MEMO / NOTE DE SERVICE

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FILE NUMBER: ACS2020-ICS-ST-0004

SUBJECT: Update on Connectivity: Interim Response to Directives

OBJET : Mise à jour sur la connectivité : réponse provisoire aux directives

BACKGROUND

In December 2017, Ottawa City Council approved Ottawa's Smart City Strategy, entitled Smart City 2.0. The strategy is centered on three pillars:

1) A Connected City - Create a city where all residents and businesses are connected in an efficient, affordable, and ubiquitous way; and

2) The Smart Economy - Stimulate economic growth by supporting knowledge-based business expansion and attraction, local entrepreneurs, and smart talent development; and

3) An Innovative Government - Develop new and innovative ways to impact the lives of residents and businesses through the creative use of new service delivery models, technology solutions, and partnerships.

As was reported in the Smart City 2.0 Update Report presented on October 2019 (ACS2019-ICS-ST-0001) to the Information Technology Sub-Committee (ITSC), the Smart City Strategy has been an anchor for innovation, economic development, and enhancements to Ottawa's connectivity landscape over the past several years. Due to the efforts of City staff and local partners, smart city advances have been made in areas such as autonomous vehicle technology testing, talent attraction and retention in the knowledge sector, and the piloting of new and innovative technologies and client service delivery models at the City.

Members of the ITSC have also expressed an interest in additional tactics to support the Connected City pillar. As outlined in Table 1, staff have been directed to explore several additional connectivity-related activities.

Table 1: ITSC Direction Related to the Connected City Pillar of Smart City 2.0

#	Area of Focus	Direction	Date
1	Expanding the City's Public Wi-Fi Offering	What City facilities are staff proposing would have Wi-Fi beyond the current 25 facilities, including public gathering places? What is the strategy and timetable for Wi-Fi implementation? What are the anticipated costs / security concerns? What is the funding strategy?	October 2019
2	Improving Connectivity for Underserved Residents	Whether there is a role for the City to play in advocating directly to the large telecommunications providers to exert pressure to invest in infrastructure upgrades to ensure that the City's most vulnerable, and its rural residents, are better connected	September 2020
3	Exploring Offering Broadband as a Public Utility	Whether there are opportunities for the City to provide broadband connectivity as a potential utility service or the potential for partnerships or opportunities in which Municipalities could provide broadband connectivity / internet access as a public utility service.	September 2020

This memo provides an update on the activities staff are taking to respond to these directions as part of a supporting strategy around the Connected City pillar of Smart City 2.0.

CURRENT STATUS

As stated in the Smart City Strategy, the vision for a connected city involves creating a network that meets the needs of residents and businesses in Ottawa.

The City of Ottawa has enhanced its connectivity posture in recent years through a variety of activities including: providing free wi-fi to the public in high-traffic City facilities; supporting the development of an Ottawa Internet Exchange to reduce latency and improve bandwidth for residents; creating a 5G testbed at City Hall to test emerging communications technology; and exploring the use of connected lighting as a way of reducing energy costs.

Despite these advances, the recent pandemic situation and the resulting shift towards greater rates of remote work and education have highlighted the disparities in rates of connectivity across the city. For example, Ottawa's rural area, which accounts for nearly 80 per cent of the geography of the municipality, is underserved in terms of access to high-speed internet[1], with many residents experiencing service levels that are well below the 50 Mbps download and 10 Mbps upload speed target set by the Government of Canada in its *High-Speed Access for All: Canada's Connectivity Strategy*. Likewise, there are segments of the population living in Ottawa for which broadband access is cost-prohibitive.[2]

Ottawa is not alone in facing these problems. According to recent figures released by the Ontario provincial government, 12 per cent of Ontarians – 1.4 million people – do not have access to reliable internet (*Up to Speed: Ontario's Broadband and Cellular Action Plan*, November 2020).

With this context as a backdrop, it is important to note the complex regulatory and legislative frameworks that surround the issue of broadband access in Canada. While communications are a shared responsibility between the different levels of government, each one plays an important role in this issue.

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[1] According to the National Broadband Internet Service Availability Map for Ottawa, there are parts of the city outside of the core where fewer than 25% of households in that area have access to broadband services offering 50/10 Mbps or greater.

[2] According to a 2015 study conducted by the Public Interest Advocacy Centre (PIAC) on behalf of the Government of Canada, the cost of communication services are outside of the range of what can be considered "affordable" (i.e., does not require a household to cut back its expenditures on other necessities such as food, shelter, clothing, transportation and health care) for low-income Canadians – including those in Ottawa.

- At the **federal** level, the Canadian Radio-television and Telecommunications Commission (CRTC) implements the laws and regulations set by Parliament to oversee the broadcasting and telecommunication services in this country, while the department of Innovation, Science and Economic Development (ISED) sets out [Canada's Connectivity Strategy](#), which aims to "coordinate investments along with complementary measures to ensure a connected Canada".

- At the **provincial** level, provincial governments across the country have invested over decades in the network infrastructure required to provide internet in their communities.

- At the **municipal** level, cities are the closest service providers to the public and are the most likely to be aware of local gaps in internet service delivery. Municipalities are also responsible for granting access to rights-of-way (roads, utilities, lands) required to build the broadband network infrastructure.

Adding to the complexity of this issue is the involvement of **private sector service providers** that build and maintain the network infrastructure and provide internet access to paying customers.

As detailed in the remainder of this document, there is a need for the City of Ottawa to pursue new partnerships and initiatives to achieve its goal of ubiquitous connectivity.

VISION FOR A CONNECTED CITY

These new opportunities are centered on collaboration within the corporation, across different levels of government, and with the private sector. Staff will explore the following tactics, each of which will be applied to the expanded Areas of Focus identified in the direction from the ITSC.

Cross-Departmental Collaboration

Within the corporation, there is a need for inter-departmental coordination as connectivity touches on the mandates of several departments including:

- Innovative Client Services (ICS), in terms of providing client-centric services to residents;

- Planning, Infrastructure and Economic Development (PIED), in terms of managing City assets, infrastructure partnerships, the municipal regulation of telecommunications companies, and economic growth opportunities;

- Community and Social Services (CSS), in terms of identifying and addressing the needs of vulnerable populations to enrich people's well-being within the community; and

- Recreation, Community and Facility Services (RCFS), in terms of providing access to high quality recreation and cultural services in City facilities.

In order to ensure that issues of connectivity are addressed in a holistic manner, staff have formed an **internal working group**. Members of this working group have been leveraged for their individual areas of expertise and will be engaged in discussions on all directions from the ITSC relating to connectivity.

SUMMARY: This tactic is led by staff in ICS and applied to Area of Focus #1 - Expanding the City's Public Wi-Fi Offering. The cross-departmental collaboration model will ensure that all perspectives are considered when prioritizing criteria for the selection of sites for an expanded City wi-fi service.

Expanded Partnerships

As discussed above, improving Ottawa's connectivity landscape is not something that the City can do on its own. It requires collaboration with other levels of government and the private sector. As such, staff will continue its effort to seek out partnerships that help address the connectivity needs of Ottawa's underserved populations, including the most vulnerable residents and those living in the rural areas. Examples of such partnerships are described below.

- **Participating in the Big City Executive Partnership (BiCEP)**: As discussed in the September 2020 ITSC report, Information Technology Services Update: COVID-19 Response & Recovery Supports and 2020 Workplan Highlights (ACS2020-ICS-ITS-0001), Ottawa is one of six major Canadian cities – the others being Montreal, Toronto, Calgary, Edmonton, and Vancouver – that have joined to advocate for the federal government to invest in the infrastructure required improve access to affordable internet in urban neighbourhoods and rural Canada. This partnership will ensure a coordinated strategy that is focused on providing equity in digital access across the country.

- **Participating in the BiCEP Digital Infrastructure Table**: As part of the BiCEP partnership, the City of Ottawa is a part of a working group that looks at how to collectively leverage, integrate, and expand physical municipal assets for digital infrastructure for private and public access.

- **Exploring a partnership with Eduroam**: Eduroam is secure, global, wi-fi roaming service that allows seamless wi-fi connectivity for students, researchers, and staff from participating higher-education institutions – whether they are on their campus or visiting other participating institutions and sites. City staff are currently exploring the possibility of partnering with Eduroam to extend this service to all public buildings in Ottawa that offer free wi-fi (including libraries, recreation centres, other City buildings). This partnership would allow the City to provide greater connectivity to the post-secondary community.

- **Collaborating with the private sector**. The City's arms-length economic development agency Invest Ottawa works with all the major knowledge-based employers located in in the city, including telecommunications providers of all sizes. Working with Invest Ottawa, staff in Supply Services will explore what the City can do in terms of supporting private sector organizations to address gaps in Ottawa's connectivity landscape.

- **Leveraging Area X.O to support connectivity advancements.** The collaborative framework, extensive partner network and considerable telecommunications investments position Ottawa's [Area X.O](#) as an ideal location to prototype and validate connectivity solutions. Building on Ottawa's internationally recognized strengths in communications, this site is equipped with numerous telecommunication and networking infrastructure systems including GPS and real time kinematics (RTK), dedicated short-range communications (DSRC), Wi-Fi, 4G/LTE, private LTE, LoRa, whitespace and 5G (including mmWave). The possibility of adding low earth orbit satellites – which have the potential to significantly improve connectivity in rural and remote areas – is also being explored. Leveraging the infrastructure, City staff and Invest Ottawa will work together to investigate ways to support advancements in connectivity in the region.

- **Exploring becoming a public utility**: In 2016, CRTC ruled that "broadband internet is a basic telecommunications service in Canada". The notion of whether local governments should be in the business of delivering this "basic service" is an idea that has gained prominence in recent years, particularly as a way of combatting the "digital divide". City staff will explore whether there are examples of other municipalities that have successfully adopted a public utility model for the delivery of broadband service.

SUMMARY: This tactic will be co-led by staff in ICS (focused on partnerships that involve city services) and PIED (focused on partnerships that respond to the connectivity needs of residents in the broader community) and will be applied to Areas

of Focus #2 – Improving Connectivity for Underserved Residents and #3 - Exploring Offering Broadband as a Public Utility. Ottawa may extend its partnerships beyond the ones identified above, depending on the opportunities presented.

New Funding Models and Opportunities

The City's pandemic response has placed a significant pressure on the finances of the corporation and has made it difficult to identify funding for unbudgeted activities, including initiatives related to connectivity. As a result, staff are examining new funding models and opportunities as described below.

- **Exploring provincial funding opportunities**. As part of the province's supplemental 2020 Budget released on November 5, the Ontario provincial government announced an investment of nearly $1 billion over six years to improve and expand broadband and cellular access across the province. A portion of these funds – $150 million to be exact – are open to municipalities and their partners through the Improving Connectivity for Ontarians (ICON) program. As mentioned in the September 2020 update to the ITSC, the City is looking at ways to provide support to Internet Service Providers (ISPs) who are applying for this funding.

- **Exploring federal funding opportunities**. The Government of Canada has committed to connect 95 per cent of Canadians to high-speed internet by 2026 and all Canadians by 2030. In support of this goal, the federal government has announced a number of different funding programs to support broadband and infrastructure investment across Canada, most recently with the launch of the $1.75 billion Universal Broadband Fund (UBF) on November 9, 2020. Similar to provincial funding opportunities, the City is looking at ways to provide support to ISPs who are applying for this funding.

- **Exploring the potential to monetize City assets**. With the advent of newer telecommunications technologies such as 5G, there have been discussions around the potential for cities to generate revenue by leasing or selling access to their broadband and telecommunications assets (i.e., towers, fiber optics, rooftops, conduit, and poles). Staff have conducted some initial analysis and will need to continue to investigate the merits of this type of model, especially in light of the potentially shifting regulatory framework that may see CRTC (or another body) manage access to municipalities' passive assets (including things like light poles, bridges, water towers, street furniture).

- **Review the 5-year build-out workplans of telecommunications companies**. As a result of the COVID-19 pandemic, telecommunications companies have indicated

that they are pivoting their rollout strategies of new services. City staff will continue to act as a supportive partner in facilitating an orderly deployment of new infrastructure to respond to changing household needs.

- **Review Municipal Access Agreements with telecommunications companies**. Several major telecommunications companies have asked for a review of their existing Municipal Access Agreements, which are the legal agreements that govern the use of the City's right-of-way and the cost-sharing arrangement between the City and these companies. Staff will look to advance the Smart City goal of a Connected City through the renegotiation of these agreements.

SUMMARY: This tactic will be led by staff in PIED and will be applied to Areas of Focus #2 – Improving Connectivity for Vulnerable and Rural Residents and #3 - Exploring Offering Broadband as a Public Utility.

NEXT STEPS

Staff will pursue the tactics identified and will report back to the subcommittee in 2021 with an update.

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