

## **Supplementary Report on ConnectTO Program Update**

**Date:** April 26, 2022

**To:** Executive Committee

**From:** Deputy City Manager, Corporate Services and Chief Technology Officer

**Wards:** All

### **SUMMARY**

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This report provides information on the ConnectTO program requested by the Executive Committee at its March 30, 2022 meeting, as well as overall clarification of the approach and priorities of the ConnectTO program.

At its February 2, 3 and 5, 2021 meeting, City Council approved the phased implementation of ConnectTO, a collaborative program that aims to centralize stewardship of municipal resources and assets to deliver on the City's equity and connectivity goals.

At the March 30, 2022 meeting of the Executive Committee, staff provided an update on the first phase of the ConnectTO program (item [EX31.8](#)). This report seeks City Council's endorsement of the proposed next steps for the ConnectTO program. The ConnectTO program aims to build and connect City-owned fibre to improve and expand the existing City-owned fibre network. Currently, the City's operational connectivity – the backbone for all digital infrastructure used to deliver City services – is enabled through a combination of City-owned and leased fibre.

ConnectTO firstly aims to more effectively leverage the City's existing investment in City-owned fibre and limit the current need to lease fibre from the private sector to reduce costs and improve security, reliability and availability of City services. Secondly, in the longer term, excess capacity in this improved City-owned fibre network has the potential to be leveraged for public benefit, such as bridging the digital divide.

The City owns and operates City-owned network infrastructure to deliver City services -- especially in critical areas such as water, transit, and traffic management -- and employs staff with the required technical skills, credentials, and expertise to do so. Owning network infrastructure improves security, reliability and availability of critical services, as well as reduces external costs to the City. Interconnecting City-owned fibre better enables the City to embed security by design across its network. Through centralizing the oversight, standardization, governance, and coordination of divisional fibre network activities, the City will interconnect City assets to deliver effective and efficient City services while reducing business and cybersecurity risk – consistent with

other leading organizations. This is aligned with the ongoing centralization of technology and cybersecurity governance activities – recommended by the Auditor General and being led by Technology Services and Office of the Chief Information and Security Officer -- which includes setting the required best practices and standards for technology to mitigate cyber and enterprise technology risk.

An interconnected City-owned fibre network has the potential to unlock value for public good. With reliable and secure connectivity capacity, the City can deploy and sustain more Smart City solutions such as public Wi-Fi, sensors for environmental protection, machine learning for data-driven decision-making, smart traffic signals, connected green buildings, and other opportunities. In addition, creates potential revenue opportunities by leasing unused fibre strands to private Internet Service Providers (ISPs), and contributes to a smart local economy that is connected.

Engineering and Construction Services, Office of the Chief Security Officer, Social Development, Finance and Administration, Economic Development and Culture, Legal Services, and Toronto Public Library contributed in the preparation of this report.

## **RECOMMENDATIONS**

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The Deputy City Manager, Corporate Services, and Chief Technology Officer recommend that:

1. The Executive Committee delete Recommendation 1 and 2 contained in the report ([March 16, 2022](#)) from the Deputy City Manager, Corporate Services and Chief Technology Officer, Technology Services.

## **FINANCIAL IMPACT**

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There is no financial impact. Any additional resources required for additional phases will be included in future Capital and/or Operating Budget submissions for approval.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

## **EQUITY IMPACT STATEMENT**

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Equitable access to the internet is a pre-condition for the health and well-being of our City. Digital exclusion is not simply a product of broader socio-economic inequities, rather it is a key contributor to deficits in health, education, employment and social cohesion. The City's commitment to the principles of digital equity is a foundation for future prosperity, and one which the City is well positioned to action by leveraging public assets for public good.

Digital equity and bridging the digital divide is a key component of the Poverty Reduction Strategy. Affordable and reliable internet connectivity is critical for residents to perform the basic activities of daily living, including participating in economic, educational, and cultural activities required to enjoy a better quality of life.

Barriers to accessing and maintaining household internet impairs residents' ability to participate in the economy, receive essential services, and to participate fully in their communities. According to the CRTC, households in the lowest income quintile spend five times more of their average household incomes on telecommunications services

than those in the highest income quintile. This represents approximately 9% of annual household income in the lowest tier versus 1.8% in the highest. Research conducted at the TCHC highlights how residents who have been disconnected from home internet because of an inability to pay experience unsustainable increases in their ancillary household expenditures.

## **DECISION HISTORY**

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### **ConnectTO and Digital Infrastructure Plan**

On June 29, 2021, the General Government and Licensing Committee received a report for information from the Chief Technology Officer about the inclusion of a commitment to the City's control and autonomy of its digital infrastructure as a sixth Working Principle within the Digital Infrastructure Plan.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.GL24.18>

On February 2, 3 and 5, 2021, City Council approved ConnectTO, a collaborative program that aims to centralize stewardship of municipal resources and assets to deliver the City's goals on equity and connectivity, including creation of a City of Toronto broadband network.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.EX20.8>

### **Connectivity Affordability**

On June 8, 2021, City Council requested The Federation of Canadian Municipalities (FCM) to consider review of the CRTC's May 27, 2021 decision, and required federal advocacy on broadband and wireless affordability.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.MM34.16>

### **Poverty Reduction Strategy**

On December 5, 2017, City Council also directed the Chief Information Officer and General Manager, Economic Development and Culture to further analyze the digital divide by comparing socio-economic data, including from the 2016 Census, and available geographic broadband penetration data to help support the digital access goals of the City's Poverty Reduction Strategy.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.ED25.4>

### **Towards Recovery and Building a Renewed Toronto**

On October 27, 2020, the City Manager's Office submitted Attachment 3 to the report, Towards Recovery and Building a Renewed Toronto, which referred recommendations #36 and #58 to the Chief Technology Officer for review. Both recommendations speak to digital access as a part of Toronto's recovery and rebuild.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2020.EX17.1>

Additional Decision History is provided in the March 16, 2022 report entitled ConnectTO Program Update from the Deputy City Manager, Corporate Services, and the Chief Technology Officer, Technology Services.

## **COMMENTS**

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### **Background**

Since the 1990's, the City of Toronto has operated a network to deliver City services. City staff have been applying their technical credentials and expertise to deliver critical services on the network for decades.

Currently, the City owns various fibre segments throughout the city to deliver services, especially critical services such as water, transit, and traffic management. In addition to this fibre, the City also leases fibre for its network needs. Connectivity is the backbone on which modernized City services are delivered, so security, reliability and availability are crucial.

City staff are working towards centralizing the oversight, standardization, governance, and coordination of divisional fibre network activities. There is a significant opportunity for the City to interconnect City assets to deliver effective and efficient City services while reducing business and cybersecurity risk. This is aligned with the City's Security by Design principle. This is also aligned with the ongoing centralization of technology and cybersecurity governance activities, led by Technology Services and Office of the Chief Information and Security Officer, by setting the required best practices and standards for technology to mitigate cyber and enterprise technology risk.

With reliable and secure connectivity capacity, the City can deploy and sustain more Smart City solutions such as public Wi-Fi, sensors for environmental protection, machine learning for data-driven decision-making, smart traffic signals, connected green buildings, etc.

Over the years, City Council has given staff a number of directives to advance broadband infrastructure and internet connectivity. Council has previously directed staff to tackle issues of basic access and affordability of broadband internet, alignment with other levels of government, as well as direction on creating public Wi-Fi and enabling digital access as part of the Poverty Reduction Strategy.

### **What is ConnectTO?**

The City already owns, operates and manages fibre infrastructure at a divisional level. The City also leases fibre network infrastructure, operations and management services to support its services. The City has an opportunity to connect City-owned fibre to improve its existing fibre network, thereby leasing less and unlocking value. Since ConnectTO launched in February 2021, City staff have been working to standardize and centralize the governance and administration of its fibre network assets and needs. ConnectTO will enhance operational and financial efficiencies across City divisions, and streamline the City's ability to provide network services for its own operations and services.

In the future, ConnectTO also aims to provide the City with longer-term opportunities to leverage any extra network capacity on the City-owned fibre network not used for delivering City Services. Excess capacity can be made available to private ISPs, for their use in delivering affordable internet directly to residents and businesses. City staff will consult with private ISPs on this potential, and determine the most effective delivery models.

The overall goals are outlined in "What ConnectTO IS" statements below. For greater clarity, "What ConnectTO IS NOT" statements are also provided below.

	<b>What ConnectTO IS</b>	<b>What ConnectTO IS NOT</b>
1	An opportunity for the City to standardize and centralize its existing City-owned fibre network by investing in critical fibre infrastructure that will enhance our ability to deliver public services, lower our network service costs, and provide opportunities for ISPs to deliver fast and reliable internet to residents and businesses.	ConnectTO is not an ISP service that provides internet directly to residences or businesses.
2	An opportunity for the City to better connect libraries, community centres, emergency services, operations, public spaces and City-owned buildings to a high capacity fibre optic network to enable service delivery, manage risks, create operational efficiencies, and reduce costs.	The City is not doing something new – City staff with the required technical credentials and expertise have been managing the current network for many years.
3	An opportunity for the City to interconnect its fibre assets by deploying conduit and fibre in already-planned City construction projects – lay conduit and fibre when the ground is open for minimal investment in fibre through a "Dig Once" approach.	ConnectTO is not creating new and/or costly construction projects for the sole purpose of deploying conduit or fibre.
4	In the long term, an opportunity for the City to unlock public assets for public good by creating opportunities for private ISPs to access City-owned fibre infrastructure on a neutral, non-discriminatory and open access basis.	ConnectTO is not a duplication of the existing proprietary networks that can limit competition.

5	An opportunity for private ISPs to invest in their own fibre infrastructure to reach residents and businesses, and to engage in the type of competition mandated by the CRTC.	ConnectTO is not limiting competition or business or economic development.
6	A longer term opportunity for the City to work with ISPs to fill in technical and/or affordable internet connectivity gaps faced by many Torontonians by leveraging excess City-owned connectivity capacity to expand better service options where needed.	The City will not provide high-speed internet services directly to end users (last mile to residents or businesses), but can lease City-owned fibre to interested ISPs who can to bring affordable high-speed internet to those underserved by the market today.
7	An opportunity for cost savings realized through the City's fibre network to be reinvested to support connectivity, with a focus on Indigenous, Black and equity-deserving communities. Cost savings will be realized by offsetting existing costs associated with leasing fibre services from major ISPs.	The City will not provide high-speed internet services directly to end users (last mile to residents or businesses).

Another function of ConnectTO is to work with other cities across the GTHA and Canada to advocate for municipalities' digital infrastructure. The March 16, 2022 staff report highlights the importance of key provincial and federal government policy, legislative, and regulatory changes that could be made to better enable all governments in addressing the digital divide. Specifically, the "Requests to Provincial and Federal Governments" outlined in Recommendations 3, 4 and 5 of the EX31.8 are critical for the City to advance digital equity in Toronto.

**Deferral Motion Questions and Issues**

On March 30, 2022, Executive Committee directed staff to provide the following in this supplementary report:

*"1. The further questions and issues raised at the Executive Committee meeting on March 30, 2022.*

*2. A time frame for developing a ConnectTO Business Plan, which will include:*

*a. the short, medium and long term costs of building and maintaining the proposed networks;*

*b. the end-user price and download/upload capacity that will be available through the City's Municipal Broadband Network;*

*c. proof of the City's ability to create better access and pricing for high speed internet than established Internet Service Providers, when the city does not have existing infrastructure or funding;*

*d. address how ConnectTO will gain access to apartment buildings that already have contracts with other Internet Service Providers;*

*e. the number of Full Time Equivalent staff required for the planning, implementation, and on-going operations and management of this project, in addition to the 1000+ existing Technology Services Full Time Equivalents;*

*f. evidence that price is the main factor that challenges the use of internet services in priority neighbourhoods, and not lack of computers, computer literacy, or other fears or concerns about internet use; and*

*g. a statement of the metrics for success, including the anticipated number of new internet subscriptions from residents who previously could not afford and/or lacked access to high speed internet.*

*3. The justification for creating this new internet infrastructure, given that most buildings already have high speed internet, and affordable high speed internet plans are available to low income families with sufficient download/upload capacity for video streaming for classroom use.*

*4. A comparative analysis of short and long term costs, capital and operating, of existing service versus the proposed service; such cost analysis should separate the costs for service to City properties from service to residential communities and should also show the cost differences between using private sector providers for internet service versus City-owned and managed assets."*

Based on the discussion on March 30<sup>th</sup>, as well as the issues and questions raised in the deferral motion, staff recommend removing Recommendation 1 and 2 item EX31.8 to improve clarity.

The term "Municipal Broadband Network" may have created confusion in the role of the City in end-user internet connectivity. For greater clarity, ConnectTO is not an ISP service that provides internet directly to residences or businesses. ConnectTO is currently focused on interconnecting and centralizing City assets to deliver effective and efficient City services. Staff will report back on how excess infrastructure capacity on City-owned infrastructure networks can be used to bridge the digital divide.

Detailed responses to the four (4) questions in the deferral motion from Executive Committee on March 30 are appended as Attachment 1.

## Conclusion

Toronto needs strong digital infrastructure for a resilient, equitable and prosperous future. Over the years, City Council has given staff a number of directives to advance broadband infrastructure and internet connectivity. ConnectTO is currently focused on interconnecting the City's existing infrastructure assets that can create a network with the capacity to enable security, reliability and accessibility of critical services; effective and efficient City service delivery, such as public Wi-Fi, smart traffic lights, sensors for environmental protection, water main condition monitoring, big data for analytics; and cost benefits by leasing less fibre from the private sector to deliver City services.

Staff will report back on how excess infrastructure capacity on City-owned infrastructure networks can be used to bridge the digital divide.

## CONTACT

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## SIGNATURE

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## ATTACHMENTS

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**Attachment 1:** Deferral Motion Questions and Issues on ConnectTO Program Update Report