

REPORT

Council

Meeting Date: April 25, 2022

FROM: Community Development Commission

DATE: April 12, 2022

SUBJECT: Halton Digital Access Strategy – 5G Wireless Technology

LOCATION:

WARD: Town-wide Page 1

RECOMMENDATION:

1. That the report entitled Halton Digital Access Strategy – 5G wireless technology be received.
2. That Council support a region-wide approach for the implementation of 5G technology with the telecommunication companies leveraging municipal assets and accelerating the delivery of 5G wireless infrastructure.
3. That staff report back with a delivery and governance framework the associated financial details and a summary of formal agreements in support of the recommended 5G deployment model.
4. That the Town Clerk forward a copy of this report to the City of Burlington, the Town of Halton Hills, the Town of Milton, Halton Region, Burlington Hydro Inc., Halton Hills Hydro Inc., Milton Hydro Distribution Inc. and Oakville Hydro Electric Distribution Inc. for their information.

KEY FACTS:

The following are key points for consideration with respect to this report:

- Digital connectivity is essential to individuals for business, education, health and social connection.
- Almost 55% of Oakville households are considered underserved with respect broadband service.
- 5G technology provides an opportunity to improve digital connectivity in the Town.
- The four Hydro Electric Distribution companies, referred to as the Halton Utilities Group (HUG), have proposed a draft business model and implementation strategy for oversight and coordinating the deployment of 5G

wireless technology that would leverage the context of a comprehensive assessment of options on a Halton Region-wide basis.

- On March 4, the Halton CAO's met with senior representatives from the telecommunications companies – Rogers, Bell, Telus and Cogeco. The discussion centered around Halton's Digital Access Strategy and telcos feedback based their respective 5G business plans. Overall, there was a positive response to the Halton strategy for 5G implementation; and, there was agreement that a streamlined approach to permitting and deployment of municipal infrastructure would be beneficial with potential HUG coordination.
- Both Industry Canada (ISED) and Health Canada have concluded that the RF emissions – including those from 5G networks, do not pose a danger to the public.

BACKGROUND:

The pandemic has amplified the need for reliable, secure and fast broadband connectivity. Beyond the reliance on dependable service as an engine of commerce, we see increasing need for broadband service as people rely on technology, to be a virtual classroom for education, access health care services and as a social imperative to connect with family and friends.

A fully integrated broadband network, inclusive of all urban and rural areas, is critical and essential infrastructure to create a reliable internet service for Oakville and to accommodate strong economic development. The “Gigabit economy” that is often referred to involves the commercialization of these technologies.

In April 2021, Regional Council adopted Report No. ST-05-21 which authorized the development of a Digital Access Strategy, including:

- Broadband Digital Readiness Report:
 - Preparing implementation for Halton Region and the local municipalities - urban and rural.
 - Sizing next generation broadband network infrastructure.
- Benefits and Implementation plan:
 - Halton Region-wide 5-year digital access implementation plan.
- Strategic and commercial reports:
 - Individual reports for each of the local municipalities and Halton Region.

Under the leadership of the Halton CAO's, the Local Municipalities have been working cooperatively in addressing connectivity issues across the Region. In April, Halton Region Council approved the development of a Digital Access Strategy, which, among other things, included the retention of a consultant (Nordicity) to assess an opportunity for a coordinated approach for the implementation of 5G

small cell wireless technology through the Halton Utilities Group (HUG). A copy of the Nordicity Halton Digital Access Strategy Report is appended to this report.

Broadband Service in Oakville

The report defines adequate broadband service having 50/10MBPS speeds. Accordingly almost 55% of household in Oakville are underserved by broadband service. Implementation of 5G small cell technology is key in improving access to dependable, adequate broadband service.

Broadband Coverage by Technology	Oakville		Burlington		Milton		Halton Hills		TOTAL	
FTTH/P	12,054	17.6%	4,832	6.7%	3,609	10.2%	1,118	5.2%	21,613	10.9%
50/10Mbps	18,845	27.5%	5,500	7.6%	9,236	26.0%	5,494	25.6%	39,075	19.7%
Below 50/10Mbps	27,518	40.1%	10,412	14.4%	16,483	46.4%	8,731	40.6%	63,144	31.9%
25/5Mbps	10,027	14.6%	46,162	63.6%	5,979	16.8%	6,032	28.1%	68,200	34.4%
Below 25/5Mbps	190	0.3%	5,649	7.8%	247	0.7%	106	0.5%	6,192	3.1%
Total	68,634	100.0%	72,555	100.0%	35,554	100.0%	21,481	100.0%	198,224	100.0%

Source: Nordicity’s estimates based as based on the analysis of household density per square kilometer using ISED Census Canada, and MPAC data.

Note: Given the methodology applied, the broadband coverage for the new sub-divisions developed in 2015 or later (which are likely to be served with FTTH/P) may not have been properly represented in our above assessment.

Advocating for Digital Connectivity

CAO’s and City Managers from across the Greater Toronto Area and Hamilton have been meeting to discuss opportunities to collaborate in support of local efforts for economic recovery as the Province emerges from the pandemic. One of the ways that has been identified is addressing and promoting greater digital connectivity in our communities. The issue that was identified was the growing gap in access to reliable, adequate internet connectivity in urban areas with the greatest focus of the provincial and federal governments in rural areas. As the chart above indicates for Oakville, connectivity is a real issue for more than half of our residents.

Seen as a critical infrastructure in economic, social and educational recovery, a working group was formed to identify ways to improve digital connectivity. The key outcomes have been:

- Production of a municipally-owned digital infrastructure map across the GTAH, which identifies service gaps and opportunities to improve connectivity among municipalities
- Development of municipal-driven digital infrastructure delivery options/models for use by municipalities in considering connectivity strategies
- Development of uniform and consistent advocacy “asks” of the provincial and federal governments

The advocacy plan was presented to Council on March 28, 2022 within the report entitled “Priority Intergovernmental Requests.” The focus for advocacy was as follows:

To request supports for residents and businesses to reliable and affordable access and higher level of service.

To request the Province to:

- Ensure that incremental investments in broadband from other orders of government are made in urban areas and directed to fill gaps in the GTHA.
- Identify provincially owned fibre assets that can be leveraged to help close the digital divide – such as schools, hospitals and traffic corridors.
- Amend Section 41 (Site Plan Approval) and Section 51 (Subdivision Approval) of the Planning Act to embed internet connectivity as a requirement for all development.

To request the Government of Canada to:

- Ensure that incremental investments in broadband from other orders of government are made in urban areas and directed to fill gaps in the GTHA.
- Declare high-speed internet as an essential service, including a definition for affordability that combines fixed and mobile costs as a percentage of household income.

Technology

The term 5G can be defined as the fifth generation technology standard for cellular networks. 5G networks provide a significantly higher capacity than current 4G networks based on higher data rates, better spectral efficiency, coverage, and lower latency. 5G networks enable a much higher density of mobile users, massive Internet of Things (IoT) and machine communications, amongst other benefits. 5G deployment is more cost effective and more efficiently introduced compared to connecting each household with new fiber connections and therefore becomes critical to address local connectivity shortfalls.

Only 5G wireless networks can deliver higher data rates, improved spectral efficiency coverage, lower delays and greater reliability. With exponential growth in demand for bandwidth speed and capacity in wireless networks, it’s expected that the current 4G will soon reach its limits.

5G infrastructure is deployed using what is referred to as small cell technology. Small boxes are fixed typically to light or utility poles and are largely unnoticeable. Units are placed approximately every 250m to form a grid that adequately can provide the coverage required for consistent and reliable service.

The Halton Utilities Group (HUG) Model

The Halton Utilities Group (HUG) or local hydro companies through their non-regulated affiliated companies, have approached the municipalities of Halton Region, offering to act on behalf of the municipalities in dealing with the telecommunication companies for 5G implementation. HUG would act as the single point of contact for the telecommunication companies in Halton Region including coordinating the permit approval, licencing, design, inspection, installation and maintenance of the 5G infrastructure. The municipalities would receive revenue for the use of the light poles by the telecommunication companies. There are a number of details that need to be resolved such as the handling of municipal consent permits and related charge-backs.

In the coming weeks, the Regional CAOs and Hydro CEOs will work closely to discuss and refine the development of a business model and governance framework for Council's consideration.

Service Providers

The Halton CAO's have met with representatives from major national telecommunications companies for introductory meetings including – Rogers, Bell, Telus and Cogeco. The Halton's Digital Access Strategy was discussed, and feedback was received based on their respective 5G business plans. Overall, there was a positive response to the Halton Digital Access Strategy for 5G implementation; and there was agreement that a streamlined approach to permitting, municipal infrastructure deployment etc., would be beneficial with HUG coordination.

Among other comments shared: continue to collaborate with carriers to pilot the HUG process to derive key learnings before full implementation; form a collaborative for open dialogue with each telecommunications service provider for broadband deployment; and, recent legislation (Ontario Connecting More Communities to High-Speed Internet Access) introduced on March 7, 2022 will need to be reviewed against proposed regional approach.

5G Health Studies

Halton Region's Public Health Department and Public Health Ontario has identified Health Canada as the authority on health effects of cell phones, cell phone towers, antennas and 5G devices. In Canada, Industry Canada (ISED) sets stringent standards for RF emissions for all emitting devices including cell phones and towers, which concord with those of international organizations such as the IEEE, ITU and FCC. Similarly, Health Canada sets RF standards for devices under its Safety Code 6 within its public health mandate. Both ISED and Health Canada have concluded that the RF emissions – including those from 5G networks, do not pose a danger to the public. Staff will continue to consult with Public Health Ontario (PHO) who will

review new research evidence provided by Health Canada on new technology effects.

COMMENT/OPTIONS:

As mentioned above, the pandemic has reinforced the need for businesses and individuals for reliable digital connectivity with appropriate speeds to meet the demands of our social, business and educational interactions. The pandemic has also put a renewed emphasis on finding solutions for underserved areas. 5G is one key aspect in improving digital connectivity.

The current proposal by the Halton Utility Group presents an opportunity to have a unified and consistent approach for 5G implementation, which is a benefit for the providers of 5G technology. Having HUG act on behalf of the municipalities allows providers to have one point of contact for the coordination of the design, installation and maintenance of the infrastructure. It also off loads the increased work demand for permitting and licensing that would normally fall to the municipality.

The municipality will receive revenue for the use of municipal infrastructure, HUG receives revenue from the 5G providers from design and coordination services and the providers receive the benefit of dealing with one agency instead of five separate municipal entities in Halton.

Next steps:

Staff will present a report in June 2022 to Committee to endorse a Halton Digital Access Strategy which will also accompany information on the financial analysis and formal agreements with service providers. Similarly, in the coming months, staff of the local municipalities and Halton Region will continue to report to their respective Councils to also consider and approve their respective customized local 5G Commercial Strategy reports as prepared by Nordicity.

The staff working team will continue its work to develop a Halton Digital Access Strategy implementation business model and governance framework. New standards, processes and agreements will need to manage both operational and financial risks while preserving aesthetics and public safety.

A consultant is being engaged to work with municipalities and locally-owned hydro companies regarding the detailed development of the HUG model. At this point, options for implementation could include: i) HUG, ii) affiliated non - regulated companies (ie OEC), iii) a hybrid involving a phase-in of HUG after starting with non-regulated affiliates. Staff will be reporting back to Committee in June with a request to endorse a recommended approach.

CONSIDERATIONS:

(A) PUBLIC

N/A

(B) FINANCIAL

A future report will present revenue opportunities associated with 5G implementation using municipal infrastructure.

(C) IMPACT ON OTHER DEPARTMENTS & USERS

Using HUG as the single point of contact will minimize the requirement for staff involvement.

(D) CORPORATE STRATEGIC GOALS

Improving digital connectivity for residents and businesses as recommended in this report addresses the corporate strategic goal(s) to:

- Livability – Promote and support actions to maintain a resilient local economy
- Engaged Community - Foster a community environment that engages residents of all ages, abilities and backgrounds.

(E) CLIMATE CHANGE/ACTION

Providing reliable broadband service facilitates many opportunities including remote working, reducing the load on transportation networks.

APPENDICES:

Appendix A – Nordicity Halton Digital Access Strategy Report

Submitted by:

Neil Garbe

Commissioner of Community Development