

Additional Supporting Information

Impact of the Digital Divide

Digital equality – the equal opportunity for all individuals to benefit from the economic, social, and educational potential of digital technologies and internet connectivity – is a precondition for the health and well-being of our residents, visitors and for cities as a whole. Precarious and unaffordable internet connectivity makes finding employment, obtaining education, and accessing essential services more challenging. It compounds the risk of broader, knock-on costs associated with poverty, including costs absorbed by healthcare, social, and housing services.

Digital access and affordability barriers correlate to underlying issues of social equity; with low-income, racialized, and elderly communities having fewer options for reliable broadband access available to them. The COVID-19 pandemic has highlighted and amplified the consequences of precarious and insufficient access to household internet; with significant costs absorbed by public schools and libraries through their efforts to bridge connectivity gaps in low-income communities.

Specifically:

- Families on fixed income, such as Ontario Works or Ontario Disability Support Program, are forced to make difficult decisions between rent, food, and internet.
- Low-income households are often forced to choose between fixed or mobile connectivity when faced with combined costs that exceed their ability to pay
- The cost of connectivity is not equitable across the region, with some residents in remote locations forced to use expensive cellular services because wired internet services are poor quality or non-existent
- While internet service providers offer reduced rate programs for low-income households, these services do not support the download and upload speeds to support working remotely or participate in online schooling
- During lockdown periods students were directed to online schooling. Families with no internet service found the only way for their children to participate in online school was to take their van full of kids – even in inclement weather – to the local public library or restaurant and remain in their parked cars and access the Wi-Fi services of these establishments.
- The digital divide can create heightened feelings of isolation. Community members can become disengaged with places of worship and community culture centres when they have no means to join virtually. Seniors living in long-term care feel isolated when they cannot have in-person visits with loved ones and have no access to a computer to connect virtually.

- Community organizations face barriers in delivering services to their clients when the community organization itself cannot access high-speed internet.
- GTHA municipalities continue to learn of the issues that our communities and residents face on a daily basis.

Municipal Role

Municipalities are well positioned to improve digital equity by leveraging public assets for public good. Although municipalities have traditionally been absent in oversight and public policy surrounding Canada's broadband service market, cities do have a vital role to play in achieving digital equality, and ensuring their communities are well served. Municipalities have an opportunity to adopt a forward-looking policy position that recognizes broadband internet as an essential service, one that must be available regardless of financial means or circumstances. This policy position is not intended as a means of overseeing, competing with, or compromising the activities of incumbent internet service providers; these entities are strictly regulated by the federal government. Adopting the principle that broadband internet is an essential service signals a municipality's intention to leverage its assets and expertise in public service delivery to work within the CRTC's regulatory framework in an effort to enhance local competition and support digital access for communities in need. Inequality in the availability and affordability of essential services are issues highlighted across a range of existing municipal operations and activities; including in public transportation, education, housing, and public health. Municipal policy and planning activities have recognized the interconnected nature of the services traditionally delivered by municipalities. For example, the public health outcomes associated with lack of affordable housing and transportation inequity. Municipal investment in digital infrastructure and services has the potential to enhance efficiencies in municipal operations and services, facilitate job creation in industries that rely on high-quality broadband, and create a supportive environment for economic growth and prosperity.

Municipalities across the Greater Toronto and Hamilton Area (GTHA) have been working together to build back better. Municipal staff have been having focused discussions and collaboration to determine how the region can best address the digital divide, in partnership with other governments and the private sector. Through this partnership, senior staff of GTHA municipalities have shared their experiences, approaches and rationales for the deployment of fibre broadband infrastructure. They have also shared data and resources to better understand gaps in broadband availability and affordability across the GTHA, as well as reviewed delivery models for Municipal Broadband Network (MBN) deployment.

GTHA municipalities have identified key policy, legislative and regulatory changes that could be made by the provincial and federal governments to better enable all

governments to address the digital divide. Provincial and federal policy objectives, such as healthcare, education, economic development, and access to justice – are enhanced when more residents and businesses are connected to high-speed internet.

Invest in the GTHA

There is an opportunity for the provincial and federal governments to ensure that incremental investments in broadband are made in urban areas and directed to fill gaps in the GTHA. The provincial and federal governments have made positive, much needed investments in broadband, including:

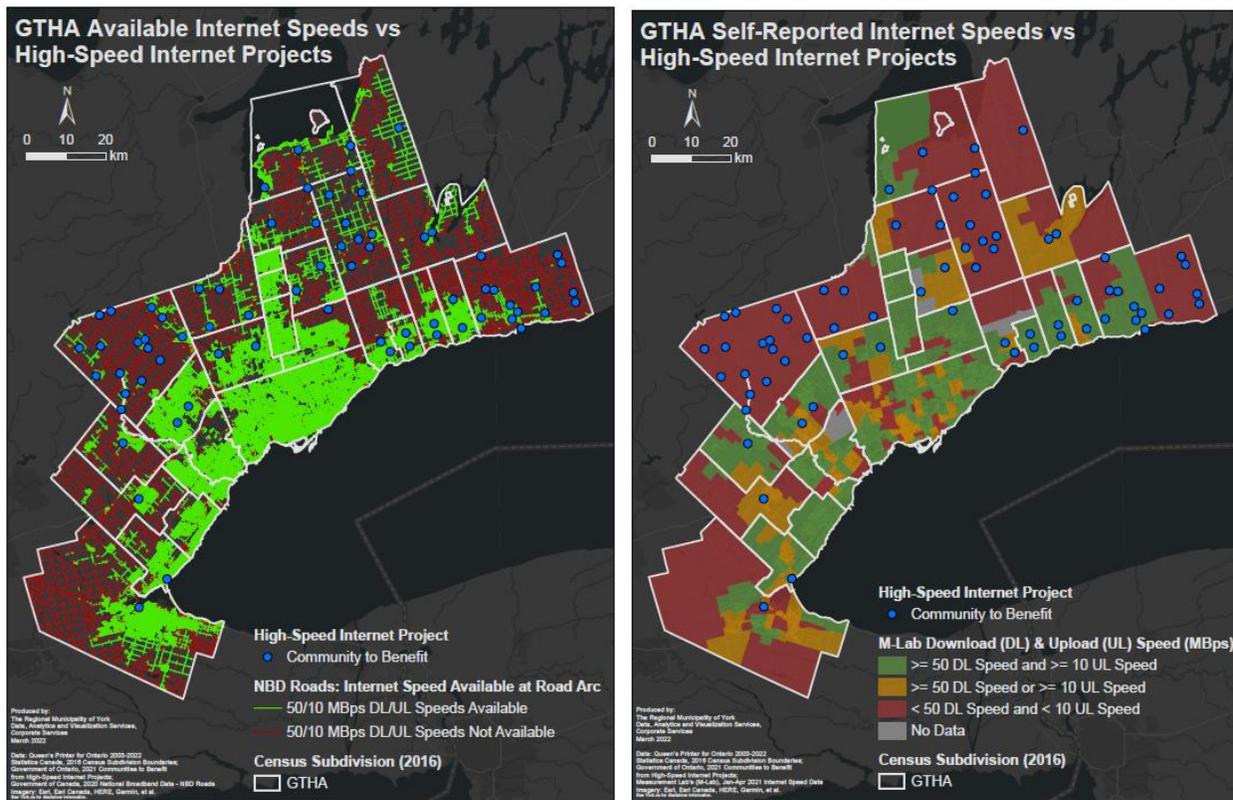
- a commitment of nearly \$4 billion by the provincial government to achieve universal connectivity across Ontario;
- a Joint investment of \$362 million to enhanced delivery of high-speed internet in Eastern Ontario, and;
- \$14.7 million in approved funding for rural and First Nations high-speed internet through Ontario's Improving Connectivity for Ontario (ICON) program.

Investments are largely focused on rural communities, which have more limited broadband access compared to urban centres. Residents in urban centres also face significant barriers to obtaining and maintaining household connectivity. Affordability in urban areas remains problematic, with low-income households (>\$30,000 per year) devoting an average of 10% of their incomes to maintaining connectivity (Communications Monitoring Report, 2019; Brookfield Institute, 2021). Data collected in Toronto in partnership with Ryerson University indicates that 75% of the responding, low-income households without broadband services reside in multistory buildings, cite cost as a barrier, and that the lowest levels of connectivity are amongst residents over the age of 60. Though no similar specific data has been collected for Hamilton, it can be inferred that similar situations exist both in Hamilton and across the GTHA. While governments have implemented programs to provide more affordable internet services to low-income households, these often take the form of discounted service packages with reduced internet speeds. These initiatives have not been sufficient to meaningfully address the affordability challenge faced by many households. Private ISP's have no obligations to maintain these programs over the long-term, posing a risk for low-income households who may come to depend on them.

The federal government's Connectivity Strategy has set 50/10 Mbps (upload/download) as a minimum speed for Canadians. Many residents in the GTHA receive speeds below this minimum. As shown in Figure 1, residents in significant portions of the GTHA indicate gaps in the availability of 50/10Mbps internet service in urban areas, despite the existence of digital infrastructure in neighbourhoods that have the capacity to provide these internet speeds. The map on the left depicts where 50/10 Mbps internet

speeds area available,¹ while the map on the right depicts residents' self-reported internet speeds using public diagnostic tools.² In addition to rural communities that are generally known to lack high-speed internet access, large areas in urban centres also lack adequate connectivity. In August 2021, the Governments of Canada and Ontario announced an investment of \$230 million to bring high-speed internet to Central Ontario. The blue dots on the below maps indicate communities benefiting from this funding in the GTHA.³ While many rural communities are receiving needed investments, there is an opportunity to make incremental digital infrastructure investments in urban areas of the GTHA.

Figure 1: Internet Speeds across the GTHA⁴



There are opportunities to make investments in broadband infrastructure in the GTHA to improve broadband access, quality, and affordability. Broadband funding is most impactful when it is non-discretionary, directed at communities where there is evidence-based and demonstrable need, and where local competition between service providers

¹ Data was derived from the [National Broadband Data - Roads](#) dataset downloaded from the Canadian Government's [Open Data Portal](#) (data extract last updated March 2020)

² Data retrieved from Measurement Lab's (M-Lab) Network Diagnostic Tool between January and April 2021, which collects speed test data from a variety of common speed test platforms.

³ Data retrieved from <https://news.ontario.ca/en/backgrounder/1000678/ontario-and-canada-bringing-high-speed-internet-to-central-ontario>

⁴ See Figures 2 and 3 for enlarged graphics

is enhanced. Many rural areas of the GTHA meet these criteria and provincial and federal investments are needed. In addition, in many urban areas it can be cost prohibitive for ISPs to deploy higher capacity fibre infrastructure, especially in neighbourhoods comprised of older multi-dwelling units. In these scenarios, incumbent service providers have few market incentives to upgrade legacy infrastructure where higher cost services are otherwise unaffordable for low-income households. This dilemma is compounded where there are little to no local competitors. Investments from provincial and federal governments to subsidize upgrading of legacy infrastructure, and incentivize new ISPs to deploy additional fibre, can improve the affordability of high-speed internet for low-income urban households.

Enable municipalities to invest in and use existing fibre more effectively

GTHA municipalities own broadband fibre across the GTHA. Municipalities across the GTHA have identified and mapped municipally owned fibre that may be leveraged, to help close the digital divide. The purpose and use of municipally-owned fibre varies across the region. Some municipalities primarily utilize their fibre to support municipal operations, such as transit systems and traffic management systems. Other municipalities have developed delivery models to allow private internet service providers to lease the use of municipally-owned fibre to provide high-speed internet services to residents without incurring the significant costs of deploying "middle mile" fibre infrastructure themselves. These cost savings can then be passed on to the customer. Open access models such as this, where private ISP's provide residential and business services by connecting to municipally owned fibre broadband networks, are examples of public sector investments being leveraged to provide affordable high-speed internet to residents. Municipalities are not taking on the role of an ISP, but rather working within the existing competitive market to enhance competition and lower costs.

Identify provincially owned fibre that can be leveraged to help close the digital divide

GTHA municipalities would benefit from the province identifying provincially owned fibre assets that can be leveraged to help close the digital divide. Provincially-owned fibre – for example at hospitals, universities, colleges, and regional transit – can be used for to help address the digital divide. By identifying where provincially-owned fibre exists across the GTHA, municipalities could work with the broader public sector to leverage our collective fibre assets. The Province could play a leadership role by supporting the identification and mapping of this fibre. In turn, the Province could work with municipalities to leverage collectively owned fibre and work in partnership with internet service providers to address the digital divide.

Collect and share local level data

GTHA municipalities would be better positioned to invest in and use municipally-owned fibre more effectively if the federal government collects and shares local level data on assets, internet speeds, and service terminations/collection activities, in cooperation with internet service providers (ISPs). Internet service disconnections resulting from inability-to-pay are problematic, especially for low-income households with children. Research indicates internet service disconnections can compromise a low-income household's ability to work within already strained household budgets.] Cities do not have access to this data from ISPs. This inhibits municipalities' ability to make data-informed decisions on how to most effectively leverage municipal resources and municipally-owned fibre to address the digital divide. Having access into ISPs assets, internet speeds available across the region, and data on service terminations, along with mapping of provincially owned fibre, would better enable municipalities to make targeted investments and work with service providers more effectively to ensure residents receive adequate internet connectivity. The competitive interests of ISPs – who benefit from significant investments of public capital and resources – can still be maintained with data sharing agreements containing appropriate non-disclosure provisions.

Enable municipalities to more easily promote access to their fibre

The federal government has an opportunity to enable municipalities to more easily promote access to their fibre for public and private services by requesting the CRTC to define municipal entities as a special class of carrier subject to exemption from sections of the Telecommunications Act, and with specific conditions related to service capacity. The CRTC has the authority under the Telecommunications Act to exempt classes of carriers from obligations under the Act if it deems doing so is in the public interest. Currently, cities can be perceived as having an undue advantage compared to ISPs when using their broadband to provide access to residents. Defining municipal entities as a special class of carrier subject to exemptions under the Telecommunications Act would create more options and flexibility for cities in providing broadband services on their own networks, especially in markets dominated by incumbents.

No revisions to the Telecommunications Act are requested, rather, GTHA municipalities request clear guidelines for the CRTC in adjudicating on matters related to municipal carrier entrants to the internet service market (i.e. as facilities-based resellers). This could be accomplished through an exemption order made by the CRTC. Non-dominant service providers constitute a fraction of revenues from national telecommunications services. Municipal carrier entrants, operating under strict capacity and revenue conditions, would not enjoy undue advantage nor pose a risk of disrupting competition in their local markets.

Ensure that new developments include digital infrastructure

GTHA residents would benefit from the provincial government reviewing legislation to include provisions on open access to telecommunications cabling and trenching activities for all developments. This could be achieved by amending the Planning Act Section 41, Site Plan Approval, and Section 51, Subdivision Approval. Developers currently submit development coordination plans, but there is no requirement for this plan to include details about how a new development will be connected to the internet. Currently, developers may negotiate exclusive access agreements with preferred ISPs, which reduces competition and options available to residents. In the case of multi-unit dwellings, these agreements risk contravening provisions in the Telecommunications Act meant to prevent anti-competitive practices.

Amending the Planning Act Section 41, Site Plan Approval, and Section 51, Subdivision Approval to require internet connectivity as a component of development approvals would give municipalities the ability to ensure all new development includes the digital infrastructure that residents and businesses need to thrive and compete in the digital economy. GTHA municipalities will collaborate with appropriate stakeholders to ensure these changes are implemented effectively. Requiring internet connectivity could take the form of ensuring that all new development have adequate conduits that can be used for fibre optic cable, along with the usual duct bank. This would give municipal planners a role in closing the digital divide by ensuring that all developments have proper connectivity. Well planned developments typically include adequate internet connectivity; however, making it a requirement would ensure high-speed internet in all new developments and prevent anti-competitive practices. New, innovative technology, such as 5G, will require expansive hard-wired fibre optic connectivity. This proactive requirement would avoid further risk to already congested public rights-of-way, particularly in the region's downtowns and urban centres.

Given the essential nature of an internet connection, it is important that connectivity be recognized as an important planning feature, in the same way that we plan for other essential infrastructure such as sewer and water connections. Adding connectivity to the planning approval process will also enable municipalities to help deliver on key provincial policy objectives including remote delivery of health care services and accelerated access to justice with expansion of remote hearings and digital case management.

Recognize broadband as an essential service

A firm federal position is still required to recognize high-speed internet access as an essential service, with a commitment to ensure access regardless of financial means. Such a declaration is most effective coming from the CRTC, as opposed to provincial or municipal governments who have little to no regulatory authority in telecommunications. The CRTC has the most impactful legislative and policy tools available to ensure

access. In 2016, CRTC defined broadband as a "basic" service, signalling the commission's intention that the service should be universally available to households. However, the CRTC did not exercise its authority to direct network deployments and has not compelled ISPs to provide broadband to all households. By declaring broadband access as an essential service, it would be given the prominence of other services deemed vital to health, safety and societal functioning, and provide a rationale for direct statutory intervention in its provisioning and pricing.

A focused effort on the affordability of high-speed internet is critical to address the digital divide. Across the region, and especially in urban areas, the inability for residents to access adequate connectivity is often a result of unaffordable prices for low-income households. A foundational step in addressing affordability is creating a definition for affordability that combines fixed and mobile costs as a percentage of household income. This should be set by the federal government. Currently, there is no accepted definition of affordable internet service. Unlike parallel essential utilities and services (e.g., electricity), retail broadband pricing does not benefit from direct regulatory oversight. However, a definition of affordability would create a critical target for government and private sector partners to drive towards. According to the CRTC, fixed and mobile internet costs average 6% for low-income households versus 1.5% for higher-income users.

Sources

Brookfield, 2021: Mapping Toronto's Digital Divide.

<https://brookfieldinstitute.ca/mapping-torontos-digital-divide/>

Communications Monitoring Report, 2019.

<https://crtc.gc.ca/eng/publications/reports/policymonitoring/2019/cmr1.htm#a3>

Map Attribution

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Data: Queen's Printer for Ontario 2003-2022

Statistics Canada, 2016 Census Subdivision Boundaries; Government of Ontario, 2021 Communities to Benefit from High-Speed Internet Projects; Measurement Lab's (M-Lab), Jan-Apr 2021 Internet Speed Data; Government of Canada, 2020 National Broadband Data - NBD Roads

Imagery: Esri, Esri Canada, HERE, Garmin, et al.

See York.ca for disclaimer information.

Figure 2: Available Internet Speeds across the GTHA

