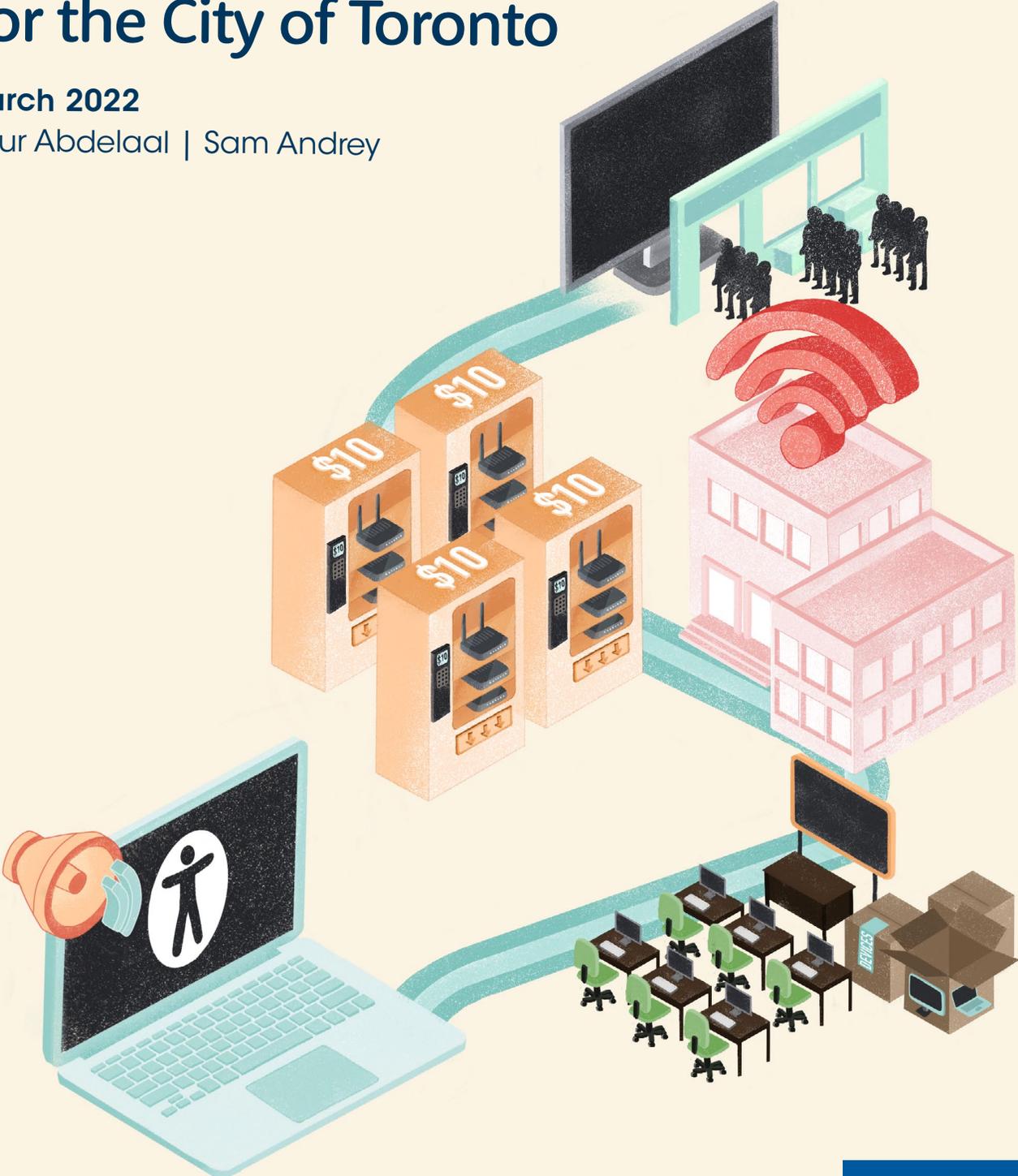


Towards a Digital Equity Policy

For the City of Toronto

March 2022

Nour Abdelaal | Sam Andrey



Presented by



The Ryerson Leadership Lab is an action-oriented think tank at Ryerson University dedicated to developing new leaders and solutions to today's most pressing civic challenges. Through public policy activation and leadership development, the Leadership Lab's mission is to build a new generation of skilled and adaptive leaders committed to a more trustworthy, inclusive society. For more information, visit ryersonleadlab.com. [@RULeadLab](https://twitter.com/RULeadLab)



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CONTRIBUTORS

Nour Abdelaal, Policy Analyst, Ryerson Leadership Lab

Sam Andrey, Acting Executive Director, Ryerson Leadership Lab

Ana Qarri, Policy Analyst, Ryerson Leadership Lab

Zaynab Choudhry, Design Lead, Ryerson Leadership Lab

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EXECUTIVE SUMMARY

Despite nearly all households in Toronto being able to connect to some of Canada's fastest internet infrastructure, socioeconomic and demographic factors continue to sustain affordability and access barriers within Toronto's equity deserving communities. Low-income households, older adults, Indigenous peoples, and people with disabilities consistently report lower rates of internet connection, use and digital skills.¹ The City's digital divides consist of interrelated factors, all impacting residents' ability to meaningfully use digital services. These include the affordability of internet services, the sufficiency of internet speeds accessed, access to digital devices, digital literacy, digital accessibility and experiences of online safety.

An equity-focused approach to developing Toronto's digital infrastructure requires uncovering and learning from digital connectivity gaps to develop evidence-informed policies and programs that better target marginalized groups' unique digital needs and ensure all people in Toronto can meaningfully access and use digital services.

In the face of ongoing disparities in digital access, the federal government has recognized the necessity of internet access for Canadians and the economy, with the CRTC declaring broadband internet access a "basic telecommunications service" that is essential to quality of life in 2016.² Through the establishment of a universal service objective, the CRTC aims to provide the digital infrastructure necessary to provide all Canadian households and businesses the ability to access a fixed broadband Internet service with speeds of at least 50 Mbps download, 10 Mbps upload and have an unlimited data allowance.³ Federal and provincial governments are engaged in efforts to deliver this service objective to all Canadians through public and private infrastructure investments, but this objective does not ensure that all Canadians are able to use or can afford to subscribe to the available service.

Scholars, legislators and international organizations such as the United Nations have argued that the equitable access to the internet is an essential enabler of individuals' ability to exercise their other fundamental rights, particularly freedom of expression and access to information.⁴ Other countries, such as Brazil, Costa Rica, France and Mexico, have formally recognized access to the internet as a basic right.^{5 6 7} Taking a human rights approach to digital equity, it can be argued that the internet has become an essential public service that should be regulated and protected by the government to ensure universal access for all people.

The City of Toronto's Digital Infrastructure Plan aims to modernize and formalize how the City approaches digital infrastructure development and is founded on a set of six guiding principles, one of which focuses on ensuring the presence of equity and inclusion in the City's decisions regarding digital infrastructure.⁸

This report outlines considerations to inform the City's approach to digital equity and provides evidence-informed analysis of where gaps in access persist, what types of digital barriers continue to impact equity-deserving groups and the initiatives that have and should develop to close digital connectivity gaps in Toronto. As Toronto has previously committed through the Declaration of Cities Coalition for Digital Rights,⁹ everyone should have access to affordable and accessible internet and digital services on equal terms, as well as the digital skills to make use of this access and overcome the digital divide.

Based on this research and engagement, we offer five policy recommendations to inform the City of Toronto's digital equity policy and advance the right to internet access:

1. Set a **universal digital connectivity objective** for the City: regularly track the percentage of Toronto residents that are adequately connected to the internet and digital services, and work to close persistent gaps in connectivity in specific communities.
2. Facilitate or subsidize **discounted prices for home internet** to all City residents below the poverty line, particularly those receiving social or housing assistance through the City, and ensure services are provided at sufficient speeds.
3. Direct infrastructure investment to the deployment of **City-owned, open access broadband networks** that increase public access, control and competition.
4. Develop a cross-sectoral network of public, private, and community organizations to coordinate and strengthen initiatives focused on enhancing **digital literacy and access to devices and software** for underserved and vulnerable communities, and ensure all of the City's surplus technology is donated for refurbishment and reuse.
5. Strengthen accessibility standards and initiatives to **remove digital inclusion barriers for people with disabilities**, including greater enforcement mechanisms.

Towards a Digital Equity Policy

For the City of Toronto

1. DIGITAL EQUITY GOAL

Set a **universal digital connectivity objective** for the City to track the percentage of Toronto residents that are adequately connected to the internet

2. AFFORDABILITY

Facilitate or subsidize **discounted prices for home internet** at sufficient speeds to all City residents below the poverty line

3. COMMUNITY BROADBAND

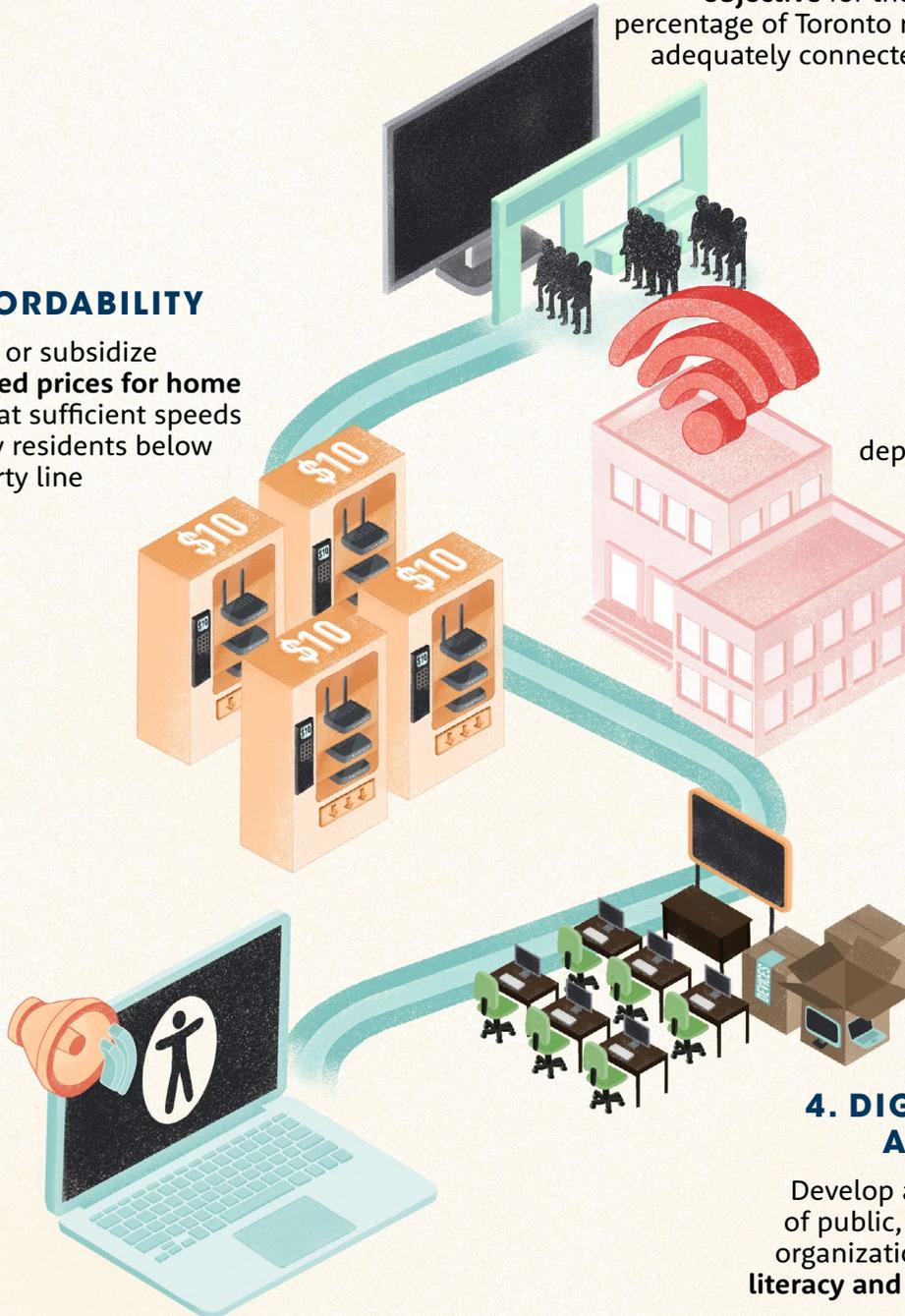
Direct infrastructure investment to the deployment of **City-owned, open access broadband networks**

4. DIGITAL LITERACY & ACCESS NETWORK

Develop a cross-sectoral network of public, private, and community organizations to coordinate **digital literacy and device access initiatives**

5. ACCESSIBILITY & INCLUSION

Remove digital inclusion barriers for people with disabilities and establish greater enforcement mechanisms of **digital accessibility standards**



BACKGROUND



Solutions to enhance digital equity in Canada have to date focused primarily on expanding digital infrastructure to rural and remote communities without adequate internet access. While progress has been slow, the good news overall is that gaps in basic internet access are closing. Connection rates for home internet have been steadily increasing in Canada from 76% in 2010 to 95% in 2020,^{10 11} with 97% of households in Toronto now having an internet connection at home.¹² Although most Toronto residents live where there is the infrastructure to connect to the internet, still a greater proportion of low-income individuals, older adults, and people with disabilities are not connected to home internet service at sufficient speeds.

The digital divide is the gap that exists between those that do and do not have access to digital services, which includes access to sufficient internet services and digital devices at home. Closing gaps to provide equitable digital access also includes developing an understanding of why certain groups are not digitally connected, including whether internet access for those who are connected is both sufficient to their needs and affordable.

According to the National Digital Inclusion Alliance in the United States, digital equity refers to the condition in which “all individuals and communities have the information technology capacity needed for full participation in our society, democracy and economy.”¹³ Achieving digital equity is critical as individuals’ ability to access digital spaces has become necessary for civic participation, employment, learning and access to essential services. Enhancing digital equity involves more than expanding internet infrastructure to

unconnected households. More broadly, digital equity involves expanding access to additional supports to ensure individuals can meaningfully use digital services to meet their needs, such as: expanding access to digital devices and softwares needed to connect to the internet service; enhancing digital literacy to enable skilled use of these devices, software and services; promoting online safety and security to enable individuals to use services with confidence; and ensuring the accessibility of online services to achieve equitable access for all people in Canada.

The Covid-19 pandemic further brought to the forefront the urgency of closing gaps in digital connection in Toronto. The closure of public and civic spaces and the expansion of remote work and online delivery of critical government services during the pandemic has made equitable access to digital services more crucial than ever before. Nearly half of people in Canada aged 18 to 65 (43%) said they used the internet to work from home more often than before the pandemic, with 12% using the internet to work from home for the first time.¹⁴ The flexibility of work-from-home measures has also encouraged businesses and organizations to adopt a hybrid model of in-person and remote work on a long-term basis. According to Statistics Canada, 80% of new remote workers indicated that they would like to work at least half of their hours from home once the pandemic is over and up to one quarter of total work hours may remain remote even after the pandemic ends.¹⁵

The pandemic was also accompanied by an increase in personal internet use; more than one-quarter (27%) of people in Canada spent 20 hours or more per week on the Internet for personal use in 2020, up from 19% in 2018.¹⁶ During the

pandemic, people in Canada most commonly used the internet to conduct online banking (75%), access online government services (74%), research information on health (69%), book appointments (48%), and take formal training or learning (24%).¹⁷

In Toronto, students and families were also significantly impacted by the transition to virtual education throughout the waves of the pandemic. This posed significant challenges to students without sufficient internet access or speeds at home or access to updated technology devices conducive to the completion of sophisticated tasks, such as completing assignments or engaging in online learning activities.¹⁸ A Statistics Canada study found that 26% of postsecondary students had some of their courses postponed or cancelled as a result of the pandemic.¹⁹

Evidence suggests that the adoption of online learning and virtual school formats have not been equal across all demographic groups.²⁰ Studies from the Greater Toronto Area analyzing the demographics of schooling choice during the pandemic found that “families living in neighbourhoods with lower incomes and with more racialized residents were more likely to choose online schooling,”²¹ the same groups facing increased risks associated with Covid-19.²² With lower income and racialized groups more likely to opt for virtual learning, access to sufficient internet services and technology devices for these groups becomes more critical to eliminate educational gaps between online and in-person learners.²³ Students in Toronto from marginalized and vulnerable communities have also reported lower educational attainment and mental well-being compared to before the pandemic.²⁴

As internet access becomes more essential to the day-to-day functioning of people in Toronto, concerns over further marginalization of underserved groups have only grown stronger. The pandemic has shown how digital access impacts individuals’ life outcomes including educational attainment, access to work opportunities, health outcomes, social inclusion and financial stability. For example, technological capacity increases individuals’ economic resilience and compliance

with health regulations by improving their ability to operate through digital spaces. A Statistics Canada study found that digitally-intensive sectors were less economically impacted by the pandemic than non-digitally intensive sectors.²⁵ Moreover, the initial shock of the pandemic decreased overall employment in technology by only 4.2% and by May 2020 employment in technology jobs had fully recovered to pre-pandemic levels.²⁶

Another U.S. study of mobile devices found that unequal access to high-speed internet significantly impacts the ability of people to stay at home and drove much of the observed income correlation with stay-at-home compliance.²⁷ Without access to adequate digital services, marginalized communities will continue to face greater economic and health risks in times of crises.

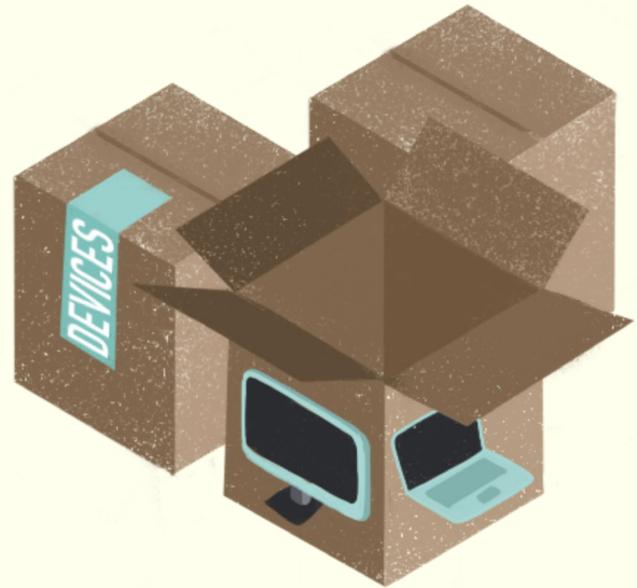
Moreover, for employees to be competitive in the labour market in an increasingly more digital economy, digital skills have become a necessity. Using an examination of job posting data from 2012 to 2018, a report by the Brookfield Institute found that fluency in Microsoft Excel, Office, Word and PowerPoint were among the top four most frequently mentioned skills in job postings.²⁸



Fluency in Microsoft Excel, Office, Word and PowerPoint were among the top four most frequently mentioned skills in job postings

Although the most in-demand digital skills in the Canadian economy involve the ability to navigate everyday data management softwares, more digitally-intensive skills are beginning to see greater demand including programs such as SQL, a database querying software, signaling the growing importance of data analysis expertise in the Canadian economy.²⁹ Digital equity policies that focus on the expansion of digital literacy skills will help ensure that all Torontonians have equal access to work opportunities and can enhance individuals’ social mobility to enable all people to achieve their full potential.

THE RIGHT TO INTERNET ACCESS



There are broadly three models of internet service provision within a rights-based framework, which can frame the provision of internet services as:

- a positive right (i.e., governments are obliged to actively provide internet connection for all eligible people);
- a negative right (i.e., the government cannot prevent or hinder access to the internet); or
- the establishment of a universal service objective (i.e., ensuring all people can access internet service infrastructure, sometimes at designated speeds or prices).

In our review, there are no jurisdictions that have firmly established the provision of high-speed internet services as a positive right for all residents. Some countries, namely Brazil, Costa Rica, France and Mexico, have recognized the ability to access the internet as a negative right, generally in the context of the state not barring individuals from accessing the internet. Most countries implementing initiatives to expand internet service provision, including Canada as well as Estonia, Finland and Spain, have established versions of a universal service objective that formalize the country’s goals to expand internet infrastructure to all residents.

Access to the internet has become a key determinant of individuals’ health, social and economic conditions. A rights-based framework of internet access highlights the increasing necessity of broadband for social participation, economic prosperity, business growth and the delivery of other essential online government services. Barriers to equitable internet connection persist due in part to Canada’s reliance on a market-driven telecommunications system that allows private internet service providers (ISPs) to price sufficient access beyond the reach of some individuals.³⁰

Eubanks’ “distributive paradigm” for access outlines how the equitable distribution of goods and services can help individuals better exercise their fundamental rights and support society in achieving social justice, defined as the “morally proper distribution of social benefits and burdens among society’s members.”³¹ Human rights scholarship related to technology access underscore that the successful realization of individuals’ rights and freedoms requires building capacity within underserved communities, specifically through the equitable distribution of essential services and resources, such as the internet.³²

FREEDOM OF EXPRESSION AND COMMUNICATION

Canada's Charter of Rights and Freedoms protects freedom of expression, including freedom of the press and other media of communication. International law emphasizes the importance of internet access for realizing individuals' rights to freedom of expression and communication. Article 19 of the United Nations' Declaration of Human Rights (UNDHR) states that "everyone has the right to freedom of opinion and expression; this right includes freedom...to seek, receive and impart information and ideas through any media and regardless of frontiers."³³ While internet access does not directly appear in the UNDHR, Article 19 posits that mediums of expression, which include the internet and related digital spaces, are a critical component of individuals' ability to exercise their freedom of expression.³⁴

In the 2010s, further developments emerged globally that established a more pronounced link between access to the internet and human rights. For example, in 2011, the UN Special Rapporteur for Freedom of Expression highlighted that the internet can play a pivotal role in "mobilizing the population to call for...better respect for human rights."³⁵ Moreover, in 2016, a United Nations' statement encouraged the promotion, protection and enjoyment of human rights on the Internet for all people, making reference to the right to freedom of opinion and expression, but also to the internet as a facilitator for enjoying other fundamental rights such as accessing information for education.³⁶ In a 2018 resolution, the UN Human Rights Council reaffirmed the "importance of applying a comprehensive human rights-based approach in providing and expanding access to the internet."³⁷

Canada is a founding member of the Freedom Online Coalition (FOC), which comprises 33 countries that collaborate to support internet freedom and advance human rights online.³⁸ *The Tallinn Agenda – Recommendations for Freedom Online* was unanimously adopted by FOC members in 2014 and affirms "the fundamental importance that non-discriminatory access to and accessibility

of the internet have for exercising the freedom to seek, receive and impart information."³⁹ Members committed to "supporting digital literacy to empower internet users to make informed decisions, promote their access to information and economic opportunities, and protect their human rights and fundamental freedoms with particular attention being paid to the challenges faced by persons and groups in a vulnerable position or who are subject to discrimination."⁴⁰

The FOC also supports the Human Rights Council's Statement on Digital Inclusion in March 2020, which urges governments to address the lack of digital inclusion and the subsequent persistence of digital divides, with explicit reference to the "adop[ti]on] of human rights-based approaches to access [as] an important enabler of digital inclusion that both encourages open dialogue online while providing safeguards for vulnerable populations."⁴¹ Toronto and 50 other cities are also signatories to the Declaration of Cities Coalition for Digital Rights, which is committed to the evolving principle of "universal and equal access to the internet, and digital literacy," stating that "everyone should have access to affordable and accessible internet and digital services on equal terms, as well as the digital skills to make use of this access and overcome the digital divide."⁴²

Jurisdictions that have explicitly formalized internet access as a right have done so in the context of reinforcing fundamental freedoms of expression and access to information. For example, Mexico's *Human Rights and Guarantees of the Political Constitution* affirms internet access as a human right that is guaranteed by the State,⁴³ including access to information and communication technology, radio broadcast, telecommunications and broadband Internet.⁴⁴ Moreover, Brazil's *Marco Civil Law of the Internet* which was enacted in 2014 stipulates that internet use in Brazil must guarantee freedom of speech, communication and expression of thought in accordance with the Constitution.⁴⁵ Moreover, the law stipulates that internet use in Brazil aims to "promote the right of all to access the internet, to information, to knowledge and participation in the cultural life and in the handling of public affairs."⁴⁶ The law also

posits that “access to the internet is essential to the exercise of citizenship” and that a “guarantee to the right to privacy and freedom of speech in communications is a condition for the full exercise of the right to access the internet.”⁴⁷

Moreover, the Constitutional Court of Costa Rica declared access to the internet “a fundamental right of citizens” in 2010.⁴⁸ The decision relates access to the internet with the right to information and communication, understood as “the right of all people to access and participate in the production interchange and free flow of information and knowledge” and making access to the internet and its content a fundamental requirement for the entire population of Costa Rica.⁴⁹ Costa Rica’s Chamber IV argued that the inability to access the internet significantly impacts citizens’ exercise of other fundamental rights such as democratic participation, education, and freedom of expression and thought and freedom of choice for consumers.⁵⁰ Similarly, the Constitutional Council of France previously ruled that the free communication of thoughts and opinions is critical to the protection of human rights and the Council deemed that this right includes access to the internet.⁵¹

UNIVERSAL SERVICE OBJECTIVES APPROACH

In Canada, government responses have mainly focused on establishing a universal service objective to ensure the expansion of adequate internet infrastructure to all people. Both the federal and provincial governments have a supporting role to play in enabling municipalities such as Toronto to effectively expand internet access to all residents.

On a federal level, Canada’s *Telecommunications Act* affirms the essential role of telecommunications for all people in Canada.⁵² The act sets the objective “to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada.”⁵³ Moreover, the CRTC has recognized the necessity of internet access for Canadians and the economy, declaring

internet access a “basic telecommunications service” that is essential to quality of life in 2016.^{54 55} The CRTC established a universal service objective, which aims for “Canadians, in urban areas as well as in rural and remote areas, [to] have access to broadband Internet services, on both fixed and mobile wireless networks.”⁵⁶ Although universal service objectives are a tool to set expectations in the delivery of telecommunications services, they do not guarantee human rights and equitable access are being protected for all people in Canada.

To measure the successful achievement of its objective, the CRTC aims to have Canadian households and businesses be able to access a fixed broadband internet service with speeds of at least 50 Mbps download, 10 Mbps upload and have an unlimited data allowance.⁵⁷ This objective refers only to the infrastructure being in place to facilitate this service at any price. Moreover, the federal government’s *High-Speed Access for All: Canada’s Connectivity Strategy* sets out the government’s commitment to make high-speed internet available to all Canadians.⁵⁸ The strategy aims to deliver 50/10 Mbps connectivity to 90% of Canadians by 2021, 95% of Canadians by 2026, and the hardest-to-reach Canadians by 2030. The strategy also commits the government to working with Indigenous communities to address their connectivity challenges.⁵⁹

Provinces across Canada have implemented their own programs that recognize the importance of internet access and seek to expand internet connectivity to underserved groups. For example, in Ontario, the *Supporting Broadband and Infrastructure Expansion Act* was enacted in 2021 to facilitate the delivery of broadband projects in the province through streamlining processes.⁶⁰ Ontario’s Up to Speed plan and the Improving Connectivity for Ontario program also aim to expand broadband access and address market gaps by supporting projects that aim to bring reliable, high-speed internet, with a focus on remote and rural areas.⁶¹

In a City of Hamilton Council motion titled *Feasibility of Connectivity Options to Help Address*

the *Digital Divide* in November 2020, the City explicitly recognized that “internet is an essential means of communication, forming an invaluable informational, educational and economic utility that should be accessible to all Hamiltonians irrespective of income.”⁶² Through the motion, City staff are directed to “work with HCE Telecom and partners to explore the feasibility of connectivity options to help address the digital divide and become a recognized leader in providing public Internet access and connectivity infrastructure.”⁶³

Other jurisdictions, such as Estonia, Finland and Spain, have also implemented a universal service objective approach to expanding internet infrastructure. Under Chapter 7 of Estonia’s *Electronic Communications Act* in 2004, internet access falls under the law’s regulations on the provision of a universal service, which by definition is required to be available to all “regardless of the location of the end-user, uniformly and at an affordable price.”⁶⁴ A 2009 amendment to Finland’s *Communications Market Act* established access to the internet as a universal service obligation, stipulating that the service should

be provided at “the user’s permanent place of residence or location” and “at a reasonable price and regardless of the geographic location.”⁶⁵ In addition, the service should be provided in a way that allows “all users, including those with disabilities,” an appropriate internet connection, “taking into account prevailing rates available to the majority of subscribers, technological feasibility and costs.”⁶⁶ The amendment established that all Finnish citizens will have a “legal right” to access a 1 Mbps broadband connection, reportedly making Finland the first country to accord such a right.⁶⁷ Furthermore, Article 52 of Spain’s law on *Sustainable Economy* establishes broadband internet access at a speed of 1 Mbps as a universal service “guaranteed by the universal telecommunications service.”⁶⁸



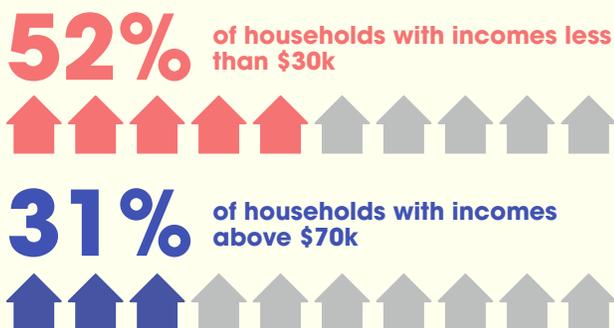
DIGITAL EQUITY POLICY RECOMMENDATIONS

UNIVERSAL DIGITAL CONNECTIVITY OBJECTIVE

Although the infrastructure to connect to the internet is available to nearly all households in Toronto, still a significant proportion of Torontonians do not have sufficient internet services at home, with rates higher for people with disabilities, older adults, and low-income households.⁶⁹ According to the latest data from Statistics Canada, 3% of households in Toronto still do not have a home connection to the internet and 5% said they did not use the internet.⁷⁰

The inability to access high-speed internet at home is more pronounced for low-income individuals in Toronto. According to the Ryerson Leadership Lab and Brookfield Institute's 2020 survey of 2,500 Toronto residents, half of Toronto households (52%) with incomes less than \$30,000 report download speeds below the CRTC's 50 Mbps target, compared to 31% of households with incomes above \$70,000.⁷¹ Moreover, 17% of households with incomes less than \$30,000 say their internet is slow relative to their needs, compared to just 6% of households with incomes over \$70,000.⁷²

Households with download speeds below the CRTC's 50 Mbps target:



Home internet service and speeds in Toronto are also correlated with age. According to our survey, those aged 60 and older have lower rates of access to home internet (95%, compared to 98% overall) and are more likely to lack a device that can connect to the internet, compared to younger residents.⁷³ Moreover, almost half (48%) of those aged 60 and older report download speeds below 50 Mbps, compared to one third of those up to age 44.⁷⁴

A lack of access to sufficient devices to connect to the internet also impacts the quality of residents' digital connectivity. According to the latest data from Statistics Canada, 5% of respondents in Toronto do not have a smartphone.⁷⁵ A lack of access to sufficient devices is even more prominent among older adults and low-income individuals in Toronto. Toronto households earning under \$50,000 have less than one computer for each person (average of 0.7 computers per person), lower than the national average of 1.0; and 15% of households with less than \$20,000 income and 20% of those aged 60 and older do not have a smartphone.⁷⁶ Among households in Toronto without home internet service, those aged 60 and older were more likely to indicate not having a device that can connect to the internet (30%) as a reason for not having home internet, compared to those under the age of 60 (14%).⁷⁷

The lack of a sufficient internet connection negatively impacts Indigenous peoples, people with disabilities and non-employed individuals' ability to access critical online government services during the pandemic. In Canada, 32% of those who identify as First Nations, Métis or Inuk (Inuit) said they did not use online government services in 2021, compared to 26% overall.⁷⁸ Use of online

government services was also lower among unemployed individuals (61% compared to 83% of those employed),⁷⁹ even though unemployed Canadians are more likely to need access to critical online services during a pandemic such as applying for employment insurance benefits and employment opportunities. In Toronto, 61% of households said the lack of home internet service impacted the household's ability to access critical services.⁸⁰ The top mention was government services and information (32%), followed by banking (27%), health care (27%), education (25%) and work (15%).⁸¹

To ensure that all Toronto residents can access sufficient digital services and fully realize their fundamental rights and freedoms, the City should set a universal digital connectivity objective and regularly measure the proportion of Toronto residents that have home internet services at the CRTC's speed target and the devices needed to connect. In Toronto, access to sufficient digital services is more than an infrastructure problem; equity-deserving groups continue to face barriers to accessing sufficient home internet and the devices needed to use this connection meaningfully. The City should seek to regularly measure the level of digital *adoption* among those who want to connect, rather than a narrow focus on infrastructure access.

The City should conduct surveys at regular time intervals to track the percentage of Toronto residents that are subscribed to a home internet service and who regularly use the internet. Those who do not have home internet could be asked if they are not interested, who could be excluded from the measurement. The survey should also ask respondents to test and report their internet speed and gauge the perceived adequacy of those speeds by users. Conducting this regular research will better position the City to evaluate its progress on meeting its universal objective to enable all people to subscribe to a sufficient internet service, with particular emphasis on enhancing adoption of services for equity-deserving groups. By setting a universal objective focused on equitably providing all Torontonians with adequate internet service at home, the City would pioneer a new approach

to presenting digital equity issues in Canada, leading a transition from a focus on residents' presumptive ability to physically connect to the internet by enhancing digital infrastructure towards ensuring that individuals truly can and do use this infrastructure to meaningfully access digital spaces.

Recommendation 1:

Set a universal digital connectivity objective for the City: regularly track the percentage of Toronto residents that are adequately connected to the internet and digital services, and work to close persistent gaps in connectivity in specific communities

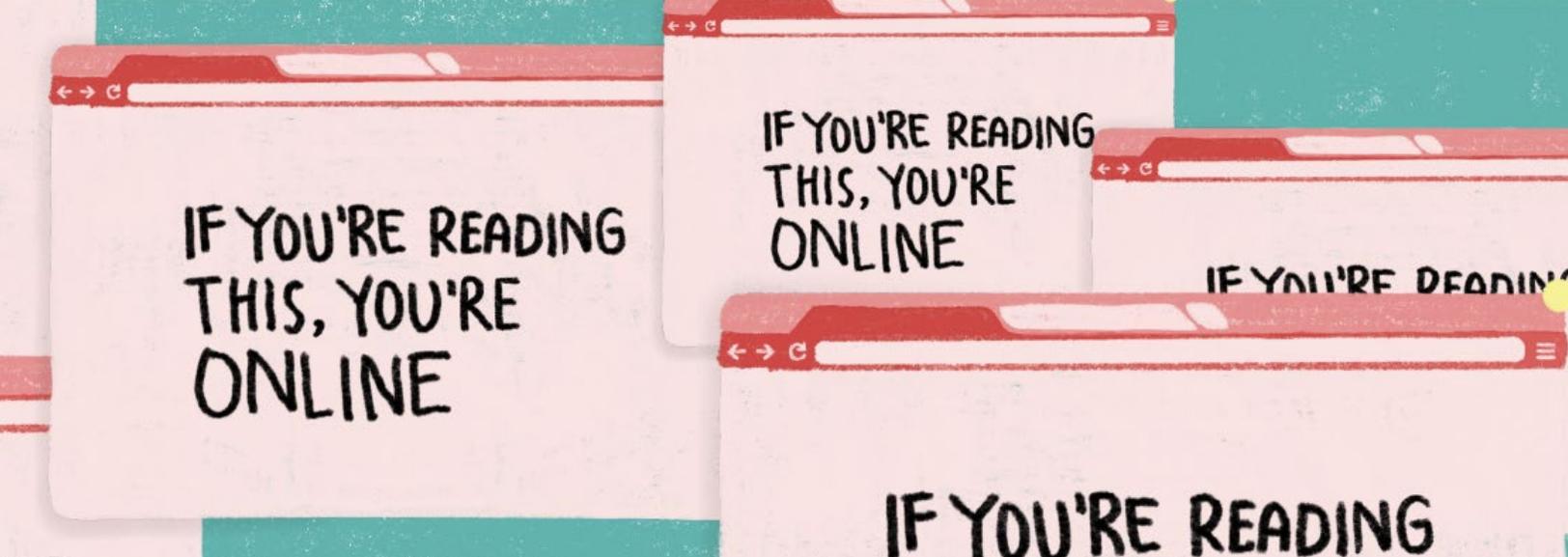
INITIATIVES TO MAKE THE INTERNET MORE AFFORDABLE

Still too many people in Toronto cannot afford sufficient internet services and these disparities also run along demographic and socioeconomic lines. For households in Toronto without home internet access and income under \$30,000, 75% of these households cited the monthly cost as a barrier.⁸²

75% of households without internet access and income under \$30,000 cited the monthly cost as a barrier.



When asked how much, if at all, they worry about being able to pay for their home internet bill over the next few months, one-third (34%) of households in Toronto indicated they worry a lot or some.⁸³ This is concentrated among lower-income households where a majority (51%) of households with incomes under \$30,000 are worried. Similarly, 51% of those not employed or unable to work indicated the same level of worry.⁸⁴ There are significant differences in worry



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about ability to pay by race and ethnicity. Latin American (53%), South Asian (46%), Black (42%) and Southeast Asian (40%) respondents were all significantly more likely to indicate they were worried.⁸⁵

Access to technology devices is also impacted by individuals' ability to afford them, and is therefore correlated with income. About 14% of those without home internet say the cost of equipment needed to connect is the reason.⁸⁶ Moreover, 32% of those without a smartphone and 23% of those without an internet-connected smart home device say the cost of these devices is the reason.⁸⁷ The inability to afford digital access at home has forced some Toronto residents to rely on other public locations to use the internet. A Toronto Public Library survey found that of users who borrowed an internet hotspot, more than half had a household income that was less than \$20,000, about 80% said they did not have internet access at home because they could not afford it, and nearly two-thirds said the library was their only source of connectivity.⁸⁸

To make the internet more affordable for those in need, the federal government's Connecting Families program has been facilitating \$10/month home internet access of at least 10 Mbps download speed to low-income families with children eligible for the maximum Canada Child Benefit since 2017.⁸⁹ The program has helped connect 75,000 families to date and is subsidized through telecommunication providers.⁹⁰ Private organizations have also

implemented projects to expand internet connectivity to underserved communities. Rogers introduced the Connected for Success program, providing subsidized internet to households in community housing in Ontario as well as those receiving financial support through the Ontario Disability Support Program, Ontario Works and the Resettlement Assistance Program. TELUS's Internet for Good programs also provides \$10/month internet to people receiving disability benefits and youth aging out of the child welfare system.⁹¹

Despite these programs, low-income families still face challenges in accessing sufficient internet connection. Multi-member households and those with children have found it difficult to rely on \$10/month internet because the speeds offered through the program (up to 10 Mbps) are too slow to allow for multiple people to use the internet for more complicated tasks (yet increasingly everyday tasks) such as online schooling or streaming video. Therefore, low-income families were still required to incur higher market-rate internet costs to access sufficient speeds to meet their needs. Recent changes to Rogers' Connected for Success program attempt to address this and now offer tiered subsidized prices, offering internet at 25 Mbps download starts at \$10/month, with options for 50 Mbps (\$15/month), 75 Mbps (\$25/month) and 150 Mbps (\$35/month). Similarly in August 2021, the federal Connecting Families program expanded to low-income seniors and offer recipients faster internet speeds at 50/10 Mbps and 200 GB of data usage for \$20/month.⁹²

Residents of community housing in Toronto deserve renewed attention as a group in need of internet access at affordable rates and sufficient speeds. A study of residents in community housing in the U.S. found that 37% of residents did not have a bank account and that residents' likelihood to bank online increased with more years of internet use, digital skills and smartphone ownership.⁹³ Although there is a strong positive correlation between internet use and the use of essential banking services among community housing residents in the U.S., only 13% of residents in that study said they had a previous digital literacy training experience that would help them access essential online services.⁹⁴ Identifying where gaps in internet access continue to persist in the City by better understanding the needs of specific communities (such as community housing residents) will allow the City to develop better targeted affordability solutions.

Moreover, despite the presence of affordability initiatives from ISPs offering discounted internet services, the programs' eligibility criteria restrict access to most low-income adults without children, leaving too many people still unable to afford internet services at sufficient speeds based on market prices. The City's ability to meet its universal connectivity objective requires that the City works to ensure that all individuals who need help in managing the costs of internet services in the City are provided the support they need. To do this, the City should facilitate direct subsidies to residents in-need to fill gaps and ensure all residents living below the poverty line can access internet services with sufficient speeds at discounted prices, starting first with those that receive social or housing assistance through the City.

To this end, the City should leverage some of its existing service delivery infrastructure and networks to distribute internet subsidies to low-income individuals more efficiently. For example, organizations that manage the implementation of federal internet subsidy programs such as Connecting Families are well positioned to facilitate subsidy delivery due to their pre-existing relationships with ISPs as well as communities in-need. Connecting Families manages a digital

portal that allows eligible individuals to enter a code within their online system and directly access internet packages at the discounted price from ISPs. An online tool that is directly available to end users ensures that subsidies are used by eligible individuals to purchase internet services, rather than providing the subsidy directly to households without guaranteeing whether the financial support will be used to its proposed end. Leveraging organizations' existing infrastructure and expanding systems in place to include low-income individuals without children would efficiently expand internet access to individuals previously restricted from accessing affordability initiatives.

Recommendation 2:

Facilitate or subsidize discounted prices for home internet to all City residents below the poverty line, particularly those receiving social or housing assistance through the City, and ensure services are provided at sufficient speeds.

PUBLIC INTERNET INFRASTRUCTURE

In addition to expanding affordability initiatives, the City should also take active measures to improve affordability of Toronto's market-driven telecommunications system in the long term beyond direct subsidies. To better facilitate affordable broadband access in Toronto, the City should leverage municipally-owned assets to ensure digital connectivity is effectively reaching those most in-need, as well as increasing public competition within the City's telecommunications market.

The ConnectTO program's plan to leverage municipal resources to expand affordable, high-speed internet to underserved Torontonians is a positive step in this direction.⁹⁵ The creation of municipally-owned broadband networks using the City's fibre assets, buildings, lights, sidewalks and boulevards should target priority neighborhoods

identified with lower home internet connectivity rates and speeds.⁹⁶ Moreover, the municipal ownership of network assets should bolster the City's position to facilitate connectivity plans at an affordable price through a public service and/or an open access model available to multiple providers.⁹⁷

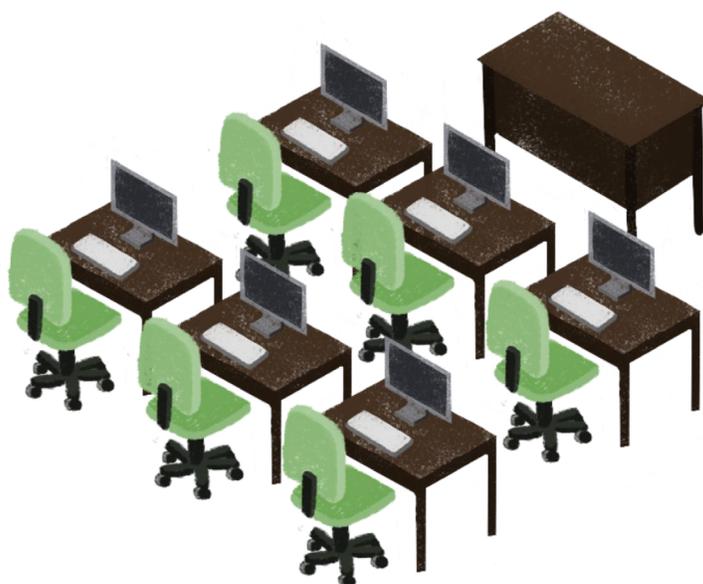
The City should also ensure broadband connectivity is an integrated priority in all City developments, such as in the development of affordable housing, long-term care homes, community centres and government buildings. Public wi-Fi access points in City-owned spaces should also be an essential component of the initial design planning of any municipal project, particularly for those that are open to the public and that serve vulnerable and marginalized communities. Moreover, investing in physical infrastructure needed to provide affordable high-speed internet across Toronto, in collaboration with public and community organizations, will provide the City more flexibility and choice in identifying private-sector partners that are best fit to realize the City's vision of equitable and affordable digital access.

In the United States and Europe, community-owned networks have successfully fulfilled unmet needs in broadband access and distribution. The Institute for Local Self Reliance said nearly 750 U.S. communities have carried out projects to provide municipal internet in varying forms: from providing full service where the city acts as the ISP to the leveraging of fibre assets for private leases or the development of public-private partnerships.⁹⁸ In many instances, the expansion of these municipal networks decreased internet service prices by increasing choice and competition for consumers. A 2014 OECD survey of eleven countries found that new entrants in wireless markets have a substantial impact on price and quality of service.⁹⁹

Moreover, the threat of new competition can be enough to encourage existing firms to improve the price and quality of their internet service. For example, the Netherlands' incumbent providers began offering plans at lower rates in order to prevent new entrants from gaining traction and market share by providing services at discounted

prices.¹⁰⁰⁻¹⁰¹ A 2013 report by the United States' National Telecommunications and Information Administration found that among those who reported switching their ISP, 38% did so to get a better price and this would not be available to those being served by one or two large providers.¹⁰²

While some municipalities have had success developing their own networks, others have leveraged partial infrastructure assets to provide residents with more competitive and affordable access to private sector ISPs. For example, Scott County, Minnesota built its own "middle-mile" networks (an extensive backbone of "intra-physical fiber or cable network connects") that can connect to the last-mile (the last parts of the infrastructure network that directly reaches businesses and households).¹⁰³ The network connects county-owned facilities such as schools, libraries, city halls, fire departments and public safety towers.¹⁰⁴ The project is a partnership between the county, the state and private service providers where the county paid for upfront costs, the state pays for operating costs in exchange for use, and private companies pay for maintenance costs in exchange for the right to use the network to offer their own services.¹⁰⁵ The initiative has achieved significant benefits as the infrastructure building costs were less than what the County was paying to lease private sector lines. Moreover, the costs for Scott County's school districts per megabyte of internet decreased by nearly 90% for all school districts.¹⁰⁶





Other success stories point to the promising potential of municipal infrastructure assets to develop a more equitable distribution of high-speed internet services, achieve greater affordability for all residents and gain profitable returns on investments. For example, Ohio’s DubLINK fibre network has reportedly saved the City approximately USD\$400,000 per year in connectivity and information technology costs.¹⁰⁷ Approximately after a decade of the project’s completion, the City realized a USD\$35 million return on investment after spending USD\$5.5 million to build the network.¹⁰⁸ Moreover, the municipal broadband utility EPB Fiber in Chattanooga, Tennessee returned almost USD\$2.7 billion on an original investment of USD\$220 million over the last ten years, after launching a program to connect 17,000 households of students facing income barriers to free high-quality internet services using city-owned fibre.¹⁰⁹

In Canada, the City of Calgary built a municipal fibre broadband network, saving the City up to \$20 million a year and increasing choice among residents in accessing the internet.¹¹⁰ The City also leases excess capacity from its network, providing more revenue for the City and positioning the City in a better position to influence the price of service provision and increase competition in the telecommunications market by enabling nondominant ISPs to access the digital infrastructure needed to connect residents.¹¹¹ The City first invested \$18 million from 2015-2018 to

build and run its municipal broadband network, with an additional \$8 million in 2018.¹¹² Cost savings from the initiative (reaching \$20 million/year in 2020) have offset the project’s initial investment and revenues earned from leasing excess capacity hit \$1 million in 2019, far above the City’s initial expectations in 2015.¹¹³ The project has expanded consumer choice within the telecommunications market in Calgary as community organizations such as the Calgary Public Library, the University of Calgary, Cybera (Alberta’s research and education network), as well as school boards, healthcare providers, and commercial business tenants currently use the City’s fibre network.¹¹⁴

In addition to municipally-owned networks, municipalities across Canada have also sought to increase public access to the internet through free wi-Fi access points across the city. As of 2019, there were 7,182 free wi-Fi hotspots in Ontario, significantly trailing British Columbia (22,365) and Alberta (12,662).¹¹⁵ These public internet access points are particularly critical for underserved groups such as low-income individuals and those experiencing homelessness, as more than half of Toronto internet users who used a temporarily loaned hotspot had a household income of less than \$20,000, and about 67% said the library was their only source of internet access.¹¹⁶ Free public wi-Fi access is part of a broader solution to expand internet access to those still left out of equity-expanding initiatives, but should not be considered a replacement for the necessity of facilitating home internet access.

The deployment of community networks and public internet access points should also take active measures to protect privacy and security of users and mitigate against risks of harm or cybersecurity threats. Public wi-fi connections that are not sufficiently encrypted leave users' personal information vulnerable to attack, particularly for underserved users requiring the use of public wi-fi to conduct sensitive tasks, such as banking or telemedicine.¹¹⁷ Moreover, privacy breaches through illegitimate hotspots, malware attacks, and the theft of username and password information by hackers, make public internet access particularly vulnerable.¹¹⁸ A study conducted by the Office of the Privacy Commissioner of Canada in 2019 collected data from 67 unique public wi-fi hotspots in Montreal and found that a significant amount of privacy-sensitive personal data was collected through the use of social login (such as Facebook and Google) and online registration forms.¹¹⁹ Moreover, some international initiatives to establish internet infrastructure for public Wi-Fi, such as the LinkNYC project, have faced criticism from privacy advocates and critics.¹²⁰

Recommendation 3:

Direct infrastructure investment to the deployment of City-owned, open access broadband networks that increase public access, control and competition.

EXPANDING ACCESS TO TECHNOLOGY DEVICES AND DIGITAL LITERACY PROGRAMS

The expansion of digital skills and device provision in Toronto must be a critical component of the City's digital equity strategy. Older adults, low-income individuals, Indigenous people, and newcomers all report lower internet and device use as well as lower digital skills and experience.¹²¹

Access to Devices

When asked whether they had used a technology device within the last three months, 6% of

respondents in Ontario said they did not use any technology device, 10% did not use a smartphone and 31% did not use a laptop or notebook.¹²² A lack of access to technology devices was even more prominent among people with disabilities, older adults, and those who identify as First Nations, Métis or Inuk (Inuit).¹²³ For example, 23% of those aged 65 and older said they did not use any technology device and 22% said they did not have a smartphone — 21 percentage points higher than those aged 25 to 34.¹²⁴

A lack of access to devices is particularly critical for students in online schooling. The Diversity Institute's survey found that individuals with children at home who identified as Indigenous (52%), racialized (36%) or low-income (33%) said it was very or somewhat likely that not having access to a computer at home impacted children's ability to complete schoolwork during the pandemic.¹²⁵ According to the report, "those with annual household incomes below \$60,000 were twice as likely as those with household incomes of \$100,000 or more to say that their children would have to use public Wi-Fi to finish their schoolwork."¹²⁶

Moreover, a recent Statistics Canada study found that children in higher income families had greater access to internet-enabled devices that were conducive to learning, and 24% of low-income households with children under the age of 18 report not accessing a home computer in 2018, sixteen percentage points more than high-income households.¹²⁷ A survey conducted by Actua also found that Canadian students from lower-income households were 15 to 13 percentage points less likely to say they have access to digital technologies such as smartphones, tablets and computers.¹²⁸

Moreover, household composition (number of family members) can also impact what is considered 'sufficient' access to devices. For example, having one computer at home may not be sufficient to allow multiple children to complete online school and parents to work from home. Low-income households may not be able to afford having multiple devices to comfortably accommodate for both parents' and children's

digital needs. A Statistics Canada report assessing the online preparedness of children during the pandemic found that 63% of households in the lowest income quartile had less than one internet-connected device per household member, compared to 56% of those in the highest quartile.¹²⁹ Overall, 58% of households that had internet access in 2019 had less than one device for each household member.¹³⁰

Digital Literacy and Skills Training

Equitable access to the internet also requires having the right digital literacy skills to effectively use technology. More than 20% of 15-year-old students in Canada report not having been taught various digital literacy and well-being skills, such as how to detect phishing or spam emails, use keywords when using a search engine and how to evaluate trustworthiness of online information.¹³¹ A quarter of people in Canada searching for digital literacy programs cited online security, followed by internet navigation skills and evaluating credible online sources, as their most needed priorities.¹³²

The pandemic has provided individuals the opportunity to pursue further technology learning online; 32% of people in Ontario said they more often engaged in online training or learning compared to before the Covid-19 pandemic and 48% said they took part in learning activities to improve skills relating to computers, software or applications through online programs, help from friends, family, or community centres.¹³³

Moreover, organizations have had to transform their programs to online formats and facilitate access by providing devices and data plans to participants.¹³⁴ These initiatives have positively impacted participants' digital skills and literacy.¹³⁵ In a survey of participants of the Building Foundations for Women (BFW) and Ve'ahavta Skills Academy (VSA) online programs during the pandemic, 79% of participants said they saw positive changes in their health and wellbeing, skills and employability, as well as their self-esteem and confidence.¹³⁶ Moreover, the survey found that digital usage increased among participants for a range of online activities, with the largest increase seen in booking

appointments (82% increase) and helping friends or family access or use the internet (67%).¹³⁷ In addition, 89% of participants felt their computer and digital skills had improved, with 57% saying they felt their skills significantly improved.¹³⁸

Although the pandemic afforded individuals the opportunity to engage in online learning to improve digital literacy and skills, the inability to access the internet or online services rendered much of this online training inaccessible to those impacted by the digital divide and without the ability to connect online — the very people most likely to need digital skills training.¹³⁹

In addition, there is still a significant gap in digital skills experienced by Indigenous people. An RBC study in July 2021 found that although Indigenous youth use digital technologies frequently, they are less confident in their digital literacy skills than non-Indigenous youth, with a 13-percentage point difference.¹⁴⁰ The study revealed that nearly two-thirds of jobs held by Indigenous workers are at risk of a “skills overhaul” as a result of advanced technologies that are transforming industries that many Indigenous communities depend on including the skilled trades.¹⁴¹

Digital literacy also includes the ability to protect sensitive information, evaluate credible sources, and understand the complexities of how online data is stored and used. One in four people in Ontario (and just over a half of those aged 65 and over) did not carry out any activity to manage access to their personal data, such as restricting or refusing access to their geographical location, refusing to allow the use of personal data for advertising purposes, checking that websites receiving personal data are secure, and changing the privacy settings on accounts or applications to limit the visibility of profile or personal information.¹⁴²

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Moreover, digital skills also include activities that enable individuals to protect their online safety and privacy. In a survey conducted by MediaSmarts, parents said that their children were least confident in checking if the information they see online is true (40%) and reading and understanding the terms of references and conditions of use (36%).¹⁴³ Moreover, top parental concerns regarding children's use of digital technology include misinformation and the need to prove online information is true (80%), the amount of sexual content children see (79%), the amount of violent content children see (79%), and cyberbullying and online harassment (79%).¹⁴⁴ Other survey data shows that parents are also concerned about the content their child is exposed to online (64%), time spent online (58%), who their child interacts with online (50%) and what their child is doing online (46%).¹⁴⁵

Developing an Integrated City Network to Coordinate Device Provision and Digital Literacy

Since the onset of the pandemic, a variety of different organizations across the City implemented new initiatives and expanded existing projects to deliver devices and software as well as to expand access to digital literacy programming to underserved individuals amid the transition to virtual work, school and service delivery. Many of these organizations were forced to quickly respond to the pressing challenges of the pandemic with little coordination, leading to a fragmented

network of initiatives aiming to fill unmet digital needs and creating siloed digital support programs. The City should move beyond a patchwork digital response strategy by creating a more coordinated approach to fulfilling Torontonians' increasing digital needs and expanding access to digital resources.

The successful delivery of digital skills programming and distribution of devices will require more than just additional uncoordinated funding to community organizations and public libraries engaged in digital training. The development of an integrated network of initiatives will better reveal how resources are best targeted to meet organizations' all-around needs, such as advancing affordable programs for low-income individuals, developing the physical infrastructure needed to accommodate for larger numbers of learners in an inviting and safe space, securing sufficient internet connectivity, improving access to advanced technology devices for programs and educators, and attracting the right teaching talent by offering competitive and attractive wages to well-qualified instructors.¹⁴⁶

To better coordinate among initiatives across Toronto and avoid duplication, redundancies and inefficiencies, the City should provide a mandate to a public sector organization, such as the Toronto Public Library, to oversee the creation of an extensive network of programs that supports and helps coordinate digital access to equity-deserving groups in Toronto. Individuals would also be able

to more easily find and contact organizations that are best served to fulfill their digital needs and provide the right support to improve device access and digital skills training.

Schools

As part of their requirements under Ontario's *Education Act* to facilitate the right to education, school boards have provided students in need with internet-enabled devices and internet hot-spots during school closures resulting from the pandemic. For example, in September 2021, the TDSB launched a one-to-one Student Device Program for students in Grades 5 and 9.¹⁴⁷ The program will offer students a district-owned and managed Chromebook for educational use, which will be assigned directly to the student and will stay with them over a four-year period.¹⁴⁸ Each year, incoming Grade 5 and 9 students will also receive Chromebooks for four years until by 2024-25 all students above Grade 5 will have their own TSDB-owned device.¹⁴⁹

Public Libraries

The Toronto Public Library offers a range of digital literacy programming through its Digital Innovation and User Education programs. Programs in digital innovation provide skills training in diverse topics including 3D design/printing, photography and photo editing, audio editing, podcasting, graphic design, web design, coding (using in-demand languages such as Python), VR, AR and robotics. Programs under the library's User Education division cover topics such as computer basics and library training classes, including navigating Microsoft Office programs, as well as their Let's Learn Tech program, a multi-week program series that covers topics from Introduction to the Internet of Things to Python Essentials.

The library conducted 223 online Digital Innovation programs from January to November 2021 that reached 4,254 learners, 30 online Innovator in Residence programs delivering data privacy workshops that reached 550 learners, and 12 online User Education and Let's Learn Tech programs with 887 attendees. In addition to programming,



the library also provided Seniors Tech Help¹⁵⁰ from January to September 2021 which received 1,113 calls and emails and 336 Book a Librarian¹⁵¹ appointments.

The Library also continued its Wi-Fi Hotspot lending program, providing Wi-Fi hotspots with unlimited data for six months to 1,000 households, and launched a new Internet Connectivity Kits initiative to give a laptop and a Wi-Fi hotspot with two-years of unlimited data to those with most urgent need. Almost 800 kits had been funded by external donations and grants by December 2021. Participating community agencies referred vulnerable households who could benefit from these programs to TPL. The Library also has for many years offered free computer training.



Government Initiatives

The federal government funds the Computer for Schools Plus program, which partners with governments and community organizations across Canada to provide refurbished computer equipment at little or no cost to those who may not otherwise have access to technology and provides internships for youth to expand opportunities to learn digital skills.¹⁵² The program takes all surplus devices from the Government of Canada and also has seen a significant increase in applications for free refurbished computers and laptop equipment since the onset of the pandemic.¹⁵³

Moreover, through the federal government's \$29.5 million Digital Literacy Exchange Program, non-profit organizations in Toronto were able to implement digital literacy initiatives, in partnership with public libraries and housing complexes, that will help Torontonians develop the necessary skills to engage with mobile devices, computers, and the internet safely.¹⁵⁴

The City of Toronto has also implemented a technology asset lifecycle management program whereby surplus IT assets are disposed of to an asset disposal vendor selected through a competitive process.¹⁵⁵ The City currently prioritizes disposing technology assets to nonprofit organizations receiving grants from the City and then to other nonprofit organizations in Toronto.¹⁵⁶ From 2016 to 2021, the City donated 50 laptops and 66 desktops to the TDSB and over

18,000 devices (laptops, desktops, scanners, and printers) to nonprofit organizations across the city. The City should consider strengthening and formalizing its IT disposal strategy by providing all of its surplus technology to a centralized agency such as Computers for Success in Toronto – a nonprofit organization with extensive experience refurbishing donated devices since 2005 and access to community networks and individuals without digital access, including vulnerable groups in shelters, community housing and older care homes.¹⁵⁷ The organization also supports the implementation of the federal government's Connecting Families and Computers for Schools initiatives, ensuring that discounted internet services and refurbished devices are provided to those most in-need.¹⁵⁸

Community Organizations

Actua is Canada's leading STEM youth outreach network representing 35 university and college-based members, and has strong partnerships with the University of Toronto and York University.¹⁵⁹ Each year, the organization provides 350,000 young Canadians in over 500 communities nationwide the opportunity to attend hands-on educational workshops and camps and organizes community outreach initiatives, with a focus on engaging underrepresented youth through specialized programs for Indigenous youth, girls and young women, at-risk youth and youth living in northern and remote communities.¹⁶⁰ In partnership with Engineering Outreach at the University of Toronto and Science Engagement at York University, Actua



helps deliver digital skills training for youth in grades 3 to 12 through school workshops, camps, clubs and events in Toronto, and offers customized programs for girls and youth facing socio-economic challenges.¹⁶¹

Other community organizations working with vulnerable groups, such as newcomers and those living in community housing, also provide targeted digital literacy support. For example, COSTI is a community service organization focused on providing newcomers or refugees with the support they need to access essential services and develop skills to succeed in the workplace.¹⁶² They offer digital literacy training workshops to introduce basics of computer navigation as well as how to use social media, protect privacy online, search the internet effectively and search for jobs online.¹⁶³ The East Scarborough Storefront’s Service Hub also hosts 35 organizations from across the City to provide access to computer devices and deliver programs and services free of charge to residents of Kingston Galloway/Orton Park (KGO), particularly focused on women, youth and newcomers in-need.¹⁶⁴

Moreover, faith-based community organizations have come together to support their communities in response to the digital challenges posed by the pandemic. Ve’ahavta, a Toronto-based Jewish humanitarian organization, has been providing Chromebooks and devices to people in-need including clients living in shelters and assisted living.¹⁶⁵ The organization has also helped those

experiencing homelessness who would not otherwise have access to technology use online spaces for critical services. The organization has also supported some shelters across the City with Wi-Fi boosters to enable community members to take part in online sessions and training provided by the organization.

Private Sector and Workplaces

Private organizations have also provided device access and digital skills training for underserved individuals. TELUS’ Mobility for Good program offers low-income seniors a \$75 credit towards a phone from Mobile Klinik.¹⁶⁶ The program also offers a free phone and plan for 2 years for youth aging out of the child welfare system.¹⁶⁷ TELUS’ Tech For Good program also offers specialized assistance and training (including assistive technology for individuals who qualify) to help people with disabilities independently use their wireless device (regardless of their provider).¹⁶⁸ Moreover, TELUS Wise offers digital literacy, skills and safety training to a wide range of audiences, including “new to the internet” sessions.¹⁶⁹

Microsoft has also provided \$100 million in technology, devices and other supports to non-profits in Canada.¹⁷⁰ Microsoft’s Tech For Social Impact program offers discounted packages for cloud products including Azure, Dynamics 365, and Microsoft 365.¹⁷¹ Moreover, Microsoft’s Software Donation Program provides donated Microsoft products to nonprofits and charitable organizations

across Canada¹⁷² and the Microsoft Digital Skills Center for Nonprofits provides community organizations with training workshops and courses on how to build teams, run remote operations, and use data analytics.¹⁷³

Rogers has also donated devices and wireless plans to more than 400 organizations across Canada, “including women’s shelters and transition houses, youth and LGBTQ2S+ organizations providing virtual mentoring, hospitals, seniors’ homes, and homeless shelters.”¹⁷⁴ Rogers has also signed a CEO Pledge with Computers for Success Canada to “donate end-of-life devices and computers to underserved communities” as part of the federal government’s Computers for Schools Plus initiative.¹⁷⁵ Twenty three companies have joined Rogers in its pledge including TELUS, Bell Canada, Microsoft, TD Bank Group, Scotiabank and Best Buy.¹⁷⁶

Workplaces across the City have also worked to facilitate access to devices as more employees began working remotely during the pandemic. According to Statistics Canada, 11% of Canadians used an internet connected device at home provided by their employer.

Hospitals in Toronto have also provided patients with smartphones and digital devices to allow them to access healthcare services. Patients requiring device access are typically low-income, experience homelessness, report mental health issues, and are socially isolated.

Investing in an organization that can build a network to connect all of these well-intentioned and differently-resourced initiatives will help ensure efforts are maximally effective and coordinated, and can help connect individuals in need with a broader range of support.

Recommendation 4:

Develop a cross-sectoral network of public, private, and community organizations to coordinate and strengthen initiatives focused on enhancing digital literacy and access to devices and software for underserved and vulnerable communities, and ensure all of the City’s surplus technology is donated for refurbishment, reuse or recycling



DIGITAL ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

People with disabilities face increased barriers to digital access. According to Statistics Canada, 12% of people with a disability in Canada said they cannot connect to the internet at home, compared to 5% of people without a disability and 16% said they did not use the internet in 2020, compared to 8% overall.¹⁷⁷ People with a disability were also approximately 2.5 times more likely to say they did not use a technology device and two times more likely to say they did not have a smartphone compared to those without a disability.¹⁷⁸ The lack of digital connectivity significantly impacts people with disabilities' access to critical services. Approximately two in five people with disabilities (38%) said they did not use government online services — 14 points higher than those without a disability.¹⁷⁹

Digital accessibility barriers also make it more difficult for people with disabilities to benefit from the digital opportunities to the same extent as others and adapt to an increasingly digital world during the pandemic. For example, the uptake in digital learning opportunities during the pandemic was not equally distributed among all people in Canada; 17% of people with a disability said they had increased online training activities since the start of the pandemic compared to 30% of those without a disability.¹⁸⁰ People with a disability were also less likely to say they had managed access to their personal data, with 35% saying they did not carry out any activity to restrict, refuse, or assess websites' access to sensitive information, compared to 25% of those without a disability.¹⁸¹ People with disabilities also did not transition to working online during the pandemic; only 19% of people with a disability said they increased their use of the internet to work at home — approximately 19 points less than those without a disability.¹⁸²

Provincial and federal regulations have sought to enhance digital accessibility. The *Accessibility for Ontarians with Disabilities Act (AODA)* outlines the provincial government's commitment to “develop, implement and enforce accessibility standards in order to achieve accessibility for Ontarians with disabilities with respect to goods, services, facilities, accommodation, employment, buildings, structures and premises.”¹⁸³ As one example, organizations with more than 50 employees in Ontario are required under the AODA to ensure their websites conform to the Web Content Accessibility Guidelines 2.0 as of January 2021, an international standard for making websites and web content accessible through a series of technical checkpoints and recommendations that outline how adaptations of technology can be made to better serve a broad spectrum of disabilities, including visual, auditory, physical, cognitive, speech, learning, language, and neurological disabilities.¹⁸⁴ Federal regulations also require that retail service providers offer wireless mobile plans that sufficiently meet the needs of people with disabilities, including the accessible promotion of plans through storefronts, websites and customer service representatives.¹⁸⁵





Although the provincial government requires organizations to identify, remove, and prevent barriers in information and community technology under the *Integrated Accessibility Standards Regulations* (IASR) of the AODA, experts say these legal frameworks have been ineffective at creating sufficient change in enhancing the accessibility of digital spaces.¹⁸⁶ Stakeholders emphasize that Canada and Ontario still need stronger information and communication standards that can enforce specific accessibility requirements.¹⁸⁷ Moreover, some have noted that fines for non-compliance under Ontario's AODA are rare and regulators do not conduct sufficient, on-site inspections. Unless stronger requirements are enacted, organizations may continue to circumvent accessibility requirements if they are not effectively enforced.¹⁸⁸

Under the *Ontario Human Rights Code*, individuals have a right to equal treatment with respect to the provision of services and facilities, which includes the provision of internet and telecommunication services.¹⁸⁹ In line with these obligations, the City has committed to assessing the accessibility of all digital projects in their design phase with the goal of embedding an equity lens in the City's approach to technology decisions that seeks to anticipate, identify and remove systematic barriers to digital access for people with disabilities.¹⁹⁰ Online services and initiatives run by the City must be accessible to all people in Toronto and enhance people with disabilities' chance to live an independent life and meaningfully engage with online services and communities.

Under the City of Toronto's Corporate Accessibility Policy adopted by City Council in June 2018, the City is required to facilitate people with disabilities' use of assistive technologies and in cases where an individual is unable to use a personal assistive device, the City is required to reassess service delivery options to meet the needs of the individual. It also requires all information and communications that the City produces to be made available in accessible formats upon request. The policy also requires that a process be in place to receive and respond to feedback on how services are delivered to people with disabilities.¹⁹¹

The City of Toronto's *Multi-Year Accessibility Plan 2020-2024* contains a focus on the accessibility of information and communication, which outlines the role of the City's Technology Services Division in establishing an AODA Compliance Public Facing Project Team to "ensure AODA compliance and accessibility by design" principles are embedded within all the City's communications and web content.¹⁹² The City of Toronto's *Digital Accessibility Standard* was also established to "ensure digital accessibility in all services and information the City provides to employees, residents and visitors."¹⁹³ The Standard recommends using easy-to-read graphic layout, fonts, language, diagrams and multiple types of delivery formats such as large print, recorded audio or Braille for all City communications, and ensuring content is compatible with screen reader technologies.¹⁹⁴ The Standard also requires that internet and web content controlled by the City conform with Web Content Accessibility Guidelines (WCAG) 2.0.

To ensure better enforcement of digital accessibility standards for all City projects, the City should consider expanding its digital accessibility staff to ensure they are able to approve the accessibility of projects prior to their implementation, undertake routine audits of digital projects in progress and respond to any complaints or challenges faced by people with disabilities in a timely manner. The team would be responsible for developing and implementing user-interface and software development guidelines to ensure the accessibility of all the City's digital services. Similar to the recommendations adopted in the *Toronto Accessibility Design Guidelines* for physical environments, the City's digital accessibility guidelines should adopt universal design principles in all the City's digital projects, shifting from a focus on product usability to a persons-centred design approach that takes into account the varying needs of all users including people with disabilities.¹⁹⁵ Developing a clear and streamlined auditing process, rather than the City's current ad hoc response to complaints or identified accessibility barriers, would enable the City to ensure accessibility is a strong cornerstone of service delivery prior to launch and that people with disabilities' needs are consistently being met.

Moreover, the City of Toronto should ensure sufficient accessibility training for web developers, digital service providers and technical support workers of all City-run services.¹⁹⁶

For example, the digital accessibility team within the City could oversee the transformation of the City's service counters through the addition of trained staff that can help assist people with disabilities in navigating online services and using assistive technologies. In addition to training, the City should take active measures to notify the public of the accessible formats and communications support available in its online services.¹⁹⁷

Providing sufficient support also includes creating a streamlined process by which people with disabilities can submit accommodation requests for the delivery of services, ensuring that employees and support staff can communicate with those requesting accommodations to determine the right form of support needed, including the use of assistive technologies to ensure effective service delivery.¹⁹⁸ With the transition of many of the City's services to online formats, the City should also conduct an annual review of all digital services to identify and remove persisting access barriers to ensure sufficient enforcement of accessibility standards.¹⁹⁹

Recommendation 5:

Strengthen accessibility standards and initiatives to remove digital inclusion barriers for people with disabilities, including greater enforcement mechanisms

CONCLUSION

Expanding digital equity in the City of Toronto requires identifying the unique digital needs of vulnerable and marginalized communities, such as low-income households, newcomers, Indigenous people, older adults and people with disabilities. These residents deserve renewed attention and better targeted policy solutions to effectively expand meaningful digital inclusion to everyone in Toronto.

A digital equity policy should establish a clear universal connectivity objective that measures internet connectivity across the City and within vulnerable groups; improve the affordability of internet services to ensure low-cost internet packages are delivered to all people in need at sufficient speeds; build municipally-owned digital infrastructure to enhance access and competition in the telecommunications market; build an integrated and easy-to-navigate network of digital literacy and device provision programs in the City; and enhance digital accessibility standards for people with disabilities. Finally, the City's digital equity strategy should be guided by an evidence-informed set of principles that prioritizes the inclusion of all stakeholders — especially marginalized and under-represented voices — in the decision-making process to realize digital inclusion for all Toronto residents.

ABOUT THE AUTHORS



Nour Abdelaal is a Policy Analyst at the Ryerson Leadership Lab. Nour has been working at the intersection of research, public service, academia, and social advocacy. She is passionate about advancing innovative policy solutions in the realms of technology, cybersecurity, and digital inclusion. Nour led the *Overcoming Digital Divides* project in 2021, a six-part workshop series that gathered research insights and stakeholder perspectives to develop policy solutions that expand digital inclusion for all people in Canada. Prior to joining the Leadership Lab, she was a Political Assistant at the U.S. Consulate General in Toronto, working to advance U.S.-Canada relations and provide research insights for the U.S. State Department's technology and economic portfolio. Nour was also a Compliance Analyst at the G20 Research Group at the Munk School of Global Affairs and the Finance Director of the University of Toronto's Amnesty International Chapter. She holds an MA in political theory and a BA in political science and economics from the University of Toronto.



Sam Andrey is the Acting Executive Director at the Ryerson Leadership Lab. Sam has led applied research and public policy development for the past decade, including the design, execution and knowledge mobilization of surveys, focus groups, interviews, randomized controlled trials and cross-sectional observational studies. He led the *Mapping Toronto's Digital Divide* project in early 2021 to provide an in-depth understanding of Toronto's digital divides amidst the pandemic. Sam also teaches about public leadership and advocacy at Ryerson University and George Brown College. He previously served as Chief of Staff and Director of Policy to Ontario's Minister of Education, in the Ontario Public Service and in not-for-profit organizations advancing equity in education and student financial assistance reform. Sam has an Executive Certificate in Public Leadership from Harvard's John F. Kennedy School of Government and a BSc from the University of Waterloo.

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