RURAL ONTARIO FORESIGHT PAPERS

2019

RURAL ONTARIO INSTITUTE

Rural Ontario Foresight Papers

2019

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Foreword

The 2019 Rural Ontario Foresight Papers is a collection of six discussion papers on selected themes as prepared by expert authors. Each has a corresponding Northern Commentary prepared by the Northern Policy Institute. This is the second set of Papers following the successful reception of the first set of Papers in 2017. They have been commissioned by the Rural Ontario Institute as part of the Measuring Rural Community Vitality initiative – Phase 2.

Each Foresight Paper explores a particular topic affecting rural and Northern Ontario. The authors were encouraged to look ahead to what directions various stakeholders, governments or nonprofits might follow in order to foster vital rural development in light of the trends the authors foresee. The 2019 Papers offer an opportunity for rural stakeholders to be informed by the perspectives of these authors and to consider the implications for their own work or their own communities. It is ROI's intent that the Papers help catalyse further dialogue and discussion which in turn may lead to various agencies in civil society, levels of government and/or rural citizens to consider actions or strategies that will improve rural vitality over the long term.

We hope that readers will find a key thought or significant insight regarding one or more of the topics that resonates with them. We invite you to share that insight with colleagues and other rural stakeholders. Similarly, you may have specific experience and knowledge surrounding the topic that reinforces a point you picked up on or have an alternative perspective. We welcome guest blogs to the ROI website if you want to share your response with others across the province.

We recognize that many trends impacting the future rural development of Ontario communities have not been addressed across the twelve Papers in the whole series. The Institute has conducted several surveys on community development priorities with rural stakeholders and municipal councillors which were taken into consideration when identifying topics. The topics were chosen after discussion with other organizations and in light of research or initiatives underway in the province. The authors of each paper were selected because they have grounded experience, a history of involvement with the topic they address and/or academic expertise and research knowledge to share.

These Papers and the previous set will remain available for individual download at http://www.ruralontarioinstitute.ca/knowledge-centre/foresight-papers

The Measuring Rural Community Vitality initiative was conducted with the support of a Ministry of Municipal Affairs Research and Analysis Grant. Please note that the opinions and viewpoints expressed in the Papers are those of the authors and do not reflect the views of the Ontario government nor that of the Rural Ontario Institute.

Authors

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John C. Hogenbirk, M.Sc., has been active in e-health research since 1998. His research includes assessing the effects of virtual care on health services utilization and service delivery costs, as well as determining the implications of virtual care for policy and decision-makers. John has also examined access to and clinical use of the Ontario Telemedicine Network. John's previous research included an evaluation of Keewaytinook Okimakanak Telehealth/NORTH Network Expansion Project plus policy research and development leading to the National Initiative for Telehealth Guidelines (NIFTE).

Joyce McLean is an environment and energy policy and communications specialist with over three decades of experience in providing strategic advice, and government and media relations expertise on energy, toxic chemicals, water quality and sustainability issues. She has worked for organizations and individuals as diverse as the Ontario Minister of the Environment, Toronto Hydro and Greenpeace International, as well as having run her own consulting company. She has also participated on a variety of boards including the IJC's Great Lakes Water Quality board, the Canadian Wind Energy Association, the Friends of the Greenbelt Foundation and Green$aver.

Dwayne Nashkawa has been the Chief Executive Officer of Nipissing First Nation, located on the shores of Lake Nipissing in Northern Ontario since January 2004. He has spent his career working in First Nations in senior roles in the areas of natural resources development, treaty research, governance and administration. Dwayne has led various tripartite negotiations including the Ontario First Nations Policing Agreement and the development of the Anishinabek/Ontario Resource Management Council. Dwayne is a member of the Chippewas of Saugeen First Nation located on the Bruce Peninsula.

Carol Simpson is the Executive Director of the Workforce Planning Board of Waterloo Wellington Dufferin. Carol has extensive experience in a variety of sectors, including workforce development, health and safety, telecommunications, federal government, retail and self-employment. Carol's specialties include: labour market expertise, research and data analysis, nonprofit management, facilitation skills, project development, strategic planning, partnership development, community economic development and more.

Mark Skinner, Ph.D., is Professor and Dean of Social Sciences at Trent University, where he holds the Canada Research Chair in Rural Aging, Health and Social Care, and was the founding Director of the Trent Centre for Aging & Society. Mark's research examines how rural people and places are

responding to the challenges and opportunities of population aging, particularly the evolving role of the voluntary sector and volunteers in supporting older people and sustaining rural communities. His most recent books are "Ageing Resource Communities: New Frontiers or Rural Population Change, Voluntarism and Community Development" (2016, edited with Neil Hanlon) and "Geographical Gerontology: Perspectives, Concepts, Approaches" (2018, edited with Gavin Andrews and Malcolm Cutchin). A leading rural aging researcher, Mark was inducted into the Royal Society of Canada's College of New Scholars, Artists and Scientists in 2016.

Amanjit Garcha was born in Punjab and raised in Brampton. After graduating from the University of Toronto with a B.A. (Hons) in Criminology and Political Science, she obtained a Master's Degree in Public Administration from Queen's University. Her areas of interest include immigration and social policy, environmental policy and Indigenous affairs. In her spare time she enjoys experiencing nature and exploring the outdoors.

Hilary Hagar is originally from Hamilton but has many summer memories exploring the North. A recent graduate from the University of Guelph with a B.A. (Hons) in International Development, Hilary values interdisciplinary approaches and is passionate about community economic development and poverty alleviation. During her undergraduate degree, Hilary completed participatory research in both Cuba and Bolivia. Closer to home, Hilary has also contributed policy debates on issues ranging from greenhouse gas emissions in Ontario agriculture to Inuit nutrition and health. An avid outdoors enthusiast, she spends as much time as possible camping, hiking and canoeing.

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Jennifer Walker, Ph.D., co-author, Local Access to Medical Services. Jennifer is a health services researcher and epidemiologist. She has Indigenous (Haudenosaunee) family roots and is a member of the Six Nations of the Grand River. She has a PhD in Community Health Sciences (Epidemiology specialization) from the University of Calgary. Her work focuses on Indigenous use of Indigenous health and health services data across the life course, with a focus on older adults. She collaborates closely with Indigenous organizations and communities to address health information needs.

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Access to Quality Medical and Health Services: Examples from Northern Ontario

Lead Author: John C. Hogenbirk
Co-Authors: Alain P. Gauthier & Jennifer D. Walker

Introduction

Rural areas in Ontario, much like other rural areas in Canada and around the globe, typically have poorer access to healthcare services and poorer population health outcomes while simultaneously having a stronger sense of community and willingness to make do with whatever resources are available. This dynamic tension often leads to innovations in healthcare programs — innovations that have a positive effect in rural areas and can also benefit urbanized areas. As Ontario transforms its healthcare system, the timing is right to develop and implement innovative programs of healthcare delivery in rural Ontario.

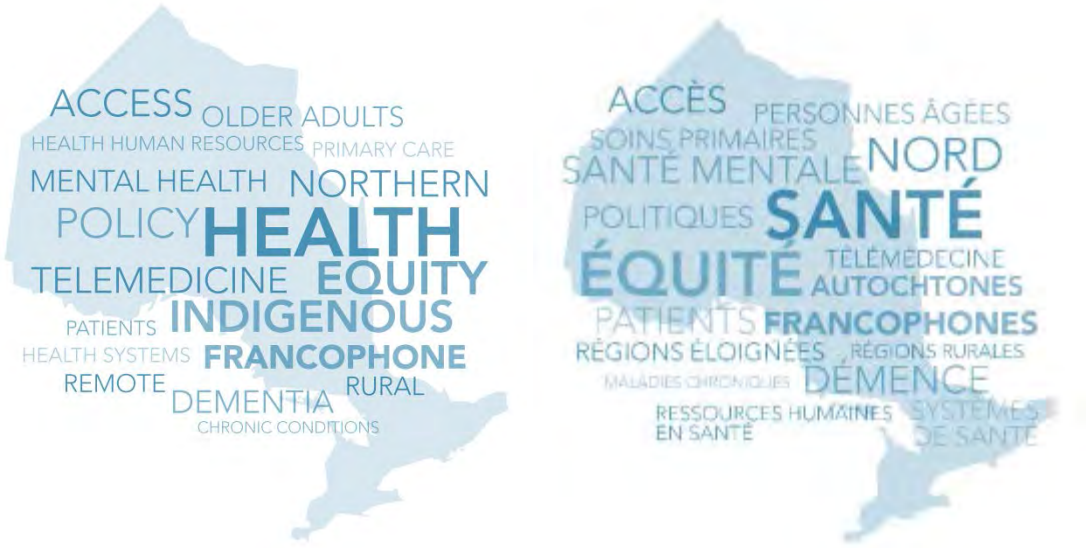
The challenges and the need for innovation are particularly acute in rural areas in Northern Ontario, and throughout Northern Ontario as a whole. In Northern Ontario, 780,000 people are dispersed across 803,000 km^2 (Statistics Canada 2019). Approximately 56% of the population are clustered in five large urban areas with 42,000 to 162,000 people (Timmins, North Bay, Sault Ste. Marie, Thunder Bay and Sudbury). Relative to all of Ontario, Northern Ontario also has a higher percentage of two cultural-linguistic minorities: Indigenous people and Francophones (Statistics Canada 2017a,b; Ontario Ministry of Francophone Affairs 2019). Relative to the rest of the province, Northern Ontario is less-densely populated, less-developed, with poorer access to healthcare services and often, poorer health outcomes.

This Rural Ontario Foresight Paper describes a few programs that have had positive effects in rural areas of Northern Ontario as well as having the potential and, sometimes, demonstrated positive impact in urban or southern regions.

The reality and misconceptions about rural health services

Rural areas, relative to urban areas, typically have lower health status, poorer health behaviours, lower educational attainment and poorer access to health care (MacMillian et al. 2003; Bouchard et al. 2012; Pong et al. 2011; Timony et al. 2013; Statistics Canada 2013a,b; Wenghofer et al. 2014; Glazier et al. 2018) — this is the reality. This is also true of less-developed regions such as Northern Ontario, relative to Southern Ontario, as well as Indigenous and Francophone peoples, relative to the general population of the province. However, it is a misconception to assume that all rural or less-developed regions exhibit these characteristics or that everyone living in these regions or who

identify as an Indigenous person or as a Francophone has lower health status, poorer health behaviours and so forth.



Word maps of health issues in Northern Ontario
(Images courtesy of the Centre for Rural and Northern Health Research-Laurentian)

Another misconception is that healthcare professionals who choose to practice in these areas are somehow less able than are their urban counterparts (e.g., Fors 2018). The reality is that rural practice often differs from urban practice, and practice in less-developed regions differs from practice in more developed regions — this poses challenges as well as opportunities. For example, relative to their urban counterparts, rural medical doctors typically provide more services or procedures (Hogenbirk et al. 2004; Wenghofer et al. 2018). Many health professional education programs offer placements in rural areas or in less-developed regions because educators and policy makers recognize the benefits of a diverse educational experience for program learners, and because educators and policy makers recognize the need for more diverse training for those who practice in these regions (Strasser et al. 2016; Strasser and Cheu 2018).

It is also the reality that many rural areas or less-developed regions serve as models of resilience and as innovators of healthcare service delivery. In addition, these areas are the harbingers of an aging province and, with the exception of some communities, typically have populations that are older than other parts of Ontario (McDonald 2012; Ministry of Finance 2018). The uniqueness of Northern Ontario's vast geography and more-sparsely populated regions adds to the complexity of rural health services delivery for an older population known to have poorer access and lower health status than Southern Ontario (e.g., Glazier et al. 2018). As such, rural and remote communities in the less-developed region of Northern Ontario can offer the harshest proving grounds for healthcare programs — some of these programs are outlined in the following sections.

Program Exemplars

Northern Ontario School of Medicine

The Northern Ontario School of Medicine (NOSM) is one of a few medical schools in the world with an explicit social accountability mandate to improve the health and well-being of the people of its service region (Strasser et al. 2009; 2018). Beginning in 2005, with the first cohort of students enrolled at the NOSM, researchers from the Centre for Rural and Northern Health Research (CRaNHR) – Laurentian University, with the guidance and support of senior NOSM personnel, have been conducting studies to evaluate how NOSM has helped improve access to medical and healthcare providers in Northern Ontario.

Consistent with its social accountability mandate, NOSM developed Distributed Community Engaged Learning (DCEL) as its distinctive model of medical education and health research (Strasser et al. 2009). Community engagement involves active community participation and occurs through interdependent partnerships between the School and the communities for mutual benefit (Strasser et al 2015). Community engagement drove the development of NOSM's comprehensive life-cycle approach, which begins in high school and extends through to continuing medical education. NOSM's admissions process seeks to reflect the population distribution of Northern Ontario in each class, specifically promoting applicants from Northern Ontario, or similar backgrounds. Community members play a vital role in selecting students for the four-year MD program, educating students by serving as standardized patients, and providing local support for students during their community placements (Strasser et al 2013).

Northern Ontario School of Medicine (NOSM) Lakehead and Laurentian Sites
(images courtesy of the Northern Ontario School of Medicine)

Studies that examined data from applications to NOSM from 2006 – 2015 found that 37% of all NOSM students were from rural communities and small towns of ≤40,000 people. This percentage is close to 42%, which is the percentage of people in rural areas or small towns in the service region based on 2011 Census data. NOSM's service region includes the area bounded by the Northeast and Northwest Local Health Integration Networks (LHINs), as well as the part of the North Simcoe-

Muskoka LHIN that is north of the Severn River. Having a student population that represents the population of the service area is a key goal of NOSM's social accountability mandate. Approximately 92% of students were from the service region and the remaining 8% are from other Northern areas in Canada. Approximately 22% had a Francophone background, which exceeds the goal of 16%. Approximately 7% had an Indigenous background, which was below the goal of 12%. However, in 2016, NOSM modified its selection process, based in part on CRaNHR's research, and the percent of students of Indigenous background increased to 12% in the next 2 years (Mian et al. 2019). In all, this shows that NOSM has been successful in selecting a student population that is representative of the service region.

Medical students at the Northern Ontario School of Medicine
(image courtesy of the Northern Ontario School of Medicine)

NOSM's curriculum includes three 4-week placements in rural and First Nation communities in the first two years, and, in the third year, an 8-month longitudinal integrated clerkship in midsize cities (populations of 5,000-78,000 people) (Strasser et al. 2009). This curriculum, coupled with a student population drawn from the region, can help to improve access to medical care by producing a skilled and diverse medical workforce with cultural/linguistic competencies that enable a fuller understanding of the people of rural and Northern Ontario and their medical care needs.

> *Some communities were still experiencing challenges in physician recruitment, but all were looking to NOSM as the primary source for new doctors.*

As part of the tracking study, CRaNHR has data on over 500 NOSM undergraduate medical students who entered NOSM from 2005 to 2013 and graduated 4 years later. As of April 2018, survey data on 80% of these students showed that 62% were admitted to family medicine residency training programs. Almost all of the remainder, 29%, matched to generalist specialties (Royal College of Physicians and Surgeons of Canada (RCPSC) specialties) that are in high demand in Northern Ontario.

Studies that examined the first two or three cohorts of family medicine graduates (College of Family Physicians of Canada (CFPC) Family Physician (FP) specialty) found that many of these FPs were practising in Northern Ontario or in rural Ontario (Hogenbirk et al. 2016; Wenghofer et al. 2017). As of April 2018, 14% of 313 FPs located their primary medical practice in Northern Ontario communities of ≤10,000 people, 48% in larger Northern Ontario communities and 8% in southern Ontario communities of ≤10,000 people. In 2018, 26% of 68 Royal College specialists had their primary medical practice in Northern Ontario. Overall, NOSM has been successful in graduating medical doctors who go on to become family physicians and generalist specialists with the potential to provide a broad range of medical and surgical care services to people across Northern Ontario and in other underserviced areas of the province.

In 2014, CRaNHR researchers conducted 10 interviews with knowledgeable individuals from 8 Northern Ontario communities (Mian et al. 2017). All 8 communities had been chronically underserviced, all were training NOSM learners and all had recently recruited NOSM graduates. Overall, interviewees reported that 29 full-time historic physician vacancies had been reduced to 1 vacancy. Interviewees also noted lower costs for travel to physician recruitment job fairs in southern Ontario and for physician incentive packages. Some communities were still experiencing challenges in physician recruitment, but all were looking to NOSM as the primary source for new doctors. In addition, most communities were reported to have become less reliant on short-term (locum) contracts to supply the medical care needs of people in the community.

A CRaNHR study examined the social and economic impact of NOSM in 2008 when it was in its third year of operation (Hogenbirk et al. 2015b). The economic impact study was repeated when NOSM was beginning its fourteenth year of operation with wide-ranging and mature medical education and medical residency programs, as well as many other health professional education programs (i.e., dietetic, audiology, occupational therapy, physiotherapy, speech-language pathology, physician assistant, medical physics, pharmacy and interprofessional education programs) (https://www.nosm.ca/education/). In Fiscal Year 2017–2018, an estimated $70 million (M) was spent by NOSM personnel, learners and teachers in the service region. The spending and re-spending of these monies was worth an estimated $125M to $137M of economic activity per year. Overall spending was estimated to support 780 to 860 full-time equivalent jobs. NOSM's community engaged distributed medical program is also a distributed economic impact program (Hogenbirk et al. in preparation).

To summarize, ongoing studies show that NOSM is producing family physicians and generalist specialists, of whom 56% have set up their medical practice in the service region. NOSM also has a demonstrated positive effect on FP recruitment in some of the small towns, though more work needs to be done to recruit physicians to these communities. In addition, NOSM has had a substantial positive impact on economic activity and employment. These largely positive impacts are direct consequences of NOSM's distributed community engaged learning medical education program that has garnered international attention and accolades. NOSM is an innovative solution to the problem of physician maldistribution that is common across underserved areas of Ontario and,

as such, some or many of NOSM's programs and approaches could be adapted and implemented to increase recruitment and retention of physicians in rural southern Ontario.

Ontario Telemedicine Network

The Ontario Telemedicine Network (OTN) is a not-for-profit organization funded by the Government of Ontario to facilitate virtual care services throughout the province (https://otn.ca, Brown 2013). OTN is the largest telemedicine service provider in Canada (COACH 2015) and also one of the largest in the world (Holmes and Hart 2009). Facilities with OTN units enable access to all levels of medical care services for people living in underserved areas such as rural or Northern Ontario. OTN units are often located in healthcare centres including hospitals, nursing stations, health/medical care clinics, public health units, treatment centres and in the patient's home (https://otn.ca). These units are connected to OTN's secure virtual private network (VPN) communications system.

A study conducted in 2014 found that there were 2,331 OTN units, of which 552 (24%) were located in Northern Ontario (O'Gorman and Hogenbirk 2016). The majority of communities with 50 or more people in Northern Ontario (690/802=86%) had OTN units or were within an hour's drive of a unit. However, the presence of a unit does not guarantee access. For example, units in many facilities are used only for patients of that facility (e.g., long term care facility) and not readily available to other patients or to the general public. In addition, some clinicians are enthusiastic users of OTN-facilitated services while others are less enthusiastic and this can affect local access and utilization. Nonetheless, the study did show that the distribution of OTN units has the potential to increase access to and use of medical services and reduce the need for medically related travel.

A parallel study used medical service billing data (Ontario Health Insurance Plan-OHIP data) to compare clinical telemedicine utilization in four regions of Ontario: urban Northern Ontario; rural Northern Ontario; urban Southern Ontario; and rural Southern Ontario (O'Gorman et al. 2016). This second study reported on 652,337 OHIP-OTN patient visits in Ontario in fiscal years 2008/2009 to 2013/2014. Northern Ontario had higher annual utilization rates per 1,000 people (rural 52.0, urban 32.1) than Southern Ontario (rural 6.1, urban 3.1). Per capita use was highest and occurred across more therapeutic areas of care in rural Northern Ontario. Urban Northern Ontario had higher per capita use than either urban or rural Southern Ontario. Recently completed graduate work (Lowey 2019) also found the same geographic patterns in per capita use, with additional insights into age and sex differences.

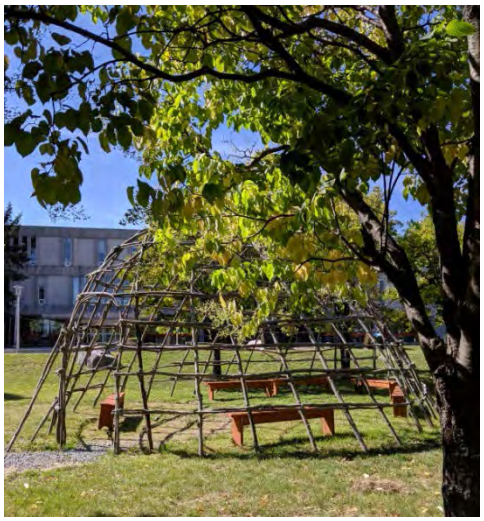
The majority of clinical telemedicine sessions are for mental health and addictions and a subsequent study took a detailed look at this category, focusing on the use of telemedicine in the treatment of opioid dependency (Eibl et al. 2017). The misuse of opioids is a North American public health crisis, for which the standard of care is opioid agonist therapy (OAT). Retention in treatment is a key marker of success, and data from 3,733 patients found that those treated primarily via telemedicine were 1.3 times more likely to stay in therapy than patients treated primarily in-person (50% versus 39%). The conclusion is that telemedicine is an effective method of delivering OAT, with the potential to improve access in rural and other underserved regions.

Although it is not known if overall access to care is increasing in rural and Northern Ontario, collectively, these findings suggest that OTN-facilitated clinical sessions are highest in traditionally underserved areas and are likely improving access to medical care services, particularly in sparsely populated regions of the province.

Indigenous Programs

Northern Ontario is the territorial homeland of Cree and Anishinaabe peoples and is covered by three overarching agreements between settlers and First Nations peoples: Treaty 3; Treaty 9; and the Robinson-Huron Treaty. It is also part of the Métis Nation. Over a third (34%) of Indigenous people in Ontario live in Northern Ontario, compared with only 6% of the overall Ontario population (Statistics Canada 2017a,b). While 3% of the overall Ontario population self-identifies as Indigenous, 25% (~59,000) of the people in Northwestern Ontario and 13% (~70,000) in Northeastern Ontario identify as Indigenous.

Northern Ontario holds many diverse stories and unique contrasts for First Nations communities. It carries stories of extreme poverty and marginalization, but also stories of resilience and strength. The centrality of land, displacement from land and environmental racism are important determinants of Indigenous peoples' health in Northern Ontario (Richmond 2015). This displacement is an ongoing challenge for First Nation communities that are regularly evacuated due to forest fires and flooding, and for whom primary or tertiary health care and secondary schools are not available in their communities. Access to health care is challenging for First Nations communities, particularly for the 30 or so communities in Northern Ontario that are fly-in or with limited land links, such as railways or winter (ice) roads. First Nations in Northern Ontario have declared states of emergency for housing shortages, water quality and youth suicides, and too often see their children and women among the missing and murdered. Yet the collective and community-grounded commitment to wellbeing and equity has woven counter-stories of strength.



Wigwam at Laurentian University

Image courtesy of the Centre for Rural and Northern Health Research-Laurentian

A notable example of this innovation and strength is the establishment of uniquely First Nations health authorities in two areas: the Sioux Lookout First Nations Health Authority (https://slfnha.com/) in Northwest Ontario; and the Weeneebayko Area Health Authority (https://www.waha.ca/) in Northeast Ontario. In addition to providing healthcare services, a partnership between the Sioux Lookout First Nations Health Authority and the local hospital, Sioux Lookout Meno Ya Win Heath Centre (http://www.slmhc.on.ca/), created the Anishinaabe Bimaadiziwin Research Program (https://slfnha.com/research/anishinaabe-bimaadiziwin-research-program) to establish a community-oriented research unit to improve health status and health services in the region.

Anishinaabe Bimaadiziwin Research Program

Working in Sioux Lookout and the surrounding First Nations, the Anishinaabe Bimaadiziwin Research Program initiates and collaborates on relevant clinical and community projects, as well as regional and cross-cultural research.

Goals:

- Assist communities and researchers to build strong and equitable partnerships on focused and common research interests
- Foster an environment of curiosity, inquiry and sharing
- Encourage research that is relevant, ethical, community-oriented and builds capacity
- Communicate with and share health research knowledge with communities and organizations

A perusal of a report summarizing 10 years of community-based research activities identifies many initiatives that have directly and positively influenced communities and community members in terms of cross-cultural care, management of infectious diseases, social determinants of health, maternal-child care and addiction medicine (Anishinaabe Bimaadiziwin 2017). For example, a novel study examined the effect of a community-based opioid agonist therapy and aftercare programs on the community itself (Kanate et al. 2017). One year after implementation there was a community-wide 61% decrease in police criminal charges, a 58% reduction in child protective cases and a 33% increase in school attendance. The effect of the OAT and aftercare programs was also evaluated in six First Nations communities, and found high retention rates of 72% after 18 months (Mamakwa et al. 2017). The authors of the summary report have perhaps said it best: “Despite often being under-resourced, these Community-based and culturally appropriate aftercare programs are very successful” (Anishinaabe Bimaadiziwin 2017: 15).

Cross-cultural care, management of infectious diseases, social determinants of health, maternal-child care and addition medicine are intertwined (Anishinaabe Bimaadiziwin 2017; Robinson et al. 2017), and the studies listed above have shown that progress in one area can lead to progress in another. These studies also demonstrate that programs must simultaneously address key issues in order to be successful. The success of these OAT and aftercare programs in rural and remote First Nations communities have led to a set of guidelines and recommendations for similar programs in rural areas (Robinson et al. 2017).

This is a clear example of a program developed in the rural north with application to other rural areas or low-resourced regions.

Cross-cultural care, mentioned above, is no small thing and exists within a broader context. The Calls for Justice in the 2019 report on the findings from the National Inquiry into Missing and Murdered Indigenous Women and Girls (https://www.mmiwg-ffada.ca/) echoes many of the Calls for Action in the Truth and Reconciliation Commission Final Report from 2015 (http://www.trc.ca/). Both reports highlight the responsibility of governments and healthcare providers to address inequities in health outcomes and health care with respect to Indigenous people. One important step in this journey to reconciliation is the establishment of training and support for developing culturally safe practices and cultural humility in health care. This is critical to address the pervasive impact of racism in health care experienced by Indigenous people in Canada (Allan and Smylie 2015). The Ontario Indigenous Cultural Safety Training program is an online

Ontario Indigenous Cultural Safety Program

ICS is a provincial program, offered Ontario-wide and administered by SOAHAC.

Anti-Indigenous racial discrimination and bias have profound negative impacts on the health and wellness of Indigenous communities in Ontario. The Ontario ICS Program is focused on supporting Indigenous Health transformation as part of the overall health and social service systems transformation underway in Ontario. The goal is to improve Indigenous healthcare experiences and outcomes by increasing respect and understanding of the unique history and current realities of Indigenous populations. We facilitate and promote transformative decolonizing, Indigenous specific anti-racist education using evidence informed and coordinated approaches and strategies. We also work in collaborative partnerships and support organizational change initiatives, seeking to improve awareness about how colonialism is embedded in services, and motivating people with influence to address anti-Indigenous racial discrimination.

There are a number of ways that the Program advances its mission:

- Core online training for health and social service professionals (see below)
- Continued online training modules (post core training)
- In-person workshops, training and meetings convened to support organizational and system level transformation
- Provincial and national knowledge exchange efforts
- Planning, monitoring, evaluation and research initiatives related to ICS
- Strategic, collaborative partnerships
- Partnership, coordination and promotion of a National ICS Webinar series (link)

From: https://soahac.on.ca/ics-training/

training program that was adapted from a successful program in British Columbia and is offered through the Southern Ontario Aboriginal Health Access Centre (https://soahac.on.ca/).

The evidence base on cultural safety training is mostly positive, but limited (Churchill et al. 2017), which speaks to the newness of this field of study. In their evidence brief, Churchill and colleagues (2017) note that there are some data showing a positive relationship among training, healthcare provider outcomes, organization outcomes and, ultimately, patient outcomes. Although results are not yet generalizable, it is easy to imagine how improved communication and understanding among healthcare providers, patients and healthcare administrators can translate into more efficient care and better outcomes for different populations who live in different regions of Ontario.

Francophone Programs

In 2016, there were 129,000 Francophones in Northern Ontario, with 7,100 in the Northwest, comprising 3% of the region's population and 122,000 in the Northeast, comprising 23% of the region's population (Ontario Ministry of Francophone Affairs 2019). Francophones tend to have poorer health status than non-Francophones (Bouchard et al. 2012) and access to healthcare services in French can be problematic (Gauthier et al. 2012; Timony et al. 2013).

Since 2012, CRaNHR researchers have been studying issues related to French-language health services (FLHS) for rural and Northern Ontario Francophones. Studies have sought to understand the availability of FLHS, the distribution of service providers, the experience of family physicians offering services in areas densely populated by Francophones and the experience of Francophone patients with receiving care in their language of choice.

CRaNHR's research has confirmed that there are a promising number of physicians that have identified French as a language of competence. In fact, nearly 16% of physicians reported the ability to offer French-language services. This initial finding was surprising given that only 4% of the Ontario population is Francophone (Gauthier et al. 2012). However, despite the perceived availability of French-language services by physicians, the reality is that many of these providers are located in areas where few Francophones reside. In Ontario, most French-speaking family physicians (55%) are located in communities where less than 10% of the population are Francophone, and only 14% of family physicians are located in communities that have a strong Francophone presence (where 25% or more of the population are Francophone) (Timony et al. 2013).

The maldistribution of French-speaking physicians in Ontario cannot be easily corrected, and does come with certain implications. Timony and colleagues (2018) found that French-speaking family physicians located in communities densely populated by Francophones worked more hours and saw more patients per week than their non-French-speaking colleagues. Our research with Francophone patients from across Northern Ontario confirmed that receiving services in the language of their choice fosters a more enjoyable experience (Jutras et al. in press). However, all rural and northern physicians have an opportunity to ensure quality services regardless of their ability to speak French or not. These studies have underlined the importance of preparing French-speaking family physicians for the extra time commitment related to offering French-language services, hiring

bilingual staff or having pamphlets and posters available in French and English. Additionally, these studies highlight the importance of the role that non-French-speaking physicians can play in support of their colleagues who offer French-language services (Gauthier et al. 2015; Timony et al. 2016).

Many lessons have been learned by delving deeper into this health human resource issue for rural and Northern Ontario Francophones. At first glance, outcomes may appear grim for French-speaking patients and hardships obvious for healthcare providers; however, a more recent CRaNHR study has shown that even small changes in communication behaviours can lead to improved patient satisfaction. As such, rural and Northern physicians are well positioned to make a positive impact on the health of Francophones in rural and urban Ontario.

The Future of Rural Health Services and Implications for Ontario

Greater geographic distance, fewer travel options, sparse populations and the patchiness of already-scarce resources will always pose a challenge for the delivery of health and medical services in rural areas and under-developed regions. With the current changes to Ontario's healthcare system, the time is right to continue development and implementation of innovative healthcare delivery programs. Pioneering programs have arisen from these areas and regions that have demonstrated ability to improve access to care. For example, NOSM's work to increase the medical and health workforce in historically underserved areas of Northern Ontario or OTN's efforts to transcend distance through the use of information and telecommunications technology to improve access to a broad suite of medical or healthcare services and expertise. These initiatives are particularly germane to other areas of Ontario because the population of Northern Ontario is older, which will be the situation in the rest of the province in a decade or two.

> *…resource constraints in rural and Northern Ontario typically require creative solutions and often require a critical evaluation of the needs or issues that may be defined differently in the general or urbanized population.*

In addition, the work of Indigenous and Francophone populations to adapt existing programs or to develop new programs that address their needs are often able to provide insights and innovations for all Ontarians, including other minority populations experiencing similar access challenges and marginalization. For instance, a disconnect between program objectives, process and outcomes may only become apparent when these relationships cannot be "translated" into different languages, cultures, genders, ages, locations, etc.

Phrased in another way, resource constraints in rural and Northern Ontario typically require creative solutions and often require a critical evaluation of the needs or issues that may be defined differently in the general or urbanized population. The success of alternatives in underserved areas

and with minority populations can inspire changes to the status quo in better-resourced or better-served areas.

It must be recognized that some rural-based healthcare delivery innovations have been less successful and so the challenges of geographic distance, restricted travel, low-population density and dispersed, scarce resources should not be underestimated. Problems of inequitable access to quality healthcare services remain. However, as the examples show, innovations in rural and northern healthcare delivery have emerged to address these challenges and improve equity. In addition, noteworthy innovations have occurred in other rural areas of Ontario, though in this Paper we have focused on those from Northern Ontario.

Rural regions and Northern Ontario can continue to be the test bed for programs evolving to meet emerging needs of an aging population, as well as demonstration sites for programs incorporating new knowledge or changing technology and infrastructure. Work to develop and evaluate these initiatives or to explore underlying reasons for geographic differences is ongoing, with the objective of developing effective, safe and economical programs to help improve well-being and quality of life of Ontarians living in rural areas and less-resourced regions.

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Northern Perspective: Innovative Healthcare Governance in Northern Ontario

Hilary Hagar

For anyone that has driven the highways in Northern Ontario, there can be vast stretches of road between one community and the next. For those outside of hubs such as Thunder Bay, Sioux Lookout or Sudbury, accessing a healthcare provider may mean navigating these expansive landscapes. Just 24% of patients in the Northwest and 28% in the Northeast report being able to see their primary care provider the same day or next day, compared to the Ontario average of 43% (HQO 2018, 23). There are likely a number of factors that contribute to this, including access to primary care providers. Just 91.5% of people in Northwest and Northeastern Ontario have a family doctor or other primary care provider, which are the lowest rates in the province and below provincial average of 94.1% (HQO 2017b).

In the paper by Hogenbirk et al., they analyze healthcare access in Ontario's northern regions. One particular point they make is that innovation can be the result of the relationship between poorer population health outcomes and a strong sense of community. These innovations are paramount for the health of northerners because as Hogenbirk et al. suggests, resource constraints in rural and northern areas require creative solutions and the critical evaluation of the needs and issues specific to the population that such solutions are intended to serve.

Examples of these creative and innovative health programs exist throughout the north. In addition to the examples provided by Hogenbirk et al., another example of an innovative community-specific approach is the Matawa Health Co-operative's inter-professional primary care health team, which aims to incorporate traditional healing and medicines to address the diverse health needs within the nine Matawa First Nation communities (Matawa First Nation n.d.).

However, local innovation isn't exclusive to program delivery. It is also needed in governance solutions to better reflect the needs and characteristics of sub-regional populations. For example, one way to build innovation at a local level could be to encourage municipalities to play a greater role in the governance, planning and delivery of health services. In Ontario, local municipalities and District Social Service Administration Boards have the responsibility to co-fund and deliver programs for public health, long-term care and paramedic services in conjunction with the Local Health Integration Networks (LHINS) (AMO 2019, 15). Municipalities also contribute considerably to capital investments for hospitals and provide incentives for physician recruitment (AMO 2019, 5). In fact, in 2017, municipal governments in Ontario contributed $2.1 billion to health costs, an increase of 38%

over the last eight years (AMO 2019, 3). However, Ontario municipal governments presently have limited ways to provide input on program design (AMO 2019, 4). Because of the growing involvement of municipalities in public health and healthcare systems, the AMO states that "municipal governments need to participate fully in health policy and planning processes as equal partners, not as mere stakeholders" (AMO 2019, 5). Increasingly, municipalities are stepping in "to fill gaps in provincial services at the community level" and as such, having their voice at the table can be another tool to help ensure health policy (and subsequently programs) are targeted (AMO 2019, 5).

In addition to this Ontario example, northerners ought to remember that we don't have to find all the solutions ourselves. Looking to successful cases of creative local healthcare governance in other parts of Canada, or even internationally, can lead to new ways of thinking and positively impact healthcare users. According to André Picard, a long-time healthcare journalist, "we've solved every single problem in our [Canadian] health system at least 10 times on a small scale. Our biggest single problem is not scaling up our successes" (CBC Radio 2017).

Take the Community Health Boards (CHB) in Nova Scotia, for example. There are 37 CHBs across Nova Scotia that are comprised of groups of community volunteers who gather ideas and share information about how to improve and promote health and wellness at the community level (Nova Scotia Health Authority n.d.). In addition to developing partnerships with local community groups, CHBs award Wellness Fund grants to community projects that focus on initiatives identified in their community health plans (Nova Scotia Health Authority n.d.). Creating the health plans, which guide the work of the CHBs, is an ongoing activity that gathers information from the community on factors affecting health and wellness (Nova Scotia Health Authority n.d.). Generally speaking, local health leaders may be better positioned to make the necessary holistic health decisions than those in government ministries (Everett 2019, 14). As well, increasing citizen participation in health governance shifts the focus to a patient-centered approach which could improve the quality of care and address existing problems (Everett 2019, 17).

Ontario is following with similar frameworks. In 2016, the province released its first Patient Engagement Framework to "guide people in planning for implementing and evaluating patient engagement activities" (HQO 2017a, 3). This framework recommends that patient input be included in order to demonstrate accountability, promote transparency and respond to patient needs (HQO 2017a, 13). Examples of these efforts can include appointing patient representatives to hiring committees and hosting public meetings to include patient input in new strategic plans (HQO 2017a, 13).

Despite the need to work with local actors to generate context-specific solutions, most municipalities in the north are "too small to provide a critical mass and economies of scale for many services" (Everett 2019, 14). To address this, the Northwest LHIN and the Ministry of Health and Long Term Care have pioneered an innovative sub-regional planning model, called Local Health Hubs (Everett 2019, 14). The Hubs are based on population demographics, economic circumstances and cultural landscapes, and are meant to provide local communities with a wide range of health services

(Everett 2019, 14). Local Health Hubs could improve client access, generate a patient-centered approach and support stronger community links (Whaley 2013, 6).

Similarly, Rural Health Hubs, an initiative of the Multi-Sector Rural Health Hub Advisory Committee, are meant to equip service providers in particular with interdisciplinary partnerships in order "to improve the coordination and effectiveness of care for a defined population and/or geographic area" (Multi-Sector Rural Health Hub Advisory Committee 2015). For small, northern communities without the critical mass for service delivery, these creative collaborations within and across municipalities and disciplines are necessary for the effective delivery of health services that meet population needs.

As highlighted by Hogenbirk et al., northern health systems must navigate an expansive geography with low-population density while simultaneously meeting the needs of Francophones and Indigenous peoples. Addressing these complexities is no easy task. However, the strong sense of community mentioned by Hogenbirk et al. is certainly a strength of Ontario's north and should be integrated into the health system. Innovative community-based solutions in both healthcare programs and governance could make for a healthier north.

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New Approaches to First Nation Infrastructure Development – The Nipissing First Nation Experience

Dwayne Nashkawa

Introduction

The infrastructure deficit in First Nations is a regular feature in any news item about the circumstances of Indigenous people across Canada. These infrastructure deficiencies are highlighted when they have resulted in misery and frustration for local residents and leave most Canadians perplexed and disturbed.

Why are these problems so intractable and where are the real solutions? It ripples out to and across Ontario and Canada. It is a foundational problem that needs more than news stories and attention through social media feeds. It needs proactive strategies, developed in Indigenous communities by the people who live in those places. It needs resources to support not only capital investments but also the ongoing planning, capacity development and operations and maintenance of infrastructure once it is finally built.

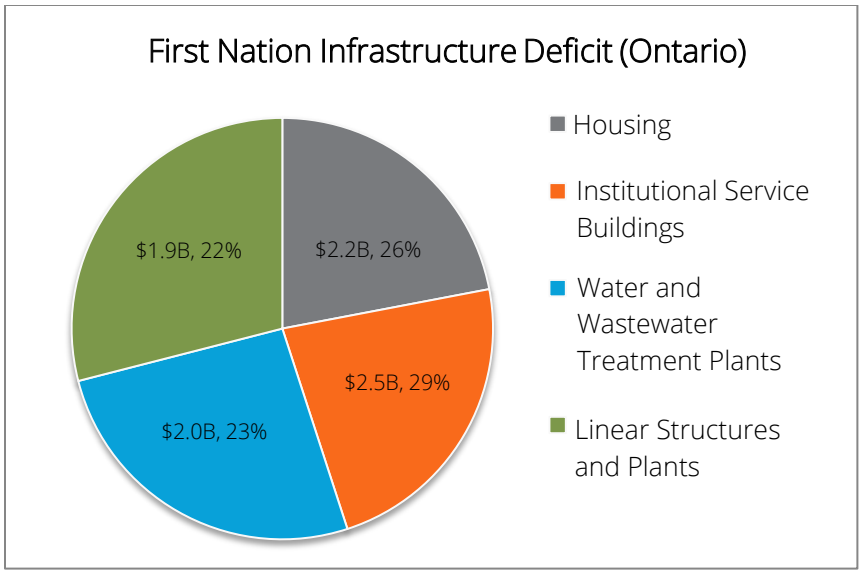
Infrastructure needs to:

- be considered and built in parallel with the other social policy areas where First Nations are working on solutions;
- reflect and support the identities of Indigenous nations;
- come from within Indigenous communities and through new or refreshed relationships at the local level.

It cannot:

- come from bureaucrats in faraway-away places;
- should not be subject to the whims of far-off committees whose members have never visited a First Nation;
- be designed in silos where problem solvers only think in systemic terms when the systems don't apply to the areas where the work needs to be done.

New ways to finance and construct these infrastructure projects need to be given serious thought. The old ways of financing critical infrastructure development have failed and continue to add to the backlog of projects waiting to get started in First Nations (Cossette 2018).



Ontario First Nation Infrastructure Deficit, from *P3's Bridging the First Nations Infrastructure Gap http://www.pppcouncil.ca/web/P3_Knowledge_Centre/Research/P3_s__Bridging_the_First_Nations_Infrastructure_Gap.aspx?WebsiteKey=712ad751-6689-4d4a-aa17-e9f993740a89*

There is a disconnect between the committees of bureaucrats that make resource allocation decisions in Toronto and Ottawa and the community citizens and leaders that are trying to make decisions on the ground. This disconnect is about much more than distance - there is a disconnect between cultures, circumstance and worldview that all come into focus when one begins to critically examine how decisions about infrastructure are made in First Nations.

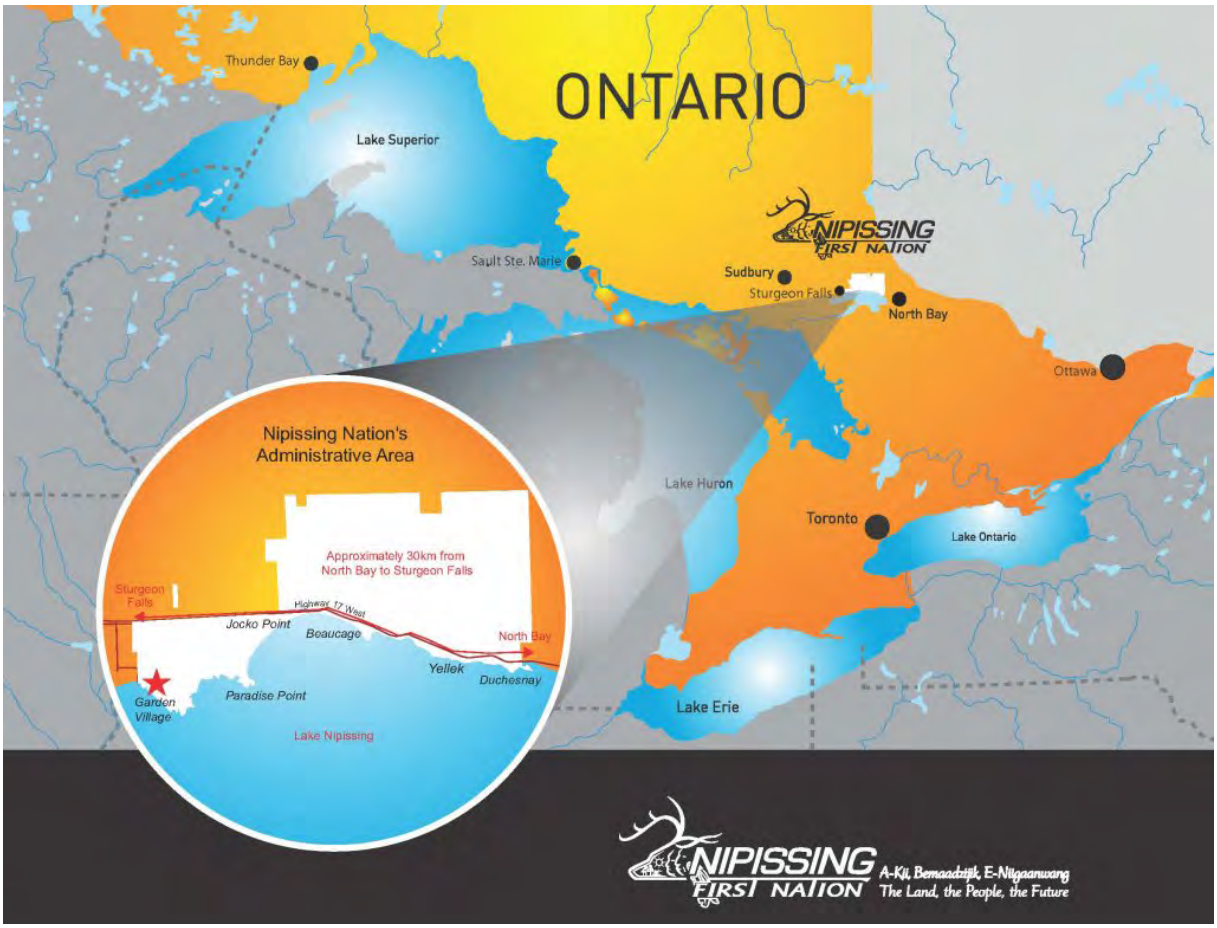
This paper will look at the efforts of Nipissing First Nation (NFN) to build an infrastructure strategy and create the conditions to close the gap and build a sustainable infrastructure base to support the long-term growth of the Nation.

Finally, wherever possible, local communities, which includes the municipality and the First Nation, must work together to find local solutions that will meet the needs of regions for decades to come. Just as with Jordan's Principle (Government of Canada 2019), the idea that certain levels of government can sit on the sidelines due to jurisdictional issues, has become outdated and is no longer acceptable. All levels of government need to do more. First Nations, and their neighbouring municipalities, also need to build relationships that benefit all the people in the region and plan together to save resources and find efficiencies. In some cases, this requires renewed effort to build relationships and extra effort to share information and consider needs beyond administrative boundaries.

Municipal Relations

Relationships between First Nations and neighbouring municipalities vary greatly across the country and are largely based on the quality of local connections between key actors. NFN has worked

diligently to build a lasting, resilient relationship with the Municipality of West Nipissing on its western boundary and the City of North Bay on its eastern boundary. It is an ongoing process.



In many cases, these relationships were not initiated by the First Nation nor the municipality, but by the federal government when it was acting in a fiduciary capacity prior to devolving responsibilities back to First Nations. In the 1980s some municipal type agreements (MTAs) were put in place in an effort to provide services to First Nations without major capital outlays on the part of the federal government.

It is my experience and understanding that when municipalities work with First Nations to meet infrastructure needs, it has historically been an imbalanced relationship from the start. The municipality is usually in the position of having benefited from support from other levels of government over many years to build up infrastructure development, while the First Nation has not. Often, the municipality has all the expertise in its planning and engineering departments while the First Nation has little, if any, capacity and must rely on technical consultants who take their expertise with them when their contract is finished.

If the parties are looking to resolve their own issues and take an approach that focuses on meeting their objectives – without making honest efforts to understand the issues and challenges of their

neighbours – then the relationship will be weak. The strength of the relationship is proportionate to the level of commitment and communication between the communities. All too often, parties only contact each other to meet basic obligations and when they are seeking something specific in relation to their interests. One should also consider that in many (but not all) circumstances, the First Nation is starting from a disadvantaged position from a capacity perspective.

The most frustrating element has been that the push for MTAs by the federal government often is much more concerned with minimizing its own costs and fiduciary duties and with municipal interests, often at the expense of First Nation interests. In the past, this has resulted in very one-sided agreements that allowed municipalities to charge higher non-resident rates while offering the local First Nation little benefit in return. The First Nation rarely had any input related to the delivery of the service(s) or any opportunity to evaluate its benefit to their members. There is little accountability to the First Nation within the agreement and the municipality always prioritizes services to its citizens over the First Nation.

Communities need to build connections that go beyond the wording of service contracts. If a contract is the only tether that binds communities, the relationship is very fragile. In 2015, a tragedy occurred when the Municipality of Loon Lake's Fire Service refused to respond to a fire in neighbouring Makwa Sahgaigan First Nation in northern Saskatchewan because the First Nation had an outstanding bill for $3360.89. As a result two children unnecessarily died (National Post 2015). While the parties debated whether or not the children would have perished anyway given the fifteen-minute response time, the relationship between the communities further deteriorated as a result of poor communication and the absence of a resilient relationship.

There is interest in improving these relationships from a municipal perspective. The Federation of Canadian Municipalities (FCM) has made the fostering of Indigenous partnerships a focus area within its mandate. It is looking at how improved planning and communication can support local economic development and create stronger relationships (Federation of Canadian Municipalities 2019). This is quite positive given that, all too often, Indigenous issues are still relegated to the periphery of agendas or only focus on narrow legal obligations. FCM has developed a number of tools to promote relationship and capacity building between neighbouring municipalities and Indigenous communities. One toolkit called *Stronger Together* looks at creating economic development partnerships (Federation of Canadian Municipalities 2019) while another focuses on aligning First Nation and municipal land use planning

for more cohesive development (Federation of Canadian Municipalities 2019).

A recent example of taking a much narrower approach can be observed at the 2019 Rural Ontario Municipal Association (ROMA) Annual Conference. The only presentation related to Indigenous people was in a "sponsored learning breakfast" in a presentation entitled "Municipal Governments and the Duty to Consult" (Turner 2019). This presentation did not look at the relationship issues discussed above but rather on narrow legal definitions and strategies to minimize the obligations of municipalities toward their Indigenous neighbours as it relates to consultation obligations.

ROMA would have been better served by looking at best practices in working with First Nations and building stronger relationships. This would have contextualized duty to consult obligations in a more proactive and positive light that viewed these relationships as adding value rather than cost and obligations. There are legal obligations that exist – Indigenous rights and treaty obligations are not going to fade away or be legislated out of existence. However, many of the issues associated with the recognition and implementation of these rights can be addressed through proactive discussion and relationship building.

Opportunity for Regional Benefit

In 2013, NFN settled a major land claim related to the improper survey of its boundary between 1881 and 1883. This settlement of $124 million brought many opportunities to finance infrastructure development in new ways. However, for area municipalities it provides a huge benefit as well. Settlement of land claims brings much-needed revenue to the region as much of this new community revenue gets redistributed. When claims are settled, First Nations invest in their people and their communities, yet lack the capacity to internalize those costs.

Outside workers and firms benefit given there is not the design and construction capacity in any First Nation to fully meet the requirements of developing these facilities. For example, when NFN built a water and wastewater facilities and a new serviced subdivision in 2010, all of the construction expertise and capacity was brought in from outside communities, save some of the labour components. Approximately 95% of the $18 million project was paid to external contractors based in area municipalities. This is in addition to economic leakage from First Nations to their neighbouring communities that can be up to 75% of local spending (Cachon 2015).

Nipissing First Nation's Relationship with North Bay

Building a relationship with the City of North Bay has been an important element of NFN's long-term infrastructure planning. One of the first appointments I made when I became the Executive Director (later CEO) of NFN was with North Bay Chief Administrative Officer Dave Linkie. He had extensive municipal experience and was very open to sharing information and new ideas. He welcomed me to his office and was very interested in building a relationship right away. He valued the opportunity to refresh the relationship with NFN and committed to working with us to get things going.

We started the relationship-building process at a personal level, getting to know each other and what each organization – and each other personally – had for goals and objectives for the future. We discussed a variety of issues from fishing on Lake Nipissing (NFN was developing its own fisheries management regime at the time) to social issues facing the local urban Indigenous community, to more administrative issues.

North Bay had always supported economic and community development efforts of NFN. In the 1980s, North Bay entered into a municipal fire protection agreement with NFN to provide services to the east part of the reserve that shares a boundary with North Bay. Later in the 1990s North Bay and NFN also entered into an agreement for a sewer connection to the city for NFN's industrial park.

One of the key elements in strengthening our relationship was to engage some of the key departments of our respective organizations in the process. We connected NFN's Lands Department with the Planning and Engineering Department of the City and our Economic Development Department staff got together to look at projects they could collaborate on. The result of this was that when North Bay began designing a new lift station to support development of North Bay's future infrastructure needs for the west end of the city, including the university, college and regional health centre, it was also designed to support future capacity requirements of NFN which borders these institutions. Now as NFN plans for development of the area that borders North Bay, there are options for servicing new developments that would not be available otherwise.

It was also important to support the relationship between the political actors, namely the Chief and the local Mayors. During my fifteen years at Nipissing, there have been two different Mayors in North Bay and three different Chiefs at NFN. Each pairing had a different dynamic and needed to be supported in a different way. Political ideology and methods of leading were not always neatly aligned, although for a good portion of my time at NFN, cooperation and effective communication has been friendly and effective.

> *…pan-aboriginal approaches just will not work when imposed externally by other levels of government.*

As discussed, relationships between First Nations and municipalities exist on a continuum from virtually non-existent to very closely aligned. And like any relationship, effort needs to be made to maintain and strengthen the relationship. There are no two circumstances that are the same and the variability between the kinds of relationships that exist are not dependent on any one set of factors. Within small areas there can be very different relationships. They are heavily influenced by the attitudes and perspectives of the main actors – the Councils, Mayors, Chiefs and senior officials.

Other communities are also being strengthened by building resiliency into the association by making connections at different access points within the communities. An example of this was the workshop held in early 2018 between representatives of Curve Lake and Hiawatha First Nation and area municipalities in central Ontario. Each community took turns in sharing stories and information

about their respective communities to begin building stronger relationships (Peterborough Examiner 2018).

NFN's Plan for Addressing the Infrastructure Gap

One of the frustrations Indigenous peoples have generally is the historical approach Canada has taken in trying to apply a pan-aboriginal lens to solving these kinds of problems. This cannot be done at a national or provincial level. The continuum of need and variability of the problems are just too great. The challenge with this is the sheer breadth of the problems and the differing views between First Nations leaders and governments as to the fundamental nature of relationships (Alcantara 2016). The solutions cannot be found by meeting with national or provincial Indigenous organizations alone, something that for many years was the preferred approach of the governments of Canada and Ontario as it lent itself to more coordination and uniformity in proposing solutions. The problem was that the solutions didn't work. Add to this that every First Nation has a different level of capacity to work on the solutions and manage and maintain operations once infrastructure is installed. For these reasons, pan-aboriginal approaches just will not work when imposed externally by other levels of government.

In recent years, the infrastructure deficit in First Nations across Canada was pegged by the federal government at between $25 and $30 billion dollars (Canadian Council for Public-Private Partnerships 2016). The federal government has recognized this and under the leadership of Jane Philpott, former Minister of Indigenous Services Canada (ISC), began looking for new solutions to close this gap. The infrastructure areas that have been recognized as needing new approaches include housing, water and wastewater, health facilities, roads, education facilities, energy systems and broadband. This includes building new infrastructure and repairs to existing infrastructure. ISC has also committed to working with First Nations, other Indigenous peoples and the private sector to co-develop and design the strategies to address these problems (Cossette 2018). The federal government has also committed to ending long-term drinking water advisories in First Nations by 2021 (Indigenous Services Canada 2019).

While it is important to note the areas that need attention from a physical infrastructure perspective, there are many other areas where gaps need to be narrowed as well in order to ensure the long-term success of First Nations as they are building their communities. Finding resources to meet the needs is critically important, but it is not the only void that needs to be filled.

There are legislative gaps and a drag that the *Indian Act* places on First Nation development. For those nations that are still entirely under the Act, there are many constraints on development. These constraints include: the requirement to have the Minister approve most, if not all, infrastructure decisions; the challenge of navigating a complex and sometimes indifferent bureaucracy; and the time all of this takes to move projects ahead. Many First Nations have begun to address these legislative and administrative challenges by adopting their own land codes and using other governance tools. The *First Nation Land Management Act* was the first piece of federal legislation – the development of which was led by First Nations – that recognized the call of First Nation leaders to

extract themselves from parts of the *Indian Act* so they could expedite developments on their lands. First Nations who chose to be scheduled under this legislation have withdrawn from sections 53 to 60 of the *Indian Act* and have taken over management of their own lands. This has greatly improved their ability to work with private businesses and adopt policies and laws to govern their lands in a way that is much more aligned with the community's culture and the pace of business.

Other pieces of legislation have followed which were created to address capacity gaps in First Nation communities. Another important example of legislation that has significantly enhanced community investment and development is the *First Nation Fiscal Management Act* (FMA). The FMA created three new First-Nation-led institutions: First Nations Financial Management Board (FMB); First Nations Finance Authority (FNFA); and First Nations Tax Commission (FNTC), designed to build First Nation capacity, develop financial tools similar to those that municipal governments have to support infrastructure builds, and raise local revenues from the use of lands and resources (First Nations Financial Management Board 2019). The FMB was developed under federal legislation as a Crown Corporation with a mandate to support First Nations in building financial administrative capacity and to develop standards that First Nations could adopt and eventually become certified under. Once certified, First Nations then have the option to join the FNFA. Its mandate is to manage a borrowing pool of First Nations that could issue debentures and gain access to international money markets.

Yet, these legislative approaches are not without their detractors. Some have criticized these pieces of legislation as minimizing the obligations of the Crown in supporting First Nations with legacy issues arising from colonialism. Some have also written that revenues should come from restoring First Nation lands and by including land rights in the discussion on fiscal relations (Pasternak 2018).

There is also a significant research gap. There is little academic literature on First Nation infrastructure needs, with most information only available through literature produced by First Nation organizations or government agencies. There is little in the way of academic research that can be reliably accessed to learn more about these issues (McCullough 2012). This is a challenge that continues to persist as First Nations wrestle with developing their own solutions.

Nipissing's Plan

Having provided some context as to the importance of local relationships and the policy and other challenges related to infrastructure development in First Nations, it is useful to provide an in-depth look at how one First Nation has approached tackling its significant infrastructure deficit.

Nipissing First Nation's plan to address its $183 million infrastructure need (First Nations Engineering Services Ltd. 2017) started with a search for funds to create a plan. Current funding arrangements with ISC (and formerly Indian and Northern Affairs Canada) provide little in the way of resources to conduct proper planning. None of NFN's transfers for funding consider any funding for proper infrastructure planning for the nation. NFN receives transfers for minor capital, that are determined by formula, based on a calculation using data that is expensive and challenging to collect.

The funds that are transferred to the community are never enough. NFN has been chronically underfunded for water treatment for decades. There has never been a proper allocation of funding that recognizes the need and particular geographic circumstances of NFN. For example, NFN has more than twenty-one thousand hectares of lands with eleven villages spread across the territory. It has three larger communities that are at capacity or growing rapidly while there are other traditional villages that are much smaller but in the eyes of the citizens are important to the culture and heritage of the community. It is neither fair nor realistic to say "move to the larger villages" as people have spent their lives in these areas and their relatives are buried there. There is not enough money for capital to properly operate the small pump house systems or to train and pay operators properly. Funds for system planning are non-existent.

Planning

Knowing this, NFN knew that to properly plan for future infrastructure needs, the administration had to update the community capital plan. The last iteration of the plan was from 1992 – and no capital funds had ever been provided to implement it – so it had effectively gathered dust for more than 20 years. The proposals NFN received after putting out an expression of interest were in the range of $250,000. INAC had no resources for this, nor did the First Nation so NFN had to cast about looking for funding that would fill this funding gap.

While looking to address housing needs, NFN became aware of the First Nation Market Housing Fund (FNMHF). Fortunately, early on in the FNMHF's mandate, their board and Executive Director Deborah Taylor recognized that for market housing to become successful in First Nations, there was significant capacity building to be completed. NFN was impressed that the FNMHF started with this recognition when, typically, government demands a results-based focus in terms of units produced – in this case new housing that was based on market conditions.

FNMHF realized they would never have long-term success that way. It chose instead to invest in capacity building at the local level. With this idea, FNMHF made investments in community governance, staff training and planning. It entirely funded NFN's new capital plan. It supported the development of NFN's Chi-Naaknigewin (Constitution), its Financial Administration Law and training for housing and other staff. These kinds of investments gave NFN a proper governance footing. They were willing to play the long game with First Nations – making the investments that did not yield immediate returns but instead provided the capacity that would ensure long-term growth. These are the kinds of programs and investments we need to build sustainable infrastructure capacity.

Governance

The proper governance structure is critical. First Nations leaders have long been criticized for lacking proper accountability mechanisms to their citizens and, more generally, to their transfer payment partners (Quesnel 2018). NFN was always frustrated with this criticism and the root of it, namely *The Indian Act*. NFN was also frustrated because there had never been substantive support for building the administrative capacity to demonstrate that it was being accountable to the people. NFN took

this on directly when it began to write its own Chi-Naaknigewin[1] in 2007. This was taken on as a community-based initiative, led by citizens who facilitated the discussions with the broader nation. The result, some six years later, was a clear articulation of who the Nipissing Anishinabek people are, their rights and responsibilities and how they would govern themselves. This moved the narrative within the community away from the Chief and Council being accountable under the *Indian Act*, to the Chief and Council being responsible to the people directly per the Chi-Naaknigewin.

While the Chi-Naaknigewin was being developed, NFN also worked with the First Nation Financial Management Board (FMB) to develop a Financial Administration Law (FAL) for the nation, and became certified by the FMB and later participated in the issuance of the FNFA's first debenture to support First Nation infrastructure development.

These efforts were important to NFN because, while all this governance capacity development was underway, it was in the process of settling a major boundary claim worth $124 million with the Government of Canada. This settlement addressed the historic loss of more than one hundred thousand acres of land due to improper land surveying following the signing of the Robinson-Huron Treaty by the Nipissing Chief and Headmen in 1850. With this new wealth now accessible to NFN, there was a need for a proper governance regime to be put in place to manage it. The Chi-Naaknigewin and FAL provided that foundation for the community. However, there was one more piece required.

Over the past 30 years, First Nations have gone from conditions where no bank would take on the risk to lend to them to having banks and other lenders actively compete for their business. NFN began to understand its financial strength and the risk mitigation that came with good governance foundations like the Chi-Naaknigewin and FAL being in place. NFN also believed that it could manage its settlement in a way where it could pay itself interest while getting caught up on the critical infrastructure the community desperately needed. With this in mind, NFN set out to design a trust to govern the financial settlement and manage and grow the funds for the beneficiaries. It approached the development of this trust very carefully given its history with banking and lending institutions.

Financing NFN's own Infrastructure

NFN first decided what it wanted this trust to do. The leadership and administration wanted to preserve and grow the capital while being able to access resources to build the community. NFN wanted to leverage its new wealth while also not letting its treaty partners off the hook for their fiduciary and treaty obligations. NFN set about designing the trust so that it could borrow from the trust that held the settlement and accelerate financing while retaining the value of the trust over the long term. NFN has done this very successfully. To date, NFN has borrowed approximately $9 million from its trust and have expanded infrastructure to support community development. This includes expanded administrative facilities, ending decades of staff having to work out of portable trailers

[1] Chi-Naaknigewin is the Anishinabe word that most closely aligns with the concept of a constitution. It literally translates into "Great Law"" or "Big Law".

and inadequate spaces, a new daycare and community centre, a new outdoor covered hockey rink/recreation facility that serves the community all year and a small business centre.

NFN has also proposed to the federal government that it could borrow from the trust to expedite water and waste water infrastructure expansion and enter into an agreement with Canada to pay back NFN for the loan over time. This would maintain Canada's fiduciary duty while allowing ISC to pay back NFN over a longer period of time. This is important given that the traditional approach would be for the Ontario region of INAC or ISC to use an annual funding envelope for capital that would only meet the needs of a few communities. NFN's proposal would require a much smaller annual contribution from ISC to service the debt that would be paid back over a longer period of time. This would allow the Ontario region to stretch its funding further.

When NFN initially approached ISC with this proposal, NFN was scoffed at by some in the bureaucracy. However, the concept was taken more seriously by a number of key people within the department. What was more important was that NFN were being taken seriously for its willingness to be creative in developing solutions and engaging with the bureaucracy in a way that was helping them solve the problem. This approach, in and of itself, moved NFN's project along within the internal machinery of government.

Property Taxation

NFN is also home to approximately one thousand lessees who have built homes on leased land in the community. These people pay an annual land lease to the First Nation for waterfront property on the shores of Lake Nipissing in two separate subdivisions called Jocko Point and Beaucage. These lands were designated for this purpose in the 1960s at rates that were far below market value. Over the succeeding decades, NFN began to adjust the leases to market rates, not without considerable resistance from lessees through the courts and media. However, today the relationship is relatively harmonious, the leases align with fair market values and people enjoy living in the community.

However, the infrastructure deficit also exists in the leased lands and NFN faces different challenges in how it will address those issues. The roads into the subdivisions were built to a much lower standard in the 1960s and many of the septic systems and wells that provide water and wastewater treatment are beginning to fail. Currently there are no government subsidies to support developing new infrastructure for the leased lands as they are viewed as an "economic development" venture for the First Nation in the eyes of the federal government. While the leases cover the use of the land and pay a nominal amount to NFN for the use of the properties, it does not provide sufficient revenue to support the development of new roads and municipal-type infrastructure.

NFN is now actively exploring property taxation for lessees as a means to raise revenues that can be used to rebuild roads, provide proper water treatment to all residents and protect the environment by addressing the failing septic systems. NFN does not expect this to be an easy conversation with lessees but it is a necessary one. This is an area that some First Nations have explored in depth, particularly in British Columbia. The attitude toward taxation among BC First Nations is much more liberal than it is in Ontario. Ontario First Nations are much warier of initiating taxation regimes lest it

lead to full taxation on reserve. Taxation is viewed as an encroachment on the sovereignty of First Nations by many community members and a mechanism for the Crown to absolve itself of fiduciary obligations toward Indigenous people.

As it approaches the issue of taxation at Nipissing, NFN does so in a very cautious way, mindful of those concerns and attitudes. However, the reality is that the Crown does not see that it is obligated to provide these essential services in areas that are deemed to be economic ventures in First Nations. And the issue for First Nations is that the land leased really only covers the loss of use of the land that is taken up for leasing and not the ongoing operations and maintenance that is required to keep the roads and other services operating at an adequate standard. So NFN has begun investigating the implementation of property taxation for its leased lands to make the necessary infrastructure improvements to ensure public safety and environmental protection in these areas.

Conclusion

The purpose of sharing these experiences is to create a better understanding of the challenges a First Nation government might face as it develops its own unique approach in moving away from the paternalism of the past and toward a new relationship with non-Indigenous governments and neighbouring communities. It is an approach that actively supports First Nations making their own decisions and being accountable to their own people, not the Canadian state.

There is such a broad range of circumstances and unique factors that create the conditions that each nation finds itself in. There is no common solution. Resources need to be committed and relationships built with the First Nation setting the vision for its own future. Where partnerships make sense, they should be actively pursued and nurtured.

Self-government approaches, settlement of land claims, development of new ways to implement the settlements and a new set of policy tools are all elements of success for First Nations like Nipissing. These are tools that can support and sustain long-term success. That coupled with a willingness to work together to solve local and regional problems can lead to fruitful outcomes.

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Northern Perspective: New Approaches to First Nation Infratructure Development

Amanjit Garcha

Within northern and Indigenous communities there are various infrastructure concerns that range from wastewater systems, commercial development, transportation infrastructure, public facilities and so on (Conference Board, 2017). Neskantaga First Nation, a community in Northern Ontario, has been under a drinking water advisory since 1996 (NIEDB, 2019). In September 2019, a state of emergency was declared, and evacuations were made after the failure of their water pump (CBC News, 2019). Insufficient infrastructure is not uncommon within Indigenous communities and building towards adequate infrastructure can take years. Additionally, due to the lack of or inadequate infrastructure more generally, impacted communities are unable to reap the benefits of major economic development advancements (NIEDB, 2019).

As Nashkawa discusses, Indigenous communities under the *Indian Act* face legislative constraints that delay infrastructure projects. While Nashkawa notes challenges specific to Nipissing First Nation, issues with infrastructure-related governance occur in other Indigenous communities. Take Dokis First Nation, an island community of about 1,000 residents in the Upper French River of Northern Ontario, as an example. The community's Okikendawt Hydroelectric Project took close to 30 years to complete due to various government processes and community reasons (Energy Exchange, 2015). Under the *Indian Act*, permits and licenses for the project needed a review by the federal Department of Justice and sign off from the Minister of Aboriginal Affairs and Northern Development (Energy Exchange, 2015). The process of obtaining approval from these departments delayed the project and incurred significantly increased costs (Energy Exchange, 2015). Additionally, restructuring within several government departments further delayed progress on the project (Energy Exchange, 2015).

The delays in infrastructure development can in part be attributed to how Indigenous lands have traditionally been governed. The Framework Agreement on First Nation Land Management was instrumental in demanding governing and management powers over First Nations lands be transferred to First Nation communities. The Agreement was ratified in 1999 with the *First Nation Land Management Act* (INAC, 2013). Signatories of the Agreement with land codes could begin to govern their own lands. Until then, the administration of First Nations lands remains in the hands of the federal government, under the *Indian Act* (LAB, 2019a). Signatories are essentially removing themselves from various sections of the *Indian Act*, and accordingly the Canadian government is no longer involved in how First Nations lands and resources are to be operated (INAC, 2019; LAB,

2019a). As such, signatory First Nations are responsible for developing their own land laws that are approved by the community, known as Land Codes.

As of September 2019, the number of signatories to the framework agreement is 163 and includes 89 First Nations that have established their own Land Codes (LAB, 2019b). Within Ontario there are currently 19 First Nations in the operational stage, 17 that are in the development process and an additional 2 that have chosen to remain inactive at the moment (LAB, 2019b). Of these 38 First Nations communities, 27 are in Northern Ontario (LAB, 2019b).

The pathway to land sovereignty is long and tedious, with multiple consultation requirements and the development phase alone taking up to two years (INAC, 2019). To assist in the process, the Government of Canada allotted investments of $143.5 million within the 2018 Budget over a five-year period to support First Nations interested in participating in First Nations Land Management (INAC, 2019). By establishing their own land laws, Indigenous communities can begin to move along infrastructure projects that were subjected to bureaucratic delays.

Gerry Duquette Jr., Deputy Chief of Dokis First Nation during the construction of the Hydroelectric Project, recognized the benefits of moving away from the *Indian Act* and employing the *First Nation Lands Management Act.* He praised the Act for giving control to the Indigenous communities and making it easy to deal with different companies because "you're sitting at the table with them" (INAC, 2016). As Nashkawa states, communities which are still entirely under the *Indian Act* are constrained with regard to infrastructure development.

In addition to legislative and governance challenges, Nashkawa recognizes that Indigenous communities often lack expertise and must rely on outside expertise to meet infrastructure needs. This is also applicable to Dokis First Nation (Energy Exchange, 2015). As a solution, "the Dokis Nation's leaders sought approval to hire an advisor so the band and council could make informed decisions in negotiating and forming a legal partnership with a developer and in communicating with government officials and financial institutions" (Energy Exchange, 2015).

Given the lacking local expertise, communities could consider new approaches such as the Community Economic Development Initiative (CEDI). CEDI aims to address the economic concerns of Indigenous communities and municipalities through joint economic development, alleviating the burden from a sole community (CANDO, n.d.). As Nashkawa mentions, working together and building strong relationships between Indigenous communities and the neighbouring municipalities should be encouraged as it benefits the people in the region, while saving on resources and finding efficiencies. As Nashkawa mentions in his Paper, the *Stronger Together* toolkit is also a useful resource for Indigenous communities and municipalities looking to build a healthy relationship and work jointly on community economic development projects (FCM & CANDO, 2015).

As established, infrastructure is crucial for the success and growth of any community. Due to limited funding for operations and maintenance within Indigenous communities, infrastructure tends to deteriorate quicker than the expected life cycle. In part, the problem arises from inadequate training

and/or the inability to retain trained professionals to operate the facilities (PPP Council, 2016). Public-private partnerships (P3s) are a possible solution. P3s are partnerships developed between governments and the private sector to deliver on infrastructure projects that incorporate all phases of a project into one contract (design, financing, maintenance, etc.) (PPP Council, 2016). Indigenous communities can benefit significantly from P3s as the private sector is financing the upfront costs. The private sector, in turn, is responsible for ongoing maintenance, and only gets paid when a substantial portion of the project is complete. As such, Indigenous communities could benefit from such partnerships (PPP Council, 2016).

The P3 model has been employed by First Nations outside of Ontario. Namgis First Nation in British Columbia benefitted from the P3 Canada Fund, which helped finance the $200 million Kokish River Hydroelectric Project (PPP Council, 2016; Knight Piésold, 2019). Financing using the P3 model has also been employed within Northern Ontario. The City of Greater Sudbury employed the P3 model to finance its Biosolids Management Facility (Infrastructure Canada, 2018). In moving away from traditional methods of procurement, the City was able to transfer risks associated with construction and operation to the private sector partners. Accordingly, employing P3 models within not only Northern Ontario but also Indigenous communities specifically, is well within the realm of possibilities.

Due to their size, infrastructure projects are often multi-year projects that require significant financing. Institutions such as the Canada Infrastructure Bank (CIB), a Crown corporation designed to invest and advise on infrastructure projects, are instrumental in providing funding (CIB, n.d.). CIB is an option for Indigenous and northern communities in Ontario pursuing infrastructure projects in: “public transit, trade and transportation, and green infrastructure” (CIB, n.d.) The CIB can also be employed to attract private partners that are hesitant to partner with Indigenous communities for P3 projects, given the large financial investments required for the infrastructure projects (Conference Board, 2017).

As Nashakawa outlines, addressing infrastructure development within Indigenous communities requires collaboration and cooperation among communities. Movement on infrastructure projects can best occur when Indigenous communities are more actively involved in their own affairs. Getting creative with securing funding and moving away from legislation that holds Indigenous communities back will be key. Given that there are more than 25 Indigenous communities in Northern Ontario that are a part of the framework agreement on First Nation Land Management, this is indicative of the movement away from traditional ways of conducting business.

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Energy Use and the Rural Homeowner

Don Eaton

Introduction

If one can believe 97% of the world's scientists (and notice the weather), humanity will need to take stronger and stronger actions to address climate change. Governments are debating various measures such as carbon tax, fuel economy regulations, emission caps, building codes and so forth, but as the effects of climate change become more severe, the ability to make choices on these issues will become increasingly limited. Moving to a very low-carbon economy and lifestyle will no longer be a *choice* but an imperative.

Individuals and communities that have made the necessary changes will not only be in a better position to adapt to the inverse impacts from climate change, but will also be more economically resilient.

- The green energy sector is already a significant income and employment generator.
- Insulating your home or building saves money on heating and cooling, and can lower maintenance costs and enhance durability.
- Renewable energy systems that displace fossil fuel generated energy results in cleaner air.

As someone who has advocated for energy efficiency and green energy for several decades, I've always stressed the benefits of making these changes. Despite all these benefits, the reality remains that moving towards greater efficiency and less reliance on fossil fuels is not going to be cheap. It also means that communities will need to work together to address their own specific situations, using their own creativity.

When addressing the issue of energy use, rural Ontario communities are in the same boat as nearly everywhere else in Canada facing climate change and the need to move away from a fossil-fuel-based economy. At the same time, however, rural communities face unique challenges around energy availability, cost, generation and infrastructure.

It's difficult to discuss rural energy as if there were one type of rural Ontario community with one type of energy challenge. There are communities that have large agricultural areas surrounding small urban centres. There are communities that have large numbers of recreational properties that create a huge seasonal population change. There are communities that pivot around a single industry. There are communities with large areas of bush, and communities defined by their relationship to lakes or rivers. Finding common themes for energy in these communities is difficult. It's probably best to look at rural energy as a collection of energy profiles and needs with some unifying themes. Because of the variety of rural communities it's essential that strategies to combat high energy costs, reduce $CO_{2,}$ maintain biodiversity and preserve the character of the community

be locally developed. And while there are a lot of technologies available, the real issue is motivation and goals.

It's difficult to discuss rural energy as if there were one type of rural Ontario community with one type of energy challenge.

The one change that will benefit all of us is reducing the energy used in our homes and buildings. It's different than some of the larger changes that have been already made, such as closing the coal-fired generators or the introduction of electric cars, as it doesn't mean using cleaner energy, it means using less through energy conservation and energy efficiency.

Current Energy Supply

Ontario's electrical energy supply (Independent Electricity System Operator, IESO – formerly Ontario Power Authority) is predominantly composed of non-polluting sources. In 2017, natural gas was down to 4% of Ontario's electrical generation mix, illustrating that electricity is primarily a non-emitting energy source in the province. However, 32 remote communities are not connected to the grid, 25 of which are recognized First Nation communities. These communities are generally diesel electric, which means high-GHG emissions, and 3 to 10 times the cost of grid electricity. Additionally, many of the remote communities primarily use wood for heating. Under the previous provincial government there was a wood change-out program for First Nations, but this has been cancelled. Replacing older woodstoves with modern EPA-approved high-efficiency stoves is still a good idea as a new stove will use less wood, emit less CO_2 and create less local air pollution.

Currently, our electrical system has a lot of capacity, but as we begin using electricity to replace fossil fuels in our cars, home heating and in industry we'll need to use that capacity as efficiently as possible.

Rural Energy Generation

The Ontario government began the FIT/MicroFIT (Feed-In Tariff) program in 2009. Rural Ontario took advantage of this program in a significant way. Nearly 20% of Ontario farms have a FIT or MicroFIT contract for energy generation. These vary from rooftop solar to generation from the digestion of manure or other organic waste to micro hydro. The generation of electricity from the digestion of organic waste is especially important because it removes that waste from landfill. Landfills account for nearly 20% of our national methane emissions, which is caused by the breakdown of organic material. If that

FIT Overview: What is the Feed-in Tariff Program?

The Feed-In Tariff (FIT) Program was developed to encourage and promote greater use of renewable energy sources including on-shore wind, waterpower, renewable biomass, biogas, landfill gas and solar photovoltaic (PV) for electricity generating projects in Ontario.

As a standardized way to contract for renewable energy generation, Ontario's FIT Program was one of North America's first comprehensive guaranteed pricing structures for renewable electricity production, offering stable prices under long-term contracts.

material is removed from landfill, and the methane generated is burned to generate electricity, the emissions are CO_2. It's still a greenhouse gas, but not nearly as potent as methane, and it generates electricity.

With the success of the battery energy storage project in Australia and some pilot projects by the IESO, a new opportunity for rural energy is opening. The possibility of storing electrical energy both enhances the viability of non-continuous generation (non-dispatchable generation), and provides an opportunity for communities that are not on the grid or that experience intermittent power supply. While the IESO has been testing energy storage, the issue is complex. There are many ways of storing electrical energy such as flywheels, batteries, pumped hydroelectric and hydrogen, and choosing one that gives both short- and long-term storage effectively is still being weighed. There are also transmission hurdles to deal with. Despite these challenges, it seems likely that storage will provide some benefit to achieving a lower-emission electrical system. It's also likely that much of the storage will be in rural areas.

Every community is unique, but this is both especially true and especially important in rural communities. Obviously a large city is not going to debate the virtues of 4-stroke versus 2-stroke snowmobiles or discuss woodlot management, biodiesel for farm equipment, seasonal population growth or many other issues that are unique to rural Ontario.

Community Energy Planning

Every community is unique, but this is both especially true and especially important in rural communities. Obviously a large city is not going to debate the virtues of 4-stroke versus 2-stroke snowmobiles or discuss woodlot management, biodiesel for farm equipment, seasonal population growth or many other issues that are unique to rural Ontario. While many rural communities have energy plans, in general, larger communities have been quicker in developing them. Some rural communities with common interests have banded together to create strategies that work for them. Most of these plans have goals for reducing greenhouse gas emissions and reducing energy use, while creating economic activity by taking advantage of the new "green" economy. Looking at plans that have been in effect for a while, communities are doing much better at reducing greenhouse gas emissions than at reducing energy use. Guelph, for example, has reduced its emissions by 35% over 10 years, but its energy use by only 2%. This is in large part because Ontario's electrical system has reduced its emissions, and many homeowners have switched from oil heat to natural gas. While this is a positive step, reducing energy use will require action by individual homeowners, businesses and municipalities.

A goal of many energy plans is to have retrofits of buildings and homes included. . Yet despite best intentions, this is a difficult goal to achieve. The difficulty is reflected in results like Guelph's, where they have been very successful with reducing CO_2 emissions but are behind on energy reduction.

Reducing emissions by fuel switching is not the complete answer. Rural areas that don't currently have access to natural gas will drop their CO_2 emissions when gas becomes available and homeowners switch from propane and oil, but that will only reduce energy use a small amount due to the availability of more efficient heating systems. Major building retrofits are required in order to see real benefits in the reduction of energy use. This will mean a market transformation, which will need to be preceded with significant public conversation. I think the most successful route to this will be local networking and rural ingenuity. The city of Kamloops in B.C. was an early "energy planner" and created an energy plan in 1997. Three years later they reported on their progress, and things had not gone as well as planned. They included a list of lessons that are useful for other planners. The first lesson was lack of personal engagement. They had failed to get the local population to be part of the plan. Because dealing with changes that we're facing in energy and climate are going to involve everyone, it's crucial that everyone is involved with the plan.

When the Elora Environment Centre began piloting the national EnerGuide for Houses program and delivering energy audits we naturally focused on rural areas. We were a community of 3000 with a strong connection to farming and some small manufacturing so those areas felt comfortable and familiar. We also knew that we had to go where the people were. The existing community networks, especially service organizations like the Lions, Rural Women's institute, Rotary and church groups were key to our success. It wasn't a case of inviting them to presentations; it was getting invited to present and engage with them. Naturally, talking to local councils and utilities was important, but the participation has to go beyond the institutional and reach the average citizen. The service organizations are already a group of people who know the importance of working for their community.

> *Conservation has always been a difficult sell. Even the word smacks of "doing without or with less."*

Additionally, many young people right now are galvanized around the issue of climate change. They realize that they will be the ones who will bear the consequences of inaction. Involving them in a community's energy planning and implementation may go a long way in increasing the engagement of the entire community.

Adaptability and Ingenuity

Rural people in Canada have been extremely creative in dealing with energy needs both in the past and today. Traditionally, rural homeowners would bank snow, straw or even earth around their homes. This required some work, but it was effective. While doing energy audits of thousands of rural homes, Certified Energy Advisors (CEA) would often find homeowners with creative ways of dealing with energy costs. A homeowner with an older brick home would use studs and insulation batts to "wall off" large areas of their home. The dining room, living room, extra bedroom and half the basement would be walled off until late spring. They closed the heating ducts to those rooms,

and just supplied heat to the kitchen, bathroom and bedroom. The plumbing was in these areas so the pipes didn't freeze, and it significantly reduced their heating bill. Although housing size has doubled since the 1970's, family size has shrunk, so there is likely quite a bit of space that is not needed. I've seen houses where the homeowner had carefully saved Styrofoam plates and carefully filled the stud cavities in their basement walls with them. Perhaps not the most effective insulation system, but it did reduce their heat loss and made the basement much warmer. I'm not suggesting this as a climate change strategy, just as an example of how homeowners come up with clever ways to cut their energy costs.

Oftentimes, there's a spirit of doing it yourself or with a neighbor that exists in smaller communities. My CEAs found that many times, and I think this will be an important asset as we move to a more energy efficient future.

Building Retrofits

Conservation has always been a difficult sell. Even the word smacks of "doing without or with less." Energy advisors always say "efficiency" to make the message more attractive. Improving a building envelope is often achieved by doing things that no one can see. Insulating, draft-proofing and properly ventilating will result in energy savings, improved comfort and a healthier home, but it has trouble competing for household budget with something that sits right out where everyone can see it like new countertops or a new dishwasher.

Canada really began to improve home energy efficiency after the oil crisis in 1973 and 1979. The cost of oil went up by 350% and 100% respectively. The federal government responded with the Canadian Home Improvement Program (CHIP). This program would rebate much of the costs of home insulation improvements. During the early 70's the building code required R-10 insulation in attics and R-8 in walls. These were raised in Ontario to R-12 and R-28. Lots of existing homes had their attic insulation increased (often from zero insulation) to R-28. The CHIP program was able to take advantage of two circumstances to achieve success. Oil and energy costs were in the news, and there was a sense of crisis. When this was combined with the federal government offering significant amounts of money it resulted in many homeowners taking advantage of the program, and lots of energy saved.

In terms of total and relative energy savings, older existing homes save more energy because they typically offer "low-hanging fruit" compared to new construction. For example, a 1970s house has more opportunities for reducing energy use than making improvements on a new house built to building code (because it's already energy efficient). https://www.nrcan.gc.ca/energy/efficiency/energy-efficiency-buildings/energy-efficiency-existing-buildings/retrofitting/20707

In 1997 the Canadian government signed the Kyoto Protocol to reduce CO_2 emissions and combat climate change. This brought new attempts to increase the energy efficiency of Ontario housing. The federal government developed an energy rating system for houses called EnerGuide for Houses. Homes would be

evaluated, tested and their energy use modelled with energy modelling software. An EnerGuide label would be attached to the heating system ranking the house from 0 to 100, and like school test scores, EGH80 (good) is an energy efficient home and a EGH40 (not good) is a very inefficient home. This was an attempt to raise people's energy efficiency literacy, better quantify household energy use and attach value to a home's energy efficiency.

The hope was that the marketplace would reward energy efficient homes and induce homeowners to upgrade as a way to increase the home's value. Some small success was had by programs like "R-2000", which was a new construction technique that featured what was cutting-edge energy efficiency, but rating systems on existing homes – while providing excellent advice to homeowners planning to upgrade their home – had limited impact on the housing market.

In 2003 the federal government began a "rewards" program to incent home energy retrofits. Homeowners would get their home assessed and rated by a Certified Energy Advisor (CEA). The CEA would provide a list of recommendations to improve energy efficiency. When the homeowner had completed some or all of the recommendations they would get a second assessment and be eligible for a grant towards part of the cost. The average grant was $1,200, but could be as high as $5,000 for measures such as Ground Source Heat Pumps. This program became very successful with many hundreds of thousands of homes upgraded. Insulators, window sales people, heating and cooling technicians, and CEAs were all promoting the program as a great opportunity. In the public's mind "what constituted a good house" was moving in a more energy efficient direction. Once at a meeting of SAWDAC (Siding and Windows Dealers Association) I asked "what was the main motivation for a customer buying new windows?", and the unanimous answer was "Their neighbour bought new windows." People's expectations for home comfort and efficiency were changing.

> *Even at the current building code requirements, a home built in 1920 likely uses three times the energy of a new home.*

At the same time the building code was changing as well. The R28 attic of 1980 had moved to R32 then R40. For a new home the code now requires R60 in the attic. The other components of a new house have changed as well – windows, mechanical equipment and all insulation areas must be much more effective than even a few years ago. The building code has traditionally considered two factors in determining insulation levels: winter temperatures and the cost of a home's fuel. This could mean that a home in North Bay would require higher insulation levels than one in Windsor. It might also mean that a home with electric resistance heat would require higher insulation than one with gas heat. The building code is a response to current conditions. Its goal has been a safe and affordable house to build and operate.

We've now reached a watershed in home energy efficiency. For years the insulation levels, mechanical systems and air tightness have been slowly moving towards greater efficiency. Now

we're at the point where the building code has something of a "final objective." This would be a "Net Zero" home. This is a home whose energy requirement is low enough so that a well exposed roof-top solar array would supply all the energy the home needs. Net Zero is already being talked about as the building code as early as 2030.

If we wonder what the houses of 2030, or even 2050, will be like, we only need to look out the window. Most of them are already built. If we want to reduce our energy use, and make sure everyone has a comfortable and healthy house they can afford to heat and cool, it won't be by building better new homes.

While going to Net Zero is both necessary and commendable it's going to have the effect of moving existing homes farther away from the new energy efficiency standards. Even at the current building code requirements, a home built in 1920 likely uses three times the energy of a new home. Not only does this mean much higher CO_2 emission and higher costs, it also leaves the older home vulnerable to disruptions in the energy markets (i.e., price shocks). In 2008 when oil reached $160/barrel, homeowners on the South Shore of Labrador began switching from oil to electric heat. Electric heat was also expensive, but it was a regulated utility. With electric heat a homeowner wouldn't find that his fuel costs had suddenly doubled overnight; they would be able to budget for the winter with some level of confidence. Right now the price of natural gas is at very low levels. This might continue, but producers are actively working on international markets which will have a definite impact on what we pay in Ontario.

If we wonder what the houses of 2030, or even 2050, will be like, we only need to look out the window. Most of them are already built. If we want to reduce our energy use, and make sure everyone has a comfortable and healthy house they can afford to heat and cool, it won't be by building better new homes. We have a lot of home retrofits to do, and it's likely to cost a lot of money. The important thing to remember is that when installing insulation or new windows, that there is an expectation that they last for decades. It's necessary that they meet the requirements they'll need in 10 or 20 years, not just the day the installation is done.

Existing Stock: Rural housing is both older and has a higher incidence of needing major repairs than urban areas (census information). The need for structural and other repairs often precludes energy efficiency improvements or increases the cost of EE improvements.

Programs that can Help

There are some programs available to help homeowners, tenants and apartment dwellers with retrofits and energy costs: they are mostly delivered through utilities. These provide rebates or funding directly to homeowners. Enbridge and Union Gas have merged, but are still working on merging their conservation programs.

Union Gas Home Energy Reno Rebate

This requires an energy audit from a Registered Energy Advisor (REA) which comes at a cost, but the audit is not only useful for identifying where you are losing energy, but the cost is rebated by Union Gas if you complete at least two qualifying upgrades. The possible upgrades include: high efficiency heating system, wall-basement-attic insulation, air sealing, hot water tanks and windows. Up to $5,000 in rebates is possible. This is available to any Union Gas Customer.

Union Gas Home Weatherization

This is income-dependent with the income requirements listed on the website. Your home must be built prior to 1975. It includes free insulation and air sealing. The income requirements don't require extreme poverty rather it is geared to a household that might have difficulty paying high energy bills.

Enbridge Gas Home Energy Conservation

This program is similar to the Union Gas Reno Rebate, but for Enbridge Gas customers.

Enbridge Home Winterproofing Program

This is an income-dependent program that provides free retrofits to qualifying homes. It is available for homes built prior to 1980. The income requirements don't require extreme poverty rather it is geared to a household that might have difficulty paying high energy bills.

The Affordability Fund

This is an income-dependent program that also considers the size of the client's electrical bill when determining eligibility. It has three levels of support, with the first providing free LED light bulbs and power bars, the second includes appliances such as refrigerators, and the third level is only available for electrically heated homes and may include insulation and heating equipment.

Property Assessed Clean Energy (PACE)

This is a program that is being adopted by some Ontario Municipalities. PACE has been used extensively in the United States, especially in California. The basic idea is that a municipality will seek investors and use that money to fund energy efficiency upgrades for homes and businesses. The cost of the upgrades will be added to the building's taxes over a long period of time. This would attach the loan to the building and not to the homeowner. It has the advantage of not requiring a large cash outlay by the homeowner, and not affecting their credit rating. Because the financing is through a municipality it is expected to be very secure, and consequently should have a very attractive interest rate. Some PACE programs require the homeowner's annual energy savings to be equal to or more than the increase in their property tax. This is much easier to accomplish in areas where natural gas is unavailable. Natural gas is currently very inexpensive so homeowners (and building owners) who heat with natural gas will have difficulty meeting this requirement. Fortunately, homeowners can take advantage of some of the retrofit programs offered by the fas utilities. This could help bring the cost down to where the savings will cover the amount that has been added to the tax bill. A PACE program can be especially helpful where a home needs significant upgrades that might involve opening the walls or removing the siding.

Conclusions

The cost of reducing our energy use will be large, and will get more difficult as time passes. As we go forward the cost of climate change adaption may overwhelm our efforts to address energy use and greenhouse gas emissions. Flooding, fires, droughts and major weather events will place a heavy burden on Canadians. Overland flood insurance only became available in much of Canada in the last few years, because in most areas floods were rare. Unfortunately insurance is for unusual events such as a 100-year flood. If your home is going to have a 100-year flood on a regular basis, you won't be able to get or afford insurance. It's important that we start doing the work necessary to meet our energy and emission goals now, before that money is needed for adaptation. We don't want to be in a situation where we can't stop bailing long enough to fix the growing leaks in our boat.

Climate change, both reducing emissions and adaptation has to become the primary issue for communities. We need to start dealing with it in all aspects of our lives. The earth doesn't see governments or businesses; it sees humans. Of course we want government and business to take the right steps to deal with the problem, but ultimately it will be us, our families and our communities who do the necessary work.

Northern Perspective: Energy Use and the Rural Homeowner

Amanjit Garcha

As Eaton emphasized, climate change is impacting everyone across Canada, irrespective of whether you live in rural, urban, remote or northern communities. Accordingly, it is necessary for communities to move away from fossil-fuel-intensive economies. As noted by Eaton, the move towards energy efficient sources is a unique challenge for rural communities because of the nature of "energy availability, cost, generation, and infrastructure" in these communities. A similar challenge exists for many communities in Northern Ontario.

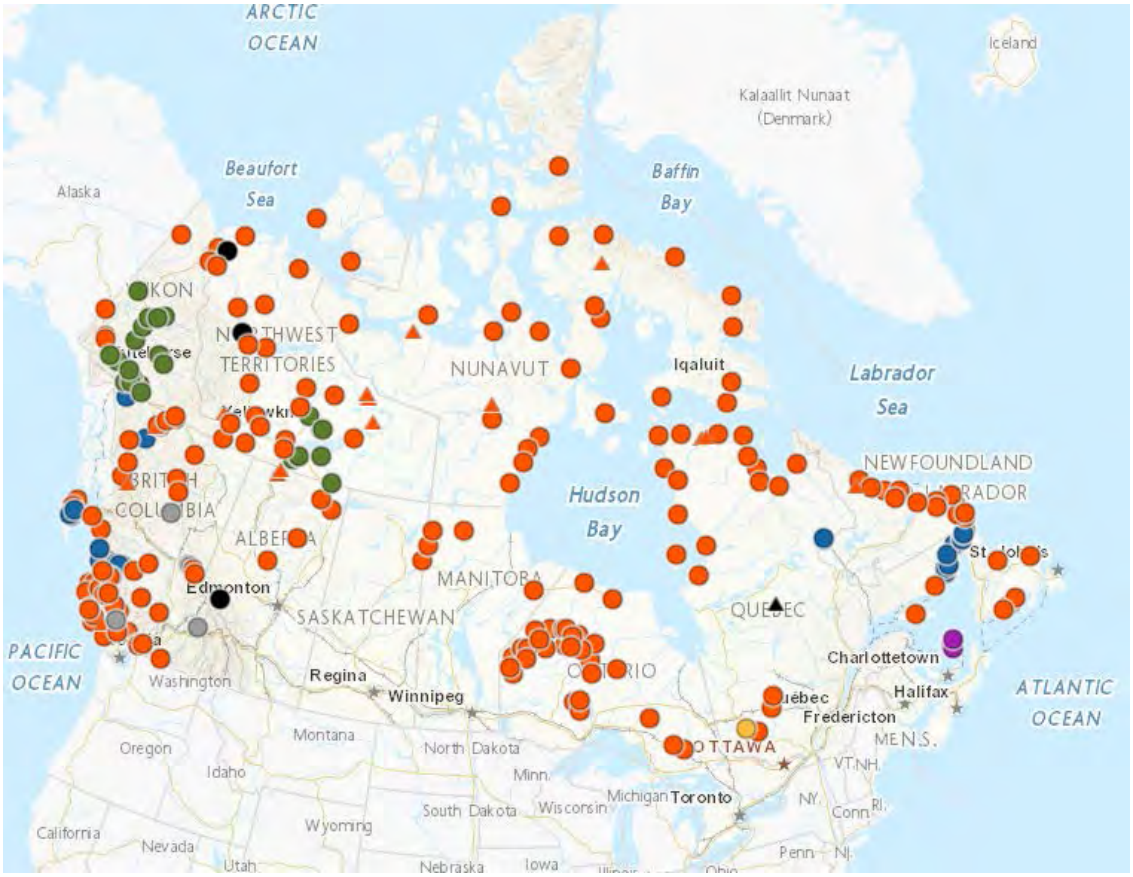
As of August 2018, the Remote Communities Energy Database recorded 200 single, active off-grid communities in Canada. Twenty-seven of these are found in Ontario with a total population of around 18,700; only three communities are non-Indigenous (NRC, 2018). Not surprisingly, all 27 are situated in Northern Ontario (Figure 1). Furthermore, all 27 are reported as running on diesel and the majority are classified as fly-in communities (NRC, 2018).[2]

As Eaton mentions, remote communities are generally diesel electric, and as such have high greenhouse gas (GHG) emissions and have three to ten times the cost of grid electricity. Additionally, these communities are faced with high costs associated with storing large volumes of diesel in storage facilities (Knowles, 2016). With storage of such large quantities, accidents that negatively impact the health of the community are not uncommon and are expensive to clean. Indigenous and Northern Affairs Canada states there are "over 250 sites at or near First Nations and Inuit communities that are contaminated with petroleum hydrocarbons and have yet to be fully remediated" (Knowles, 2016).

Communities that are not connected to the electric grid are disadvantaged in many aspects. These communities lose out on potential economic development opportunities as a result of being off the grid. Cost of electricity in off-grid communities is a deterrent for potential investors as it incurs additional costs if the industry consumes even moderate levels of electricity (Canada, 2011). The communities are also faced with substantial GHG emissions not only from burning diesel but also from the transport of fuel by trucks (Canada, 2011).

[2] Fly-in communities refer to those in which road access is not available.

Figure 1 - Remote communities in Canada



Source: Remote Communities Energy Database, Natural Resources Canada

Diesel that is transported to these communities is flown in, shipped in or driven in on winter roads; with such limitations the transport costs are high (Canada, 2011). These costs are bankrupting many First Nation communities in Northern Ontario, with one remote First Nation community "paying over $1.3 million dollars a year on fuel and transportation" (NCC, n.d).

In terms of electrical capacity, the north is not only smaller compared to the south, but less diverse in terms of fuel sources. The primary source of electricity within Northern Ontario is hydroelectric. Southern Ontario in comparison is varied in both electricity generation capacity and fuel sources (National Energy Board, 2017). As such, it is necessary to invest in infrastructure that supports alternative energy sources within communities across Northern Ontario.

There are four main renewable energy alternatives available for sustainable energy production and usage to off-grid communities currently reliant on diesel. Investments in hydro, biomass, wind and solar energy could bring significant economic benefits for remote and northern communities (Canada, 2011). Furthermore, Christopher Duschenes, director of the Center for the North at the Conference Board of Canada, states that "investing in clean energy solutions to reduce reliance on

diesel is a small but vitally important link to energy security, reconciliation and self-determination for Indigenous people" (NRC, 2019).

Indigenous communities in Northern Ontario are engaging in innovative renewable energy projects to reduce their reliance on fossil fuels. For instance, the solar micro grid in Gull Bay First Nation will be the first of its kind in Canada. The micro grid combines "solar photovoltaic power, battery energy storage and a micro grid controller connecting to the existing Hydro One Remotes diesel generating station to provide clean solar power and off-set diesel use" (Gull Bay First Nation, n.d). The switch from diesel to solar power will reduce diesel fuel usage by 25% or 110,000 litres (Gull Bay First Nation, n.d). Deer Lake First Nation is another community employing solar energy to reduce reliance on diesel which costs the community $2.7 million a year (Canadian Solar, n.d). The community installed a solar rooftop at Deer Lake First Nation Elementary school, introducing a renewable energy source to assist in satisfying the energy needs of the community (Canadian Solar, n.d).

Additionally, there is a need to support initiatives similar to the ecoEnergy for Aboriginal and Northern Communities Program, which was a five-year project that supported these communities in reducing GHG emissions. The program allocated $20 million to fund "renewable technologies such as residual heat recovery, biomass, geothermal, wind, solar, and small hydro" (INAC, 2015). An evaluation of the program found that there was a continued need to fund energy efficiency projects within Indigenous and northern communities, especially those communities not connected to the grid (INAC, 2015).

Support is also needed for programs that provide affordable electricity to remote communities already connected to the grid. For example, the Rural or Remote Rate Protection program (RRRP) provides rate subsidy to rural and remote residents who are faced with high distribution costs (Ontario Newsroom, 2017). Due to their location, most homes in Northern Ontario require additional insulation to withstand the winter and prevent heat loss in homes (Hydro One, n.d.). Programs like Home Winterproofing by Enbridge should be encouraged as they can have a significant impact on creating energy efficient homes in Northern Ontario (Enbridge, n.d.).

As Eaton established, climate change is happening, and measures need to be taken to create sustainable energy generation and usage. Investments need to be made for energy efficient fuel sources within remote and northern communities, especially off-grid communities.

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Services for an Aging Rural Population

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Introduction

Twenty years ago, Health Canada's special Advisor on Rural Health described access to Canadian healthcare services in this way: "If there is two-tiered medicine in Canada, it's not rich and poor, it's urban versus rural" (Wooton, as cited by Laurent, 2002). Two decades later, the rural population in Canada is rapidly aging; the baby boom generation has moved through the population's demographic figures since the second world war, its weight affecting every aspect of social and public policy, including debates about the provision of services (Statistics Canada, 2017). Wooton's concept of two-tier medicine perhaps still rings true today given downsizing and restructuring in rural health care, despite the needs of the aging population, and can be accurately applied to other rural services, especially those relevant for older adults such as housing and transportation (Hanlon & Skinner, in press).

The concern for rural services today is only more timely and relevant as it is no surprise that the rural population is aging. The release of Statistics Canada's (2017) report on age, sex and type of dwelling data from the 2016 Census created an instantaneous ripple effect in national media outlets, citing the anticipated statistic that "for the first time, seniors outnumber children in Canada, as the population experienced its greatest increase in the proportion of older people since Confederation" (Grenier, 2017). This growth is compounded in rural Canada where, although there are some inter-provincial differences, the population is aging more rapidly than in cities (CIHR, 2017).

Rural Canada has experienced considerable social and economic restructuring in the last twenty years, resulting in changes in service availability (Halseth, Markey & Ryser, 2019; Halseth & Ryser, 2006). Indeed, the rural aging literature has long recognized rural communities as often not fiscally equipped to address older people's increasingly complex needs given their population decline, limited fiscal resources and reliance on volunteerism (Keating, Swindle & Fletcher, 2011; Scharf, Walsh & O'Shea, 2016; Skinner & Winterton, 2018). Restructuring has universally been applied in urban and rural environments in Canada, but their impacts have most keenly been felt in rural settings which heavily rely on public sector investment to support primary industry and rural services (Ryser & Halseth, 2010; 2014). Retail, social, health, education, infrastructure and government services, although crucial for maintaining daily activities and quality of life, have gradually begun to be housed in regional urban and metropolitan centres. Under the health service umbrella, restructuring in particular has created service delivery gaps in transportation, mental health services, palliative care and respite care (Halseth, Markey & Ryser, 2019); all of which are essential services for older people (Skinner et al., 2008).

This Foresight Paper aims first to define and describe those rural services that are relevant to an aging population, situating its role as a mediator between the tensions between older people aging in place – when "remaining living in the community, with some level of independence, rather than in residential care" (Davey, Nana, de Joux & Arcus, 2004, pp. 133) – versus being "stuck" in place – wherein older adults seeking to move *from* their homes cannot do so, typically embedded within economic, social, and/or racial disparity (Torres-Gil & Hofland, 2012). Second, the paper provides an overview of four rural services that are especially relevant to and challenging to deliver for older people (healthcare and community support services, housing, transportation and recreation), but also giving case examples of rural Ontario communities demonstrating innovation in response to adversity by successfully addressing these service delivery challenges at the community level. By describing service delivery challenges for older rural populations, we aim to paint a balanced picture of challenges that directly affect older Ontarians in rural communities but also ways in which communities are in some ways able to continue to facilitate an appropriate place to grow older for their citizens.

Services for an Aging Rural Population

Rural areas and populations are often considered under-serviced, that is, lacking the full range of public services such as health care, education and community support. They are also often described as subject to the longstanding deprivation of public infrastructure, most recently in relation to broadband (internet) services that are crucial for social and economic development across Canada today (Hanlon & Skinner, in press). Popular ideals such as social capital, voluntarism and the rural idyll, however, propel a parallel argument that what rural communities and small towns lack in formal services due to restructuring, they make up for in close interpersonal ties and a shared understanding of the notion of community. This conventional wisdom is questioned by key debates within rural health policy, research and practice, especially in relation to seniors' in-home and community care in rural and small-town settings (e.g., Kulig & Williams, 2012; Ryser & Halseth, 2014; Simpson & McDonald, 2017; Skinner et al., 2008).

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Indeed, a sense of stakeholder uncertainty surrounds the ability of rural communities to support aging in place. Paired with the rural services restructuring, this challenge speaks to a "double jeopardy" concept (Joseph & Cloutier-Fisher, 2005), in which "vulnerable older people are living in vulnerable rural areas" (pp. 137). Community vulnerability, in this context, can be attributed to the lack of community services, lack of transportation and lack of specialized care access. In turn, older peoples' vulnerability stems from the increased likelihood of ill health, low income, impaired

mobility, social supports and social and geographical isolation in rural Canada (Joseph & Cloutier-Fisher, 2005). Continued support for rural seniors demands a downloading of responsibility to families and individual community members to reduce government costs (Skinner & Joseph, 2011). Strengthening the rural voluntary sector (both formal and informal) facilitates individual volunteers' and voluntary organizations' capacity to help retain services essential to supporting aging in place (Ryser & Halseth, 2014; Skinner et al., 2014). However, when voluntarism is crucial to service provision for older residents, younger seniors often become the exclusive (volunteer) service providers as a result of population out-migration and diminishing volunteer pools (Colibaba & Skinner, in press).

Key Challenges in Service Provision for Seniors

Canada's aging population increasingly is straining longstanding problems of service availability and accessibility for rural seniors, in line with the "double jeopardy" burden described earlier (Joseph & Cloutier-Fisher, 2005). Cost-effective, high-quality services are challenging to provide to few rural seniors. This is compounded by the failure of federal and provincial governments to acknowledge distinctive challenges associated with the small-town milieu, such as geographic, socio-economic and technological barriers and a limited pool of both health professionals and volunteers (e.g., Herron, Rosenberg & Skinner, 2016; Herron & Skinner, 2018). Additionally, overwhelming and burdening the voluntary sector emerges as a risk. The challenge of what Colibaba and Skinner (2019) refer to as 'older voluntarism' compounds this risk, in which individual, older (typically 65+) volunteers' activities and voluntary organizations featuring an older volunteer base provide essential services and supports to aging communities (see the Rural Ontario Institute *Focus on Rural Ontario Fact Sheet* on 'Volunteering in non-metro Ontario' for data: http://www.ruralontarioinstitute.ca/uploads/userfiles/files/2016%20Jan27%20updated%20%23%2020%20Volunteering%20in%20non-metro%20Ontario%20(1).pdf)

The widespread prevalence of older voluntarism questions the sustainability of aging rural communities, as it is peer-to-peer service provision within the context of a community that is, itself, aging, and the challenges in maintaining and sustaining satisfactory service delivery. These limitations question whether rural seniors' needs are being met and if rural households and communities are a sustainable source of care. In an era of demographical aging, out-migration and downsizing, the work of the voluntary sector, in conjunction with a limited rural public sector, significantly contributes to communities' ability to continue to provide services, both formal and informal. This is seen across a range of healthcare and community support services (e.g., community support agencies, in-home services), housing (e.g., co-housing), transportation (e.g., volunteer driver programs) and recreation (e.g., service clubs, seniors' associations), among others (e.g., social services, arts and culture, economic development, etc.) (Hanlon & Skinner, in press), some of which we profile in the following section focusing on examples from rural Ontario.

Profiling Services for Seniors in Rural Ontario

This section provides an overview of four services that directly affect older adults living in rural areas, including healthcare and community support services, housing, transportation and recreation. We aim to describe the issue and identify some of the challenges faced by rural communities in service provision, and in turn, some of the challenges for older people who may be receiving a fragmented version of this service. Each concludes by profiling a rural Ontario community or communities that has/have adapted creative, innovative ideas in seeking to address each service delivery challenge.

Healthcare and Community Support Services

Aging in place, defined earlier, is a predominant theme in policy and academic literature and is especially relevant when considering healthcare and community support services. The cost-savings of aging in place make it an attractive strategic direction, as those growing older in their own homes essentially avoid or delay institutional care. Given the widespread belief that older people use a disproportionately large share of Canada's healthcare services (Novak, Northcott & Campbell, 2018), the concept of aging in place has generic appeal and salience. Further, most older people identify aging in place as their strong preference of location to grow older (Salomon, 2010).

"Place," however, must be conceptualized beyond the physical – it should include also the diverse policy, social and personal factors that contribute to the meaning of "place" (Wiles, Leibing, Guberman, Reeve & Allen, 2012). In essence, aging in place requires not only the ability to remain in the place (house and/or community) but to access appropriate services, especially those related to health care. Access to healthcare services and supports then becomes critical in the distinction between aging in place and being "stuck" in place (Torres-Gil & Hofland, 2012). It is here that rural areas may struggle to provide appropriate environments for older people to age in place given the limited healthcare services that often exist, embedded within the prevalence of older voluntarism (Colibaba & Skinner, 2019) and the fact that older rural Canadians access healthcare services less than those living in urban centres (McDonald & Conde, 2010).

Tensions between the concepts of aging in place and stuck in place are acutely prominent when compounded by Wooton's (as cited by Laurent, 2002) distinction between urban and rural health care. Rural areas often are challenged to provide the full continuum of healthcare services, ranging from acute hospital care to institutional care to homecare. The move toward community-based health care represents an adaptation to the needs of an aging rural population. Rates of hospitalization and nursing home institutionalization among older people have declined, in part due to technological improvements and increased reliance on homecare services (Novak et al., 2018). However, with a shift to community-based care systems, rather than acute and institutional care, comes a shift to an underfunded branch of health care.

Community Care Access Centres (now part of Ontario's Local Health Integration Networks) were created in Ontario in the late 1990s, offering a suite of allied health services (e.g., geriatric day hospitals, adult daycare, and assisted living and home care), nursing care, and help with the

activities of daily living (Lysyk, 2017). Moving community care services into a prominent place in the healthcare system is a useful way to support aging in place, but with limited funding and a parallel reduction in acute and institutional care, it may result in a care gap – "the difference between what care could or should be and what care usually is" (Novak et al., 2018, pp. 189). Core challenges to effective rural health service delivery include: difficulty recruiting physicians to rural areas (College of Family Physicians of Canada, 2017); bed closures following budgetary trimming and amalgamation; longer wait times; and further travel distances to access regionalized services. Further, this shift facilitates a paradoxical reliance on community, placing a share of the healthcare burden on the communities and the local volunteers (Skinner, 2008; 2014). Gradual closure of industry in rural Ontario and the parallel out-migration of youth and families precipitated a diffuse, aging population that may be challenging to deliver healthcare services to, however, a downloading of that responsibility onto communities and the voluntary sector likely creates additional health challenges for individuals and financial repercussions for government agencies and funders.

Despite these challenges to healthcare services delivery, community resilience in rural Ontario has supported successful, resourceful approaches to resisting this downsizing. For example, in Arnprior, a small town in Renfrew County (population 10,426), following completion of an assessment of older residents' needs which stemmed from age-friendly planning, volunteers and community leaders formed the Greater Arnprior Seniors' Council. Qualitative results from the needs assessment reflected local long-term care statistics: only 10% of residents on the waitlist for the local long-term care facility (The Grove) the previous year were locally accommodated. Instead, half remained on the waitlist and the other 40% moved to another location to receive appropriate care (Arnprior Regional Health, n.d.). Prepared with these data, the Greater Arnprior Seniors' Council, a community-based voluntary organization, embedded within its terms of reference the need to lobby to increase the supply of long-term care beds (GASC Terms of Reference, 2018) – a task that was successfully achieved in 2017 with the announcement of an additional 36 long-term care beds being added to The Grove with the support of the Seniors' Council's local healthcare and municipal partners (Arnprior Regional Health, 2017). Though age-

friendly programming is designed to capture a variety of dimensions, it may often be implemented at a grassroots scale too small to achieve large-scale, sustainable community change. This example of Arnprior, however, shows that partnerships between volunteers, community organizations and the municipality, when united under an age-friendly umbrella, may hold the power to achieve enduring systemic policy change in rural healthcare.

Housing Services

Housing is identified by the World Health Organization (2007; 2015) as a critical component to aging in place (Davey et al., 2004). Safe, affordable housing that is structurally appropriate and adaptable, proximate to essential services and is well-maintained is essential to facilitate aging in place. In rural areas, meeting seniors' housing needs may be particularly challenging given population decline and reductions in rural service provision. The recent release of Canada's National Housing Strategy (Government of Canada, 2017) considers seniors among those most in need of core housing, especially senior women living alone (e.g., Ryser & Halseth, 2011). It particularly focuses on creating new affordable housing units and repairing existing ones, and on rental support, community housing initiatives for low-income seniors and creating service partnerships to support aging in place. This national strategy directs focus to housing needs of the aging population, however, a broad stroke approach in conjunction with the significant gaps in data may limit the extent to which policy change can reach older rural residents.

Aging in place policies provide supports from the spectrum of environmental, social and economic perspectives to allow people to remain in their homes.

Furthermore, rural communities are diverse in their economic and demographic characteristics, and so even within a rural housing paradigm, housing strategies may discount the diversity that exists within rural landscapes (Ryser & Halseth, 2011). Aging in place policies provide supports from the spectrum of environmental, social and economic perspectives to allow people to remain in their homes. There is a wide variety of housing options that older people may choose from, including private homes, apartments, retirement communities, independent-living lodges, assisted-living facilities and long-term care. Lawton and Nahemow's (1973) ecological model is frequently cited as a theory underpinning the understanding of seniors' housing needs, in which there is a good fit between a person's capability and environmental demands. Indeed, research has consistently demonstrated that satisfaction of older rural residents with their residences and features of their houses most strongly predicted mental health status (e.g., Scheidt, 2017). However, access to the variety of housing choices that embodies this best fit is unequal and may be challenging to achieve in rural areas without an effective alignment of social services (Novak et al., 2018) – services that are today facing downsizing and cost-cutting measures (Hanlon & Skinner, in press), resulting in an experience of being "stuck" in place (Torres-Gil & Hofland, 2012).

Interesting alternative models for older people have recently emerged. Shared housing, in particular, has received attention given the efficiencies of adapting infrastructure rather than

building from the ground up. Further, Ontario's houses contain five million empty bedrooms in the homes of people living in houses that may be too large for their needs (Jones, 2018). Homesharing, although not for everyone, may be facilitated flexibly in a variety of ways (e.g., older people buying a house together (e.g., Hall, 2019), renting apartments at affordable rates in an Abbeyfield-style home designed for older people (Abbeyfield Canada, n.d.); and renting rooms to students facilitated formally through a homesharing organization (e.g., Canadian Press, 2018). Homesharing models are receiving media attention given their efficient, intuitively positive nature, and there is strong potential to be applied to rural areas. Depending on the arrangement, people may choose to leave their homes but stay in their community, or to remain in their homes with the financial and also non-financial support of another person.

In the small town (pop. 2,753) of Lakefield in Peterborough County, 40% of the population is over 65 (Statistics Canada, 2016). Lakefield is close in proximity to the City of Peterborough, however a recent needs assessment found that older adults would far prefer to remain living in Lakefield in their later years than move (Rutherford et al., 2018). Its walkability, array of basic services and sense of community (typically common to rural Canada) were key reasons why participants largely wished to remain – preferring not to have to establish new formal and informal connections. For example, one participant reflected: "…if you are a part of a community your health improves". Although residents wished to remain in Lakefield, limited retirement living options challenge the ability to age in place. As a reaction, exploring the development of an Abbeyfield house has emerged as a local, volunteer-based grassroots approach to addressing this challenge. The Abbeyfield model originated in the UK and has only recently been introduced to Canada. Currently, there are four Abbeyfield Houses in Ontario. More information about each of these Houses can be found at www.abbeyfield.ca/province/on.

Abbeyfield Houses Society of Caledon

Abbeyfield Houses Society of Durham

Abbeyfield Ottawa

Abbeyfield Toronto – Lakeside House

The Abbeyfield House Society of Lakefield, governed by a volunteer board, is working toward founding an Abbeyfield house, a type of shared, 'family-style' rental house for older people that offers communal living arrangements geared toward the middle-income bracket. A more affordable housing option than home ownership or assisted living, Abbeyfield housing, at approximately $1250-$1500/month, includes private bedrooms/suites with a bathroom, shared common spaces, a kitchen and a guest bedroom. A house coordinator takes care of general daily tasks, shopping, and meal preparation, while volunteers complete maintenance and yard work. In Lakefield, volunteers have conducted a needs assessment, completed a business plan and developed community-level partnerships that will support its development. Innovative, grassroots housing ideas founded in principles of community individuality and aging in place such as this will allow older people to age in their own rural communities without the development of new infrastructure.

Transportation Services

Rural transportation is intrinsically linked to independence, providing access to social and cultural events, services and shopping. Limited transportation access can remove the sense of security and control associated with being able to freely participate in these regular activities. Older people typically relate transportation access directly to their quality of life, particularly those who are single or live alone, are recently widowed and have health challenges (Novak et al., 2018). However, transportation challenges may be compounded in rural areas given limited alternatives and scattered settlement patterns (Newbold, Dardas & Williams, 2018). The ability to drive privately owned vehicles provides access to community services in the local or wider area, and public transportation programs typically do not exist.

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Informal familial and social transportation resources may be available for some older people, however, consistent dependence may not be realistic or preferable (Weeks, Stadnyk, Begley & MacDonald, 2015). Most older people continue to drive given its importance to service access (Dobbs & Strain, 2008), however, a higher accident rate and increased likelihood of death in a collision as a result of frailty (Somes & Donatelli, 2017) when compared to most age groups (Turcotte, 2012) makes consideration of primary transportation in older age important. This is especially important as downsized or restructured services may additionally require residents to drive further afield than perhaps they have been used to or are comfortable with, particularly within the limits of light and road conditions during the winter. Indeed, Turcotte (2012) illuminates this challenge: "Outside census metropolitan areas and census agglomerations, alternatives to the car are virtually non-existent as primary means of travel" (pp. 12). Continuing to drive may not be a choice but a means of necessity for older people living in rural areas (Mattson, 2011), as it may be the difference between aging in place (Davey et al., 2004) and being "stuck" in place (Torres-Gil & Hofland, 2012). Service restructuring compounded with a rapidly aging rural population inevitably puts the onus back onto residents themselves to travel further afield to access services (Ryser & Halseth, 2012).

Public transportation is normally required for those with mobility challenges or as an alternative to driving (Novak et al., 2018). Rural areas typically do not have public transportation, however, some jurisdictions in rural Ontario have developed creative and viable alternatives that may support older residents who can no longer drive. Paratransit services may use smaller accessible vehicles with a flexible scheduling program, or door-to-door services through local healthcare organizations (See *Accelerating Rural Transportation Solutions – Ten Community Case Studies* for examples of communities working on solutions: http://www.ruralontarioinstitute.ca/uploads/userfiles/files/ARTS_-_Case_Studies_for_WEB.pdf). Though these options are more flexible than public transportation, they may require longer-term bookings and significant wait times for riders. Sustainability challenges exist when these initiatives are municipally driven, however coordination of transportation policies at a larger regional level through comprehensive transportation strategies may be an effective alternative (Ryser & Halseth, 2012).

Following a comprehensive needs assessment by the Temiskaming Shores Age-Friendly Steering Committee, which identified transportation access as a major challenge for older rural residents in Temiskaming Shores, a town in Northeastern Ontario (population 9,920), a two-pronged approach to strengthen rural transportation was undertaken, both of which built upon existing services and resources. A shared, coordinated regional approach between five transportation providers saw the development of a 1-800 number for older people to access information about accessible transit (Ontario Community Transportation Network, 2019). By phoning this number, older people are provided options to access to a large geographic area for a small cost, with escorts and companions riding for free (Timiskaming Home Support, 2019). The 1-800 number was strategically advertised through members of the coordinated partnership to increase awareness (Ontario Community Transportation Network, 2019).

Second, a rider training program was developed, following the purchase of accessible buses and an expansion of routes to some of the rural outskirts. The training was targeted at older adults, aiming to teach how to use the community's expanded public transportation – particularly necessary given the increased rural reach and the likelihood that older rural residents may never have taken the bus. Further, a local grocery store has also begun to provide transportation to older people looking to get groceries (City of Temiskaming Shores, 2016). This demonstrates the momentum that can be facilitated within a community when an issue, in this case transportation, is tackled regionally, relieving the pressure from individual organizations and services to independently address the gap in services. In this case, a combined regional approach in conjunction with community-level participation have facilitated an enhanced transportation network for older people living in Temiskaming Shores.

Older people today are staying engaged in their communities for longer than ever before.

Recreation Services

Though participation in recreation declines with age, older people adapt their activities to best fit their ability. Canadian baby boomers are more active than their predecessors, supported by higher levels of health, education and affluence. Older people today are staying engaged in their communities for longer than ever before. As an underlying structural support to this movement toward health and longevity in later years, the Canadian social context has recently emphasized health promotion in addition to prevention (Novak et al., 2018). Physical health is related to leisure activity involvement and well-being among older people (Paggi, Jopp, & Hertzog, 2016), and so emphasizing recreation is an essential component of a holistic suite of service provision.

Canada's existing recreation infrastructure must continue to adapt as more Canadians grow older, aiming to support leisure and recreation. In rural areas, without state-of-the-art gyms, pools and ice surfaces, for example, recreation opportunities may appear limited. Their diffuse nature may constrain walkability: research has demonstrated that neighbourhood walkability (proximity to services or public transportation) and walking infrastructure (e.g., access to parks and fitness facilities) is correlated with older peoples' recreation engagement (Carlson et al., 2012). Further, access almost always requires a vehicle, often limiting participation. Challenging weather conditions may similarly prevent access (Aronson & Oman, 2004; Ryser & Halseth, 2012).

Perhaps unsurprisingly, physical activity in rural areas tends to be lower than in urban centres (Statistics Canada, 2011).Despite this, rural communities are often rich in alternative forms of recreation for older people. Perceptions of activity may differ among rural older adults, with research demonstrating that 'traditional' forms of activity and recreation may be lower among rural older adults. However, a contextualized analysis demonstrates that supporting and encouraging specific activities that make sense within an active rural lifestyle are more likely to receive uptake (Witcher et al., 2016).

Further, seniors' clubs and organizations in rural areas often have successful, strong membership growing from the rapidly aging population. It is clear that employing a specifically rural lens to understanding and conceptualizing rural recreation provides a more accurate perspective. Unique to the rural context, however, rural municipalities and voluntary organizations alike are under pressure to provide a suite of recreation services to residents. Population out-migration leaves fewer taxpayers, many of which are older themselves. Small municipalities are stretched to provide basic municipal services, and rural recreation, despite its importance to health and wellness, may not be able to be prioritized. Despite strong membership, seniors' clubs and other service organizations are typically challenged by older voluntarism, in which older people comprise the foundational volunteer pool, creating uncertainty about sustainability and longevity (Colibaba & Skinner, 2019). Influx of rural retirees without place-based attachment cannot be relied upon to help sustain these initiatives as they are not typically as involved in the community (Winterton & Warburton, 2014).

Rural Ontario presents many examples of comprehensive, appropriate recreation opportunities for older people. From informational sessions on seniors-specific topics such as falls prevention, to exercise programs, cooking and music classes, there often exists a wide variety of recreation opportunities. For example, in Beaverton, the Community Health Centre offers community-based exercise, drumming for health, guided meditation and yoga, and at the Seniors' Active Living Centre in Arnprior, the centre is open daily for four hours for a variety of activities such as carpet bowling, chair yoga, shuffleboard, swimming and ukulele, both formal and informal (Arnprior Regional Health, 2019a).

To meet the gender gap that is often found in programming for older adults, the active living centre has recently begun a Men's Shed that provides a daily space for older men to work on hobbies and projects such as building picnic tables and planter boxes.

In Temiskaming Shores, a regular coffee hour for older people has become a major staple of recreation for older people in the area, with its operations having become embedded within the municipality (City of Temiskaming Shores, 2016). Although similar examples of these recreation programs can be found in many rural communities across Ontario, what makes these programs particularly unique is their partnerships or embeddedness within healthcare organizations and/or municipalities.

Rural recreation programs are often implemented at the volunteer level through age-friendly programs or community centres, engendering limited sustainability given volunteer burnout and limited capacity (Russell, Skinner & Fowler, 2019). In these examples, the challenges often faced by rural communities to facilitate sustainable and beneficial recreation programs for older people have drawn on partnerships with healthcare organizations and municipalities to overcome pitfalls that may be faced by those relying on older voluntarism (Colibaba & Skinner, 2019). By building capacity through partnerships, it is likely that similar rural programming, when designed in a way that meets the specific needs of local older adults, may be sustained to achieve long term health and wellness benefits for participants.

Conclusion

Although the drivers of population aging in rural Ontario typically differ by community (e.g., those viewed as retirement communities, those with high proportions of people choosing to age in place, and those experiencing rapid youth out-migration in conjunction with aging in place) (CIHR, 2017), the proportion of rural populations in Ontario that are older is growing quickly. As we have demonstrated in this Foresight Paper, the provision of services that directly relate to quality of life for older residents (e.g., healthcare and community support services, housing, transportation and recreation) living in rural communities may mediate tensions between aging in place, considered an optimal choice for growing older, and being "stuck" in place, in which a person must remain in their own home or community despite it not suiting their needs or abilities.

Decisions to downsize and restructure rural services may be made based on fiscal challenges; however, the pervasive absence of public service delivery in small, rural areas likely will increasingly and negatively impact the population which remains in those areas (Hanlon & Skinner, in press). With this in mind, there exists a conspicuous strain between two policy options: the first, to promote healthy aging through aging in place at both the federal and provincial levels, and the second, to promote fiscal efficiencies given population out-migration and decline in rural areas. In reference to a contemporary, global example, age-friendly programs (WHO 2007, 2015) are often developed to fill the gaps left by the closure of rural services, as our profiles of health, housing, transportation and recreation services in rural Ontario have shown, however, programs implemented primarily by the voluntary sector may lack sustainability and effectiveness, given factors such as volunteer burnout and older voluntarism.

Further, consistent with the literature (e.g., Colibaba & Skinner, 2019; Russell et al., 2019), we observed that this approach may transfer undue stressors to community members, organizations and volunteers by downloading state-level responsibility for essential and non-essential services. Indeed, key studies of rural aging across Canada, particularly Skinner et al. (2008), Keating et al., (2011) and Russell et al. (2019), have shown that partnerships with local governments and healthcare organizations may strengthen program sustainability and reach to older residents, yet the deprivation of essential services still remains, with age-friendly programs providing a only stopgap rather than a viable alternative to closures or restructuring of essential rural services. As the older population in rural Ontario continues to increase, federal and provincial governments must seek to improve the balance between conflicting policies in support of community leaders and older resident efforts to age in place and sustain services for seniors in Ontario's aging rural communities.

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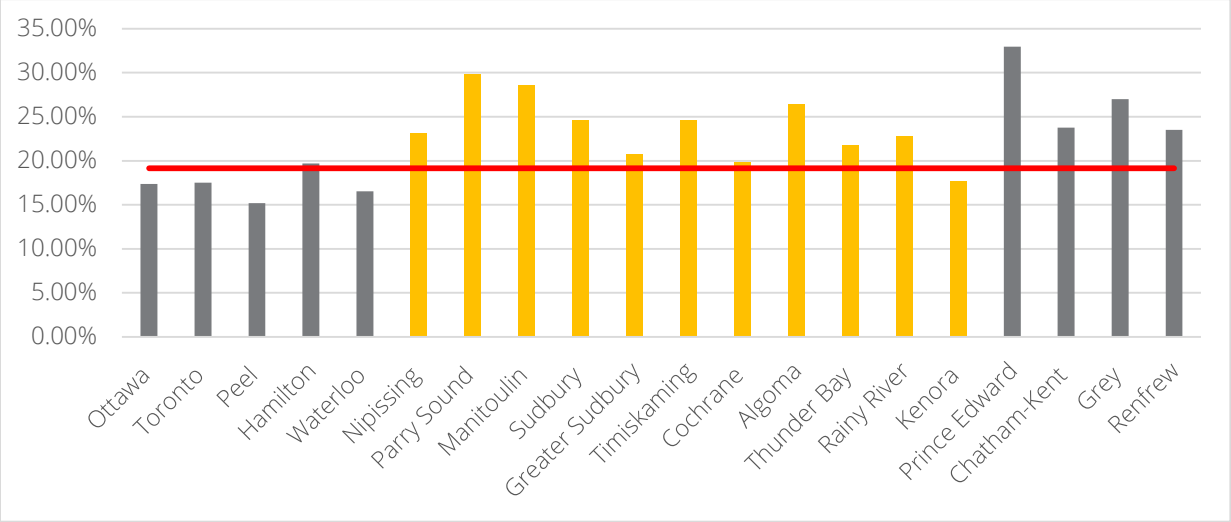
Northern Perspective: Services for an Aging Rural Population

Hilary Hagar

If anyone understands the challenges of an aging population, its northerners. Despite its vast geography, Northern Ontario is home to about 6% of all Ontarians and 7% of all Ontario seniors (Statistics Canada 2016). Looking at the proportion of people over age 65, many northern districts are above the provincial average (19%) (Fig. 1). Indeed, the disproportionate amount of elderly in northern and rural areas makes the concerns surrounding services for seniors more pertinent.

Figure 1: Percent of Population Age 65+ by Selected Districts



Source: Statistics Canada 2016.

Because of the geographical distance, aging in place is particularly challenging for northern seniors. Moving to a community with more services could mean travelling hundreds, possibly thousands of kilometers. The North is also home to much of Ontario's Indigenous population, who specifically emphasize aging in place as it allows for continued social and environmental connection (Pace and Grenier 2016, 254).

However, as Skinner and McCrillis note, rural and northern areas are "subject to the longstanding deprivation of public infrastructure", which limits the breadth and quality of essential services for aging in place.

Indeed, Northern Ontario lacks the appropriate services for seniors such as available physicians (Newberry 2018; Pong 2008). Yet, there have been efforts towards physician attraction and

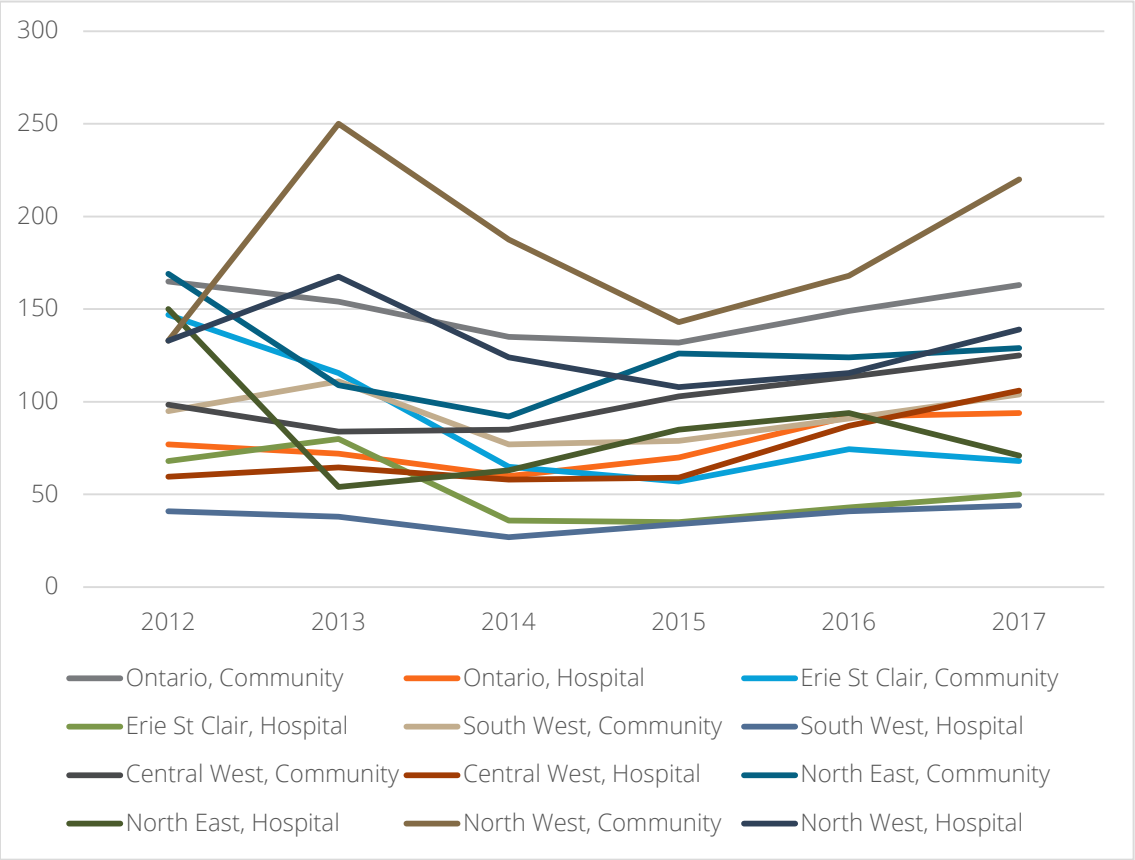
retention. HealthForceOntario's Northern and Rural Recruitment and Retention Initiative aims to attract physicians by offering financial incentives to those who establish a full-time practice in a rural or northern community (Ontario 2017). The Northern Ontario School of Medicine (NOSM) also attempts to recruit physicians by giving the opportunity to study in the North (see the *Access to Quality Medical and Health Services* Foresight Paper). Interestingly, NOSM is finishing a three-year-long study looking to recruit doctors from Northern European countries (CBC 2016). Ultimately, overcoming physician maldistribution in Northern Ontario will take the "adoption of multiple strategies but also simultaneous use of different strategies" (Pong 2008).

Further, housing options are also limited for seniors in the North. Many seniors in Northwestern Ontario, in particular, live alone (Northwestern Ontario District Health Council 2004). As Skinner and McCrillis state, support for rural seniors is often downloaded to family and community members. This is a challenge for northerners. Not only do seniors rely more heavily on unpaid care or assistance in Northwestern Ontario than the provincial average (Northwestern Ontario District Health Council 2004), the out-migration of families and youth means that many who could assist seniors living independently are no longer in the community (Making Kenora Home 2007).

Skinner and McCrillis acknowledge that offering a variety of housing options for seniors in rural areas is challenging "without the effective alignment of social services". Because rural seniors have less access to supports in their homes, a greater number are being directed to long-term care homes (LTC) than seniors in urban areas (AMO 2016). In fact, individuals on LTC waitlists in rural and remote regions surrounding Thunder Bay were more likely to be cognitively intact and experience less difficulty with daily living activities than those in Thunder Bay (Williams et al. 2016). Instead of living in LTC, these individuals could be living in seniors' homes or other community-based living situations.

Accessing LTC is also difficult. The average LTC wait times are longer in the Northeast and Northwest than other areas of rural Ontario (Fig. 2). In particular, since 2013, placements in the Northwest from the community have had longer wait lists than the provincial average (Fig. 2).

Figure 2: Median number of days people waited to move into a long-term care home, in Ontario, by selected regions, by prior location



Source: Ontario 2019

Requirements to provide LTC homes are also different in the north. Each municipality in Southern Ontario "is required by law to establish and maintain a long-term care home" (AMO 2016). However, for Northern Ontario municipalities, this is optional (AMO 2016). To further complicate the issue of housing, the north has challenges recruiting and retaining essential staff, such as nurses and personal support workers (Zefi 2019).

Other conventional housing options, such as retirement homes, are also limited. Of the 745 licensed retirement homes in the province, approximately 4% (31) are in Northern Ontario (RHRA, n.d.). Of the 31 retirement homes in the north, 81% are located in the five largest cities in Northern Ontario (RHRA, n.d.). Seniors seeking retirement homes outside these cities will likely have a limited selection. Even in communities with retirement homes, access could still be a challenge. Many seniors living on fixed incomes find retirement homes too expensive (Northwestern Ontario District Health Council 2004). Certainly, there is a need for "innovative, grassroots housing ideas founded in principles of community individuality and aging in place", as recommended by Skinner and McCrillis.

Another challenge is transportation. While public transit options do exist in northern cities, transportation between communities can be difficult. One of the ways this issue is addressed is

through the Northern Health Travel Grant, which provides subsidized transportation to northern individuals who live at least 100 kilometers away from the nearest medical specialist (Ontario 2019b). Other community-based transportation services exist for seniors in the north, noted by Skinner and McCrillis' examples in Temiskaming Shores. With the use of technology, efforts are being made to eliminate the need for transportation altogether. Timiskaming Health Unit, for example, hosts a "Senior Centre without Walls" which allows seniors to participate in activities and presentations via conference call at no cost (Timiskaming Health Unit 2019).

While these services are steps in the right direction, barriers for northern seniors to age in place still remain. For the increasing number of seniors in the north, this will take the collaborative effort of various actors. Community organizations, as well as government at provincial and local levels, will need to generate innovative and grass-root approaches to provide these much needed services. Both seniors and communities will be "stuck" without this effort.

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Water, Water Everywhere – When the Storm Water Flows

Joyce McLean

Introduction

In May 1988, the Beluga, a Greenpeace flat-bottomed river vessel, was transported across the Atlantic Ocean from Germany to Montreal to begin a four-month boat tour of toxic hotspots in the Great Lakes and St Lawrence River. That summer the Beluga visited 36 ports of call – also known as Areas of Concern under the Great Lakes Water Quality Agreement.

I was the leader of that campaign. We called it Water for Life. I was understandably anxious about the tour going well when we began to motor through the St Lawrence/Great Lakes on May 5, 1988. The Greenpeace team had done its homework; we had made local connections in each of the areas of concern and had carefully researched the issues. Our goal was to highlight the environmental problems across the basin on both sides of the border in hope of political action to reduce pollution.

When the tour began in Montreal in May, the captain and I were very worried. We weren't sure there was going to be enough water in the Mississippi River, the second part of the Beluga's North American tour, to get the boat down the river. Would we find similar shallow waters in the five Great Lakes that might impede our movements?

The summer of 1988 was the start of a significant drought, which ranks among the worst episodes of drought in the United States. It caused about $60 billion in damage across the country. That year, Milwaukee set records for the lowest monthly precipitation and the longest interval between measurable precipitation events of 55 days. What followed by mid-summer were concurrent heat waves that ultimately killed thousands of Americans. Canadians felt it too. As we floated through the glorious lakes, we experienced the drought first hand. But en route, we also experienced one of the scariest thunderstorms I've ever witnessed in St. Ignace, Michigan. What we were observing was the start of dramatic weather pattern changes that would ultimately be known as climate change.

So, does this matter now?

Fast forward to May 2019.

Ontario is blessed with water

The province fronts onto four of the five magnificent Great Lakes. We have over 250,000 freshwater lakes and over 100,000 kilometers of rivers in the province. We have deep and generous aquifers, which have sustained us for hundreds of years. Ontario has plenty to draw on for our drinking water, agriculture, commercial and industrial uses, recreation and other needs.

Ontario has 444 municipal governments which own the lion's share of the province's water and wastewater infrastructure systems. More than 14 million Ontario residents rely on these services, as most of the population is served their potable water through a system of pipes. There are some small communities in Ontario which rely on individual wells, particularly in northern and remote parts of the province. As has been widely discussed, many remote Indigenous communities do not have a safe and secure supply of drinking water despite years of political promises. At the time of writing this Paper, at least 44 drinking water advisories remain in Ontario communities.

In April and May 2019, a significant number of Ontario municipalities, including the nation's capital, experienced severe flooding, two years after the 2017 floods, considered by meteorologists to be "the flood of the century" or the "one in a hundred year" flood.

In the current era of climate change, where water resources are being affected by changing weather patterns, are we using and treating our abundant water resources to their highest and best uses? Could we be managing our water systems more effectively? Are we getting our best return on investment?

This Paper will explore the various ways that Ontario municipalities can better protect their water resource, keep it abundant and relatively inexpensive to deliver to families and businesses, all under the lens of climate change predictions for the province.

Climate Change

The climate is changing globally and most environmental leaders and politicians recognize that while we may no longer be able to stop the overall planetary warming trend, we can learn to adapt to the changing conditions we are beginning to face now and will face in the coming years. Climate change is affecting all natural systems including weather patterns, our soils, the amount of rainfall we receive and when, wildlife, the salinity of the oceans and the nature and temperature of our freshwater resources. The warnings are not new.

Remember the summer of 1988.

A recent report released by the federal government outlines the state of Canada's climate and concludes that we are warming faster than other nations, particularly in the north.

"Extreme precipitation amounts accumulated over a day or shorter are projected to increase; thus, there is potential for a higher incidence of rain-generated local flooding, including in urban areas." (www.changingclimate.ca, 4.3, 6.2) As our climate warms, our language and connection around water will need to change. Put simply, one can start to think about our available water three different ways: too much water, too little water and the wrong kind of water. The purpose of this paper is to primarily examine the Too Much Water problem and what could be done to help change the situation.

Too Much Water

Having too much water in the system leads to flooding, a problem that municipalities have faced for decades. But with the predicted extreme weather and even heavier rainfall when storms do occur, problems for municipalities managing storm water will increase. Of course communities want and need rain – it recharges aquifers and provides the opportunity for crops to flourish, but intense rainfall without methods of managing it is a challenge for communities not just now, but in the future.

> *…a different approach needs to be taken, one that emphasizes prevention not clean up, and one that includes the property owner in decisions that focus on limiting the damaging effects of too much water.*

In April and May 2019, a significant number of Ontario municipalities, including the nation's capital, experienced severe flooding, two years after the 2017 floods, considered by meteorologists to be "the flood of the century" or the "one in a hundred year" flood. Bracebridge, along with other cottage country communities, such as Minden and Huntsville, have declared states of emergency in 2019. The cities of Ottawa and Montreal have done the same. The Toronto Islands are once again threatened, as in 2017. Lake Ontario is now at its highest point in recorded history.

Ontario Premier Doug Ford was quoted as saying, "They say it's 100-year storms – well it's a few years later and we're back in the same boat." Those 100-year storms are the "new normal." At the same time, the province of Ontario has announced that they would be cutting 50% of the flood protection budget for Ontario's conservation authorities – the agencies that manage floodplains and watershed oversight for 95% of Ontario's population.

Storm water runoff has the potential to carry pollutants into our lakes and rivers and can cause significant flooding and serious erosion, not to mention the displacement of residents and businesses and causing insurance claims and insurance rates to skyrocket.

According to the Environmental Commissioner of Ontario's (ECO) November 2016 report, while managing storm water is largely a municipal responsibility, it is an under-funded one.

"Inadequate funding has created a $6.8 billion storm water infrastructure deficit in Ontario. This financial gap could get even bigger in the future as population growth leads to the creation of more impermeable surfaces and consequently worsens runoff." (Executive Summary, Urban Storm water Fees: How to Pay for What We Need, November 2016, Environmental Commissioner of Ontario.)

There will be additional costs to upgrade or replace existing storm water infrastructure to handle increased storm events, but most Ontario municipalities don't have the money to do what is needed now, let alone in the future. According to the ECO, storm water management monies have traditionally been gleaned from property taxes, but there's not enough money to pay for all that is required. Generally, homeowners don't want to pay any more tax. So – how can we improve the situation? Clearly a different approach needs to be taken, one that emphasizes prevention not clean up, and one that includes the property owner in decisions that focus on limiting the damaging effects of too much water. Knowing that there is a funding gap and a federal water and wastewater infrastructure deficit to the tune of approximately $6 billion, a third of that in Ontario, what can be done?

Return on Investment

The economic concept of seeking a "return on investment" is a sound tool but it's a simplistic one when it relates to long-term environmental issues. Municipalities make spending and investment decisions every month. Incorporating a triple bottom line approach – taking into account financial, social impact and environmental responsibility at the same time – is an effective way to ensure that future climate impact considerations are baked into investments.

When it comes to decision-making, this aligns perfectly with the facts of climate change, as we now know them.

Large Municipalities vs Small Municipalities

It's true that large municipalities have more resources to pay for the needs of their populations, even with the myriad of issues and problems that larger municipalities encounter. But as urbanization increases in Ontario, the movement of people away from small communities to larger places creates two problems. Larger municipalities have to plan for increasing water and wastewater capacity as their populations increase and small municipalities need to continue to invest in their infrastructure even while their tax base shrinks.

The town of Bancroft is a classic example of a small municipality with a significant cottage-owner summer population but a steady or shrinking residential population on the tax base, which is responsible for maintaining the water and wastewater system. My parents had a cottage for years south of Bancroft. In over 40 years, the welcome sign announcing Bancroft has had the same listed population number. The tax burden on Bancroft's residents is significant. In 2016, the town approved a whopping 53% increase in municipal water rates to pay for new infrastructure. This is a town where incomes average around $33,000, or 30% below the provincial income average. When the new water rates hit, local food bank usage went up 300%.

There are a series of cascading reasons for this massive increase, including provincial government changes to requirements to deal with septage; adjacent communities pulling out of agreements when these requirements changed, leaving the permanent residents on the hook to meet financial commitments to a plant now too large for the town itself. The province agreed to a redesign when

the neighbouring communities pulled out of the agreement, but that redesign cost even more money and at the end of that process, the new plant cost 10% more than originally projected.

> *….the province and municipalities could save precious money by planting more trees, encouraging the development of green roofs, green walls, bio-swales, rain gardens and other natural methods of keeping the rain out of the drain and instead directing it back into the ground.*

Because it's against the law for Ontario municipalities to carry deficits for operational costs, Bancroft was forced to take out two long-term bank loans.

The City of Toronto, the largest municipality in Ontario, is in an entirely different situation. The city has already created an ongoing funding approach within the City's $13+ billion operating budget and a 10-year $40 billion capital budget. All of that money is still largely to maintain the current system allowing for some expansion, but not necessarily to introduce innovation. And managing storm water is still a giant issue in a city where combined sewers and their inevitable overflows into the Don and Humber Rivers are still way too common.

Turning Grey Infrastructure Green

Infrastructure is the stuff of our towns and cities. It is the connection, mostly unseen, between our homes and businesses – roads, sewers, water mains, gas and electric utility equipment, for example. Traditionally, the province and the federal government helped fund this type of infrastructure because it's essential to our common way of life. But Ontario is already in a significant deficit when it comes to paying for these types of investments. And good investments they are because once the money is spent, the pipes, the roads, the bridges etc., tend to last for decades until either they fail or there is a need to expand capacity as populations grow.

While this type of infrastructure, sometimes called "grey" infrastructure, is critical to sustaining the health of our communities, a different kind of infrastructure has emerged as equally critical. Sadly, it is even more under-funded or ignored entirely by government, and is somewhat misunderstood as a concept.

"Green" infrastructure emphasizes the use of natural biological systems. According to the 2014 Provincial Policy Statement, green infrastructure: "means natural and humanmade elements that provide ecological and hydrological functions and processes. Green infrastructure can include components such as natural heritage features and systems, parklands, storm water management systems, street trees, urban forests, natural channels, permeable surfaces, and green roofs." (Provincial Policy Statement, under the Planning Act, 2014. P.42)

According to a report released by Green Communities Canada, entitled 'Ready Set Rain', green infrastructure can reduce flood risk by:

- Preserving and/or enhancing existing wetlands, forests, and meadows can ensure that communities downstream are at reduced risk of flooding.
- In areas with undersized sewers, reducing runoff volumes can take pressure off and reduce the risk of surcharging.
- Retrofitting existing built up areas to manage rain where it falls and reduce impervious surface can reverse the negative trends of urbanization, ultimately reducing flood risk downstream (when done at scale).

Ready, set, rain! Apr. 2019, p. 16

As espoused by Green Infrastructure Ontario (GIO), a 40-member coalition of organizations ranging from Conservation Ontario (which represents the province's conservation authorities), Forests Ontario, Ontario Parks Association, Ontario Association of Landscape Architects, Landscape Ontario, Green Roofs for Healthy Cities, Green Communities Canada, LEAF and others, the province and municipalities could save precious money by planting more trees, encouraging the development of green roofs, green walls, bio-swales, rain gardens and other natural methods of keeping the rain out of the drain and instead directing it back into the ground to recharge aquifers.

Sometimes embracing what was once popular leads us back to the future. The expansion of natural systems makes so much sense in communities where impervious surfaces mean that water flows to the lowest point, rather than the highest use. Every time it pours in communities with paved surfaces and without much green infrastructure, there is storm runoff and that rain finds itself in the sewer system, which can't cope with the overflow and overland flooding occurs.

As noted on GIO's website:

"Many municipal water supply, wastewater and storm water infrastructure systems across Ontario are approaching the end of their planned service life. Replacing or rehabilitating these systems will require major investments. Implementing green infrastructure solutions, however, can deliver significant savings through:

1. Reduced capital costs;
2. Reduced flood damage costs; and
3. Lower costs associated with maintaining storm water systems over their lifespan.

Properly scaled and sited green infrastructure systems can manage runoff as effectively as conventional storm water infrastructure at a comparable or lower cost. Green infrastructure can be anywhere from 5 to 30% less costly to construct, and approximately 25% less costly over its life cycle, than traditional infrastructure that performs comparably." (www.greeninfrastructureontario.org)

No More Walkertons

In 2000, Ontarians were stunned to hear about the contamination of Walkerton's water supply with E. coli and Campylobacter jejuni bacteria. Two thousand people got sick and seven people died. Eventually two brothers plead guilty to mismanagement of the town's water supply. Millions were

spent, a public inquiry was held and new provincial rules came into play. But the question still remains in many communities, could Walkerton happen again? According to the Ontario Water Works Association (OWWA), the answer is a maybe, as existing financial tools for water and sewer plant maintenance are unsustainable – there's more demand than cash available.

According to Michele Grenier, the Executive Director of OWWA, while there is a lot of concern among Ontario municipalities about fixing and maintaining the infrastructure, little innovation has actually occurred in the way grants are managed.

In the 1990s, when I worked in office of the Minister of Environment, I helped guide the funding for water and sewer infrastructure provincially. We processed hundreds of grants, but one in particular really stood out for me. While this does not relate directly to flooding, it does speak to the lack of an overall cohesive approach to community grants to protect our water.

The City of Barrie was seeking funding to expand their sewage treatment plant capacity to the tune of $41 million primarily because the largest user in the city was looking to expand. That expansion involved adding once-through cooling lines for beer production. Once the water was used for cooling purposes, it was to be disposed of directly into the sewer system. This seemed wasteful to us at the time, so we proposed to work with the Barrie officials to ensure that the end result was met – that the beer company could expand and that the city had enough capacity in their wastewater plant. We suggested, and the large user eventually agreed, that a once-through cooling line was indeed a waste of water and that they could install instead a different kind of system that involved a close-loop approach. A lot of water and money could be saved and the appropriate user paid.

Additionally, we proposed that the City of Barrie could be a provincial leader in installing six-litre toilets, which at the time were still relatively rare. Crane Toilets, before they merged with American Standard in 2008, had a manufacturing facility in Peterborough and we helped introduce the two players. Almost 9000 households took part in Barrie's water conservation program which cost the city about $3 million to run, but saved almost $19 million in deferred construction and expansion costs at the sewage plant. This approach created 825 more jobs than a straight capital expansion of the plant and Barrie households that took part saw the benefit of lower water costs. As part of the project, the city of Barrie installed an ultra-violet disinfection system and reduced the amount of chlorine going into the receiving water of body – Lake Simcoe.

Room for innovation

While innovation has been in short supply, Grenier did mention some helpful pointers that homeowners could take at the lot level and which are encouraged by municipal governments:

- Disconnect the downspouts
- Install a rainbarrel
- Install backflow valves
- Have the roof leaders flow away from foundations

These are all fairly simple, low-cost fixes.

As community resource water managers, operators could install inflow infiltration controls and ensure that all the staff is up to date on training and operational excellence. Ensuring that all community members have installed mandated six-litre water-efficient toilets, as they have been required for new and retrofit construction under the Ontario Building Code since 1996, is an important municipal responsibility but not all the necessary conversions have happened.

Grenier also questions whether there needs to be a different service level standard for different size municipalities. Of course, municipal water systems need to meet minimum standards, but no model currently exists for small communities and treatment requirements in a community of 1000 are the same as a city of over two million. This is a financial, technical and personnel problem, which the province needs to and can address.

While innovation is not evident in today's granting programs, some municipalities see the need to apply their own solutions to too much water. One solution that some communities have implemented is a storm water user fee for property owners.

Ontario communities with Storm water User Fees

Community	Type of Storm water Fee
London	Fee based on Property Size
Aurora	Flat Rate (per unit)
St. Thomas	Flat Rate
Kitchener	Single Family Residential Unit (SFRU)
Markham	Residential / Non-residential flat rate*
Mississauga	Single Family Residential Unit (SFRU)
Newmarket	Development Intensity & Property Size
Waterloo	Tiered Flat Rate
Richmond Hill	Tiered Flat Rate
Guelph	Equivalent Residential Unit (ERU)

Adapted from Smart Prosperity Institute: https://institute.smartprosperity.ca/canadian-storm water-user-fees

The municipality of Mississauga instituted a storm water user fee (suf) for all property owners in 2016. This was in response to more storm water in the system and the need to manage it and treat it before it flows into Lake Ontario. Mississauga's storm water user fee is based on the amount of impervious (hard surface) ground you have on your property and the size of your lot. Large buildings would pay more, for instance, because there are more hard services – roofs, parking lots, courtyards – for example.

The program has a built-in incentive to reduce storm water runoff by allowing for a storm water credit, by application, that requires the property owner to demonstrate that they have invested in

storm water reduction measures, many of the same aspects proposed by Green Infrastructure Ontario. The revenue from the program has led to the creation of a storm water fund, which among other things, has invested in a storm water pond in the Cooksville area of Mississauga capable of reducing the 100-year predicted storm flow by 80 per cent. This is water management with our climate future in mind.

Grenier also points to a successful collaboration between the Town of Alliston and Honda, their largest industry, to reduce the car company's water usage enough to forestall further taxpayer investments at the sewage plant. This kind of collaboration is critical for both – so that the company can act as a good corporate citizen, and for the municipality to provide the best and most reasonably priced services to their citizens. While this kind of collaboration can result in a struggle and sometimes threats by companies to pull out of communities if they're asked to "do too much", it's important to remember that climate change affects everyone no matter where they clock in to work every day.

> *The rain and snow will continue to fall on Ontario communities. Climate projections say that we will experience more storms of greater intensity. The farther north you live the more climate disruption you are likely to experience.*

Backflow prevention bylaws are in place in many larger communities in the province including London, Kitchener and St. Catharines and smaller communities are beginning to put these requirements in place. More progress needs to be made to push for this relatively simple requirement.

Speaking from personal experience, after wading through a flooded basement, installing a backflow preventer has saved me from subsequent flooding. It's an easy fix and could prevent not only the obvious water intrusion, but also the subsequent rise in insurance claims, not to mention the heartache of dealing with wet and damaged belongings.

Municipalities deal with a large range of issues on behalf of their citizens. Storm water management is often seen as a transportation issue as rainwater and snow melt does affect roads, road safety and future planning, but it's so important to remember that climate-smart policies need to be instituted across the entire municipal corporation and that departments must work together to ensure the highest and best use of taxpayer dollars. Storm water is a very real wastewater issue across Ontario and it's time it was recognized as such.

Consideration for Municipalities

Some measures that could be implemented regardless of the size of community include:

- Aligning municipal government decision making and investments, across the corporation that don't negatively affect another aspect of what municipalities are responsible for. In other words, continuing to require black, impervious surfaces that promote runoff is not helpful for those in the environment or water department who are trying to ensure that a local water body remains safe for recreation, and/or a source for drinking water (if applicable).
- Implementing a bylaw requiring backflow prevention valves. This will save money over the long term.
- Implementing a storm water management fee on all properties and use the revenue to create rain gardens and other green infrastructure technologies.
- Asking the provincial and federal government to update floodplain maps for your area, which are significantly out of date
- Communicating with your residents about water conservation approaches (low-flow toilets and showerheads, rain barrels etc.)
- Actively promoting a conservation first / prevention first approach
- Looking to other municipalities who have initiated successful programs to encourage the reduction of water use and who have effectively managed storm water.
- Eliminating all cross-connections within the wastewater system to reduce combined sewer overflows
- Following Intact Insurance's excellent advise on how to reduce homeowner flooding and insurance risks – www.intactcentreclimateadaptation.ca
- Become familiar with the non-profit Ontario Mutual Insurance Association. They partner with Intact and other insurers to deliver insurance products exclusively for smaller communities in Ontario. They are also advocating for provincial building code improvements particularly related to flooding. As OMIA's CEO John Taylor said in 2018, 2017 was "the year of the flood claim." Water risk models are changing and there will no doubt be an impact on municipal insurance rates as we continue to experience more water than the infrastructure can effectively handle. www.omia.com
- Calling for the reinstatement of flood prevention monies to the province's conservation authorities. These agencies are critical to the delivery of effective programs at the watershed level.
- Calling for a reinstatement of funding to the Ministry of Environment and to grants and loan programs in the Ministry of Infrastructure to support best practices in our water and wastewater facilities. We are beyond time where deficits for infrastructure are acceptable public policy.

Starting with the summer of 1988, climate change has been upon us in Ontario. Yet not enough recognition has been given to this massive global problem at the local level. This paper has only looked at one important aspect of our anticipated future – too much water.

The rain and snow will continue to fall on Ontario communities. Climate projections say that we will experience more storms of greater intensity. The farther north you live the more climate disruption

you are likely to experience. The sooner all Ontario elected and public officials start to work together to implement proven approaches and embrace innovative ideas to managing storm water, the better prepared our population will be at becoming climate smart citizens. The more we invest up front, the less money municipalities will pay in the long run. It's a win-win approach. Now that's a positive return on investment.

For further reference and reading:

Why Sewers are Overflowing Across Ontario, by Andrew Autio, www.tvo.org April 1, 2019.

"Welcome to Bancroft, Ontario where residents are charged $2400 Water Bills" by Zi-Ann Lum, Politics Reporter, Huffpost Canada, March 20, 2019

Canada's Changing Climate Report, https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/Climate-change/pdf/CCCR_ExecSumm-EN-040419-FINAL.pdf, April 5, 2019

Environmental compliance reports. Annual summaries for all regions on: air emissions; municipal/private sewage discharges; and industrial sewage discharges – www.ontario.ca/data/environmental-compliance-reports

Municipal treated wastewater effluent – www.ontario.ca/data/municipal-treated-wastewater-effluent

Conservation Authorities protect people and property from flooding, www.conservationontario.ca

Northern Perspective: Water, Water Everywhere - When the Storm Water Flows

Hilary Hagar

Climate change has various impacts on human, aquatic and terrestrial life. In Northern Ontario, these impacts range from increased flooding in Far North Indigenous communities, to damaging the Boreal forest, to dwindling aquatic species in lakes (Huff and Thomas 2014; Khalafzai, McGee, and Parlee 2019).

In particular, climate change impacts water – whether too much, too little or the wrong kind of water, as McLean puts it. In terms of too much water, Northern Ontario has felt the impacts. For the Kashechewan First Nation near James Bay, spring ice melting is not a usual event. However, the timing and extent of the flooding has been changing so much so that between 2004 and 2018, the community has been evacuated 12 times (Khalafzai, McGee, and Parlee 2019).

In Sudbury, increased winter precipitation and the subsequent application of road salt results in high sodium and chloride levels in nearby waterbodies. Over time, this has potentially damaging effects for aquatic ecosystems and the citizens who consume drinking water from these water sources (CBC News 2018). As well, in Timmins, a recent report from the Environmental Commissioner of Ontario (ECO) revealed that the City's sewage system bypassed treatment and discharged directly into Porcupine Lake (ECO 2018, 70). The City uses a combined sewer system that mixes waste water and storm water, leading to the over capacity of the sewage treatment plant during times of high precipitation, with the potential to cause untreated water to flow into water bodies (Autio 2019; ECO 2018, 62). This problem is likely to worsen with climate change as the risk of a "combined sewage overflow is compounded by more intense precipitation" (ECO 2018, 66).

Because of this potential for environmental harm, the province has prohibited any municipality from installing new combined sewer systems since 1985, though there are still 57 operating combined systems across the province that were installed before 1985 (ECO 2018, 64). While the City of Timmins has started to update its system[3], the work was delayed because of ground settling and legal issues with the contractor working on the site (MECC 2017, 5).

Regardless, these important issues need lasting solutions, particularly in the context of climate change. While tragic, the Walkerton crisis paved the way for the Clean Water Act, which made

[3] A provincial inspection, conducted in 2008, resulted in a Provincial Officer's Order with 11 recommendations (MECC 2017, 2). Part of this Order was to update the existing pumping stations and construct new storm water retention tanks (MECC 2017, 3).

watershed-based source water protection plans mandatory in areas with a Conservation Authority (CA) (Ontario 2007). However, more than 400,000 people remain outside of any source protection area, most of whom are in the north (ECO 2018, 38). In fact, "while nearly all of Southern Ontario is covered by source protection areas, most Northern Ontario communities are not" (ECO 2018, 38). Nonetheless, the province has at least "some responsibility to protect sources of drinking water for all Ontarians" including northern and First Nation communities (ECO 2018, 39).

Areas without CAs are also areas with smaller municipalities. The five CAs in the north surround the five largest cities – North Bay, Timmins, Sudbury, Sault Ste. Marie and Thunder Bay (Conservation Ontario n.d.). This could be a problem for sustainable investments because as McLean writes, "small municipalities need to continue to invest in their infrastructure even while their tax base shrinks". For areas without both a CA and large tax base, economically and environmentally sustainable efforts to preserve water bodies can be hindered. Green infrastructure, as suggested by McLean, poses a solution to these challenges. Relying on natural biological systems to absorb, slow, filter and store run-off can reduce the number of combined sewer system overflows (ECO 2018, 68). While grey infrastructure comes with costly updates, green infrastructure is a renewable resource that can cut costs in the long run, as described by McLean. These sustainable efforts are even more necessary as the amount and variability of precipitation changes with climate change.

Examples of green infrastructure are popping up in Northern Ontario. Notably, the Municipality of Wawa, which is not under the jurisdiction of a CA, is generating efforts in green infrastructure to preserve and improve water quality. The municipality is implementing the Boreal Forest Eco-Walk Rejuvenation Project which involves the construction of bioswales, natural landscaped features to slow, collect and filter storm water, along the shoreline of Wawa Lake (Municipality of Wawa 2019). Presently, storm water is collected through street side gutters and catch basins that flow directly to water outfalls into Lake Wawa without cleaning or treating the discharged water (Municipality of Wawa 2019). The bioswale is meant to manage pollution from storm water, while addressing "an infrastructure deficit in the maintenance and replacement needs of concrete outflows" (Municipality of Wawa 2019). Other added benefits of the Eco-Walk include preserving the Lake's natural beauty for tourism and providing a recreation area for residents and visitors to utilize the beach and learn about boreal forests (Municipality of Wawa 2019).

Solutions such as implementing green infrastructure ought to be seriously considered in Northern Ontario, especially in smaller municipalities without CAs or that lack sustainable environmental policies. In the context of climate change and increased precipitation, integrating economic, social and environmental perspectives will ensure the health and sustainability of the north, both now and for future generations.

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Workforce Development in Rural Ontario – A snapshot

Carol Simpson
With input from 10 Workforce Planning Boards across Ontario

Introduction

This paper examines the current employment situation across Ontario and provides an overview of supply and demand in rural regions. A sampling of initiatives to address rural workforce challenges are highlighted, with an emphasis on new and emerging approaches. Industry sectors that are important to rural communities are explored in more detail, i.e., health, manufacturing and agriculture. Several considerations are offered to those engaged in rural workforce development to stimulate discussion of potentially effective policy and program directions.

In order to develop this paper, the author has tapped into a network of on-the-ground intelligence. In total, fifteen rural planning board areas provided background data and, of those, ten participated directly by providing input to this paper. Other information provided is based on the roll-up of data from the nine Western Region board areas which make up Workforce Planning West, covering South Western Ontario and also, where possible, provincial data has been used to provide an overall picture of Ontario's rural communities. Selected information from previously published Focus on Rural Ontario Fact Sheets from the Rural Ontario Institute is also included.

Workforce Overview

Unemployment/Participation Rates

Unemployment rates and participation rates provide important parameters about the functioning of regional labour markets; however, it is difficult to find current unemployment rates and participation rates for smaller communities. For the purposes of this report, 2016 census data for each Planning Board is illustrated in the map below.

Map 1

Source: Statistics Canada: 2016 Census, Custom Tabulation

This map illustrates that unemployment rates are not uniform across the province. While employment growth since 2016, when this data was gathered, has been substantial and unemployment rates overall have dropped, we can expect there will continue to be uneven regional outcomes. Indeed, some rural communities are now reporting exceptionally low unemployment rates as their pool of workers shrinks and employment demand is quite high. There are pockets where unemployment rates are now under 2%, as in Bruce and Wellington Counties.

Participation Rates/Aging Population

The participation rate within a region is important as it tells us how many people are actively working or seeking employment. Lower participation rates can be a reflection of several factors, including an aging population, as older age groups have lower participation rates.

Lack of engagement in the labour market is a key concern in many parts of Ontario. This lack of engagement might include:

- Transportation may be a barrier;
- Lack of awareness of the variety of opportunities available elsewhere in their region;

- Those who have given up looking for work may have the perception that there is nothing available to match their skill set or their availability;
- People may have family obligations that make them unable to relocate for work, especially if they are caring after others in their families; and/or
- Personal health problems.

Generally, across Ontario, areas outside metropolitan centres have an older and aging work force. Participation rates are lower in these places and the employment levels (number of jobs) have also declined.

Counties with participation rates 55% or lower:

Haliburton	49%
Manitoulin	52.5%
Prince Edward	54.2%
Algoma	54.8%
Parry Sound	55%

Source: Census 2016

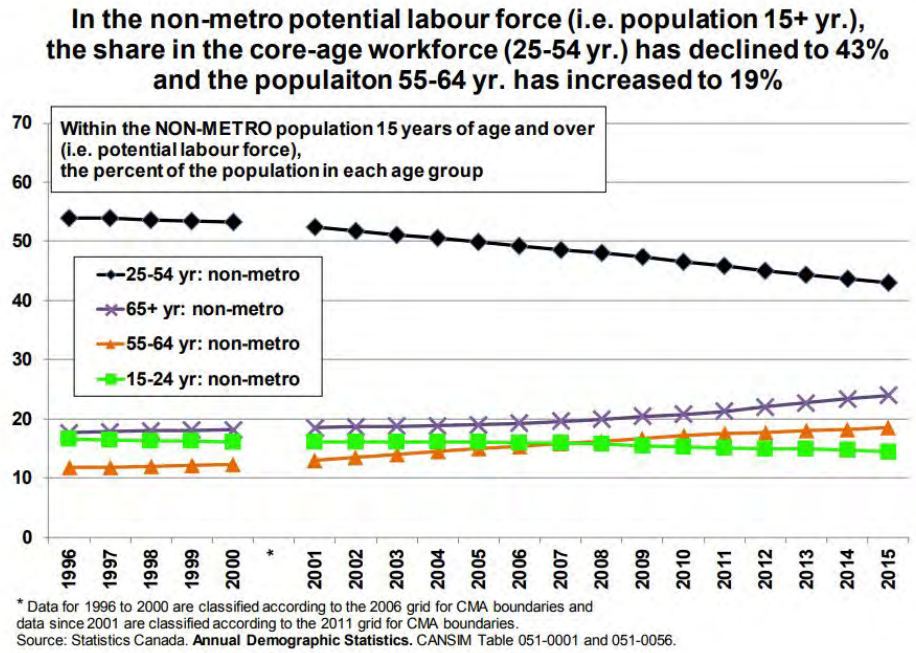
The aging rural work force impacts the participation rate despite some countervailing trends. There is an increasing trend for Canadians to retire later and to continue working after retirement age. A recent Statistics Canada report indicated that "close to one-third of persons aged 60 and over worked or wanted to work in the previous year. Of these, more than 80% worked as the main activity, about 10% worked at some time during the period without it being the main activity, and less than 10% did not work but wanted to work. Half of older workers who worked or wanted to work in the previous year did so out of necessity, and the share was similar for men and women."[4]

The decline of share of the population in this core-age workforce is recognized by researchers, as is the increase share of population fifty-five and older. According to Dr. Ray Bollman[5] this shift will impact overall employment rates: "In non-metro areas, within the core-age workforce (25-54 yr.) 80% of the population is employed compared to 55% for those 55-65 yr. Thus, this structural shift in the age structure of the population will reduce the reported employment rate of the total potential labour force."

[4] Hazel, Myriam. 2018. Labour Statistics at a Glance: Reasons for working at 60 and beyond. Statistics Canada Catalogue no. 71-222-X. Retrieved from: https://www150.statcan.gc.ca/n1/pub/71-222-x/71-222-x2018003-eng.htm.

[5] Non-metro population trends by age. (2017). Focus on Rural Ontario, Vol.4, No.1. Rural Ontario Institute. Retrieved from: http://www.ruralontarioinstitute.ca/uploads/userfiles/files/Non-metro%20population%20trends%20by%20age%20%20Vol_%204%20%20No_%201.pdf

Chart 1



In rural communities with aging populations, older workers can be encouraged to re-engage or stay in the labour market either through self-employment or if part-time opportunities are available. Generally, however, the outlook is that the trend towards increasing participation rates among the older age groups will not offset the overall decline created by the shifting demographic into older-age categories. See for example this recent Statistics Canada publication: *Insights on Canadian Society: The labour force in Canada and its regions: Projections to 2036* https://www150.statcan.gc.ca/n1/pub/75-006-x/2019001/article/00004-eng.htm. Rural Ontario (areas outside Census Metropolitan Areas) in these projections are predicted to witness a situation of increasingly fewer people working – by 2036 a ratio of only 1.9 persons working to those working, as compared to a ratio of 2.5 in urban Ontario. Employers in rural Ontario will be competing for increasingly scarce talent if they aren't already.

It is important to recognize that low unemployment rates do not necessarily reflect an increase in economic activity or high growth in the number of jobs available. This can also be a result of a steady economy and a shrinking labour force, as elderly workers retire and the number of incoming younger adults entering the workforce is not sufficient to replace those leaving.[6] In these types of situations, worker attraction becomes a key requirement and focus of economic development strategies. However, especially in rural areas, the lack of transportation and attainable housing can be a serious barrier to the ability of communities to attract new workers. There are several initiatives aimed at addressing these challenges which are highlighted later in this report.

[6] Employment trends in economic regions. (2017). Focus on Rural Ontario, Vol. 4, No. 3. Rural Ontario Institute. Retrieved from: http://www.ruralontarioinstitute.ca/knowledge-centre/focus-on-rural-ontario.

In and Out-Migration of Working Age Populations

Ten participating Workforce Planning Boards identified their top three workforce development challenges. The top workforce development concern in seven of these regions was shortages in the labour market.

Youth out-migration was mentioned as a component of this challenge. It is generally recognized and understood that many rural communities experience out-migration among their youth aged 18-24. This is mainly driven by access to post-secondary education institutions which are predominantly in larger centres. In fact, with the exception of seven regions/counties (that host large community colleges or universities)[7], all other areas have net out-migration among their 18-24 year old populations. Youth can also be motivated to move by a desire to access perceived enhanced employment opportunities in larger urban communities.

The propensity for youth to return to rural areas after post-secondary education is related to the strength of their family ties and their experiences in their communities before they left. The establishment of youth engagement activities, including Youth Councils, in a variety of rural communities, provides opportunities for youth to have a say and identify activities and initiatives that would keep them rooted in their communities. The Prosper in Perth initiative is one example: https://www.perthcounty.ca/en/doing-business/prosper-in-perth-county.aspx#

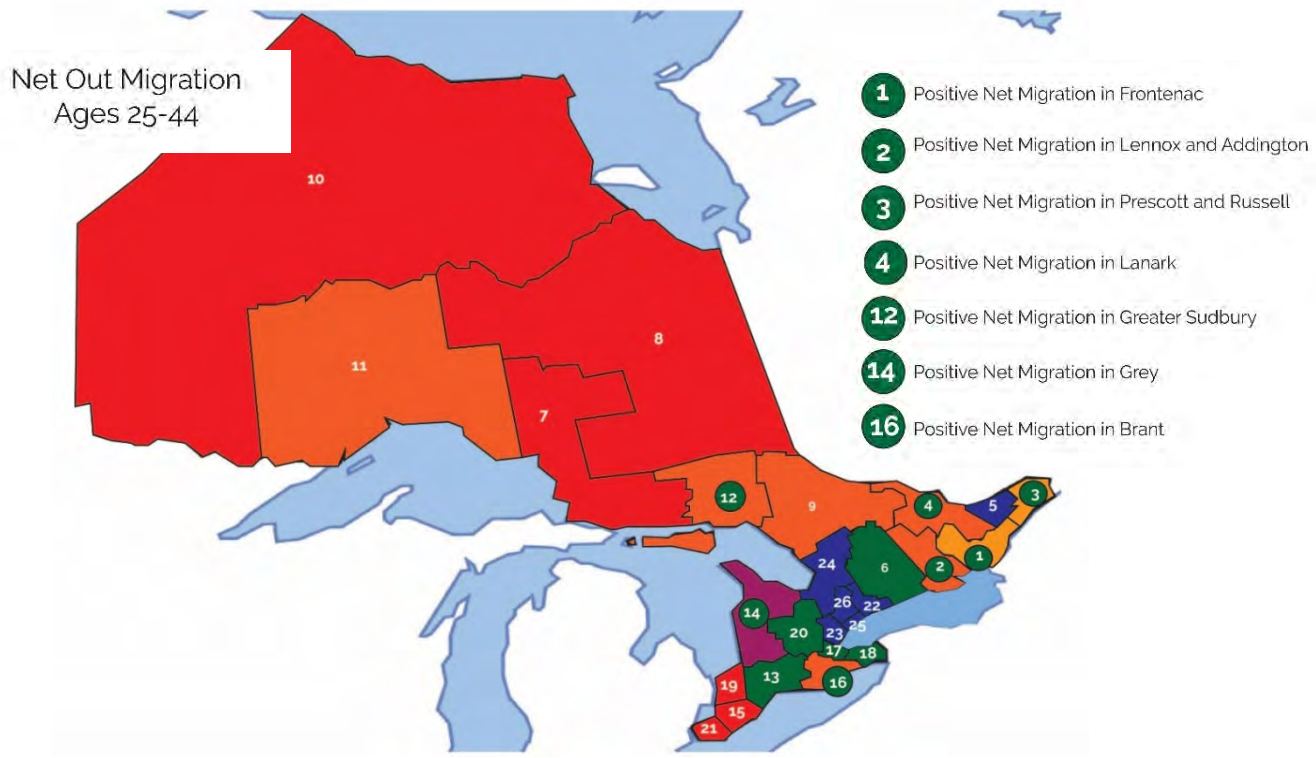
Likewise, the Northern Wellington Youth Connections event (https://town.minto.on.ca/events/2019/04/30/northern-wellington-youth-connections) was established to bring together students in Grade 9 to learn about available jobs, self-employment and other training opportunities within the rural community. Previous participants have contributed to the development of Youth Action Plans aimed at encouraging youth to return to their home communities after post-secondary education.

Despite the fact that many communities have embarked on, or are considering, recruitment campaigns to encourage youth to return to their home communities upon graduation or when considering starting a family, the fact remains that in many rural places the relative proportion of working age populations between the ages of 25-44 years is smaller. This has significant impacts on economic vitality and workforce availability.

Using data from Annual Tax Filer Migration Estimates by Census Division, the map below shows variable levels of net migration (in minus out) in this key working age demographic across the province. Most non-metro counties and districts lost population in the 25-44 age group due to out-migration. However, up to a third gained population between 2011 and 2016 in this age group. (A table of county by county net migration by age group is available here: http://www.ruralontarioinstitute.ca/uploads/userfiles/files/Migrants%2025-44_Focus%20on%20Rural%20Ontario.pdf)

[7] The seven geographies with post-secondary are Frontenac, Peterborough, Wellington, Hamilton, Waterloo, Middlesex and Greater Sudbury

Map 2



Source: Statistics Canada: Annual Tax Filer Migration Estimates by Census Division

The table below shows rural census divisions with net out-migration of 2% or more of the total population in the 25-44 age range. Small net losses in the context of a large overall population will be significantly less impactful than in places with a small population base, so the percentages are as telling as the absolute numbers.

Rural census divisions with net out-migration of 2% or more of the total population in the 25-44 age range:

HURON	8.5%
PRINCE EDWARD	8.1%
SUDBURY	7.3%
RAINY RIVER	5.3%
ALGOMA	4%
COCHRANE	3.5%
TIMISKAMING	3.3%
LAMBTON	3.3%
CHATHAM-KENT	2.8%
PARRY SOUND	2%
MANITOULIN	2%

The top two counties with the highest percentage of out-migration in this age group are in Southeast and Southwest Ontario. A declining population in Huron County has been an ongoing concern for a number of years. The community is actively looking at ways to deal with this chronic problem. Huron County is one of several rural communities with a Local Immigration Partnership (LIP) initiative (http://wiki.settlementatwork.org/index.php/Local_Immigration_Partnerships) to encourage immigrant attraction and settlement and has also embarked on a Worker Attraction and Retention Strategy (WARS). (See Huron County Workforce Attraction and Retention Strategy (WARS) Appendix 1)

Other factors that impact labour markets and people's decisions to locate or relocate are transportation availability and housing cost. Along with south Georgian Bay and Lake Huron shores, Prince Edward County is a rural area where we are seeing the impact of rising house prices due to an influx of recreational property buyers. This has affected the average house price, currently over $500K, an increase of 28% over 2017. While perhaps maintaining their employment in the County, workers are moving away to neighbouring areas where there is more attainable housing. In both Huron and Prince Edward County, as in many other communities, the lack of public transportation options looms large over the labour market. Workforce mobility becomes more of a challenge if people can't afford to live close to their work places.

Both Huron and Prince Edward County report that available employment opportunities are mainly at the unskilled/semi-skilled levels which typically have lower wage rates. High housing prices and low wage rates is not a recipe for an influx of people looking for work.

Initiatives targeting Worker Attraction

Rural communities across Ontario are focussing on meeting employer demand through worker attraction strategies. There are a number of methods being used to try to address this issue including targeted recruitment and marketing campaigns.

Huron's economic development plan highlights the need to work with local industries to encourage expansion of the workforce in manufacturing and health care. Perth County has recently partnered with local businesses that are in need of workers to attend regional job fairs on their behalf. Lambton and Grey County have followed similar strategies. These counties have participated in job fairs in regions like Kitchener, Peel and London to try to recruit workers and encourage them to relocate. This is an effective way to use minimum resources to reach out to jobseekers in larger regions.

Grey County has also partnered with the Peel Rural Employment Initiative (REI) to invite new immigrants to explore employment opportunities in Grey. Grey REI provides supports to immigrants who have initially located in the GTA but who are interested in relocating to rural communities. Two bus tours were organized in 2018 and 2019 resulting in 73 professional immigrants visiting the area and learning about the career opportunities by participating in the Regional Job Fair. The objective

was to promote opportunities in the rural region to individuals residing outside of rural communities. Lessons learned included:

- connecting directly with champion employers prior to and post tour;
- having a defined process in responding to enquiries of interested REI clients;
- and maintaining a list of 1) interested candidates with identified skill set and 2) employer champions who are looking to hire outside of regular networks.

For more information, see www.helpingnewcomerswork.ca

Wellington County has focussed on working with post-secondary institutions to promote rural opportunities as well as working with REI to try to attract newcomers with an interest in potential entrepreneurship opportunities in Wellington.

Employment by Skill Level

Some areas of the province experience high levels of in and out-migration even if the net balance stays relatively the same. Churn in the population is not always a symptom of problems. As Dr. Bollman observes "the inflow and outflow of workers presumably helps ameliorate skills mismatches so levels of turnover may indicate a realignment of skills in the local labour market."[8]

Shifts in the skill requirements which are employed in various industries have an impact on labour force dynamics. The occupational make-up of the workers in a particular industry can shift as technological change occurs and investment in machinery or production processes occurs. The employment trends in rural census divisions show that employment in three of five skill groups has grown. As Chart 2 illustrates, most of the jobs in rural census divisions fall into Skill Groups A, B and D. Skill Group A occupations require a university degree. Skill Group B requires college or skilled trades training. Skill Group C includes intermediate jobs that usually call for high school and/or job-specific training and Skill Group D requires only on-the-job training. Skill Group A has grown the most, with close to 25% growth between 2001 and 2018. On the other hand, Skill Group C has remained fairly steady after a sharp decline following the recession in 2008-9.

Notwithstanding the general lack of growth in Skill Group C, particular occupations within it may remain in high demand. For example, this would be the case with:

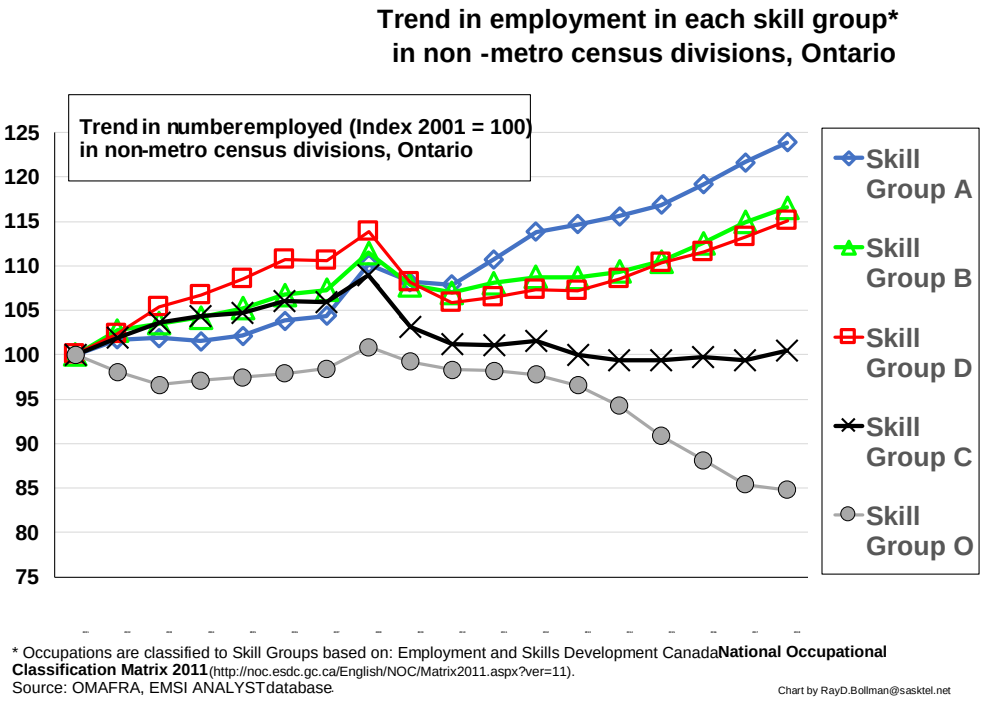
- industrial butchers
- long-haul truck drivers
- food and beverage servers

Several local employers in the Waterloo Wellington Dufferin Board area are reliant upon the FTW Foreign Temporary Workers program to fill their need for Industrial butchers.

[8] Migrants 25-44 years of age. (2018). Fact Sheets on Rural Ontario, Vol. 6, No. 3. Rural Ontario Institute. Retrieved from: http://www.ruralontarioinstitute.ca/uploads/userfiles/files/Migrants%2025-44_Focus%20on%20Rural%20Ontario.pdf

Skill Group O (Management level) has declined steeply. Employment in management occupations in rural communities is projected to continue to decline while slight employment growth is anticipated in other skill levels.

Chart 2

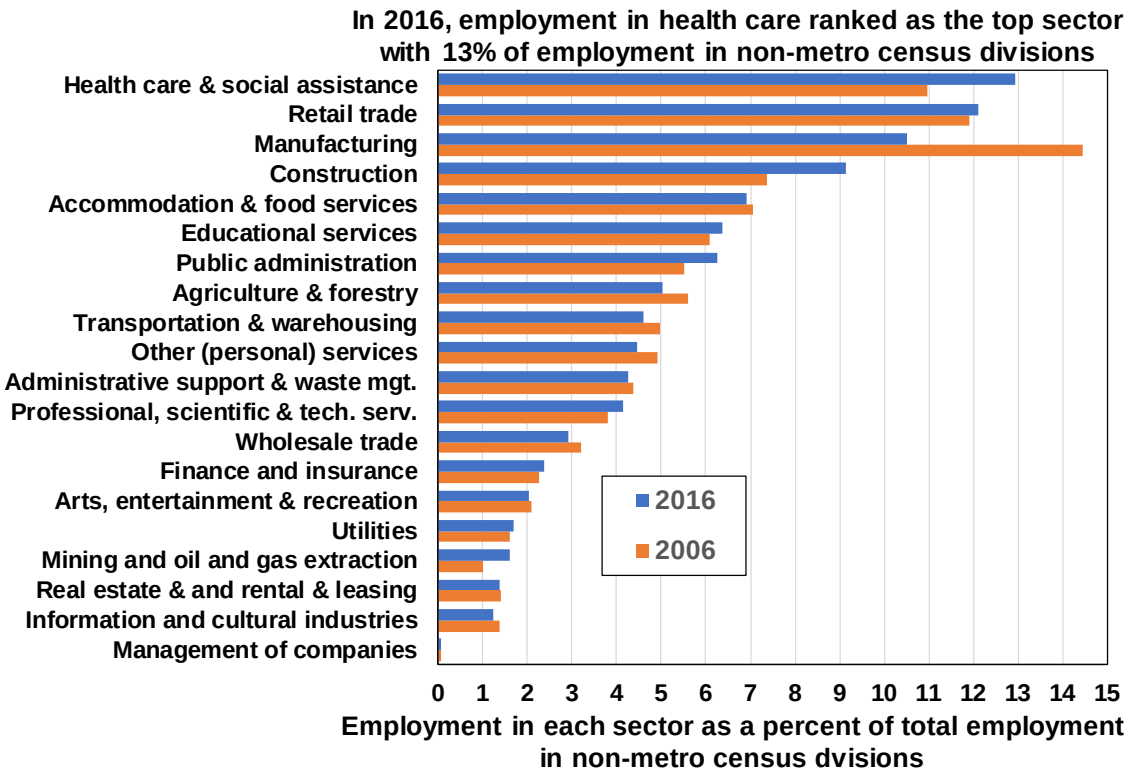


For the short term, it is expected that Skill Group B occupations will grow at a slightly faster rate than others.

Trends in Industry Employment

Across non-metro census divisions, the sector with the largest employment in 2016 was health care and social assistance (13%), up from 11% in 2006. Manufacturing was the largest sector in non-metro CDs in 2006 (14.4%) but it declined to the third largest sector with 10.5% of total employment in 2016. From 2006 to 2016, the non-metro sector with the largest increase in employment was mining and oil and gas extraction (+55%) and the sector with the largest decrease in employment was the manufacturing (-30%).[9]

[9] Employment by Sector, Overview 2006-2016. (2018). Focus on Rural Ontario. Vol. 6, No. 10. Rural Ontario Institute. Retrieved from: http://www.ruralontarioinstitute.ca/uploads/userfiles/files/Employment%20by%20sector%20%20Overview%202006-2016_Vol%206%20No%2010.pdf



Additionally, information supplied by 10 planning board areas covering rural communities reported industries listed as in the top 3 as follows:

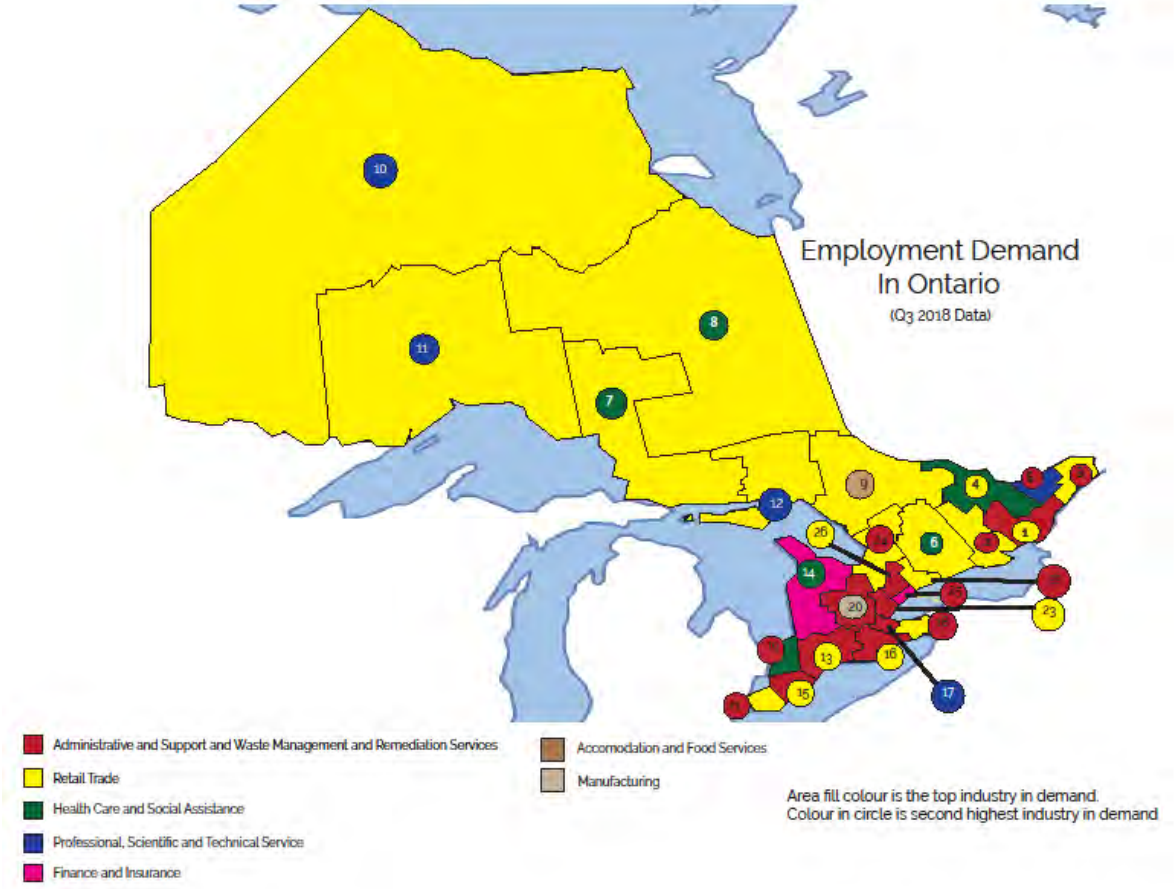
Health (9)
Retail Trade (9)
Public Admin (3)
Education (2)
Manufacturing (4)
Mining (1)
Construction (1)

The manufacturing sector appeared in the top 3 in the Southwest, while Mining was in the top 3 in the North.

Employment Demand

Another way to understand employment demand is to look at current job postings and see how many jobs are on offer in which industries. Current job postings are a snapshot look at labour markets.

Map 3



Source: CEB Talent Neuron

Based on the map above, current employment demand in the third quarter of 2018 was high in industries such as retail trade and health care across rural Ontario, while in the Southwest industries like Administrative, Support and Waste Management and Remediation had the highest demand. The top jobs on offer in Cochrane were Other Customer and Information Services Reps compared to Transport Truck drivers in Essex and General Farm Workers in Prince Edward.

However, the analysis of job postings to help identify trends in skills in increasing demand or short supply has its shortcomings and points to gaps in the availability of local data that Workforce Planning Boards have been working to fill. The "sector" of Administrative and Support Services, for example, includes "Employment Services" so it is likely that many of the job postings in that sector reflected on the map could actually be recruitment agencies who may in turn be placing workers in other sectors. A recent Labour Market Information Council report on the challenges of measuring skills and skills shortages delves in depth with some of the measurement difficulties we have in Canada with this type of issue: "How we define skills can be confusing, which limits our ability to measure skills and skills shortages. There is an urgent need for a common, credible, and open skills

taxonomy. This would enable stakeholders – job seekers, employers, and educators – to speak the same language with respect to skills."[10]

The report also notes that: "Online job postings likely skew toward higher-paying, urban job markets – though even this is difficult to determine concretely"[11]

The Business Council of Canada in its 2016 report *Labour market information: an essential part of Canada's skills agenda* called for concerted efforts for improved data collection and investment by government to enable the collection and sharing of better local labour market information.[12]

Agriculture

Rural Ontario is blessed with a broad agricultural base which feeds a value-added food chain that produces a diverse set of products for both domestic and international markets. Ontario hosts some 49, 600 census farms. According to the most recent sector profile from Employment and Social Development Canada, employment in primary agriculture rose slightly to 77,700 in Ontario in 2016, after three consecutive years of decline. While primary agriculture made up just 0.7% of Ontario's total gross domestic product in 2016, that figure jumped to 5.9% for the broader agri-food industry.

There are several noteworthy trends highlighted in the report:

- The number of farms fell in Ontario but operations are larger and more valuable.
- Machinery and new technologies have allowed farms to maintain production with fewer inputs.
- The industry faces challenges to attract local workers and relies heavily on temporary labour.
- Greenhouses and the advent of medicinal marijuana will be a focal point in the years ahead.
- Employment growth will likely remain flat in the agricultural industry over the 2017 to 2019 period (Agriculture 2017-19: Labour Market and Socio-economic Information Directorate (LMSID), Service Canada, Ontario).

While direct on-farm employment may be predicted to be flat, other agriculture-related careers appear to be experiencing significant growth. According to AgCareers.com, there was a 32% increase in the number of Canadian agri-food jobs posted in 2018 compared to 2017, with 21% of these jobs posted in Ontario and Quebec. The same report indicates that 57% of agribusiness companies believed workforce size would increase over the next two years. Employers cited the main reason for recruiting difficulty was that applicants lacked required skills, followed closely by the low number of applicants.[13] Sales and management positions are often cited as hardest to fill. Retirements and recruitment difficulties were cited as significant factors.

[10] Labour Market Information Council. (2019). Is this a skill which I see before me? The challenge of measuring skills shortages. LMIC Insights, no. 14. Retrieved from: https://lmic-cimt.ca/wp-content/uploads/2019/06/LMI-Insights-No-14-2-1.pdf
[11] Ibid
[12] Drummond, D., Halliwell, C. (2016). Labour Market Information: an essential part of Canada's skills agenda. Business Council of Canada. Retrieved from: http://thebusinesscouncil.ca/wp-content/uploads/2016/06/Labour-Market-Information-June-13.pdf
[13] 2018 Agribusiness Job Report, Canadian Edition. (2018). Retrieved from: https://www.agcareers.com/reports.cfm

Farmers attending a recent consultation session with Employment & Social Development Canada shared concerns regarding concerns about the temporary foreign workers program, the following issues were raised:

- Struggles with bringing in off-shore workers despite having zero response to Canada Job Bank postings that were live for over two years.
- Increased cost related to minimum wage increase, plus the additional cost of having to provide housing. Free housing for off-shore workers is on top of wages – creates an uneven playing field for domestic workers who have to cover these costs on their own.
- Regulations and inspections – almost impossible to meet the conditions as criteria varies from ministry to ministry (e.g., housing versus health).

CANADIAN AGRICULTURAL HUMAN RESOURCE COUNCIL
CONSEIL CANADIEN POUR LES RESSOURCES HUMAINES EN AGRICULTURE

In August 2019 The Canadian Agricultural Human Resources Council released a Labour Market Information report "How Labour Challenges Will Shape the Future of Agriculture: Agriculture Forecast to 2029"

Canada's agriculture sector faces many unique labour challenges that could jeopardize its growth potential and its contribution to the national economy. In 2017, 16,500 jobs went unfilled in Canada's agriculture sector, which cost the sector $2.9 billion in lost revenues, or 4.7% of product sales. Labour shortages don't just impact the sector today, they also limit its future growth by preventing or delaying expansion plans.

Chronic labour shortages have led agricultural employers to rely increasingly on foreign workers; this labour source now accounts for 17% of the sector's workforce. While foreign labour has helped to lessen the impact of chronic labour shortages, it is only a partial solution and one that could easily disappear due to policy changes or global events.

A Widening Labour Gap

While agricultural labour issues are significant today, they will intensify in the future. The sector's labour requirements are expected to grow considerably over the next 10 years. By 2029, the agriculture sector will need significantly more workers to reach production targets. At the same time, the size of the domestic agricultural workforce will shrink, driven by a rising number of retirements. In fact, the sector is expected to see 112,200 workers retire between 2018 and 2029, which is the equivalent of 37% of its workforce. This is placing added pressure on a sector already challenged to find enough workers.

As a result, the sector's labour gap will nearly double over the next 10 years, reaching 123,000 people by 2029. This is equivalent to 32% of labour demand for that year, or roughly one in every three jobs in the sector. Ontario will account for the majority of Canada's agricultural labour gap in 2029, but Quebec, Alberta, British Columbia, and Saskatchewan will also have a sizeable labour gap. (https://cahrc-ccrha.ca/sites/default/files/CAHRC-National-Report-FINAL-August-19-2019.pdf)

Manufacturing

The manufacturing sector in Ontario employs around 770, 000 people, according to the Canadian Manufacturers and Exporters (CME) 2018 report: *Manufacturing Ontario's Future: Leveraging Ontario's Manufacturing Sector to Drive Ontario's Success.* Analysis of census data from 2016 revealed that 339,000 manufacturing jobs were in census divisions outside of the major urban centres as reported in a Fact Sheet for ROI.[14] However, manufacturing saw the largest sectoral decrease in employment in rural Ontario from 2006-2016, down from being the largest employment sector to 3rd as it shrank from employing 14.4% of the rural work force down to 10% over the ten year period – a 30% drop.

Proportionally, manufacturing remains a relatively larger sector in rural and small town Ontario than in urban centres, so this restructuring of the economy is of great significance. A review of rural jurisdictions with a high proportion of manufacturing employment reveals that many are in areas with access to major transportation routes such as the Highway 401 corridor.

According to the CME report, those running manufacturing companies ranked skills and labour shortages as the most important issue they face. "This message came through loudly and clearly from both the Industries 2030 Ontario consultations, as well as from the results of the 2018 Management Issues Survey. Specifically, executives noted deep concern both about the availability of workers, as well as the skill level of existing and future employees at all levels within their organizations. These gaps are undermining the current performance and future growth of their companies."

The report goes on to identify these areas for action:

- Improve Linkages Between Industry and Post-secondary Institutions
- Support Apprenticeships and Work-Integrated Learning
- Engage Youth, Women and Other Underrepresented Groups
- Strengthen STEM Education
- Support Company Training
- Immigration Reform

In my own area I have seen several rural manufacturing companies looking to upsize but lack of available land, workers, affordable housing and transportation have impacted their ability to do so, sometimes forcing them to expand in another community. Such constraints on existing businesses may ultimately cause them to relocate or close which would devastate these small communities, their workers and the tax base. It is crucial that we work with these businesses to continue to support workforce attraction and retention to keep them viable for the foreseeable future. Manufacturing is not a dying industry but it will be if we ignore the challenges being faced by the sector in rural communities. Recent announcements of provincial funding for badly needed industry-specific training for manufacturers are uneven at best and generally focussed on larger urban areas. More focus needs to be given to manufacturing in rural communities.

[14] Employment by sector: Overview 2006-2016. (2018). Focus on Rural Ontario, Vol. 6, No. 10. Rural Ontario Institute. Retrieved from: http://www.ruralontarioinstitute.ca/uploads/userfiles/files/Employment%20by%20sector%20%20Overview%202006-2016_Vol%206%20No%2010.pdf

Health Care

The recruitment and retention of healthcare professionals to serve rural regions is a problem shared by many nations. Countries such as Australia, the United States and the UK all have this challenge. Across Canada and Ontario many ongoing efforts are directed at this issue. HealthForceOntario (http://www.healthforceontario.ca/) has many incentive programs for qualifying jurisdictions based on their "rurality index." Initiatives such as the Rural Ontario Medical Program (https://romponline.com/) reach into university training and education programs to help expose medical and nursing students to placements in rural settings. Gateway Centre for Excellence in Rural Health (https://www.gatewayruralhealth.ca/) has a long relationship with the School of Pharmacy at Waterloo and University of Western Ontario. HealthKick Huron (http://www.gopalmer.ca/) was designed to "grow your own" health care workers by encouraging high school students to consider professional health careers and encouraging placements locally for those that did. The Northern Ontario School of Medicine (https://www.nosm.ca/en/) which is described in a companion 2019 Foresight Paper has had substantive success with this approach.

There are trends that suggest this challenge is going to get more acute. Our aging society will create a higher demand for healthcare workers – especially among personal care workers if the "aging in place" approaches are successful. In the past, as people got older they often left their homes and communities to receive care in larger communities with available care facilities. Now, however, older people are more interested in remaining in their own rural communities. A New Brunswick researcher conducted interviews with seniors in 2017 and found a common thread that they wanted to remain in their own homes.[15] This has had an impact on healthcare employment in rural areas – in 2016 it was the number one employment sector, with 13% of employment in non-metro census divisions[16]. Much of this is attributable to an increase in homecare businesses and the establishment of new longterm care facilities in smaller communities.

As the unemployment rate in many rural communities continues to decrease, attracting new workers is becoming more challenging. Recently, the Town of Minto, in Wellington County, needed to attract personal support workers (PSWs). Several Filipino PSWs had already been hired in the area and it was clear that they settled easily and were well accepted by the community. This led the Town to focus its recruitment efforts to friends and family of those who had already moved into Minto and those landing in larger centres like Toronto.

Considerations

The following considerations are offered as important areas for further action:

1) Review Foreign Trained Worker Program to make it easier and quicker for workers in this program to achieve landed status more quickly and easily when employed in occupations in demand.

[15] https://www.cbc.ca/news/canada/new-brunswick/senior-home-rural-nb-1.4069723
[16] Ibid

2) Review other immigration programs such as Express Entry and Ontario Immigrant Nominee programs to provide more opportunities for unskilled and lower skilled occupations in demand with priority given to rural communities.

3) There is a need to carry out in-depth analysis and case studies on how we can support immigrants to move into small town/rural communities.

4) Continue to build on technology infrastructure to support business growth in rural communities. E.g., SWIFT.

5) Invest in training for key large industries and individual businesses to support their maintained commitment to employment in rural communities.

6) Many organizations and initiatives supporting workforce development are funded on a year to year basis. This does not allow for longer term investment in, or development of, creative and constructive ways to address long term rural workforce development priorities. Consideration needs to be given to longer term funding cycles for programs such as LIPs and organizations like Workforce Planning Boards.

APPENDIX 1: WORKFORCE DEVELOPMENT INITIATIVES

The following is a selection of examples of initiatives which illustrate the diversity of projects that are responding to rural labour force challenges. It is by no means exhaustive or encompassing and reflects my knowledge and experience arising from my work as an Executive Director for a particular Workforce Planning Board. What is encouraging is the range and innovation among collaborating agencies to tackle these long-term complex issues that have no single solution.

The following are just a sample of some of the types of innovative initiatives currently being implemented across the province to support workforce development in rural communities. These initiatives are led by many different organizations however the planning board area in which these initiatives is taking place is listed in brackets as the contact for information.

Encouraging Immigration

Immigration will be a key factor to the employment success and growth of rural communities. As the majority of immigrants first settle in larger urban areas, it will be increasingly important to showcase available opportunities and lifestyle options in rural communities. Those communities which currently welcome Foreign Temporary Workers may be at the right place and time to take advantage of any new policies and programs which would change the way these workers are allowed to remain within Canada. For example, allowing FTWs to become eligible for permanent residency after a specified period of time, perhaps 2-3 years, would allow them to move on to other opportunities within the community they are familiar with and allow others to take their place in the FTW pipeline. This would be of benefit to many industries.

As communities experience lower unemployment rates due to a lack of workers, they have the potential to become less welcoming to immigrants as they perceive that there is no need as anyone currently in the community who is wanting to work is working. The perception that immigration is not needed may pose problems for some rural communities. Semi-rural/rural areas have few or no services supporting new immigrants to their communities.

Local Immigration Partnerships (LIPs)

There are 70 Local Immigration Partnerships across Canada. 30 of these LIPs are in Ontario with 5 of these covering Toronto. Funded by Immigration, Refugees and Citizenship Canada (IRCC). 12 LIPs cover non-metro Ontario communities/counties. These are:

- Chatham-Kent
- Five Eastern Counties
- Huron County
- North Bay
- Oxford
- Quinte
- Renfrew & Lanark
- Sarnia Lambton
- Sault Ste. Marie
- Smiths Falls
- St. Thomas-Elgin
- Timmins

"LIPs are municipal or regional coalitions designed to strengthen local capacity to attract newcomers and improve integration outcomes, as indicated by enhanced economic, social, political, and civic participation. They operate through formal agreements that establish broad-based partnership councils charged with developing and implementing strategies to produce more welcoming communities. LIP coalitions include immigrant and mainstream service providers; municipalities; federal and provincial agencies; employer associations; health organizations; ethno-cultural and religious groups; school boards; academic institutions; and other partners. As such, they are important focal points for increasing engagement and promoting strategic alignments and coordination among service providers and other institutions. The LIP initiative began operations in Ontario, and has now expanded to a number of other provinces. This site is updated as new LIPs are formed and new information becomes available. The LIP initiative is funded by Immigration, Refugees and Citizenship Canada."

Source: Pathways to Prosperity Canada website p2pcanada.ca: Definition of LIPs.

These LIPs have developed settlement strategies and/or action plans to encourage settlement of immigrants into non-metro rural areas. Many of the issues facing these LIPs are similar across Ontario. Employment and newcomer integration are key themes including such topics as transportation, housing, access to health care and translation/language training services. Samples of goals to support settlement include e.g. "Create an awareness campaign to advance the positive aspects of newcomers joining the community"[17], "Increase networking opportunities between employers and newcomers and immigrants"[18] and "Better assist immigrants at accessing appropriate employment"[19].

WESTERN ONTARIO WARDEN'S CAUCUS

The Western Ontario Warden's Caucus (WOWC) is made up of municipal representation from small communities across Southwestern Ontario. WOWC developed a Workforce Development Strategy in 2018 with the following Regional Workforce Planning Objectives:

- **Objective 1:** To strengthen the access and quality of labour market intelligence to address the needs of businesses and create opportunities to bring together businesses, economic developers and educators to strengthen the alignment between business needs and education programming.
- **Objective 2:** To assemble intelligence that will inform municipal business retention and succession planning activities. Included in this objective is the need to advocate for improved programming support.

[17] Quinte LIP – Local Settlement Strategy & Action Plan
[18] Sarnia Lambton – Settlement Strategy
[19] 5EO LIP – Work Plan

- **Objective 3:** To improve the region's access to skilled and talented labour pool that is poised and positioned to respond to changing economic conditions.

The WOWC Economic Development Committee, in partnership with Workforce Planning West, held a Conference in December 2018 to discuss workforce development issues. A follow-up conference, Growing Your Workforce will be held in Stratford in October 2019 to highlight successful initiatives to address workforce challenges, some of which are featured in this paper.

Targeted short-term training plus subsidized work placement programs for the following:

- At-risk youth (Eastern Ontario Training Board (EOTB))
- persons with disabilities (EOTB)
- manufacturing sector (EOTB, Workforce Planning Board of Grand Erie (WPBGE), Four County labour Market Planning Board (FCLMPB))

Bringing transit to rural areas

- Huron Shores Transit project (Sarnia Lambton Workforce Planning Board (SLWPB))
- Wellington Transit Project (Workforce Planning Board of Waterloo Wellington Dufferin (WPBWWD))
- Innisfil Uber Partnership (Simcoe Muskoka Workforce Development Board (SMWDB))

Talent Attraction & Retention

- Working in Grand Erie (WPBGE)
- Live and Work Wellington (WPBWWD)
- Talent Attraction Initiative (WPBWWD)
- Using social media to promote entry-level opportunities with targeted manufacturers (EOTB)
- Manufacturing Workforce Strategy (Centre For Workforce Development (CFWD), WPBWWD)

Youth Retention

- North Wellington Youth Connections (WPBWWD)
- Experiential Learning Fair & Employer Participation (Workforce Planning Board (WPB))
- *(six Nations initiative – details required)*

Indigenous People

Indigenous communities represent an important part of rural communities. Efforts to address system employment and education barriers are underway.

The new SN Polytechnic (SNP) facility in Brantford - SNP is delivering high school STEAM programs, technical training for women, and skilled trades training for industry and residents of Six Nations, Brantford and surrounding area.

Entrepreneurship

- Launchit Minto (WPBWWD)

Bruce, Grey Huron & Perth (2019)

Proposed Research: Understanding Workforce Mobility

Four County Labour Market Planning Board

The struggle for workers means that the Four County area needs to pay close attention to its viability as a place to live and work. This can be accomplished by examining Four County's workforce mobility characteristics and trends, as it speaks to the ability to attract workers as well as the propensity to lose workers.

Workforce mobility can be examined from two perspectives: movers and commuters.

The proposed research will analyze mover and commuter data for each County.

Huron County Workforce Attraction and Retention Strategy (WARS)

- #1 challenge is to ensure there are enough workers
- Overall goal is to add 500 people to the workforce

Huron County's plan uses a five pronged approach. A couple of examples are provided of activities proposed under each pillar as follows:

1. Prepare the Community
    a. Support Diversity/Cultural Sensitivity
    b. public awareness
2. Attract People
    a. Newcomer attraction materials
    b. We want you back campaign
3. Hire People
    a. Regional Job Fair attendance
    b. Employer round table
4. Settle People
    a. Housing research
    b. Realtor roundtable
5. Retain People
    a. Social events for recent immigrants
    b. First impressions survey

There are many other useful ideas for activities suggested under each of the five pillars. For more info https://www.ontarioswestcoast.ca/wp-content/uploads/2018/04/Huron-County-Workforce-Attraction-and-Retention-Strategy-2018-2020-V2-1.pdf

The objective of the **Minto Alumni Attraction Program** is to bring back community expatriates who grew up in Minto, moved away, but still have an affinity for the community. For more info www.comehometominto.ca

The program is designed to reach out to these expatriates and remind them of the benefits of living in Minto (access to family and friends, safety, lower cost of living…) so that they will be inspired to 'repatriate'. The model is shown below:

Audience Profile	Message
Tier 1:	**Tier 1:**
High school alumni who left Minto	Emphasize returning to family & friends
People who "grew up" in Minto	Nostalgic – memories of "home"
Aged 30+	Perfect place to raise a family with the ability to do business globally
Community members: parents: teachers and friends – as a channel	A refuge from the city
Tier 2:	**Tier 2:**
Minto youth in College/University	Consider Minto a place where you can come back to when you're ready to start a family
Current high school students	Go and experience new things, we will always be here for you when you're ready to return.
Aged under 30	If you are looking to open your own business, it might be cheater to do it from home or in a rural area.
High school parents	It's much easier to get customers where you know people.
Guidance counsellors	
School teachers (Arts/Business programs)	

Research - Beyond the GTA: Making Immigration Work for All of Ontario, Toronto Workforce Innovation Group (TWIG) 2019

Key Facts Uncovered in the Research

There are still many real and perceived barriers that face immigrants in locating to a non-urban environment and part of a way to address this is information.

There is some evidence that newcomer immigrants will better integrate and have sustainable jobs with improved earning trajectories in rural/remote and small-town communities than if they were in the urban setup. TWIG encourages ongoing research on the challenges and opportunities of labour mobility through the lens of educational attainment of the newcomers.

Immigrants will respond to economic signals when they become aware of them. Willingness to relocate significantly increases with an opportunity to earn higher wages, added job security or an offer of a job more related to the training/education received by the recent immigrant.

Of those who were willing to relocate, the majority preferred larger communities. In other words, the higher the degree of rurality the less likely the recent immigrants would move in that area, indicating that a major determinant of relocation is the level of urbanization of the exact area of move. However, this requires further exploration.

Given the economic imperative to combat aging population, falling birth rates and rising out-migration from the small town/rural communities, there is a need to carry out in-depth analysis and case studies on how we can support immigrants to move into these communities.

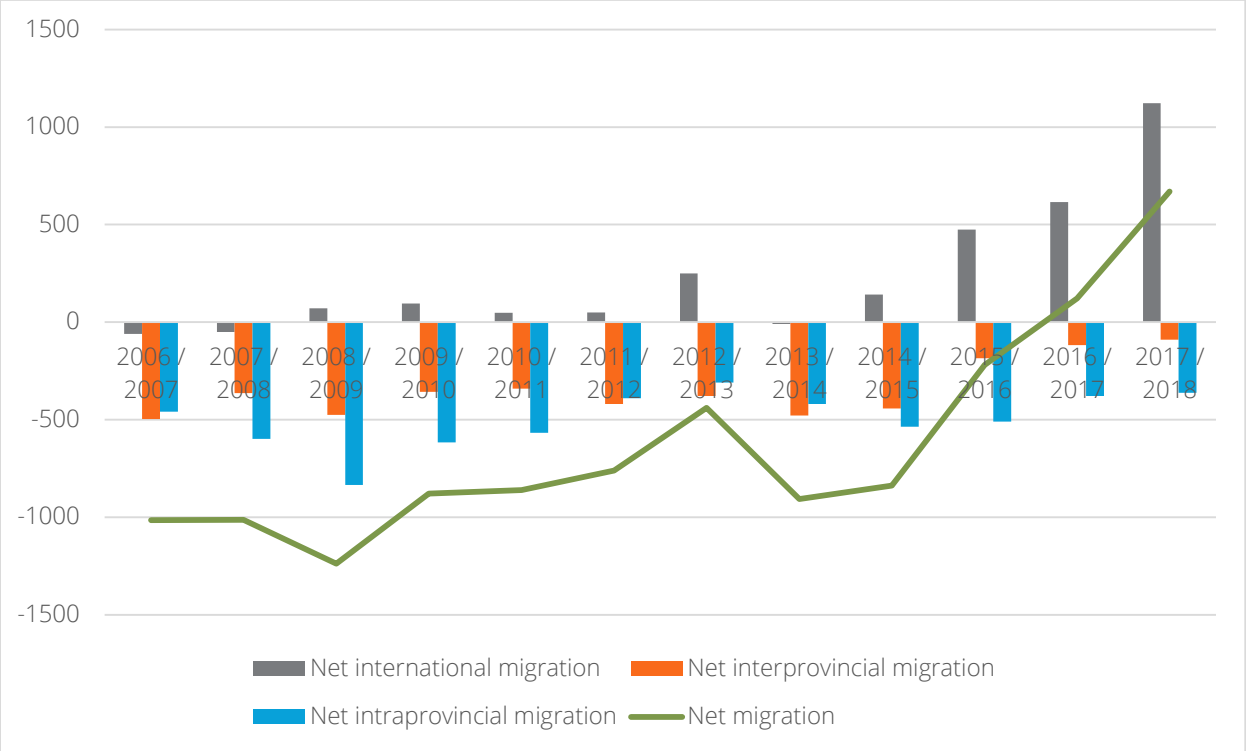
For more info https://drive.google.com/file/d/1aTJrjfSxQFpB1lveh5lXPsrmtPAs7aMC/view

Northern Perspective: Workforce Development in Rural Ontario- A snapshot

Amanjit Garcha

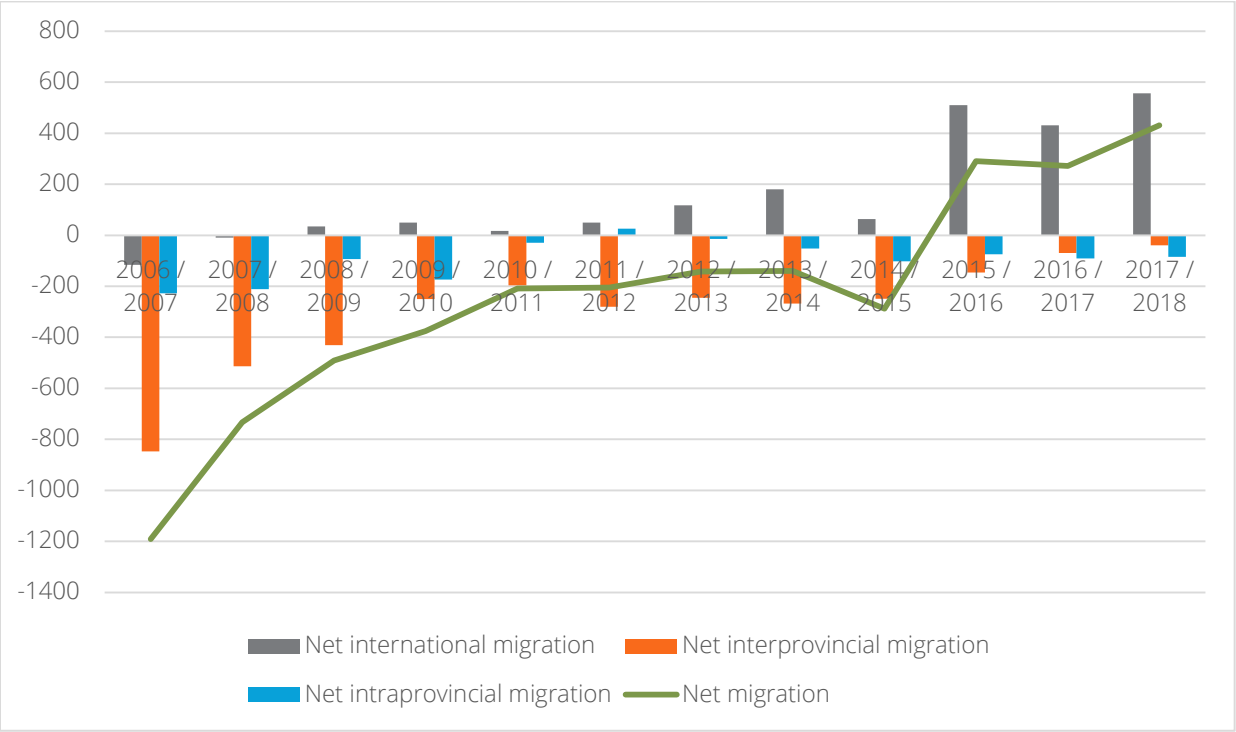
Labour market participation is crucial for the economic viability of communities. In her paper, Simpson observed the top workforce development concern was found to be shortages in the labour market. She notes there is an "inability to retain the existing working age populations between the ages of 25-44 years" within rural communities. A similar trend can be observed across districts in Northern Ontario. Looking specifically at those aged 20 to 29, there is significant out-migration in Northeastern and Northwestern Ontario (Fig.1 and 2). In recent years, positive net migration can be observed in Northern Ontario, primarily from more international migrants moving to the region than those leaving.

Figure 1: Net Migration, 20-29 Age Group, Northeastern Ontario, 2006-2018



Source: Statistics Canada, table #17-10-0138-01, Author's calculations (2019)

Figure 2: Net Migration, 20-29 Age Group, Northwestern Ontario, 2006-2018



Source: Statistics Canada, table #17-10-0138-01, Author's calculations (2019)

Like the rural communities elsewhere, a declining population is a significant concern within northern communities. Northeastern and Northwestern Ontario observed a rising population during the 1980s and 1990s followed by a decline in population during the 21st century. Two major causes have been noted for this decline: out-migration by youth and a fertility rate below the generational replacement rate (Moazzami, 2019). The result is a population comprised of fewer young people to replace the current aging workforce.

As with the rural communities an aging population is a major concern in the north. "Northern Ontario's population is also expected to experience a large shift in its age structure, with the share of seniors in the population there becoming the highest in Canada by 2041" (Zefi, 2018). This is concerning because there will be a greater number of dependents while the number of working individuals who will be supporting the economy declines (Zefi, 2018).

As Simpson notes, immigrants can help to fill the gap in the workforce left by the aging population, falling birth rates and out-migration in rural communities. This is also true for northern communities. In 2016, the labour force participation in Northern Ontario by immigrants was higher than the non-immigrant population apart from Manitoulin (Zefi, 2019b). This is indicative of the potential for increased labour force participants given that immigrants participate in the labour force at higher numbers. Immigrants in northern communities are at an added advantage as they

generally have a higher median income than those immigrants who settle in high-density immigration hubs such as Toronto (Zefi, 2019b).

Investments need to be made in immigration attraction and recruitment programs in the north to provide Northern Ontario with opportunities to benefit from immigration as Southern Ontario has. In her Northern Attraction series Christina Zefi demonstrated how the north lags when compared to the south in attracting newcomers. “From 2011 to 2016, Ontario welcomed 472,175 immigrants; of that number, only 3,305 people, or just 0.7 per cent of the total, came to Northern Ontario” (Zefi, 2019b). Initiatives like the Rural and Northern Immigration Pilot (RNIP) are steps in the right direction. The pilot will be a means for participating communities to attract newcomers and fill skill shortages in local economies (Government of Canada 2019).

Immigrant attraction should not focus solely on international newcomers, consideration should be given to attracting newcomers from communities across Ontario and other provinces. The marketing scheme to attract international immigrants should also be applied to attract young people from Southern Ontario and other metropolitan areas that are unaffordable for young individuals. As Simpson mentions, there is a need to bring the young back by promoting the rural and northern communities. For the north, promoting the attractive housing prices and lower shelter costs for young families among other factors will be key (Zefi, 2019b).

Another means to address the future workforce is to take advantage of what communities have to offer already. Communities in Northern Ontario are at a natural advantage as they have prominent Indigenous communities with a population that is growing. In general, the Indigenous population is younger compared to the non-Indigenous demographic. As such, the young Indigenous population will be a means to address the aging workforce. There is a projected increase in the share of the labour force represented by Indigenous workers as their non-Indigenous counterparts retire (Moazzami, 2019). Provided that the Indigenous labour force will comprise a significant portion of Ontario’s future workforce, it is necessary to invest in educational policies that will enable this demographic to meet future labour market requirements (Moazzami, 2019).

Additionally, to address the workforce shortage, it is necessary to be aware of which sectors are in demand, and which ones will be in demand in the future. In her study Simpson noted that jobs in Skill Group C were in demand across the province, which includes jobs such as industrial butchers, long-haul truck drivers and food and beverage servers. In Northern Ontario, many jobs in demand are classified as Skill Group C or D (Zefi, 2019a). Skill Group C entails intermediate jobs requiring high school and/or job-specific training while Skill Group D entails labour jobs usually requiring on-the-job training (Government of Canada 2018). Existing express entry immigration streams do not include occupations categories C and D (Zefi, 2019a). As such, programs need to be developed that focus on attracting individuals to fill the gaps in these specified industry sectors.

Overall, as Simpson suggests, a review into immigration programs is needed to match the immigrants arriving with the jobs in demand in rural and northern communities. Special attention

needs to be given to northern communities facing skill and labour market shortages as their population demographic shifts.

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