy intake (kilocalories) by specific ultra-processed foods, Canadian population 2 years and older, 2015⁸

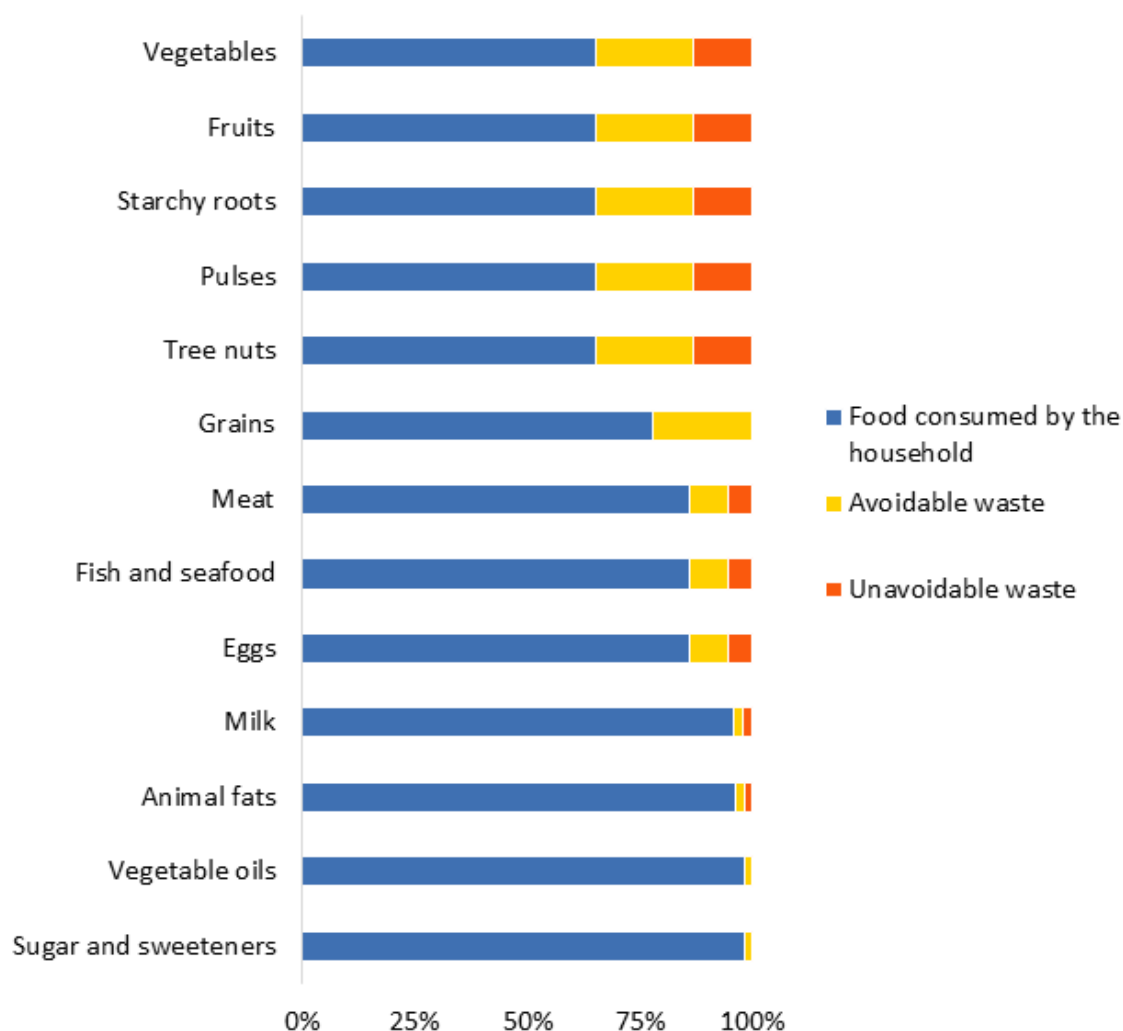
Ultra-processed food item	Proportion (%) of total daily energy intake (kilocalories)
Frozen entrees, burgers, pizzas, sandwiches, and other pre-prepared products bought in fast food restaurants	8.7
Mass-produced packaged breads	8.4
Sweetened fruit juices and drinks	3.6
Ice cream, chocolate milk, flavoured yogurt, and milkshakes	3.6
Margarine	3.2
Chocolate, candies, and sweet desserts	3.0
Cakes, cookies, pies, and other sweetened baked goods	3.0
Sauces and spreads	2.9
Chips, crackers, and other salty snacks	2.6
Sausages, deli meats, meat spreads, bacon, chicken nuggets, and fish sticks.	2.5
Sweetened breakfast cereals	2.0
Carbonated drinks	1.5
Canned soups, baby food, cheese products, frozen french fries and onion rings, fish or seafood imitations, meal replacements, sweeteners, protein shake powder, egg substitutes, and meatless burgers and sausages.	3.3
Total	48.3

Findings

Household food purchasing and waste

As part of Our Food Future's Food and Food Waste Flow Study, household food purchasing patterns in Guelph-Wellington were estimated using food availability, expenditures, and price indexes from 2018.⁹ According to the study, households in Guelph-Wellington buy about 83.5 kilotons of food every year from retail food outlets (excluding restaurants) – but they end up throwing away up to one quarter of it (see Figure 1.2). A portion of this food waste is unavoidable (e.g., meat bones, eggshells, and coffee grounds), but most of it is avoidable. Every week every resident is throwing away about 1 kilogram of food they could be eating.

Figure 1.2 Avoidable and unavoidable food wasted by Guelph-Wellington families, as a proportion of household food purchases



Based on the Food and Food Waste Flow Study, households throw out almost a quarter of the edible portions of vegetables, fruit, grains, pulses, and tree nuts that they buy – all plant-based foods and the main components of a nutritious eating pattern (see Figure 1.2 above). The edible portions of animal-based proteins, such as eggs, meat, fish, and seafood, are also wasted but to a much lesser extent.

While the waste data suggests that households consume almost all the milk products, oils, fats, sugar, and other sweeteners that they buy, there is likely some error in those estimates. Milk and milk products are often disposed of down the sink and would not be found in audits of household solid waste. Additionally, fats, oils, and sugars are sometimes added to dishes and drinks which are difficult to identify in audits of household waste.¹⁰

Using the household purchasing data from the Food and Food Waste Flow Study, a grocery list of food purchased from retail food outlets (excluding restaurants) and wasted by a four-person household was estimated (see Table 1.3). Standard food weights from the Canadian Nutrient File¹¹ were used to estimate specific food items purchased and wasted. A previous study of the most common items in the avoidable food waste of Guelph families¹⁰ was also used to estimate the list of grocery items that reflect the types of foods purchased and wasted in Guelph-Wellington.

The grocery list of purchases and food waste more clearly illustrates the quantity of edible food that is wasted in Guelph-Wellington. The list also suggests that Guelph-Wellington households purchase substantially more animal-based proteins (which include eggs, meat, fish and seafood, and milk) as compared to plant-based proteins (which include tree nuts and pulses).

While more research is needed to better understand eating patterns, interventions that develop food skills and knowledge may help residents actually prepare and consume the foods they are buying, promote a nutritious eating pattern, and shift attitudes so that people value nutritious foods and prioritize preventing food waste.

Table 1.3 Estimates of weekly purchases from retail food outlets (excluding restaurants) and avoidable food waste of a household of four people in Guelph–Wellington

Food item	Estimated weekly purchases	Estimated weekly avoidable food waste
Vegetables	1 L cherry tomatoes (2 pints) 4 large tomatoes 2 heads lettuce 2 cucumbers 2 stalks broccoli 4 onions 8 carrots	1 large tomato 1 head lettuce 0.5 cucumber 1 stalk broccoli 0.5 onion 1 carrot
Fruit	12 apples 12 peaches 12 bananas 1 bunch grapes	4 apples 4 peaches
Starchy roots	8 potatoes 8 sweet potatoes	2 potatoes 2 sweet potatoes
Grains	4 loaves of bread or packages of pita or naan 1 kg of pasta, noodles, or rice 2 boxes of cold cereal	1 loaf of bread 300 g of pasta, noodles, and rice (about 6 portions)
Pulses	1 cup dry lentils, peas, or beans	2 tablespoons dry lentils, peas, or beans
Tree nuts	500 ml (2 cups) almonds	125 ml (0.25 cups) almonds
Eggs	12 eggs (1 dozen)	1 egg
Meat	2 packages ground beef 8 chicken thighs 4 pork chops	1 chicken thigh 1 pork chop
Fish and seafood	2 fillets whitefish	1 tablespoon whitefish
Milk	2 L milk 8 yogurt cups 1 block cheese	125 ml (0.5 cups) diced cheese
Vegetable oils	1 L vegetable oil (canola or olive)	1 tablespoon vegetable oil
Animal fats	1 pound butter	1.5 teaspoons butter
Sugar and sweeteners	1 L (4 cups) white sugar 500 ml (2 cups) honey	1.5 teaspoons white sugar

Limitations

The data presented in this section provides some general understanding about food purchasing and waste patterns in Guelph–Wellington. However, data from the Food and Food Waste Flow Study only provides a crude estimate for all of Guelph–Wellington. It is not a direct measurement of purchasing, consumption, and waste, and should therefore be interpreted with caution. These findings also do not accurately reflect the variations between individuals, households, and groups within Guelph–Wellington and should therefore not be used to describe individual behaviours.

The data from the Food and Food Waste Flow Study also does not account for purchasing and waste from restaurants, institutional food service settings (such as schools, childcare centres, recreation settings, and hospitals), and non-retail sources of food (such as food that is hunted, foraged, or grown for personal consumption). The types of foods purchased from these settings may differ from the foods purchased from retail food outlets like grocery stores. Also, the data does not provide details about specific foods, methods of preparation, or level of processing. Future assessments should look more closely at these details to support the identification of priority areas and interpretation of food supply data.

Section Key Terms

A glossary of key terms related to nutrition, food processing, food environments, and food access is included in Appendix A.

Nutritious foods are the foods that should be consumed regularly as part of a nutritious eating pattern. They include unprocessed and minimally processed vegetables and fruits, whole grains, proteins foods (with an emphasis on plant-based protein foods), and water.³

Unprocessed foods come from plants or animals without any industrial processing.⁵ Spring and tap water are also included.

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Section 4:

Food Marketing, Promotion and Celebration

“Food marketing and promotion refers to any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal, or consumption of foods. It comprises anything that acts to advertise or otherwise promote a food.¹⁴ Celebration of nutritious foods occurs when nutritious foods are promoted widely and favorably. This can occur through commercial and non-commercial communications, like social norms, food traditions, or community events.”



4.1

Consumer food environment



4.1 Consumer food environment

Key Highlights

Highly-processed foods are widely available and promoted in our community. The availability, affordability, prominence, and promotion of foods in Guelph-Wellington grocery and convenience stores may lead residents to choose less nutritious food options. While vegetables and fruit may have more shelf space in grocery stores, ultra-processed foods are promoted more. As residents walk through the store, they are faced with decisions about ultra-processed foods far more frequently than nutritious foods. While independent grocery stores tend to display fewer ultra-processed foods, their prices tend to be higher, and they may have less variety of foods available. Thus, residents may need to visit other types of retail food outlets, such as chain grocery stores, to meet their food needs. Furthermore, people with low incomes may rely more often on less expensive retail food outlets with greater availability and promotion of ultra-processed foods.

Despite the audits showing that grocery stores have high availability of nutritious foods, residents may still find it challenging to find the specific foods they need, such as cultural and diet-specific foods. Whether a store has the food in stock at the time of shopping may also impact food access. In October 2020, a representative sample of 600 Guelph-Wellington residents was surveyed about their experiences with food access and food insecurity during the COVID-19 pandemic. Limited stock at stores as one of the top challenges reported by respondents. While this may be related to effects that COVID-19 pandemic had on food supply, it is possible that limited stock in stores is a pervasive challenge faced by residents.

Managers of both grocery and convenience stores are flexible and attentive to their customers' needs and are open to working with community organizations to implement various actions to increase access. However, all types of retail food outlets, and each individual outlet, will have unique challenges. Any actions to increase access to affordable, nutritious foods in retail settings should therefore be in collaboration with the store to identify actions that are both acceptable and feasible.

In other communities, convenience stores have been a primary location for interventions to increase access to nutritious foods.^{15,16} However, convenience stores in Guelph-Wellington do not appear to be a primary source of nutritious foods or any grocery items for residents. The availability of nutritious foods in convenience stores is low, which is due in part to the low demand for these foods from customers. For interventions in convenience stores to be effective, customer attitudes would also need to shift.

Background

Our proximity to grocery stores and markets – and the ratio of these “nutritious” retail food outlets to limited-service restaurants and convenience stores in our neighbourhoods – can influence our eating patterns. The more affordable, nutritious food stores that are accessible to us, the more nutritious food choices we are likely to make.¹⁻³ However, the

location, type, and accessibility of retail food outlets in our neighbourhood is not sufficient to explain our food purchasing and eating patterns. The availability, affordability, and prominence of nutritious foods **within** those outlets also influence the foods we choose, and we may not choose nutritious options even in “nutritious” outlets like grocery stores and markets.^{4,5}

Consider a budget-conscious grocery store, which is considered an affordable, nutritious retail food outlet. Suppose it located a five-minute walking distance from most residents, has a bus stop near the entrance, and there are only one or two fast-food restaurants competing in the neighbourhood. All this encourages people to choose the grocery store to get food. However, getting to the grocery store is only one step in choosing nutritious foods. Shoppers now need to navigate the food environment **inside** the store before making food choices, and this environment often favours less nutritious options.⁶

The **consumer food environment** includes availability of nutritious foods, nutrition information, and marketing factors like product, promotion, placement, and price.^{7,8} Even though a grocery store has nutritious foods like minimally processed vegetables and fruit, whole grains, and plant-based protein foods available, these may cost relatively more than ultra-processed foods like chips, soft drinks, sweets, and frozen ready-to-eat foods. While vegetables and fruit are often the first thing people encounter when walking into a grocery store, shoppers may only encounter them once – in the produce section. Displays of chips, soft drinks, and sweets appear throughout aisles and at the check-out. This increases the opportunities to choose these foods – and the likelihood of making these choices – even when individuals have the knowledge, skills, and motivation to avoid ultra-processed foods.^{7,9}

Findings

Consumer food environment in Guelph-Wellington

In August 2021, data about the availability, affordability, prominence, and promotion of nutritious foods was collected from grocery and convenience stores throughout Guelph-Wellington. For the purpose of the audits, nutritious foods were defined as fresh, frozen, and canned vegetables and fruit. Ultra-processed foods were defined as frozen entrees, chips, soft drinks, and sweets (chocolate and candy).

Availability was measured as the shelf length occupied by vegetables and fruit and ultra-processed foods, the quality of fresh vegetables and fruit, and the availability of grain products and six proteins foods from the national nutritious food basket¹² (see Table 3.1). The national nutritious food basket provides a list of foods that are consistent with Canada’s Food Guide recommendations.

Table 3.1 Grain products and protein foods from the national nutritious food basket, and their less nutritious comparators, used to assess availability and affordability of nutritious foods in grocery and convenience stores

Food group	Foods from the national nutritious food basket	Less nutritious comparators
Grain products	Brown rice	White rice
	Unsweetened O-shaped oat cereal	Sweetened O-shaped oat cereal
	Whole wheat bread	White bread
Protein foods	Natural peanut butter	Peanut butter with added fat and sugar
	2% plain milk	Chocolate milk
	Lean ground beef	Medium ground beef

Affordability was measured as the cost per portion of vegetables and fruit, price per regular-size Kit-Kat bar, and the relative affordability of the six foods from the national nutritious food basket and their less nutritious comparators (see Table 3.1).

Prominence was measured as the ratio of shelf length, obtained by dividing the total vegetable and fruit shelf length by the total shelf length of ultra-processed foods.

Promotion was measured as the number of end-of-aisle, check-out, middle-of-aisle, and entrance displays of vegetables and fruit, chips, soft drinks, and sweets.

A sample of grocery and convenience stores was based on a list of retail food outlets in Guelph-Wellington compiled as of July 14, 2021. All 5 independent grocery stores and 12 grocery store chains were invited to participate; 4 independent grocery stores and 8 stores from 8 different grocery chains participated. Of the 12 grocery stores that participated, 5 were in Wellington County.

A random sample of 20% of all convenience stores in Guelph-Wellington participated: 12 variety stores, 3 gas stations, 3 dollar stores, and 2 mass merchant pharmacies. When stores were contacted to participate, several variety store managers noted that they did not sell nutritious foods. To respect the time and space provided by variety store owners for the audit, only three variety stores were included in the full audit. An additional nine stores in Guelph were audited for the availability of vegetables and fruit, grain foods, and protein foods using a checklist of these foods, which took less than five minutes to complete. Of the 11 convenience stores that participated in the full audit, 4 were in Wellington County.

An additional 3 non-mass merchant pharmacies were contacted to participate, but the owners noted that they did not sell food, so they were excluded. However, several pharmacy owners noted that they would be interested in participating in other types of interventions to increase food access. For example, by providing information to customers about food access programs in their community.

Availability

Availability of vegetables and fruit and ultra-processed foods differed greatly within and between store types, as illustrated by shelf length. The total shelf length of vegetables and fruit in chain grocery stores, for example, ranged from 15.1 to 267.3 metres (see Table 3.2). In contrast, the total shelf length of vegetables and fruit in independent stores ranged from 5.3 to 33.9 metres. Convenience stores also had comparatively less shelf length of vegetables and fruit and ultra-processed foods. The total shelf length of ultra-processed foods also tended to be higher in chain grocery stores compared to independent stores and convenience stores.

Shelf length is related to both store size and variety of food available, suggesting that smaller stores (such as independent grocery stores and convenience stores) likely also have less overall variety of foods.¹¹ For example, smaller stores may have fewer varieties of fresh vegetables and fruit to choose from, in addition to having a lesser quantity available.

Table 3.2 Shelf length, in metres, of vegetables and fruit and ultra-processed foods in grocery and convenience stores

Store type	Food item	Average shelf length (metres)	Shelf length range (metres)
Chain grocery stores (8 stores)	Fresh vegetables and fruit	86.2	12.3–217.3
	Frozen vegetables and fruit	10.7	1.1–28.6
	Canned vegetables and fruit	8.6	1.8–24.8
	Total vegetables and fruit (fresh, frozen, canned)	105.5	15.1–267.3
Independent grocery stores (4 stores)	Fresh vegetables and fruit	13.1	4.6–30.7
	Frozen vegetables and fruit	0.4	0.0–1.1
	Canned vegetables and fruit	1.8	0.0–4.0
	Total vegetables and fruit (fresh, frozen, canned)	15.2	5.3–33.9

Shelf length ratios of vegetables and fruit to ultra-processed foods were calculated for each store. Note that complete shelf length data for ultra-processed foods was only available for 10 grocery stores and 9 convenience stores. In two grocery stores (one independent and one chain store), one pharmacy, and one gas station, the shelf length of chips or frozen entrees was not collected in error. As such, the ratios exclude these stores. Ratios above 1.0 indicate greater presence of vegetables and fruit, whereas ratios under 1.0 indicate a greater presence of ultra-processed foods.

All grocery stores had a ratio above 1.0, whereas all convenience stores had a ratio under 1.0 (see Table 3.3). The average shelf length ratio for grocery stores, for example, was 2.3 meaning that for every 1 metre of shelf length occupied by ultra-processed foods there were 2.3 metres occupied vegetables and fruit. It should be noted that some independent stores did not sell frozen and canned vegetables, but they also did not sell chips, soft drinks, and frozen entrees. While availability was lower in independent grocery stores, the relative presence of vegetables and fruits compared to ultra-processed foods was similar in both types of grocery stores.

Table 3.3 Shelf length ratio of vegetables and fruit to ultra-processed foods in grocery and convenience stores

Store type	Average shelf length ratio	Range of shelf length ratio
Chain grocery stores (7 stores)	2.4	0.7–4.3
Independent grocery stores (3 stores)	1.9	1.6–2.0
Convenience stores (9 stores)	0.05	0.0–0.3

All grocery stores had fresh vegetables and fruit available (see Figure 3.1). In comparison, only two convenience stores offered fresh vegetables and fruit. Most offered canned vegetables and fruit (70%), and a few also offered frozen (20%). However, six stores (including variety stores, gas stations, and dollar stores) did not offer any type of vegetables and fruit (30%).

Figure 3.1 Proportion of grocery and convenience stores offering fresh, frozen, and canned vegetables and fruit



All grocery stores offered at least one variety of grain products and protein foods, with the majority offering all three (see Figures 3.2 and 3.3). Both nutritious grain products and protein foods and their less nutritious comparators were generally available at grocery stores, but independent stores tended to offer fewer varieties than chain stores.

In comparison, not all convenience stores offered grain products or protein foods, although protein foods (specifically milk) were more commonly available. Less nutritious grains were more often available than nutritious while more nutritious proteins were more commonly available. Again, this is related to the widespread availability of milk and that not all stores selling 2% milk offered chocolate milk.

Figure 3.2 Proportion of grocery and convenience stores offering three types of grain foods (rice, O-shaped oat cereal, and bread)

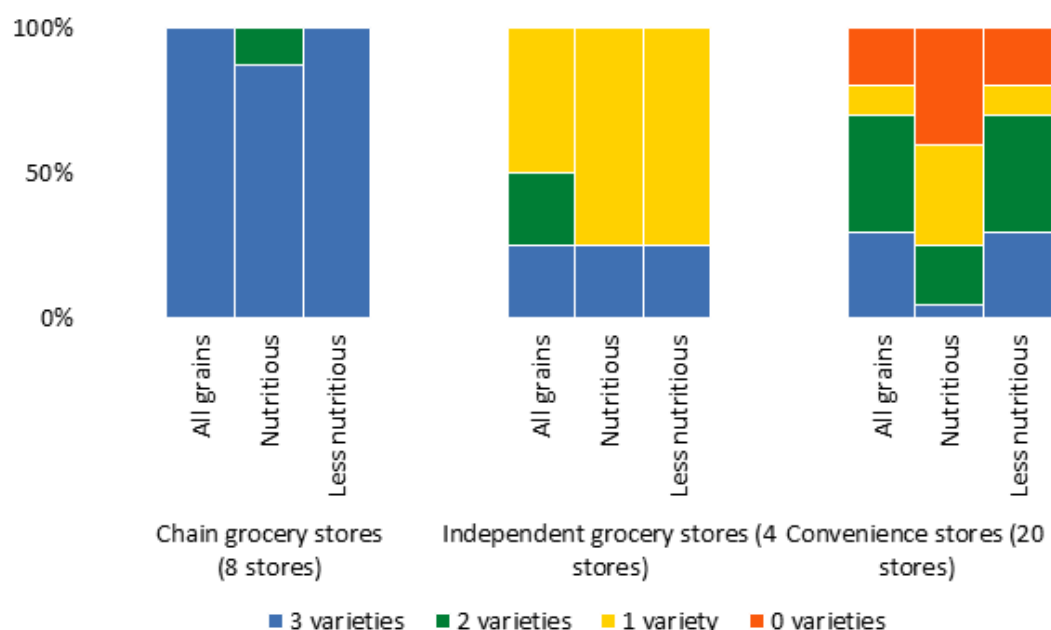


Figure 3.3 Proportion of grocery and convenience stores offering nutritious and less nutritious varieties of peanut butter, milk, and ground beef



Quality of fresh vegetables and fruit did not differ significantly among stores, and most offered the highest quality. Only one convenience store offered low quality vegetables and fruit. That is, the vegetables and fruit were overripe and bruised. However, only one convenience store that was included in the full audit had fresh vegetables and fruit. Thus, quality was assessed in only one convenience store. It cannot be assumed that, in general, the quality of fresh vegetables and fruit is lower in convenience stores.

Affordability

Price per portion of vegetables varied more than twofold and price per portion of fruit more than threefold from one grocery store to another (see Table 3.4). The price per litre of milk and for a loaf of bread also varied considerably.

Prices at chain grocery stores tended to be the lowest while prices at independent grocery stores were highest. It should be noted that there is also considerable variation within the store types, as illustrated by the wide ranges in price by store type. A reminder that only one convenience store that was included in the full audit had fresh vegetables and fruit. As with quality, affordability of vegetables and fruit was assessed in only one convenience store.

Table 3.4 Average price of vegetables, fruit, milk, and bread in grocery and convenience stores

Store type	Food item	Average price (\$)	Price range (\$)
All grocery stores (12 stores)	Vegetables (per portion)	0.35	0.22–0.73
	Fruit (per portion)	0.63	0.35–1.16
	Milk, 2% M.F. (per litre)	2.88	1.17–4.80
	Whole wheat bread (per loaf)	3.05	1.64–6.99
Chain grocery stores (8 stores)	Vegetables (per portion)	0.31	0.22–0.41
	Fruit (per portion)	0.54	0.35–0.68
	Milk, 2% M.F. (per litre)	2.50	1.17–3.29
	Whole wheat bread (per loaf)	2.21	1.64–2.50
Independent grocery stores (4 stores)	Vegetables (per portion)	0.43	0.28–0.73
	Fruit (per portion)	0.82	0.57–1.16
	Milk, 2% M.F. (per litre)	3.65	2.50–4.80
	Whole wheat bread (per loaf)	4.74	3.49–6.99
Convenience stores (11 stores)	Vegetables (per portion)	0.40 ^a	0.40–0.40 ^a
	Fruit (per portion)	1.36 ^a	1.36–1.36 ^a
	Milk, 2% M.F. (per litre)	3.11	1.17–3.99
	Whole wheat bread (per loaf)	3.34	2.29–4.29

^a Based on one convenience included in the full audit that had fresh vegetables and fruit available.

Except for bread, the nutritious grain products and protein foods cost more per unit than their less nutritious comparators (see Table 3.5). However, only peanut butter and rice showed a statistically significant difference ($p=0.04$ and $p<0.01$, respectively) suggesting that, while on average the nutritious option was more expensive, this was not the case in all stores. Some stores sold these products at the same price, and some sold the less nutritious option at a higher price.

With regard to rice, price was based on the product with the lowest cost per 100 grams, and not compared between similar unit. That is, the price for a large bag of white rice was often compared to a smaller bag of brown rice. The price per 100 grams of larger unit sized of food is usually lower, which could explain the difference seen between these two foods.

With that in mind, brown rice (and other nutritious foods) may not be available in bulk sizes as often as less nutritious foods.

Table 3.5 Average price of three grain products and three protein foods from the National Nutritious Food Basket and their less nutritious comparators, based on prices from 12 grocery stores and 11 convenience stores

Food group	Food item	Average price (\$)	Difference in price (\$)
Grain products	Rice, brown (per 100g)	0.60	0.30
	Rice, white (per 100g)	0.30	
	O-shaped oat cereal, plain (per box)	5.12	0.04
	O-shaped oat cereal, sweetened (per box)	5.08	
	Bread, whole wheat (per loaf)	2.92	0.00
	Bread, white (per loaf)	2.92	
Protein foods	Peanut butter, natural (per 100g)	0.87	0.12
	Peanut butter, added fat and sugar (per 100g)	0.75	
	Milk, 2% plain (per litre)	3.43	0.24
	Milk, chocolate (per litre)	3.19	
	Ground beef, lean (per 100g)	1.25	0.11
	Ground beef, medium (per 100g)	1.14	

In April 2021, a sample of 95 residents at increased risk of food insecurity were about their experiences with food access and food insecurity during the COVID-19 pandemic. Respondents to that survey had also noted the price difference between nutritious and less nutritious foods, and between grocery and convenience stores. One respondent said that “healthy foods are sooooo expensive compared to not healthy foods...[especially] for the amount you get”. Another had observed that products like bread, milk, and eggs cost more at convenience stores, but transportation barriers to other stores “force” people to rely on the retail food outlets closest to home.

Interestingly, the cost of one Kit-Kat bar was more expensive than a portion of fruit ($p < 0.0001$), suggesting that the cost of a nutritious snack may be less expensive (see Table 3.1). However, many factors beyond price contribute to choosing a chocolate bar over fresh fruit. For example, convenience, ease of transport, and food marketing.

Table 3.6 Average price of a portion of fruit and a Kit-Kat bar, based on prices from 12 grocery stores and 1 convenience store

Food item	Average price (\$)	Difference in price (\$)
Fruit (per portion)	0.63	-0.45
Kit-Kat (per bar)	1.18	

Prominence

Displays of ultra-processed foods outnumbered vegetables and fruit at a rate of 3.4 to 1 (see Table 3.7). So, for every 1 display of vegetables and fruit, there would be approximately 3.4 displays of ultra-processed foods. Most of the vegetable and fruit

displays were either canned or fresh, and were located on the ends of aisles, middle of aisles, and the entrance. No store had vegetables or fruit displayed at the check-out.

Displays of both vegetables and fruit and ultra-processed foods were more common in chain grocery stores. There were no displays of vegetables and fruit in convenience stores.

Table 3.7 Display counts of vegetables and fruit, chips, soft drinks, and sweets in grocery and convenience stores

Store type	Food item	Average number of displays	Range of displays
All grocery stores (12 stores)	Vegetables and fruit	6.8	0-33
	Chips	7.7	0-23
	Soft drinks	4.4	0-16
	Sweets	11.0	0-38
Chain grocery stores (8 stores)	Vegetables and fruit	8.1	0-33
	Chips	10.3	5-38
	Soft drinks	6.1	2-16
	Sweets	15.1	2-23
Independent grocery stores (4 stores)	Vegetables and fruit	4.0	0-8
	Chips	2.5	0-9
	Soft drinks	1.0	0-3
	Sweets	2.5	0-6
Convenience stores (11 stores)	Vegetables and fruit	0.0	0-0
	Chips	5.3	0-16
	Soft drinks	4.1	0-19
	Sweets	7.6	1-26

Changing the consumer food environment in Guelph-Wellington

In March 2021, 13 managers of 10 grocery stores and 3 convenience stores (variety stores and gas stations) in Guelph-Wellington were interviewed.¹¹ Those who agreed to be interviewed were asked about current trends in sales of ultra-processed foods, the actions they currently have in place to increase access to nutritious foods, and their openness to future collaborations with community partners.

Grocery stores tend to sell more nutritious foods, convenience stores sell less

Consistent with the findings of the retail food outlet audits, managers of grocery stores reported that, generally, 50% or less of the products they sell are ultra-processed. Whereas convenience store managers reported that 50% or more of the foods they sell are ultra-processed, with some offering exclusively ultra-processed foods.

Grocery store managers reported that ultra-processed foods contribute to about 50% of their sales, while in convenience stores, they contribute to about 80% of sales. Convenience store managers also noted that customers most often visited their store with the intention to buy ultra-processed snack foods and drinks.

Many grocery store managers noted a change in sales in the last 5 years, trending away from ultra-processed foods. Given the recency of the COVID-19 pandemic, these observations may be reflective of changes in food purchasing and eating patterns that occurred during the pandemic. A recent survey of Ontarians found that many respondents were buying more baking supplies and canned and frozen foods, and many increased their consumption of vegetables and fruit.¹⁵ However, other respondents to that survey reported they were buying and eating more sweet and salty snacks.¹⁵ Interestingly, one store manager did note an increase in sales of ultra-processed foods (such as chips) and alcohol during the COVID-19 pandemic. Convenience store managers did not note any changes in sales in the last 5 years.

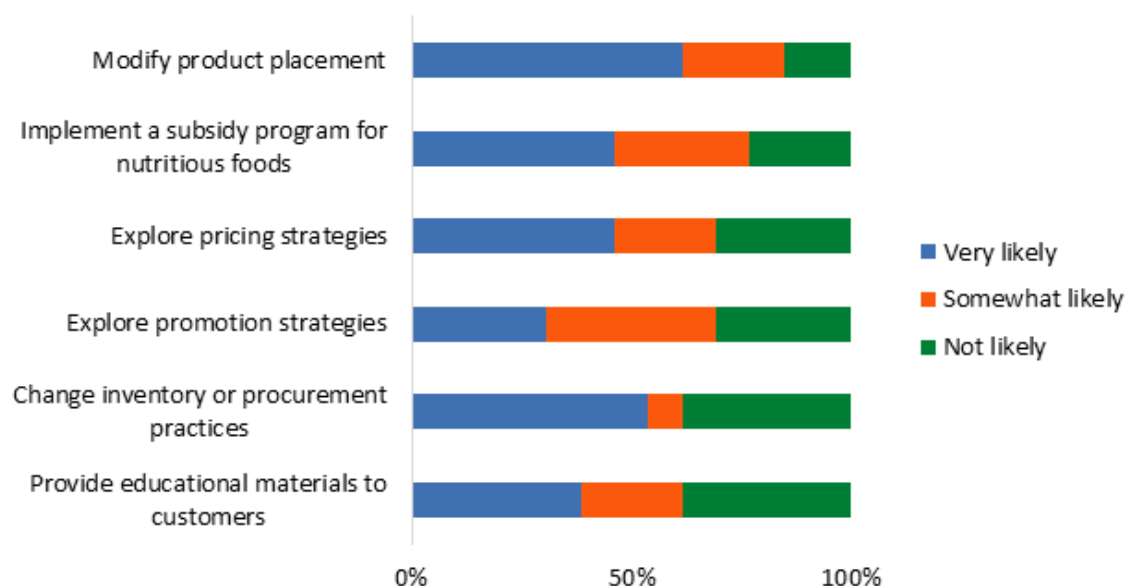
Store managers are interested in collaborating to increase access to nutritious foods

All grocery and convenience store managers reported they would or might be interested in opportunities to collaborate with community organizations to increase access to nutritious foods. They believed that such collaborations would be beneficial for the community and potentially increase sales at their business. And most grocery store managers reported they have already made efforts to increase access to affordable, nutritious foods by:

- Increasing the proportion of nutritious foods available in their store.
- Increasing availability of fresh vegetables and fruit through their online store.
- Rearranging the store layout to increase the visibility of nutritious foods.

Of all strategies to increase access to affordable, nutritious foods, store managers reported they would be most likely to modify product placement and implement a subsidy program for nutritious foods (see Figure 3.4). For each potential strategy, over half of the store managers said they were either somewhat or very likely to implement the strategy.

Figure 3.4 Likelihood of implementing various actions to increase access to affordable, nutritious foods in grocery and convenience stores, as reported by grocery and convenience store managers (13 respondents)



Barriers to increasing access to nutritious foods differ between types of retail food outlets

Half of the store managers interviewed reported it being harder to stock and sell nutritious foods, due to shorter shelf life. Increased shelf space and refrigeration would be needed to increase availability of nutritious foods. However, offering a greater quantity and variety of nutritious foods may not be sufficient to increase sales, particularly for convenience stores given the lower consumer demand for these foods.

Managers at chain grocery stores also shared that most of the suggested actions to increase access would be difficult, as decisions around product offerings, store layout, and marketing are made at the corporate level rather than the local level (see Figure 3.5).

Figure 3.5 Snapshot illustration of the different opportunities and barriers to increasing access to nutritious foods faced by independent and chain grocery stores in Guelph-Wellington



Limitations

The audits only included grocery and convenience stores, excluding other types of retail foods outlets like markets and specialty food stores. However, most consumers tend to choose grocery stores as their primary food store and visit other types of stores for smaller, complementary purchases between their main food shopping trips.¹⁴ Thus, these stores probably depict a part of the food environment to which more residents are exposed.

The measurement of availability of nutritious grain products and protein foods was limited to only six foods. These foods were chosen because they have less nutritious comparators. Many of the other foods in the National Nutritious Food Basket do not have clear comparators that are of lower nutritional quality. For example, there is no clear comparator for eggs or dried lentils. However, there are a variety of nutritious foods that all stores may have carried, which this audit did not capture. Thus, the availability of nutritious foods in food retail outlets, and particularly convenience stores, may be greater than what has been reported here.

Given the small sample size for the retailer interviews, the findings do not identify any specific priorities for any specific types of stores. Rather, it provides insight about some of the barriers and potential solutions to increasing nutritious food offerings in retail settings. Any interventions should be planned in collaboration with a retailer and tailored to their needs and the needs of their customers.

Key terms

A glossary of key terms related to nutrition, food processing, food environments, and food access is included in Appendix A.

Nutritious foods are the foods that should be consumed regularly as part of a nutritious eating pattern. They include unprocessed and minimally processed vegetables and fruits, whole grains, proteins foods (with an emphasis on plant-based protein foods), and water.¹⁰

Unprocessed foods come from plants or animals without any industrial processing.¹¹ Spring and tap water are also included.

Minimally processed foods are unprocessed foods altered in ways that do not add any new substance (such as salt, sugar, or fat) but often involve the removal of parts of the food.¹¹ Processing techniques typically preserve the food and extend its duration, aid its use, preparation, and cooking, and improve its palatability.

Ultra-processed foods are formulations of industrial ingredients and other substances derived from foods, plus additives.¹¹ The purpose of ultra-processing is to create products that are convenient (durable, ready-to-eat, -drink, or -heat), attractive (hyper-palatable), and profitable (cheap ingredients). Excess consumption of ultra-processed foods is associated with excess consumption of sodium, sugar, and saturated fat and an increased risk of chronic disease. Overconsumption of these foods should be avoided.

The **consumer food environment** refers to aspects within food retail outlets that influence food purchasing, such the availability of nutritious foods, nutrition information, and marketing factors like product, promotion, placement, and price.^{7,8}

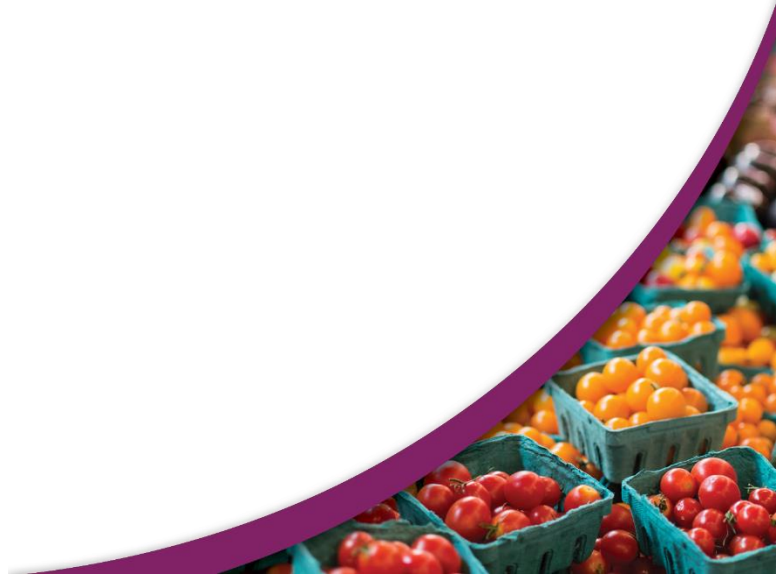
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4.2

Food marketing



4.2 Food marketing

Key Highlights

Outdoor food advertisements have the potential to expose a large portion of the population to food marketing, which can influence food preferences and eating patterns. Children are particularly vulnerable to the effects of food marketing strategies like outdoor advertising. In Guelph–Wellington, 80% of outdoor food-related advertisements within 500 metres of schools promote highly-processed foods like fast food meals, ice cream and sugary drinks. As a result, children (and other residents exposed to these advertisements) may be more likely to choose these foods over more nutritious options.

With that in mind, the outdoor food advertisements in Guelph–Wellington are primarily located on retail food outlets like fast food restaurants and convenience stores. While not all elementary and secondary schools are located near these outlets, children that attend schools that are nearer to these outlets may be exposed to advertising for ultra-processed foods. Further, people who live, work, or travel near these outlets may also be exposed to this advertising. Any action to regulate this type of advertising would therefore need to be in collaboration with, and consideration for, these businesses.

Background

Food marketing “refers to any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal and/or consumption of [foods]. It comprises anything that acts to advertise or otherwise promote a [food].”¹ Examples of food marketing include:

- Advertising (e.g., TV and radio, print media, online, and outdoors)
- Product placement and branding
- Sponsorship (e.g., events, sports teams)
- Direct marketing (e.g., contests, vouchers)
- Product design and packaging
- Point-of-sale (e.g., displays at check-outs, samples)

Food marketing is part of the information food environment, which includes media and advertising, as well as the consumer and organizational food environments.^{2–4} For example, grocery store displays and advertising in recreation settings are examples of food marketing in retail or institutional settings.

Children are particularly exposed to food marketing, which has been shown to influence children's food preferences and purchase requests (which influence parents' purchasing decisions), thereby influencing their eating patterns.^{5,6} For example, advertising can lead children to request certain foods. Considering that food marketing is often focused on ultra-processed foods and foods high salt, sugar, and/or saturated fat, this could negatively impact food purchasing and eating patterns of children (and their families).⁶ And, since

eating patterns established during childhood might track through to adulthood, this has implications for their long-term health, too.⁷⁻¹¹

Many actions focused on reducing exposure to food marketing have focused on television and online advertising targeted to children.¹² For example, Bill S-228 (the Child Health Protection Act) proposed amendments to the Canadian Food and Drugs Act prohibiting food and beverage marketing directed at children 12 years of age and younger.¹³ Introduced in 2016, this Bill had passed the third reading in the House of Commons, but it was never passed by the Senate due to the 2019 federal election and dissolution of parliament.

While television and online food marketing tends to be the focus of research and policy initiatives, there are many other forms of marketing that can influence the food purchasing and eating patterns of children (and adults). One example is outdoor advertising, which offers a relatively inexpensive way to reach a broad audience of consumers. Examples include billboards, bus shelters, and window displays. Since these advertisements tend to be viewed repeatedly by the same people, they have high potential for brand exposure.¹⁴

Findings

Outdoor advertising in Guelph-Wellington

In September 2021, outdoor advertisements within 500 metres (about a 5-minute walking distance) of elementary and secondary schools in Guelph-Wellington were audited. School zones were chosen as the focus of the study to assess the prominence and type of outdoor food advertising that children and youth may be regularly exposed to. Only the main roads were audited. It was assumed that most advertising would be linked to retail food outlets and other businesses, which tend to be located on main roads and not smaller residential streets.¹⁷ Advertisements included billboards, posters, banners, free-standing signs (such as sandwich boards and wire-stake yard signs), digital signs, and merchandising (such as logos on a store sign or patio umbrella). The following advertisements were excluded from the audit:

- Real estate signs advertising the sale or lease of a specific residence or building.
- Construction fencing or signage, such as logos on construction equipment or safety information.
- On-premise signage imparting information only, such as a business name, contact details, logo, or opening hours.
- Advertisements inside stores, except advertisements in windows visible from the outside.
- Community safety or public information, such as parking information or “slow down” signs.
- Political campaign signs.

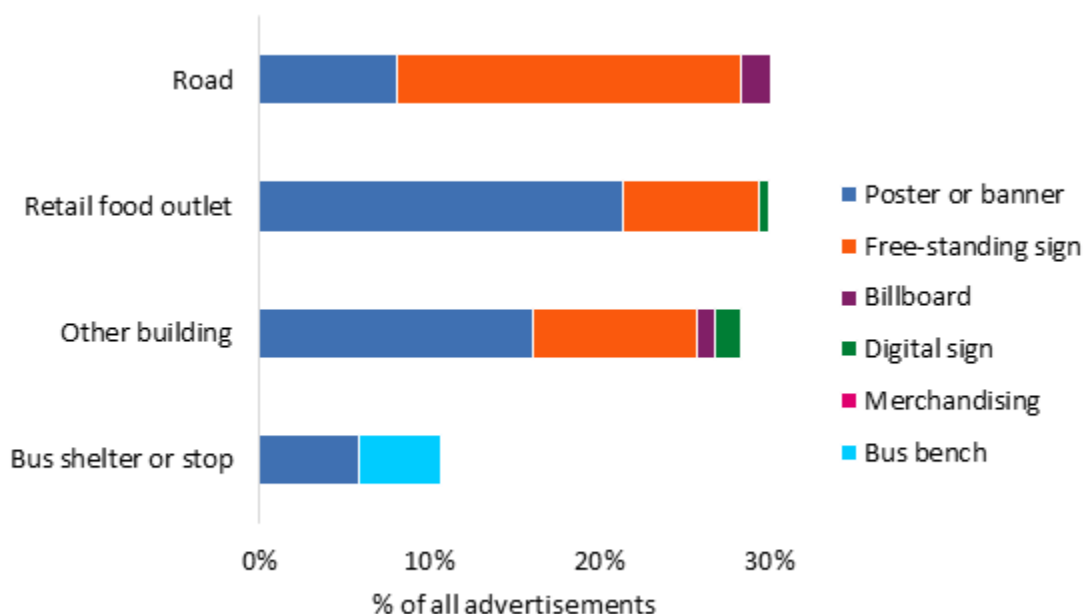
A random, stratified sample of 16 elementary and secondary schools were included in the audit. An equal number of schools were sampled from Guelph and Wellington County (8 schools from each geography). In both Guelph and Wellington County, 6 elementary and 2 secondary school were sampled.

A total of 187 advertisements were present within 500 metres of the schools and almost a quarter (22%) of the advertisements were related to food.

Most advertisements were at the roadside, on the premises of food retail outlet (including on the building itself), or on the premises of another type of building, such as another business or a house (see Figure 4.1). Advertisements at the roadside were primarily free-standing signs (most often wire-stake yard signs), followed by posters or banners attached to phone poles. In contrast, most advertisements on building premises were posters on the building itself followed by free-standing signs.

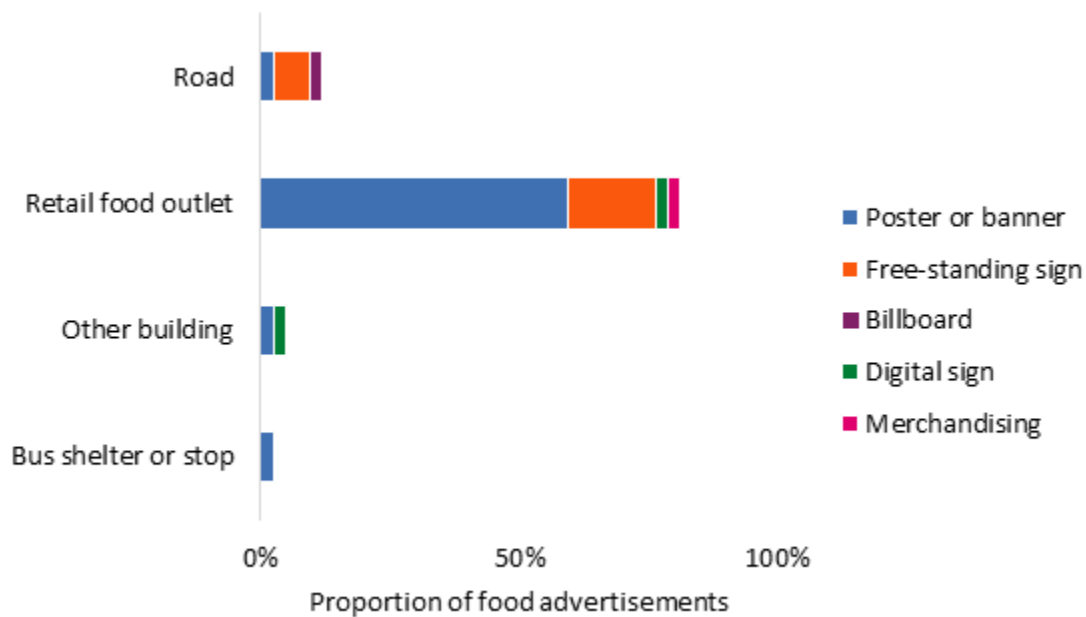
Interestingly, 35% of all bus shelter advertisements (posters and benches) were only promoting the opportunity to advertise. That is, the advertisement space had not been purchased but there was an advertisement promoting its availability. When this data was collected, it was also noted (although not measured), that many bus shelters had no advertising at all.

Figure 4.1 Setting and type of advertisements within 500 metres of 16 elementary and secondary schools in Guelph-Wellington



Of the 187 total advertisements, only 22% were food related (42 advertisements). That is, the advertisement was promoting a retail food outlet or a specific food product. The vast majority of these were on the premises of retail food outlets (primarily limited-service restaurants, variety stores, and gas stations) (see Figure 4.2).

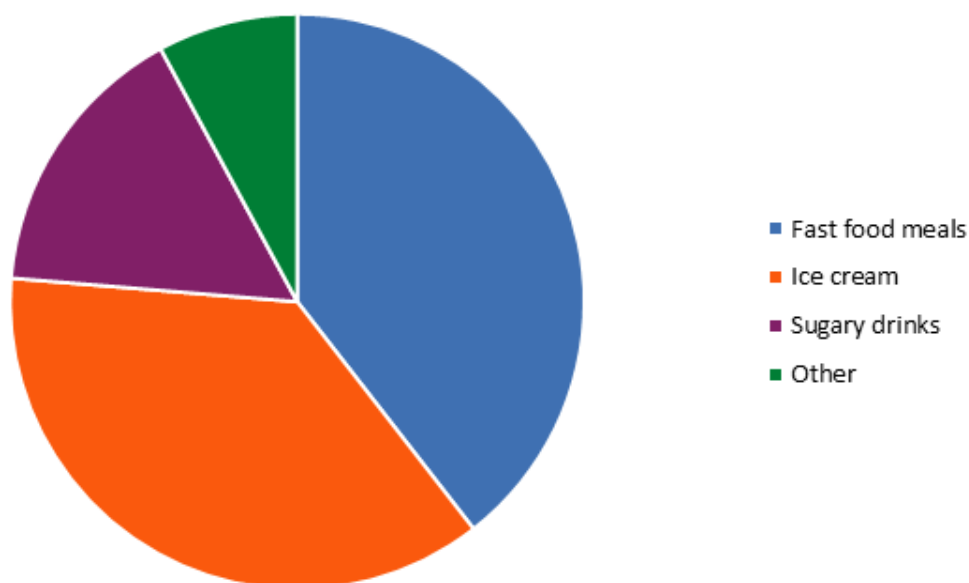
Figure 4.2 Setting and type of food advertisements within 500 metres of 16 elementary and secondary schools in Guelph–Wellington



Only 22% of the foods advertised in the 42 food-related advertisements were unprocessed or minimally processed. These included advertisements for vegetable and fruit markets, milk, coffee, bottled water, bulk and frozen foods, and local meat. There were also two advertisements for alcoholic beverages.

The remaining three quarters of advertisements promoted ultra-processed foods with excess salt, sugar, and/or saturated fat. Most of the foods advertised were either fast food meals (such as pizza, hamburgers, and fried food) or ice cream (see Figure 4.3). Sugary drinks like pop and energy drinks were also common, particularly in advertisements at convenience stores.

Figure 4.3 Type of foods promoted in advertisements for ultra-processed foods and their proportion of all ultra-processed food advertisements



- **Fast food meals** include pizza, hot dogs, hamburgers, french fries, shawarma, and fried chicken.
- **Sugary drinks** include pop, slushies, and energy drinks.
- **Other foods** include chips, funnel cake, and deli meat.

The number of advertisements, ratio of food advertisements to non-food advertisements, and the ratio of advertisements for less processed foods to ultra-processed foods did not differ significantly by geography (City of Guelph or Wellington County), school type (elementary or secondary), or neighbourhood marginalization rating (based on a weighted average quintile of the Ontario Marginalization Index¹⁸ for Guelph neighbourhoods and Wellington County townships).

Limitations

The audit of outdoor advertisements took place on a single day in September. This data may not represent the type of advertisements in Guelph-Wellington at other times of the year. For example, there may be fewer advertisements for ice cream in the cooler months. Moreover, data collection occurred during a federal election. There was an overwhelming number of election campaign signs present, which may have deterred other types of advertisements.

Finally, the presence of advertisements does not describe exposure. Children and youth attending are not necessarily exposed to the advertisements near schools more than people who live, work, or go to school elsewhere. Further, this study focused on outdoor advertising and does not account for all the food marketing that children and youth may be exposed to, such as digital marketing through television and the Internet.

Section Key Terms

A glossary of key terms related to nutrition, food processing, food environments, and food access is included in Appendix A.

Nutritious foods are the foods that should be consumed regularly as part of a nutritious eating pattern. They include unprocessed and minimally processed vegetables and fruits, whole grains, proteins foods (with an emphasis on plant-based protein foods), and water.¹⁵

Unprocessed foods come from plants or animals without any industrial processing.¹⁶ Spring and tap water are also included.

Minimally processed foods are unprocessed foods altered in ways that do not add any new substance (such as salt, sugar, or fat) but often involve the removal of parts of the food.¹⁶ Processing techniques typically preserve the food and extend its duration, aid its use, preparation, and cooking, and improve its palatability.

Ultra-processed foods are formulations of industrial ingredients and other substances derived from foods, plus additives.¹⁶ The purpose of ultra-processing is to create products that are convenient (durable, ready-to-eat, -drink, or -heat), attractive (hyper-palatable), and profitable (cheap ingredients). Excess consumption of ultra-processed foods is associated with excess consumption of sodium, sugar, and saturated fat and an increased risk of chronic disease. Overconsumption of these foods should be avoided.

Food marketing and promotion refers to any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal, or consumption of foods. It comprises anything that acts to advertise or otherwise promote a food.¹

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Conclusion



Conclusion

All four aspects of food access (physical access; economic access; food and nutrition knowledge and food skills; and marketing, promotion, and celebration of food) are important for promoting the health and wellbeing of Guelph–Wellington residents. Nutritious foods must be available, accessible, and affordable to everyone in Guelph–Wellington. Even if a person has physical and economic access to nutritious foods, they require the right knowledge and skills to choose and prepare nutritious foods. Likewise, nutritious foods need to be promoted and celebrated in the community so that eating these foods is a positive, enjoyable experience.

The information collected in this food environment assessment has improved our understanding of food access in Guelph–Wellington and identified initial opportunities for improvements. It provides a baseline to measure the impact of current and future actions to increase access to nutritious foods. Although there are many strengths in Guelph–Wellington, evidence indicates there is a need for continued focus on addressing the complex barriers to nutritious food access in our community, as well as implementing long-term, sustainable solutions.

Based on findings from the food environment assessment, the following are recommended when planning interventions:

- **Develop comprehensive interventions that address multiple aspects of food access.** All aspects of food access should be considered when planning interventions. For any one intervention to be effective, nutritious food access needs to be supported by all dimensions of the food environment.
- **Apply a targeted or tailored approach.** Everyone in Guelph–Wellington faces barriers to accessing nutritious foods. However, not everyone experiences the same barriers. Interventions should be targeted to the barriers faced by, and the unique strengths of, specific groups, such as residents of rural communities and people with low incomes.
- **Recognize all barriers to food access.** The aim of the Nutritious Foods Workstream is to increase access to nutritious foods for everyone in Guelph–Wellington. A barrier for one person is still a barrier. While interventions may focus on barriers faced by many residents, consideration should be given to less common barriers so as not to exclude any one person or group.
- **Continuously evaluate effectiveness.** Food access is complex, and no single food environment assessment can fully tease apart that complexity. Actions should be continuously evaluated to determine whether (and why) they are effective, as well as to identify unintended outcomes – both positive and negative. Actions should be modified based on this evaluation.
- **Integrate sustainability and circularity.** Food access interventions are often limited by funding and other resources. Actions should consider sustainable funding approaches and build from existing resources and infrastructure.

Moving forward, this report will be used as a resource to develop a Food Security Action Plan to increase access to nutritious foods for everyone in Guelph–Wellington. However, the Food Environment Assessment may not have captured the perspectives and experiences of all individuals and groups in Guelph–Wellington. The Nutritious Foods Workstream will continue listening to, and learning from, diverse voices and perspectives so that interventions are useful to, and welcomed by, community members.

Appendix A:

Glossary



Appendix A: Glossary

Nutrition

Nutrition is the intake of food, considered in relation to the body's dietary needs. Good nutrition, which is when the body has adequate and well-balanced carbohydrates, protein, fat, vitamins, and minerals, is a cornerstone of good health. Poor nutrition occurs when there are nutrient deficiencies, excesses, or imbalances, and can increase risk for disease and impair mental and physical development.¹

Nutritious foods

Nutritious foods are the foods that should be consumed regularly as part of a nutritious eating pattern. They include unprocessed and minimally processed vegetables and fruits, whole grains, proteins foods (with an emphasis on plant-based protein foods), and water.²

Nutritious eating pattern

What and how we eat on a regular basis forms our pattern of eating. A nutritious eating pattern is a pattern of eating that promotes good nutrition. Recommendations for a nutritious eating pattern are as follows²:

- Eat a variety of nutritious foods each day.
- Be mindful of your eating habits.
- Cook more often.
- Enjoy your food.
- Eat meals with others.
- Use food labels.
- Limit highly processed foods.
- Be aware that food marketing can influence your food choices.

Food processing

Processed foods include any foods that have been altered in some way during preparation. Practically all foods have been processed in some way. However, some processed foods have excess salt, sugar, and saturated fat added to them, and regular consumption of these foods can negatively impact health.

The NOVA classification system groups all foods according to the level of processing they undergo.³ This system helps to understand the purpose of food processing, and which processed foods should be limited in a nutritious eating pattern.

Unprocessed and minimally processed foods

Unprocessed foods come from plants or animals without any industrial processing. Spring and tap water are also included.

Minimally processed foods are unprocessed foods altered in ways that do not add any new substance (such as salt, sugar, or fat) but often involve the removal of parts of the food.

Processing techniques typically preserve the food and extend its duration, aid its use, preparation, and cooking, and improve its palatability.

Processed culinary ingredients

Processed culinary ingredients are extracted and refined by industry from food constituents (such as sugars, fats, and oils) or obtained from nature (such as salt). These substances are not or normally not consumed by themselves. Their main purpose is to be used in the preparation and cooking of foods.

Processed foods

Processed foods are made by adding salt, sugars, fats, oils, and other culinary ingredients to minimally processed foods to make them more durable and usually more palatable, and by various methods of preservation. Depending on how they are prepared and used in dishes and meals, processed foods can be part of a nutritious eating pattern when eaten in moderation.

Ultra-processed foods

Ultra-processed foods are formulations of industrial ingredients and other substances derived from foods, plus additives. The purpose of ultra-processing is to create products that are convenient (durable, ready-to-eat, -drink, or -heat), attractive (hyper-palatable), and profitable (cheap ingredients).

Excess consumption of ultra-processed foods is associated with excess consumption of sodium, sugar, and saturated fat and an increased risk of chronic disease. Overconsumption of these foods should be avoided.

Food environment

The food environment encompasses the physical, social, economic, cultural, and political factors that impact food access and, by extension, food choices.⁴ A nutritious food environment facilitates nutritious eating patterns by making the nutritious choice the easy or default choice.

There are multiple dimensions to the food environment, including the community, consumer, organizational, and information food environments, as well as government policies.

Community food environment

The community food environment refers to the geographic location, type, and accessibility of food outlets. Accessibility includes features like proximity to a public transit route, hours of operation, and whether there is a drive-thru option.^{5,6}

Consumer food environment

The consumer food environment refers to aspects within food retail outlets that influence food purchasing, such as the availability of nutritious foods, nutrition information, and marketing factors like product, promotion, placement, and price.^{6,7}

Organization food environment

The organizational food environment refers to the consumer food environment within places such as schools, workplaces, child care centres, and health care settings.⁶

Food information environment

The information environment refers to food marketing and promotion.^{6,8}

Food policy environment

The food policy environment refers to the government policies (including municipal, provincial, and federal policies) that influence other dimensions of the food environment, such as mandating food and nutrition education in schools, menu requirements in child care settings, and regulating food advertising.⁹

Food access

Food access includes the ability to acquire, select, purchase, prepare, and consume nutritious foods. Food environments influence food choices by shaping access to nutritious food. There are four aspects of food access: physical access, economic access, food and nutrition knowledge and food skills, and marketing, promotion, and celebration of food.

Physical access

Physical access refers to the number and kinds of food retail outlets where people live, work, play, or go to school. It includes the location of food retail outlets and the ease of reaching those outlets, the availability of nutritious foods within those outlets, and how those outlets can adapt to individual needs.^{10,11}

Economic access

Economic access refers to the cost of food and a person's ability to afford that cost.^{10,11} Absolute affordability is defined as how much it costs a person to follow a nutritious eating pattern compared to their household income. Relative affordability is the cost of a food product compared to a more nutritious alternative.

Food insecurity

Food insecurity, also called household food insecurity, is not having enough money to buy food. Individuals and families living on low incomes struggle to pay the rent, other basic living costs (such as utilities, phone, childcare, clothing, medication, transportation) **and** food.¹²

Food and nutrition knowledge and food skills

Food and nutrition knowledge includes the facts and information acquired through experience or education related to food and nutrition. For example, the capacity to distinguish between nutritious and less nutritious foods, understand where food comes from, and understand the nutrients in food and how these can affect health. Food skills are the techniques related to food purchasing, preparation, handling, and storage, such as chopping, measuring, cooking, reading recipes, and food safety.¹³

Marketing, promotion, and celebration of food

Food marketing and promotion refers to any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal, or consumption of foods. It comprises anything that acts to advertise or otherwise promote a food.¹⁴ Celebration of nutritious foods occurs when nutritious foods are promoted widely and favorably. This can occur through commercial and non-commercial communications, like social norms, food traditions, or community events.

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Appendix B:

Methods



Appendix B: Methods

Using a results-based accountability framework, informed by a document review and expert consultation, the Nutritious Foods Workstream identified indicators for each of the four aspects of nutritious food access. A total of 30 indicators were identified (see Table B.1).

Table B.1 Indicators of each of the four aspects of food access identified by the Nutritious Foods Workstream to measure the food environment and nutritious food access in Guelph–Wellington

Aspect of food access	Indicators
Physical access	<ul style="list-style-type: none"> • Level of neighbourhood access to retail food outlets. • Ratio and characteristics of ultra-processed foods compared to less processed foods available in retail food outlets. • Amount and characteristics of retail food outlets connected to transportation networks. • Ratio and characteristics of ultra-processed foods compared to less processed foods available in institutional food service. • Amount and characteristics of food access programs. • Amount and characteristics of online food retail options. • Amount and characteristics of infrastructure available enabling physical access to food. • Amount and characteristics of food policies or resources provided enabling physical access to food. • Residents' perceptions and experiences related to physical access to food across demographic groups.
Economic access	<ul style="list-style-type: none"> • Relative affordability of ultra-processed foods compared to less processed foods available in retail food outlets. • Amount and characteristics of "low-cost" retail food outlets. • Relative affordability of ultra-processed foods compared to less processed foods available in institutional food service. • Level of purchasing power to consume a nutritious eating pattern. • Level of food insecurity in the region across demographic groups. • Amount and characteristics of food policies or resources provided enabling access to less processed foods through financial strategies (or de-incentivizing ultra-processed foods). • Residents' perceptions and experiences related to the cost of food across demographic groups.

Food and nutrition knowledge and food skills	<ul style="list-style-type: none"> • Frequency and characteristics of home cooked meals consumed by households. • Amount and characteristics of educational opportunities supporting the development of food and nutrition knowledge and food skills. • Amount and characteristics of infrastructure available supporting the development of food and nutrition knowledge and food skills. • Level of food and nutrition knowledge and food skills across various demographic groups. • Level of awareness and use of national guidelines promoting nutritious eating patterns across demographic groups. • Amount and characteristics of policies or resources provided enabling the development of food and nutrition knowledge and food skills. • Residents' perceptions and experiences related to food and nutrition knowledge and food skills across demographic groups.
Marketing, promotion, and celebration of food	<ul style="list-style-type: none"> • Ratio and characteristics of marketing strategies and materials for ultra-processed foods compared to less processed foods in various settings. • Amount and characteristics of marketing materials that promote less processed foods in a professional manner. • Amount and characteristics of food marketing targeting children. • Amount and characteristics of food events promoting ultra-processed foods compared to less processed foods. • Level of food-related media literacy across demographic groups. • Amount and characteristics of food policies or resources provided enabling the promotion of less processed foods (or restricting marketing of ultra-processed foods). • Residents' perceptions and experiences related to food marketing across demographic groups.

Glossary of terms

Characteristics refers to traits or features of an entity (for example, a program or policy), such as location, hours, messaging, frequency, cultural appropriateness, impact, and cost.

Economic access refers to food pricing and financial abilities.

Educational opportunities refer to programs or courses offering training in food and nutrition education or food skills, such as cooking classes and curriculum.

Food access programs refer to locations where food is available for no cost or at a low cost, such as sliding scale markets and emergency food programs.

Infrastructure refers to supports for production, preparation, storage, distribution, retailing, or consumption of food, such as community kitchens, land for urban agriculture, and water supply for community gardens.

Institutional food service refers to food service such as vending, concessions, and cafeterias within community institutions, such as long-term care homes, hospitals, child care centres, municipal buildings, and schools.

Less processed foods refer to unprocessed or minimally processed foods, processed culinary ingredients, and processed foods.

“Low cost” retail food outlets refer to outlets or programs selling foods at a lower cost than average, such as sliding scale markets, garden fresh boxes, and certain grocery stores.

Marketing strategies and materials refer to various marketing tactics, mediums, and platforms such as digital, print, influential people, billboards, and posters.

Online food retail refers to platforms where food can be purchased online, such as online grocers and delivery services.

Policies refers to municipal policies, such as those related to zoning, by-laws, subsidies, and taxation.

Residents refers to individuals living in Guelph–Wellington or working in the food sector, including those responsible for teaching and providing food services in schools, hospitals, and other settings.

Retail food outlets refer to locations where food is sold, such as grocery stores, farmers markets, and convenience stores.

Transportation networks refer to various modes of transportation, such as walking, bicycling, and driving, as well as characteristics of transportation networks, such as available parking and bike racks.

Various settings refer to public locations throughout Guelph–Wellington where marketing tactics are present, such as bus stops, grocery stores, institutions, municipal buildings, and restaurants.

Primary data collection activities

Once the indicators of food access were established, a series of data collection activities were planned to measure each. Data was collected from October 2020 through September 2021. Due to social gathering restrictions related to the COVID-19 pandemic, data on food events in Guelph–Wellington (an indicator of marketing, promotion, and celebration of food) was not collected. A brief description of each data collection activity is provided next. Complete details are included in a supplementary report which is available upon request to Our Food Future.

Household food purchasing and waste

Household food purchasing and avoidable food waste data from Our Food Future's Food and Food Waste Flow Study¹ were converted to a grocery list of food purchased and wasted by a four-person household. The Canadian Nutrient File² was used to estimate standard food weights. Avoidable food waste was estimated based on a previous study of the most common items in the avoidable food waste of Guelph families.³

Neighbourhood mapping

Using geographic information system (GIS) software, retail food outlets and community agriculture spaces throughout Guelph–Wellington were mapped to assess physical access to sources of food. Data was collected from April through September 2021.

Retail food outlet audits

Twelve grocery stores and twenty convenience stores (including variety stores, gas stations, pharmacies, and dollar stores) throughout Guelph–Wellington were audited to assess availability, affordability, prominence, and promotion of nutritious foods in retail food outlets. Data was collected in August 2021.

Food retailer interviews

The owners and managers of nine grocery stores and three convenience stores were interviewed. Data was collected about the tendency in sales of ultra-processed foods to less processed foods and the actions these retailers have in place to increase access to nutritious foods. Their openness to future collaborations with community partners and likelihood of implementing certain actions to increase access to nutritious food were also explored. Data was collected in March 2021.

Online food retail audits

A scan of all grocery stores in Guelph–Wellington was completed to determine whether they offered online ordering for pick-up or delivery, the associated cost, and where in Guelph–Wellington they delivered. An audit of three third-party restaurant delivery apps was completed to determine which municipalities in Guelph–Wellington had access to these services, the number restaurants available, and the associated cost of delivery. Data was collected in August 2021.

Outdoor advertising audits

An audit of outdoor advertising present within 500 metres of elementary and secondary schools throughout Guelph–Wellington was completed to assess the amount and characteristics of food advertising that children and youth are exposed to. Data was collected in September 2021.

Recreation setting audits

Recreation department staff in the City of Guelph and five townships in Wellington County were interviewed about the types of food available in concessions and vending machines, and presence of food advertisements, in municipal arenas and outdoor parks. When possible, concession menus and vending machines within these settings were audited. Data was collected between August and September 2021.

Food access during the COVID-19 pandemic survey series

Recognizing that individuals may be facing additional barriers to accessing nutritious foods during the COVID-19 pandemic, the Smart Cities Office released Our Food Future's 10-point social and economic recovery plan entitled Grow Back Better.⁵ To support this plan, information about food access and food insecurity during the pandemic was collected through a series of three surveys.

Providers from 22 social service organizations in Guelph–Wellington were surveyed about how providing services to people experiencing food insecurity changed during the pandemic, the challenges their organizations faced, and what can be done to improve physical and economic access to food in Guelph–Wellington. Data was collected in October 2020.

Guelph–Wellington residents were surveyed about household food insecurity and barriers to food access during the COVID-19 pandemic. A stratified, random sample of 600 residents completed the survey. Data was collected in November and December 2020. To supplement the findings from the random sample of residents, a second, targeted survey was conducted to capture feedback from residents at higher risk of food insecurity. A sample of 95 clients of social service organizations completed the survey. Data was collected in March and April 2021.

Program and infrastructure scans

A scan of the number and characteristics of food access programs, food and nutrition education programs, and community agriculture resources in Guelph–Wellington was completed. An initial list was identified through a review of online directories and the websites of community. This list was then reviewed by community stakeholders to identify additional programs and infrastructure. The organizations providing the program or maintaining the infrastructure were contacted to collect additional details when sufficient information was not available online. Data was collected between March and July 2021.

Focus group pilot

One virtual focus group, two online discussions through Our Food Future's Kitchen Table website, and one key information interview with Guelph-Wellington residents were hosted. The primary goal was to assess whether virtual focus groups and online discussions would be an effective way to engage residents in conversations about barriers and opportunities to nutritious food access. However, the discussions centred around food and nutrition knowledge, food skills, and food marketing, the findings of which also provide insights into residents' perceptions and experiences related to nutritious food access. Data was collected in July 2021.

References

1. Dillon Consulting & Metabolic. (2021). Our Food Future – Food and food waste flow study. <https://foodfuture.ca/foodflowstudy>
2. Government of Canada. (2021). The Canadian Nutrient File. <https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/nutrient-data/canadian-nutrient-file-about-us.html>
3. von Massow, M., Parizeau, K., Gallant, M., Wickson, M., Haines, J., Ma, D. W. L., Wallace, A., Carroll, N., & Duncan, A. M. (2019). Valuing the multiple impacts of household food waste. *Frontiers in Nutrition*, 6, 143. <https://doi.org/10.3389/fnut.2019.00143>
4. Our Food Future. (2020). Grow back better: Our Food Future's 10-point recovery plan in response to COVID-19. <https://foodfuture.ca/basic-page/grow-back-better>

Appendix C:

Food Environment

Assessment

infographic



How COVID-19 impacted food access and food insecurity in Guelph and Wellington County

August 2021

Our access to nutritious food is closely tied to our work, family, and social lives – all of which have been profoundly impacted by the COVID-19 pandemic. These impacts have created new barriers to accessing food, while exacerbating existing barriers.

Recognizing that the COVID-19 pandemic may have impacted food access in Guelph–Wellington, Our Food Future, in partnership with Wellington–Dufferin–Guelph Public Health and Toward Common Ground, asked community members and social service providers about their experiences of food access and food insecurity during the pandemic.

What we learned is summarized over the next few pages and will be used to establish local priorities and identify and implement interventions to increase access to affordable, nutritious foods for everyone in Guelph–Wellington.

COVID-19 restrictions and the individual actions people took to keep themselves and others safe changed how we access food. A snapshot of what we heard:

- Many people stayed home to limit their exposure to COVID-19, while others who were caring for family members were unable to leave the home easily. This made it challenging to get to grocery stores and community organizations for food.
- Job loss and increasing food prices related to the pandemic impacted some households' ability to afford nutritious food, leading them to experience food insecurity for the first time.
- Community organizations that support people experiencing food insecurity noticed a change in demand for emergency food services during the pandemic. Forty-two percent of community organizations that were surveyed reported an increase in demand with new clients and more food needed by existing clients.
- While the barriers to affordable, nutritious food are perceived differently between people who are at increased risk of food insecurity and those who are not, both groups agreed that income-based solutions, such as guaranteed annual income and a living wage, would help to increase food access.

“Food insecurity, also called household food insecurity, is not having enough money to buy food. Individuals and families living on low incomes struggle to pay for basic living expenses such as rent, utilities, phone, childcare, clothing, medication, transportation and food.”¹



How COVID-19 impacted food insecurity and food access in Guelph and Wellington County

What we heard from community members

Food insecurity, also called household food insecurity, is not having enough money to buy food.¹

Food insecurity was measured based on 7 experiences, ranging from worrying food would run out before there was money to buy more, to going hungry because there was not enough money for food.²

1+ experiences =
living in a food insecure household

5+ experiences =
living in a **severely** food insecure household

In November/December 2020, we asked a **representative sample of Guelph-Wellington residents** about their experiences with food insecurity and food access during the pandemic



600 community members were surveyed by phone

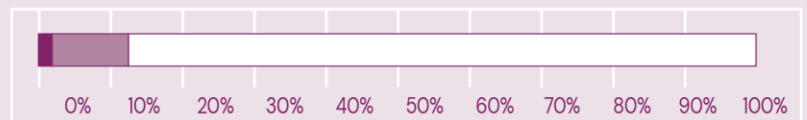
People from each municipality in Wellington County and all 6 wards in the City of Guelph responded to the survey.

Some people are at increased risk of severe food insecurity due to their living conditions and identities (e.g., income, race, age). In March/April 2021, we asked community members at increased risk of severe food insecurity about their experiences.



95 community members at increased risk of severe food insecurity were surveyed by phone³

1 in 7 (14%) of Guelph households and 1 in 10 (10%) Wellington County households are food insecure



● Severely Food Insecure ● Food Insecure ● Food Secure

Of the 95 community members at increased risk of severe food insecurity who were surveyed, 72 (75.8%) reported living in a food insecure household of which 40 (42.2%) reported living in a severely food insecure household

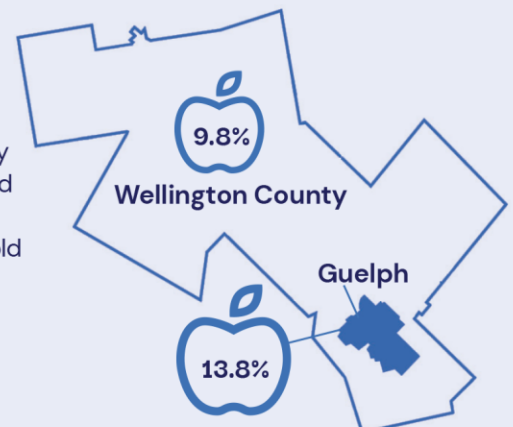
Food insecurity did not affect all households equally



Guelph-Wellington residents living in food insecure households were more likely to:

- Be **under 55 years of age**
- Be **single, separated, divorced, or widowed**
- Identify as **racialized**
- **Rent** their home
- Have an annual household **income of less than \$40,000**
- Be **precariously employed, or not employed**

More Guelph residents than Wellington County residents reported living in a food insecure household



The pandemic led some community members to experience food insecurity for the first time

Reasons for this included:



Job or income loss



Increasing food price



Inconsistent food supply

Community members (both those who were living in food insecure households and those who were not) faced a variety of challenges to accessing food



Isolating due to pandemic



Not having enough money to buy food



Lack of **transportation**



Living in a **rural or remote area**



Stores or community food organizations had limited **stock** or changed their **hours**



Not having **support people** to help with getting food



Difficulty leaving home due to a disability or being a single parent

Most community members thought that income-based solutions e.g., guaranteed income, living wage, higher social assistance rates, would help to increase food access

What would help households access nutritious food? (1 means most commonly said)	Survey of representative sample of Guelph-Wellington residents	Survey of community members at increased risk of severe food insecurity
Income-based solutions	1	1
Food skills opportunities	2	4
Greater variety of food at no or low cost accessible from community food organizations	3	2
Improved physical access to food	4	3
Greater variety of cultural foods at stores	5	5

¹ Ontario Dietitians in Public Health. (2020). No Money for Food is... Cent\$less. <https://www.odph.ca/centsless>

² The experiences from the six-item Household Food Security Survey Module short form were used with the addition of, "In the past 30 days, you and other household members worried food would run out before you got money to buy more" (often true, sometimes true, never true).

³ This was not a representative sample. Experiences of survey respondents cannot be generalized to all community members at increased risk of severe food insecurity.

How COVID-19 impacted food insecurity and food access in Guelph and Wellington County

What we heard from social service providers

Food insecurity, also called household food insecurity, is not having enough money to buy food.¹

Organizations that provide emergency food (e.g., soup kitchens and food banks) offer **temporary food relief** and **can provide many benefits to the community**. But they **do not address the root cause of food insecurity** – not enough money to buy food.^{1,2}

In October 2020, we surveyed social service providers at **22 organizations** in Guelph-Wellington

Who provided emergency food during the pandemic



Who provided services, but not emergency food

They told us how providing services to people experiencing food insecurity changed during the pandemic, the challenges they faced, and what can be done to improve physical and economic access to food in Guelph-Wellington.

Demand for emergency food services **fluctuated** during the pandemic



42% of the organizations that provided emergency food during the pandemic saw an **increase** in demand

- New clients
- More food needed by current clients, and more frequently



The remaining organizations noted that demand **decreased or stayed the same**. Or they were unsure if demand changed because they were offering a different service due to the pandemic.

Social service providers believed the **increased** demand for emergency food was due to:



Changing life circumstances caused by the pandemic (e.g., job loss, eviction, and inability to access other social services)



Increased promotion of emergency food services



Funding and donations which allowed for more and different emergency food services to be offered

Social service providers believed the **decreased** demand for emergency food was due to:



Financial assistance from the government which helped people who were experiencing food insecurity



More emergency food service options which meant less demand for each individual service



Post-secondary students who are at increased risk of food insecurity³, no longer living in Guelph-Wellington



People less willing to access in-person emergency food services due to COVID-19 risk

Households needed different food and services than before



- Gift cards
- Contactless delivery
- Household supplies (e.g., toilet paper and cleaning supplies)
- Fresh food
- Culturally appropriate food

Organizations faced operational and logistical challenges to providing emergency food

Services needed to **align with COVID-19 restrictions** to keep staff and clients safe, which created challenges:



Fewer staff to allow for physical distancing



Need for outdoor and larger indoor spaces to offer services



Delivering food all over town



Some organizations were no longer able to let clients choose food



More resources were needed, such as funding, physical space (e.g., storage, kitchens), transportation, and volunteers

Social service organizations are working to meet increased demand for emergency food and overcome the challenges of the pandemic



Many new partnerships were formed during the pandemic, and organizations plan to keep working together in the future.

100% of organizations that responded to the survey indicated they have been **collaborating and sharing resources** with other organizations that provided emergency food during the pandemic



COVID-19 related funding was used to serve more and diverse clients, and adapt to COVID-19 restrictions



Partnering to apply for funding, source food, and manage surplus

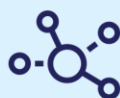


Sharing food, physical space, information, and expertise

Social service providers shared their ideas to improve physical and economic access to food in Guelph-Wellington:



Collectively advocate for system change and policies that **address the root causes of food insecurity** (e.g., affordable housing, decent work, and basic income guarantee)



Create more opportunities to network and enhance capacity to provide **emergency food services**



Where food access is problematic or household income is low, **prioritize opportunities for households to access food in their neighbourhoods** (e.g., delivery programs, transportation supports, and pop-up food stands)



Bring nutritious foods to areas where people of all income levels access food in the community (e.g., recreation centres)



Provide **food skills education on meal planning and recipes**

¹ Ontario Dietitians in Public Health. (2020). No Money for Food is... Cent\$less. <https://www.odph.ca/centsless>

² Dietitians of Canada. (2016). Addressing Household Food Insecurity in Canada: Position Statement and Recommendations. <https://www.dietitians.ca/foodinsecurity>

³ Silverthorn, D. (2016). Hungry for knowledge: Assessing the prevalence of student food insecurity on five Canadian campuses. Toronto: Meal Exchange. Retrieved from: <http://mealexchange.com>

Appendix D:

Neighbourhoods and townships



Appendix D: Neighbourhoods and townships

Figure C.1 Map of the townships in Wellington County, including the City of Guelph

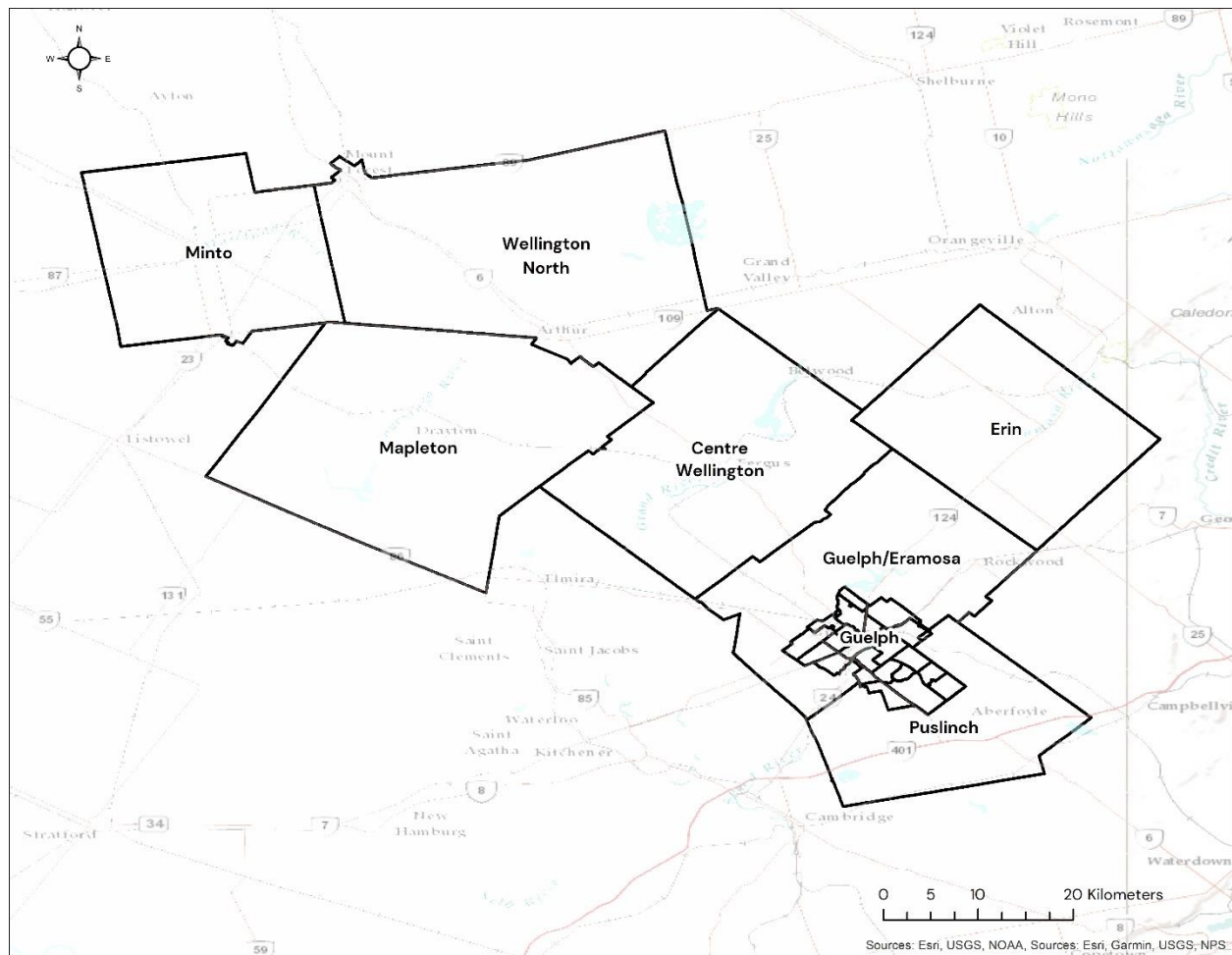


Figure C.2 Map of the neighbourhoods in the City of Guelph

