NORTHERN CONNECTIONS

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Issue

Northern Ontario is growing. Between 2016 and 2021, population in seven of the eleven census districts in Northern Ontario experienced population growth. Parry Sound grew by almost 10 per cent. Sudbury, Greater Sudbury, and Nipissing grew, on average, by about 3 per cent.

These are positive developments and a sign that regional development in Northern Ontario is indeed possible. The key to future, sustainable, economic opportunities in Northern Ontario is to maintain and accelerate this population growth. People, after all, are the key to economic prosperity, social improvements, and environmental protection.

How do you attract, and retain, the necessary population in these diverse and geographically dispersed regions? By connecting them, to each other and to the rest of the world through a commitment to public investments in digital and physical infrastructure.

Overview

A Northern infrastructure agenda must account for (1) changing infrastructure needs and (2) the role of government and the role of markets in financing, delivering, and maintaining modern infrastructure assets.

Information and communications technology (ICT)

In 1995 the *Final Report of the Information Highway Advisory Council* first made internet access a priority for Canadian governments. Twenty years later, in 2016, the Canadian Radio-television and Telecommunications Commission (CRTC) established a universal service objective to provide minimum internet speeds of 50 megabits per second (Mbps) download and 10 Mbps upload (50/10). By 2025, or sometime thereafter, we are told all Ontarians will have access to high speed internet at that level.

Yet that minimum standard (50/10) that many in Northern Ontario won't have until five or six (or more?) years from now is already insufficient to the demand for internet capacity. The table below is from Rogers Communications Inc. It provides estimates of download speeds required for online activities, per device (speeds vary based on file size and quality).

Based on these figures it is clear that multiuser households, and any medium-sized business even reasonably active in online sales and marketing, will routinely exceed a 50/10 threshold. Add to that the visions of both the federal and provincial governments of adding to internet demand by providing meaningful access and leadership in digital government (including basic service delivery), and you have a recipe for the internet's version of a brownout due to system overloads. Just ask any northern MP or MPP who has tried to participate in committee meetings remotely these past two years how daunting, and frequent, that problem is.

TABLE 1: Typical Speeds Needed For Common Online Activities

Online Activity	Typical download speed required per device
E-mail and web surfing	0.1 to 1 Mbps
Music streaming	1 to 2 Mbps
SD video streaming	2 to 3 Mbps
Video calls and gaming	3 to 5 Mbps
HD video streaming	5 to 25 Mbps
4K video streaming	25 to 50 Mbps

Lack of Physical Connections

While virtual connectivity is bad in Northern Ontario, physical connectivity is worse. It is 1,500 kilometers from the Ontario-Manitoba border to Ottawa which amounts to a roughly 15-hour drive (in a straight line, which it isn't). A drive of similar length in the other direction would put you well past Banff, Alberta. The key difference however is that, going west (through three provinces), you would spend the majority of your time on a four lane, divided highway (that would change in BC, but let's not digress). On the eastern trek, spent all in one province (Ontario), the percentages would reverse. All but a few hundred kilometers are driven on two lane, narrow shouldered, limited passing, roads. Compared to 4-lane dived highways, these 2-lane roads are both more dangerous and significantly more economically unreliable.

Using data from the *2018 Road Safety Annual Report* Ontario had slightly more than 21 accidents, province-wide, per 100 licensed drivers. Only in Thunder Bay did Northern Ontario score worse than that provincial average, almost 24 accidents per 100 licensed drivers. Unfortunately, you were almost twice as likely to die in an accident in Northern Ontario than in the province as a whole, and three times as likely in the Timiskaming district. Only in Cochrane and Rainy River were your chances of survival better than the provincial average. Now, don't get me wrong: Driving in Ontario overall is a safe activity. We are talking about .26 per cent of all accidents in Ontario being fatal in 2018. But we are also talking about almost one per cent of accidents in the Timiskaming district being fatal. That variance should be a wake up call for us all.

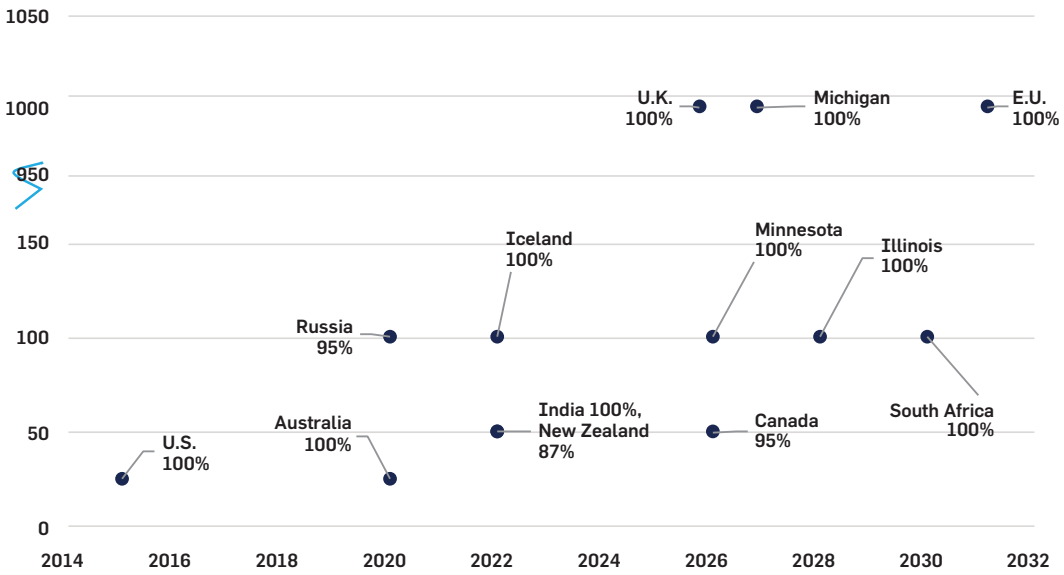
Beyond the immediate suffering and loss for the people involved in these accidents, and the people close to them, there is also an economic cost. One estimate places the costs directly connected to transportation incidents at $3.6 billion, nationwide. Accidents on narrow, two-lane roads, where no real alternative route exists, result in economic interruptions beyond even those direct costs. Road closures, not detours, closures, frequently accompany accidents in Northern Ontario. Not for a twenty-kilometer radius but for hundreds of kilometers in either direction. Recall the headlines when Canada was "cut in two" due to the closure of the Nipigon River Bridge. Again, while it would be unfair to call these closures routine, it is not overstating the case to call them frequent, especially in winter.

The Need For Reform: The Province Needs To Strengthen Northern Ontario's Digital And Physical Connections

So, the key point thus far is that the future of Northern Ontario depends on sustained population growth and that growth will depend in part on better digital and physical connections to the rest of the province, the country, and broader markets.

Let me start with digital infrastructure. Canada's Economic Strategy Tables concluded that internet access and broadband speed are among the digital industries' key performance indicators for 2025. In a world where everyone uses the internet to access care, work, education, and entertainment, 50/10 is simply not enough. Other nations have recognized this and are pursuing far more ambitious internet speed goals than we are. By the time Northern Ontario overcomes its geographical challenges and achieves 50/10, it will already be far behind new global standards and still trailing our economic competitors (see Figure 1). Our current strategy is not to build ourselves into first place, but last. How will that attract the people and capital required to promote sustainable economic growth?

Figure 1: Canada versus a sampling of other state internet speed objectives



% figure indicates population percentage having that internet speed by that date[1]

The service objective of the European Union is the most ambitious reflecting Europe's longstanding initiative to compete with South Korea and Japan for global leadership. The EU's 2021 broadband strategy, "The Digital Compass," specifically tied its 1 Gigabyte per second (Gbps) objective to the empowerment of citizens, 5G network security and sustainability, and the digital transformation of businesses, professions and public services.

[1] Data for Canada from *High-Speed Access for All: Canada's Connectivity Strategy*, by Innovation, Science and Economic Development Canada (2020). Data for EU from *2030 Digital Compass: The European Way for the Digital Decade*, by European Commission (2021). Data for Iceland from *Parliamentary resolution on a twelve-year electronic communications plan for the years 2011-2022*, by Althingi (2012). Data for Illinois from Connect Illinois: Broadband Strategic Plan, by Illinois Department of Commerce of Economic Opportunity (2020). Data for India from *National Digital Communication Policy*, by Government of India (2018). Data for Michigan from Michigan Broadband Roadmap, by Michigan Infrastructure Commission (2018). Data for Minnesota from Broadband Goals (2020). Data for New Zealand from *Broadband and mobile programmes*, by Ministry of Business, Innovation & Employment (n.d.). Data for Russia from "A Sector Assessment: Broadband in Russia," by C.M. Rossotto, et. al., 2015, World Bank Group. Data for South Africa from *South Africa Connect: Creating Opportunities, Ensuring Inclusion*, by Republic of South Africa, Department: Communications (2013). Data for UK from *National Infrastructure Strategy*, by HM Treasury (2020).

Europe's ambitious vision of 2030 is shared with other leaders that Figure 1 does not capture. Other jurisdictions' broadband strategies focus on overall infrastructure goals, rather than speed. For instance, Saudi Arabia was one of the first countries to pursue a broadband strategy that united fixed telecom operators to build an open access, ultra-fast Fibre-to-the-Home (FTTH) network. This model ensures future-proof capacity and network security across the country.

The European Court of Auditors' Special Report No. 12/2018 stated that fibre and cable are the only technologies that can provide Gigabyte fast speeds into the future. Only recently has SpaceX's Starlink entered the North American market, promising future speed offerings of up to 1 Gbps. Starlink satellites are trending in Northern Ontario as current beta testing services offer speeds between 50 and 150 Mbps per download. There are, however, concerns that Starlink's service will slow down as community subscribership increases, and that remote and rural communities will be dependent on a single private American company for essential internet service.

The United States, it should be noted, has one of the lowest national service objectives. Therefore, some states in the US, including Illinois, Minnesota, and Michigan, have established higher objectives than the federal minimum. Ontario could do this too, leading to a high-speed future by setting a speed objective well beyond the federal government.

Ontario should follow the lead of these US states and move ahead of our federal government on this file. Whether or not the CRTC updates its universal service objective to reflect the new global reality, Ontario must set a higher minimum goal if the province truly wishes rural and remote areas, like Northern Ontario, to grow and prosper. **At a minimum, any new investment in ICT by Ontario should deliver not the federal minimum 50/10 standard, but a globally competitive (and new provincial minimum) of 100/30.** Lowballing the minimum internet speed is settling for subpar broadband infrastructure. It dissuades and postpones investment in reliable technology that can deliver future-proof speeds, especially in underserved areas.

In practice, this would then mean working with the federal government and the private sector to leverage provincial investments to achieve a more ambitious target. The higher target may require adjustments in the ratio of public-private investment, particularly in those parts of the province with weaker market returns based on population density. Nevertheless, there is an economic imperative here including due to the ability to leverage internet-enabled technologies in mining, forestry, and other economic activities concentrated outside of major urban centres.

As for physical infrastructure, the commitment to a shared cost national highway system was made in 1949. Almost three-quarters of a century later the roads so designated would be easily recognizable to the people who voted for that legislation. The promise of a national transportation grid has, so far, exceeded the reality. We can change that, and we don't need to make every stretch of our TransCanada highway four lanes and divided to do it.

Analysis of 3-lane "2 plus one" highway systems in north Europe routinely show that they are cost effective to both retrofit and new build. That they are safer, indeed much safer, than older two-lane roads, is important to recognize in light of the data presented below.

In 2003, a report from the National Cooperative Highway Research Program, for instance, showed the early results of 2+1 to be impressive:

- Sweden had observed a 55 per cent reduction in fatal and injury accidents.
- In Germany, 2+1 roads had been found to operate with accident rates 36 per cent lower than conventional two-lane highways.
- Finland's estimate was that accident rates on 2 +1 roads were 22–46 per cent lower than conventional roads.

More recent data shows that those reductions have carried forward over time:

- Between 2000 and 2019, the number of annual road fatalities fell by 63 per cent in Sweden.
- The road fatalities total for Sweden in 2019 was a 17 per cent decrease on the 2010 total.
- The number of traffic deaths per 100,000 inhabitants in Sweden fell by 68 per cent between 2000 and 2019.
- In 2019, 2.2 traffic deaths per 100,000 inhabitants were recorded, compared to 6.7 in 2000. (By way of comparison, the average in the European Union was 5.1 deaths per 100,000 inhabitants in 2019.)

Sweden was recognized in February 2020 with the Global Innovation Award for this remarkable, and remarkably simple, change in highway design.

For twenty years, the data has been available on the impact of 2 + 1 roads, specifically in climates and conditions much like those across Northern Ontario. In 2021, Ontario to its credit committed to a small 2 +1 pilot here in Northern Ontario. It is what comes after this pilot that matters. **If the 2 + 1 pilot is successful, Ontario should commit to working with the federal government to ensure that 2 + 1 roads are in place from Kenora to Thunder Bay (489 km) and from North Bay to Hearst (586 km) within 10 years.**

That will not be cheap. In 2019, the team at Northern Policy Institute estimated that the average construction cost of highways in northern Ontario (most of which are, as noted, standard 2-lane highways) was between $350,000 and $550,000 per km. Let's assume a 2+1 road would be double that. One thousand kilometers of highway at $1 million per kilometer is, in broad strokes, one billion dollars. The entire Northern Highways program was $641 million in 2021 having grown from $630 million in 2017. Setting aside $100 million of the Northern Highways Program on annual basis for 2 + 1 expansion for ten years would be a significant commitment.

Of course, Ontario need not do this alone. Yes, the province itself should commit $50 million a year specifically to 2 + 1 road introduction and expansion in Northern Ontario. This provincial commitment could be conditional on two things: (1)the successful completion of the current 2 + 1 pilot, and (2) a commitment by the federal government to provide matching funds. Both conditions would protect the Ontario taxpayer and highlight that this is a national rather than merely a regional project.

Ontario does not, however, need to wait for federal buy-in to act. The provincial government could start with accelerated construction of the pilot 2 + 1 highway stretches. It could make a clear statement in the near term about how "success" will be measured for the pilot. It could then provide monthly updates on those success measures once the new highways open. At the same time, preliminary community engagement could be initiated now in the corridors targeted for accelerated 2 + 1 expansion. Federal investment would accelerate this process, but as with virtual connectivity, the province cannot afford to wait for federal movement before acting themselves. It may take longer for the province on its own, but the reduction in economic disruptions, accidents, and deaths could begin immediately.

Conclusion

There are significant economic opportunities in Northern Ontario and those will only grow as our population, and our collective brain power, grow as well.

I could have used this memo to speak about the central importance of true nation-to-nation respect and economic partnership with Northern Ontario's Indigenous peoples. It was a difficult choice for me, as the evidence is overwhelming that to grow the North, indeed to grow the entire country, the economic promises made to our First Nations, Métis, and Inuit partners must be fulfilled.

In the end, I decided that reliable connectivity to global markets is a necessary pre-condition to sustainable economic growth for everyone, including Indigenous peoples. Without access to global markets, both digital and physical, the regions of Northern Ontario will never reach their full potential. The promise of a better future together, the promise that rests at the very heart of our treaty agreements, will be lost.

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