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## **Setting the Table: Food Insecurity and Costs in Ontario's North**

By Eric Melillo

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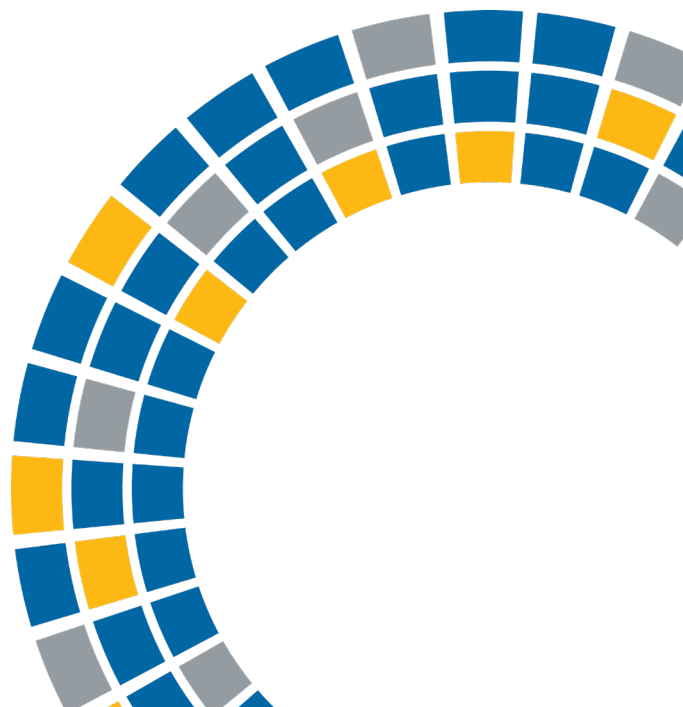
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Eric Melillo is a former Summer Policy Placement for Northern Policy Institute. He is currently completing a BA in Economics at Lakehead University.

This research paper was prepared as part of Mr. Melillo's summer 2017 placement with Northern Policy Institute. We are pleased to provide an opportunity for our new generation of thinkers to express their views to a public audience.



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## Executive Summary

Food insecurity is a complex issue that impacts a wide spectrum of people. In Ontario's northern communities, the relatively higher cost of food – measured by the Nutritious Food Basket assessment (NFB) – is a major contributor to the incidence of food insecurity in northern communities compared to those in the South.

In northern communities, there are several factors that can account for higher food prices including increased travel costs, a lack of market competition, as well as inadequate road and transport infrastructure. According to data from 2016, the Northwestern Ontario Health Unit, which is comprised of the Rainy River and Kenora Districts, was the region with the most expensive food basket. For this health unit, the cost of healthy food for a family of four was \$1,018.20 per month, \$159.39 more than the cost for a family in Toronto. For perspective, over the course of a year, a family from this health unit would need to spend \$1,912.68 more than a family in Toronto.

Furthermore, the analysis illustrates that there is a positive relationship between community remoteness and the cost of healthy eating. To illustrate, an average family in a community that is a part of the Nutrition North Canada food subsidy program, like Attawapiskat, pays \$645.08 more each month for the Nutritious Food Basket than the average family in a Northwestern Ontario Health Unit community and \$804.47 more each month than a family in Toronto. Finally, data and analysis reveals that food security is also impacted by inadequate income and social assistance.

Currently, there are established plans in place to combat the high cost of healthy eating in the north and food insecurity more broadly. Data would suggest however, that these programs have not adequately addressed the situation. As such, the study provides possible solutions to both remote and connected communities in Northern Ontario. These proposals are evaluated based on their potential to alleviate food insecurity in northern communities by either lowering the cost of the Nutritious Food Basket and/or increasing the income of those currently struggling. The proposals include:

**Development of the Northern Economy:** Building roads to connect more communities would be expected to lower prices of the food basket. As well, this connection has the potential to increase economic activity and job creation.

**Development of Airship and Drone Technology:** These forms of transporting goods are more cost effective than the traditional means of trucking or flying a cargo airplane and would contribute to lower costs of the food basket.

**Incorporating Cooperative Business Models:** With a focus away from profit-maximization, establishing cooperative retail outlets for the sale of healthy food would drive the price of the food basket down.

**Basic Income Guarantee:** Implementing a basic income guarantee would lead to increased income and purchasing power for those who currently struggle with food insecurity, thereby increasing their consumption opportunities. Given this, it is worth reconsidering the resumption of such a program in Northern Ontario.

## Introduction

The high cost of healthy eating is an ongoing concern for many families and individuals in Ontario's northern communities. It often leads to food insecurity, a situation in which people are unable to obtain a nutritionally adequate and culturally appropriate diet due to financial restrictions and other barriers (Dietitians of Canada 2016). Currently, the Canadian government has initiatives in place, such as Nutrition North Canada (NNC), designed to reduce the cost of healthy eating in remote northern communities. There are also other initiatives, such as food centres in "connected northern communities" (i.e., communities accessible by road) and elsewhere across Canada, to address the prevalence of food insecurity.

However, given the fact that healthy food is still much more expensive in Northern Ontario than in other regions of the province, it is evident that current initiatives are not enough to ensure that such food is accessible and affordable for every Canadian. This paper will look at the issue of high food costs across Northern Ontario and the resulting food insecurity. It will explore the causes of higher food prices in this region, as well as other underlying social concerns that contribute to food insecurity, and propose potential solutions to address this issue.

## Background

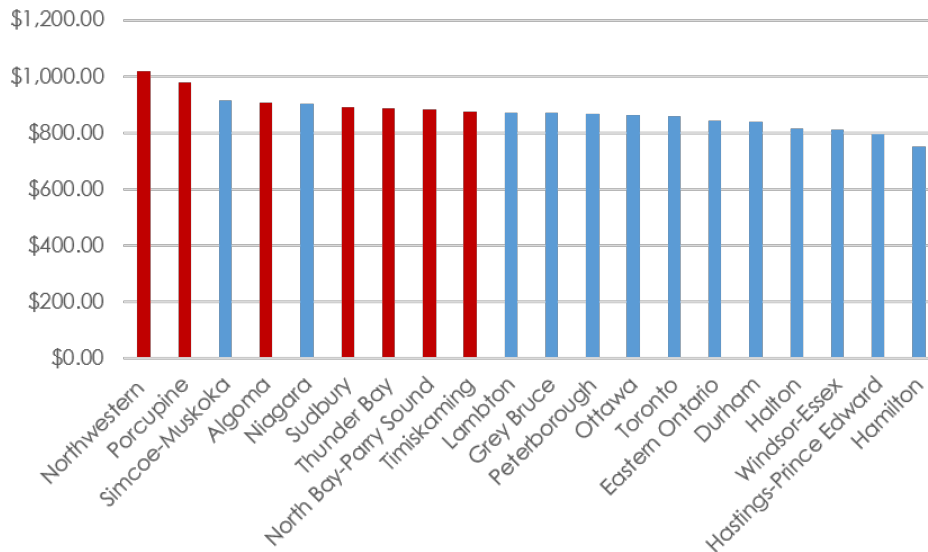
**Figure 1: Communities in Northern Ontario That Qualify for the Nutrition North Canada Subsidy (2016)**



Source: Government of Canada. 2018. Eligible communities.

In Ontario, local health units annually measure the cost of healthy eating for a family of four using the Nutritious Food Basket tool (Ontario Ministry of Health and Long Term Care 2017). The breakdown of Nutritious Food Basket costs by health unit can be found in Figure 2.

**Figure 2: Cost of Health Food per Month: Family of Four (2016)**

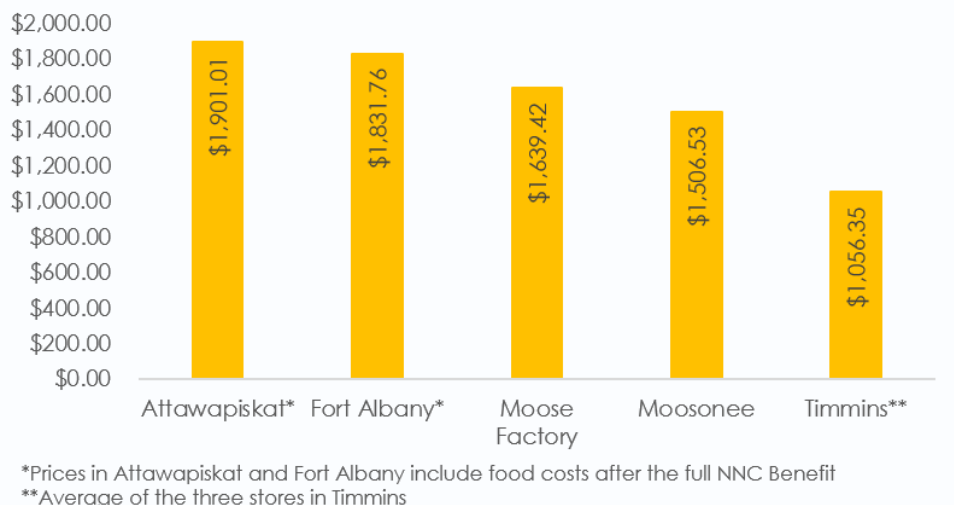


Retrieved from: <http://www.health.gov.on.ca/en/common/system/services/phu/locations.aspx>. Health Units denoted in red are in Northern Ontario. Methodology

According to data from 2016, the Northwestern Health Unit was the region with the most expensive food basket. This region encompasses the Rainy River District and much of the Kenora District. For this health unit, the cost of healthy food for a family of four is \$1,018.20 per month, \$159.39 more than the cost for a family in Toronto. Thus, over the course of a year, the average family living in this health unit would need to spend \$1,912.68 more than a family in Toronto.

Although there are outliers, namely Simcoe-Muskoka and Niagara, Figure 2 demonstrates that, in general, the further north one goes, the cost of healthy food increases. This correlation stays true even within the health unit boundaries, suggesting that the price of food in the connected north is less expensive than in the remote north, yet more expensive than in southern communities. For example, in the Far North First Nation community of Attawapiskat, the food basket costs were \$1,909.01 (Martin et al. 2016, 23), which is \$100+ more expensive than the average food cost within the Porcupine Health Unit, which includes Attawapiskat and connected communities such as Timmins. When compared with Timmins, the cost of the food basket in Attawapiskat is \$844.66 more, as can be seen in Figure 3.

**Figure 3: Cost of the Revised Northern Food Basket by Community**

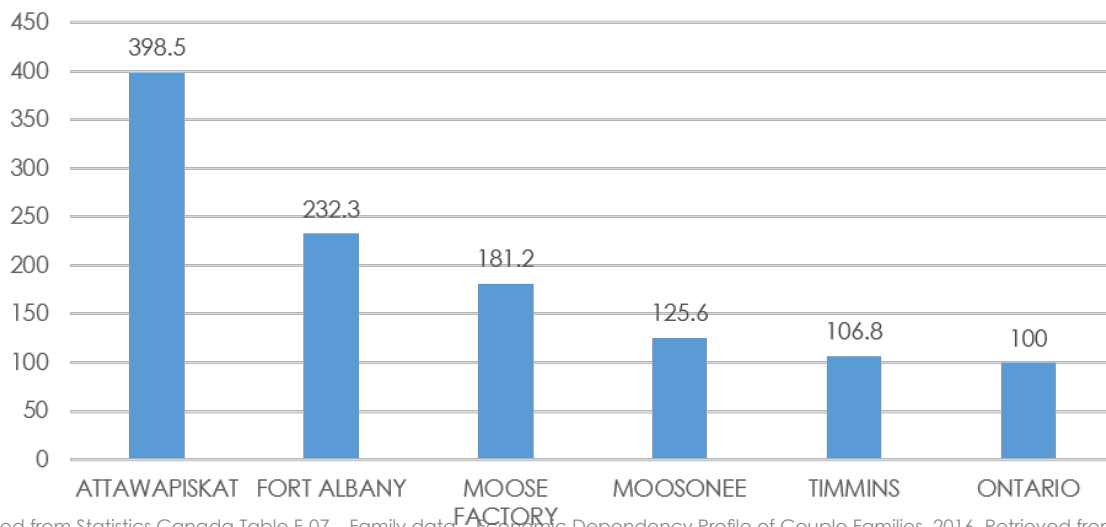


Retrieved From: Winter Lipscombe's "Delivery by Drone," published January 29, 2018. Sourced from Martin et al., 2016. <http://www.northernpolicy.ca/deliverybydrone>.

Moreover, the average cost of healthy eating for a family of four in a community that qualifies for the Nutrition North Canada subsidy program is \$1,663.28 per month (Government of Canada 2016). These are isolated communities, such as Attawapiskat, located either in the remote north of Canada's provinces or its northern territories (Government of Canada 2016). The average family in one of these communities pays \$645.08 more each month for the Nutritious Food Basket than the average family in a Northwestern Health Unit community and \$804.47 more each month than a family in Toronto. Indeed, as the data above show, the cost of healthy eating is directly related to the remoteness of a community (Dillabough 2016, 7); however, evidence indicates that food costs alone do not determine who experiences food insecurity. Inadequate income plays a pivotal role in the incidence of food insecurity in Canada (Power, 2005) and other social factors, such as unemployment, contribute greatly to this crisis (Chandrasekera 2008, 5). That said, unemployment is more prevalent in Ontario's northern and remote communities than in its southern regions. According to the 2016 census profile, the unemployment rate in Attawapiskat was 32.4 per cent, Fort Albany, 23 per cent, Moose Factory, 17.5 per cent, and Moosonee at 8.6 per cent (Statistics Canada, 2017e). Further, the overall unemployment rate for Northern Ontario was 9.3 per cent (Statistics Canada, 2017e). This was in stark contrast to unemployment rates in other areas of the province. For example, the rate was 7.0 per cent in Hamilton and 8.2 per cent in Toronto (Statistics Canada 2017a; 2017b). Waterloo and Ottawa, meanwhile, had unemployment rates of 6.3 and 7.2 per cent respectively (Statistics Canada 2017c; 2017d). Overall, Ontario's unemployment rate was 7.4 per cent in 2016 (Statistics Canada 2017a).

Being dependent on social assistance and other government transfers is also strongly correlated with food insecurity (PROOF 2017). Figure 4 shows the economic dependency ratio (EDR) index for couple families in the same communities as in Figure 3. EDR measures the amount of all government transfers per \$100 of employment income, which can then be indexed to a baseline, in this case, the province (Statistics Canada 2018). The variance from 100 represents the per cent change from the baseline. For example, Moosonee's EDR is 25.6 per cent higher than Ontario's, whereas Attawapiskat's is nearly 300 per cent higher. Interestingly, the EDR of these communities correlates directly with the cost of food outlined above, although the data are not conclusive on causality. Further research could explore the relationship between EDR, food costs, and food insecurity.

**Figure 4: Economic Dependency Ratio in Select Communities, Provincial Index, Couple Families, 2016**

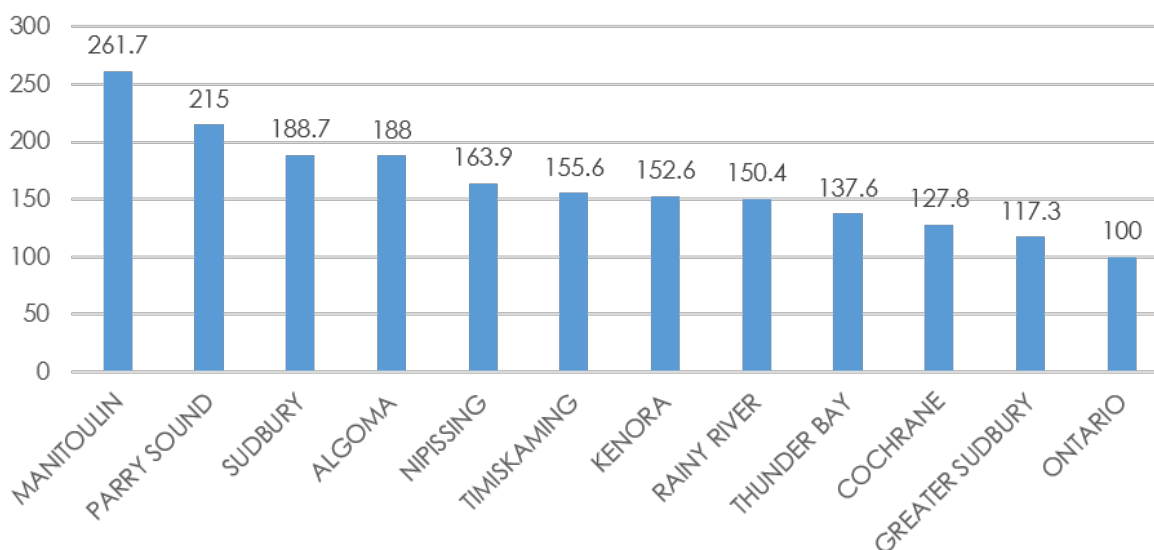


Source: Calculated from Statistics Canada Table F-07 – Family data – Economic Dependency Profile of Couple Families, 2016. Retrieved from Northern Ontario Data Consortium Community Data.



Figure 5 shows that high EDRs are not exclusive to these communities. In fact, all of Northern Ontario has a high EDR. Overall, Northern Ontario has higher unemployment and more dependence on government transfers, both of which are associated with food insecurity, and it is not clear whether social assistance levels are high enough to overcome the higher food costs.

**Figure 5: Economic Dependency Ratio Across Northern Ontario, Provincial Index, Couple Families, 2016**



Source: Calculated from Statistics Canada Table F-07 – Family data – Economic Dependency Profile of Couple Families, 2016. Retrieved from Northern Ontario Data Consortium Community Data.

EDR counts all government transfers, such as child benefits, pensions, and employment insurance that do not necessarily imply financial duress. Social assistance, on the other hand, is targeted to people in financial need. Here again, the North fares worse than elsewhere: 6.6 per cent of Northern Ontarians received social assistance in 2015, compared to 4.9 per cent in the rest of the province.<sup>1</sup> Given that food basket measures tend to be based on a family of four, with two adults, couple family data are more appropriate to judge benefit levels.

Couple families on social assistance in Northern Ontario receive an average of \$10,946.77 annually, compared to \$9,587.74 in Toronto.<sup>2</sup> This additional \$1,359.03 could buy fewer than two months of nutritious food at the elevated costs in Attawapiskat, although lower shelter costs and other government transfers may offset this. Worse still, couple families in these northern communities tend to be larger. In Attawapiskat, for example, the average size of a couple family with children was 5.8 people, compared to 4.7 in Moosonee and 4.0 in Toronto (Statistics Canada 2016). Thus, the costs of nutritious food for the average family would be even higher, as they tend to have more mouths to feed. Given the difficulty in measuring housing costs on reserves, more research is needed to determine whether social assistance levels are sufficient to compensate for the higher costs of food in Ontario's northern regions.

Even though issues related to high food costs are more prevalent in the remote north, there are still many similar issues in the connected north. As stated previously, the Nutritious Food Basket costs more in places such as Sudbury and Timmins than it does in places such as Ottawa and Peterborough. Both the remote north and the connected north communities face similar challenges, but it is important to address them separately because of their social and economic differences. This will enable an enhanced understanding of the specific problems in different communities and how potential solutions could work.

<sup>1</sup> Calculated from Statistics Canada Table I-09 – Individual data – Economic Dependency Profile of Individuals, 2015. Retrieved from Northern Ontario Data Consortium Community Data.

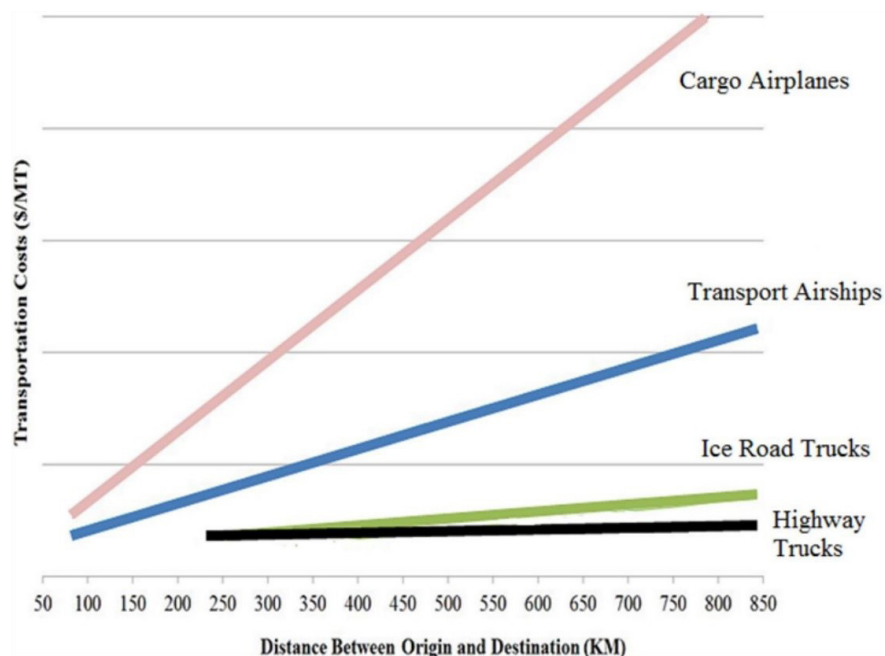
<sup>2</sup> Calculated from Statistics Canada Table F-07 – Family data – Economic Dependency Profile of Couple Families, 2016. Retrieved from Northern Ontario Data Consortium Community Data.

## The Remote North

### Why Food is More Expensive in the Remote North

There are multiple reasons for high food costs in northern communities, many of which stem from access to infrastructure. More specifically, the lack of road transportation to many communities results in significant challenges. Many communities in Ontario's Far North are accessible only by plane, which makes the transportation of food and other resources more expensive relative to highway travel. Alternatively, some communities only have road access in the winter via ice roads, which are seasonal and unreliable. For perspective, Figure 4 shows the cost curves, in dollars per tonne, of different forms of transportation to northern communities in Manitoba (Prentice and Adaman 2015, 21). It is clear from the graph that airplanes are the least cost-effective means of accessing northern communities, and thus communities that rely on air access experience much higher food costs. Currently, airship transportation is not used to access remote communities, which will be discussed further as a potential solution.

**Figure 6: Transportation Costs (Dollars per Tonne) Over Kilometres Travelled (2015)**



Retrieved from: [http://www.isopolar.com/wp-content/uploads/AA\\_2015\\_paper\\_final.pdf](http://www.isopolar.com/wp-content/uploads/AA_2015_paper_final.pdf). Prentice and Adaman removed the Y-axis from this graph for confidentiality purposes.

Another problem is that many communities in Northern Ontario and, even more so, the province's remote north lack market competition (Martin et al. 2016). There are, in many communities, very few stores that sell groceries, meaning consumers must buy from these stores regardless of cost. This creates another financial barrier to accessing healthy food since consumers may have to choose between paying more or not eating. The relative or outright lack of business competition also impacts some connected northern communities, creating a monopolistic environment. For that reason, this issue will be discussed further in "The Connected North" section.

*"... airplanes are the **least cost-effective** means of accessing northern communities, and thus communities that rely on air access experience **much higher food costs**."*



## Current Government Initiative: Nutrition North Canada

The Canadian government established the Nutrition North Canada subsidy program in 2011 to assist with the high cost of food in remote northern communities. The subsidy is given to businesses and it is designed to be passed on to consumers, offsetting the higher cost of healthy food (Government of Canada 2017b). The subsidy is calculated as follows:  $\text{subsidy level (\$/kg)} \times \text{weight of eligible item (kg)} = \text{subsidy payment}$  (Government of Canada 2017a). A business will only receive the subsidy if it is in a community that:

- lacks year-round surface transportation (e.g., rail, road, or marine access)
- meets the provincial/territorial definition of a northern community
- has an airport, post office, or grocery store
- has a year-round population according to the national census<sup>3</sup>

Many have criticized the subsidy's effectiveness. The Auditor General of Canada has noted, for example, that the government does not require information on profit margins from businesses or verify that the subsidy is even being passed on to consumers (Auditor General of Canada 2014, 5). The Auditor General's report stated that the government must work with retailers to create subsidy monitoring measures and ensure it is passed on (Auditor General of Canada 2014, 6). Furthermore, although the subsidy has been in place since 2011, there has been an upward trend in food insecurity in the North in recent years (PROOF, 2017), reinforcing the impression that the program is ineffective.

## Potential Solutions

### Road Access

Year-round road access would make a substantial difference for many Far North communities. It would lower the cost of transporting food and other supplies as surface travel is less expensive than air. Unfortunately, roads have not been built to connect this region as they are very costly and take years to build. For instance, the cost of a Northern-Manitoba-to-Nunavut-all-weather highway is approximately \$1.4 billion and it is at least a 15-year project (Nishi-Khon/SNC-Lavalin 2010, 26). In Ontario, cost estimates for the road to the proposed Ring of Fire development range from \$83.6 million to \$99.9 million (Green Forest Management Inc. 2013), and they do not include annual maintenance costs.

Yet, there is an economic incentive to build some of these northern roads. The northern regions of Ontario and Canada are filled with vast amounts of natural resources, and many projects that will benefit the economy can also connect remote communities. This is exemplified by the Ring of Fire. It is estimated this region will generate \$25 billion in economic activity (Ontario Chamber of Commerce 2015, 7), but will also result in new road access to some northern communities, which could help lower food costs. Even so, it is unlikely that roads will be built to communities that do not provide economic return. Moreover, the cost of building a road to every community would be monumental, so not all Far North communities could be realistically connected by road. However, many of these communities could be connected by further developing the northern economy. As a result, it is worthwhile for the provincial government to explore how it can continue developing the North thereby providing positive benefits to the economy and to the people who live there. Road development will not only lead to lower food costs but also generate economic development that provides jobs for residents of these communities. The result is that people can earn more income and potentially achieve food security as the gap between the cost of living and income narrows or becomes non-existent.

<sup>3</sup>Please refer to Appendix A for a list of communities that qualify for the subsidy.

## Airships/Drones

Given that air transport is currently the most effective means of transportation to the remote north, there is potential for cargo airships to be used to deliver supplies, including food, to remote communities instead of traditional airplanes. Airships have been around for decades and there are compelling reasons to be excited about this technology as a means of delivering food to northern communities at a reduced cost. Some current airship models can carry 20 tonnes of cargo and cost only \$40 million each (Wells 2016). Moreover, an airship does not burn as much fuel as a plane and does not require additional infrastructure such as runways (Adaman 2013, 19-20), making it a cost-effective air transport alternative. There is also evidence that using airships to access communities currently served by planes or ice roads can result in savings between 12.5 and 38.3 per cent (Prentice and Adaman 2015, 22-23). Finally, there are many different airship models, which could be used for different communities based on need. This would result in a more community-centred solution as opposed to a uniform solution.

Ultimately, airships are a relatively inexpensive alternative to traditional air transportation and they can reduce the cost of the Nutritious Food Basket in Canada's north. Even so, there are investments that must be made to make this option a reality. The federal or provincial government could take the initiative and advance this technology with a pilot project. The willingness to make such an investment could encourage private investment in the technology and help build the industry to its full potential. As Dr. Barry Prentice wrote previously for Northern Policy Institute, the provincial government has identified the need for alternative transportation in the Far North; however, a more specific framework is required to advance these initiatives (Prentice 2017). Should the provincial government choose to proceed with airship technology, it can identify the designs that will best serve Northern Ontario, research infrastructure requirements, construct a public air dock to test the technology in frigid conditions, and assess the economic impact on the connected northern communities involved in such a project. These concrete steps will lay the foundation to determine the role of cargo airships in Northern Ontario's future.

Airship technology is not a dramatic deviation from the provincial government's commitment to development strategies; it is simply an expansion and specification of similar ideas. Ontario's current Growth Plan for Northern Ontario outlines key policies to address some of the issues related to access in remote communities. The provincial government has affirmed its commitment to improving access to remote communities (Government of Ontario 2011), which potentially encompasses all the previously discussed initiatives. It is important for the government to continue with its support of northern development projects and to be actively investing in road access and new technologies to fulfill those goals.

These new technologies could include drones, which may also represent an innovative opportunity to address food cost challenges. Drone Delivery Canada, a company that is developing a commercially viable drone delivery system in Canada, also plans to use its technology to bring essential goods, such as food, to northern communities (Drone Delivery Canada 2017). Compared to airplanes, drone technology is less expensive, and, much like airships, there is no requirement for additional supporting infrastructure. However, these drones can only transport up to 10 pounds of goods each, thus this technology may not be as practical as airships. Drone Delivery Canada has launched a pilot project delivering goods to Northern Ontario First Nations (de Montigny 2017), which will provide invaluable insight on the cost, effectiveness, and overall feasibility of the technology.

Both airship and drone technology also have the potential to diversify the northern economy. These new transportation technologies could facilitate economic development efforts (Adaman 2013). Furthermore, the companies that provide these services may need to employ people in Northern Ontario communities to make that happen, resulting in new job opportunities that help grow the region's economy. Furthermore, relatively southern communities – possibly connected northern communities – will serve as the departure point for airships and drones, and thus will experience employment and economic growth as people are hired to design, build, maintain, load, and operate this technology. Thus the economic benefits of airship and drone technology will be shared province-wide.

# The Connected North

## *Why Food is More Expensive in the Connected North*

In the connected north, the price of food is more inflated than in Ontario's southern regions due to transportation costs. Additionally, as noted previously, there is a lack of retail competition in many connected communities that contributes to higher food prices. Even so, these connected communities have a cost advantage over the remote fly-in regions of the isolated north in that they are more easily accessible by road. This supports the evidence presented previously that the prices of food in the connected north are less than those in the remote north and higher than those in the south. This is exemplified in Figure 2, which demonstrates that food costs are lower in connected communities, and that the costs within health units differ greatly based on the accessibility of a community.

## *Current Initiative: Community Food Centres Canada*

In line with international best practices around increasing food security<sup>4</sup>, there is an initiative called Community Food Centres Canada, which provides ideas, resources, and a proven approach to partner organizations to create Community Food Centres nationwide. These centres enable people "to grow, cook, share, and advocate for good food" and they help empower communities to work toward a healthy and fair food system (Community Food Centres Canada 2017). These goals are achieved by providing people with emergency access to high-quality food in a dignified setting that does not compromise their self-worth. Community Food Centres are operational across the country and are intended to address food insecurity issues in all parts of Canada, not just the northern communities. In 2016, Community Food Centres Canada served 137,077 healthy meals to people in need who could not afford them (Community Food Centres Canada 2017).

At the provincial level, there are initiatives in place to address food insecurity across Ontario as part of the Food Security Strategy. This strategy includes the Student Nutrition Program, Ontario's Healthy Kids Strategy, and the Urban Aboriginal Healthy Living Program, among others. There is also one program that is specific to Northern Ontario: the Northern Fruit and Vegetable Program, which ensures elementary students have adequate servings of healthy fruits and vegetables (Northwestern Health Unit 2018). This program is a solid step toward alleviating food insecurity; however, it only targets one specific demographic. It would be more beneficial if the government of Ontario implemented a policy that addresses food insecurity for all of Northern Ontario based on the unique issues it faces. In the 2017 Ontario budget, new funding was introduced which included increases to health care and social assistance; however, early expectations from Food Secure Canada are that these new programs and funding will be of little help to many citizens (Food Secure Canada 2017). Such an assessment indicates that a revised or different approach to eliminating food insecurity is needed.

## *Potential Solutions*

### Cooperative Business Model

Encouraging communities to start cooperative grocery stores, or co-ops, as opposed to for-profit grocery stores may help reduce some food costs (Dillabough 2016, 11). This is a solution that can be implemented in both the Far North and connected north communities. Transportation costs are a big factor in the price of items and these expenses are largely passed on to consumers by for-profit businesses. Establishing co-ops would result in stores where decisions are based on the needs of all community members, including employees and consumers, as opposed to what is good for shareholders or what will increase profit margins. The result would likely be lower prices compared to regular for-profit businesses. Moreover, non-profits operating in a monopolistic environment may not feel compelled to take advantage of the situation by hiking prices to the same extent that a conventional for-profit retailer would.

The establishment of co-ops in the North would potentially help lower the cost of healthy eating; however, this solution alone would not likely provide sufficient enough relief and it should be coupled with other measures discussed in this report. Also, the establishment of co-operatives would require buy-in from community members who may not be able to dedicate the necessary time, resources, and energy required. This solution could be pursued by communities where it is logistically practical to do so, but it cannot be considered an effective solution to food insecurity on its own.

## Basic Income Guarantee

Another solution that could work for the remote north and connected north is a basic income program that replaces or complements existing social assistance programs. Currently, 70 per cent of households on social assistance are food insecure (PROOF 2017), which suggests that current social assistance programs are not sufficiently addressing this issue. Given that benefits are low and the administrative bureaucracy is sometimes difficult to navigate, there is a solid case for implementing a basic income in Canada.<sup>4</sup> Such a move has the potential to adequately address a major cause of food insecurity given that it affects a higher percentage of low-income Canadians than any other demographic. However, the relationship between income and food insecurity is not linear – indicating a more complex problem (Tarasuk 2017, 13). If a basic income were to be implemented, it would help reduce or eliminate the monetary gap that restricts some Canadians from being able to buy food. Also, a basic income guarantee is advantageous because it could be universal and thus potentially reach all households that are vulnerable to food insecurity, not just specific demographics such as seniors or current social assistance recipients (Tarasuk 2017, 16).

A basic income can take many different shapes, but the idea tends to garner praise for both social and economic reasons. On the social side, guaranteeing every Canadian has a basic living wage will help eliminate poverty and food insecurity, as well as many other social issues that result from low income. On the economic side, some experts claim that a basic income that replaces the current social assistance scheme will save taxpayers money (Fernando 2016). This presents basic income as both a viable option to combat food insecurity and a responsible fiscal decision.

In 2017, the Government of Ontario implemented a basic income pilot project to explore how the concept would work in Ontario (Government of Ontario 2017; Government of Ontario 2018). However, this project will not be continued and will be wrapped up at the end of March 2019 (CBC 2018). Had it been fully completed and analyzed, this pilot project would have provided crucial information on whether and how to proceed with a provincial basic income. If the province decides to reinstate this program in the future, it could be a valuable tool in alleviating food insecurity in Ontario's northern regions.



<sup>4</sup>Public Health Agency of Canada, "Food Security," date modified April 14, 2016, accessed September 16, 2018, <http://cbpp-pcpe.phac-aspc.gc.ca/public-health-topics/food-security/>.

<sup>5</sup> Northern Policy Institute, "Basic Income Guarantee," [northernpolicy.ca](http://www.northernpolicy.ca/big), accessed September 7, 2018, <http://www.northernpolicy.ca/big>.

## Conclusion

The crisis of food insecurity in Ontario and Canada's north due to the high price of the Nutritious Food Basket is a complex problem with many possible solutions. Although each solution has its challenges, all have the potential to improve the current situation over the short and long-term. Federal and provincial governments could consider adopting more than one approach to address high food costs in Northern Ontario. Evidence suggests that implementing the solutions identified here will lead to lower food costs in the North and reduced food insecurity.

*"Federal and provincial governments could consider adopting **more than one approach** to address high food costs in Northern Ontario."*

Continued development of the northern economy that includes construction of highways to some isolated communities would have many positive impacts. The construction of the roads would help grow the economy, and the subsequent resource development would generate even more economic growth. These roads will also result in lower food costs because they offer a cheaper means of transporting goods to northern communities, and the associated construction will result in jobs that generate more income among community members. Thus, the economic return from building these roads will surely justify their creation from a financial standpoint and the positive social benefits could make this proposal an effective and well-received approach. However, this solution will take time to develop and would not provide immediate results. This means the government could pursue this development but not rely on it as the only strategy for reducing food insecurity in northern communities.

Airship technology has great potential to be a solution to food access in the North as well. However, this technology needs investment and further development to make it a reality. Conceptual designs suggest airships could be used instead of planes to deliver food to communities where there is no economic justification for building a road. Also, airships could be used as a temporary measure to deliver supplies to northern communities during road construction. This would facilitate a more immediate intervention and help lower the cost of food and food insecurity rates relatively quickly.

The drone pilot project will determine the value of this technology as a solution to food insecurity. Much like airships, drones will be useful for many reasons; however, one drawback is that they are relatively small and cannot carry as much weight. This means that drones may not be a practical solution to this issue. Regardless, there is evidence to suggest that drone and airship technology will provide a less expensive means of transporting goods to remote northern communities. Therefore, this would lower the cost of the Nutritious Food Basket and drive employment and economic growth in remote areas.

Cooperative business models may also result in lower cost food items for the population of Northern Ontario. When not operating for-profit, there is less incentive for a grocery store to raise prices far beyond marginal costs. On its own, such an initiative would not address the socioeconomic issues that contribute to food insecurity. However, as part of a broader food security approach, this could further help to lower the price tag of food items.

Implementing a basic income guarantee is something that should be reconsidered as a means of providing social assistance to Canadians. There is evidence to suggest this increased income will help lift people out of poverty and enable more Canadians to experience food security. There are many other factors, economic and social, that must be considered when thinking about the concept of a basic income guarantee. But from a strict food cost and food insecurity standpoint, a basic income would be very effective in reducing the gap between food costs and income and in eliminating food insecurity in Canada.

# Appendices

## Appendix A

Ontario	Manitoba	Quebec	Newfoundland and Labrador
Angling Lake	Berens River	Akulivik	Black Tickle
Attawapiskat	Brochet	Aupaluk	Hopedale
Bearskin Lake	Gods Lake Narrows	Chevery	Makkovik
Big Trout Lake	Gods River	Harrington Harbour	Nain
Cat Lake	Granville Lake	Inukjuak	Natuashish
Deer Lake	Island Lake (Garden Hill)	Ivujivik	Postville
Eabamet Lake (Fort Hope)	Lac Brochet	Kangissualujjuaq	Rigolet
Favourable Lake (Sandy Lake)	Little Grand Rapids	Kangiqsujuaq	Williams Harbour
Fort Albany	Negginan (Poplar Hill)	Kangirsuk	
Fort Severn	Oxford House	Kuujuuaq	
Kasabonika	Pauingassi	Kuujuarapik	
Kashechewan	Red Sucker Lake	La Romaine (Gethsémani)	
Keewaywin	Shamattawa	La Tabatière	
Kingfisher Lake	St. Theresa Point	Mutton Bay	
Lansdowne House	Tadoule Lake	Port-Menier	
Muskat Dam	Waasagomach	Puvirnituq	
North Spirit Lake	York Landing	Quaqtaq	
Ogoki		Saint-Augstin/Pakuashipi	
Peawanuck		Salluit	
Pikangikum		Tasiujaq	
Poplar Hill		Tête-à-la-Baleine	
Sachigo Lake		Umiujaq	
Summer Beaver			
Wawakapewin			
Weagamow Lake			
Webequie			
Wunnummin Lake			

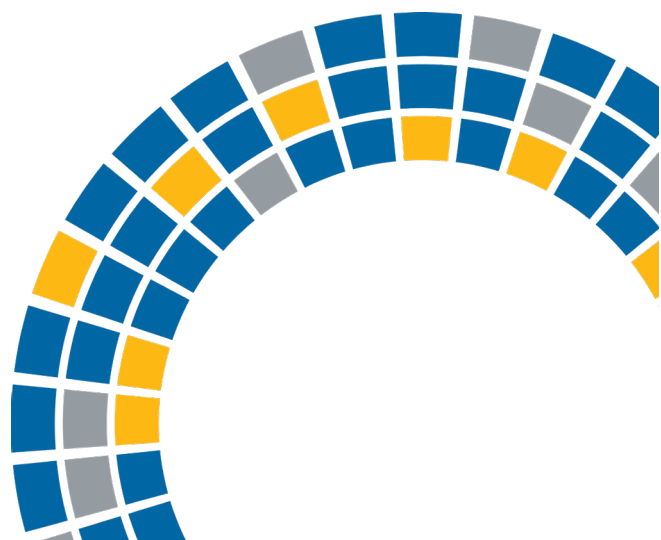
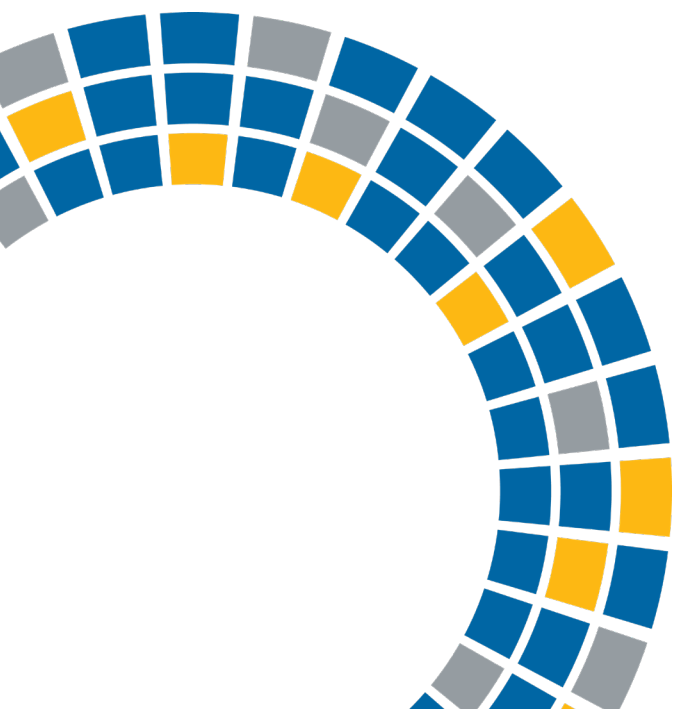
Saskatchewan	Alberta	Yukon	Northwest Territories	Nunavut
Black Lake	Fort Chipewyan	Old Crow	Aklavik	Arctic Bay
Fond-du-Lac			Colville Lake	Arviat
Stony Rapids			Deline	Baker Lake
Uranium City			Fort Good Hope	Cambridge Bay
Wollaston Lake			Gamefi	Cape Dorset
			Lutsel K'e	Chesterfield Inlet
			Norman Wells	Clyde River
			Paulatuk	Coral Harbour
			Sachs Harbour	Gjoa Haven
			Sambaa K'e	Grise Fiord
			Tuktoyaktuk	Hall Beach
			Tulita	Igloolik
			Ulukhaktok	Iqaluit
			Wekweèfi (Snare Lake)	Kimmirut
			Wha Ti	Kugaaruk
				Kugluktuk
				Nauyasat
				Pangnirtung
				Pond Inlet
				Qikiqtarjuaq
				Rankin Inlet
				Resolute
				Sanikiluaq
				Taloyoak
				Whale Cove

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*Northern Policy Institute is Northern Ontario's independent think tank. We perform research, collect and disseminate evidence, and identify policy opportunities to support the growth of sustainable Northern Communities. Our operations are located in Thunder Bay, Sudbury and Sault Ste. Marie. We seek to enhance Northern Ontario's capacity to take the lead position on socio-economic policy that impacts Northern Ontario, Ontario, and Canada as a whole.*

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