

# THE FUTURE OF 5G FOR CALGARY'S CONNECTIVITY

Calgary's established leadership in 5G preparedness, overall connectivity and efficient regulatory environment, position the city to be a centre for 5G development and application.




## Calgary's digital advantages go well beyond its extensive fibre foundation.

- Calgary is unique among large cities in Canada, with private sector and municipal fibre optic networks that enhance delivery of 5G.
- Major carriers Telus, Shaw Communications, Rogers and Bell have invested significantly to deploy 5G services in Calgary.
- The City of Calgary has also built a 550-km dark fibre network extending to all quadrants of the city. Dark fibre is physically in place and activated when spectrum band is leased to a carrier.
- Calgary is a non-dominant internet service provider (ISP). It leases access to its fibre but does not provide internet service nor network equipment.
- This surplus open-access fibre makes Calgary attractive for companies wishing to explore the potentials of 5G.

## Calgary is leading the national movement for a coordinated effort to standardize the 5G policy process.

- Calgary released its Digital and Fibre Infrastructure Strategies in 2015, one of the first Canadian municipalities to do so.
- Digital transformation is a key element of the vision for Calgary in the New Economy.
- The City and wireless service providers created guidelines and processes to test 5G, including drafting an open access policy for smaller wireless service providers to access the infrastructure.

## 5G PROMISES:

-  Greater speed to move more data
-  Lower latency for higher responsiveness
-  The ability to connect far more smart devices and sensors at once



# CALGARY IS READY TO BE A CENTRE FOR 5G DEPLOYMENT AND APPLICATION.

**Calgary is committed to creating a comprehensive 5G ecosystem with a track record of investing in local data infrastructure.**

- Calgary is home to one of North America’s first municipally owned Long Range Low Power Wide-Area Network (LoRaWAN).
- Calgary, unique among Canadian cities, provides free access to City fibre and data servers to the local internet exchange point, the Calgary Internet Exchange (YYCIX). It is the fourth largest internet exchange in Canada.

**Calgary has made notable progress using City fibre, including achievements in innovation and IoT development.**

- University of Calgary used City fibre for the teleportation of a light particle’s properties in 2016 between its campus and downtown six kilometres away.
- The City is working with wireless service providers to create a 5G application test zone in downtown.
- The City and businesses are experimenting with IoT sensors using LoRaWAN to monitor air quality, soil conditions and river activity.

## COMPARING CANADIAN CITIES

	Development of municipally owned fibre	Existence of a Digital Action Plan	Built public wifi infrastructure	Municipal relationship with local IXP	5G specific agreement structures with City
<b>Calgary</b>	<b>Yes</b> (550km)	<b>Yes</b> (Since 2015)	<b>Yes</b>	<b>Yes</b> (Since 2012)	<b>Yes</b>
<b>Vancouver</b>	<b>Yes</b> (+300km)	<b>Yes</b> (Since 2019)	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Edmonton</b>	<b>Yes</b> (+200km)	<b>Yes</b> (Since 2019)	<b>Yes</b>	<b>No</b>	<b>No</b>
<b>Winnipeg</b>	<b>No</b>	<b>No</b>	<b>Yes</b>	<b>No</b>	<b>No</b>
<b>Toronto</b>	<b>No</b>	<b>Yes</b> (Approved in 2021)	<b>Yes</b>	<b>No</b>	<b>No</b>
<b>Ottawa</b>	<b>No</b>	<b>Yes</b> (Updated in 2019)	<b>Yes</b>	<b>No</b>	<b>No</b>
<b>Montreal</b>	<b>No</b>	<b>Yes</b> (Since 2015)	<b>Yes</b>	<b>No</b>	<b>Yes</b>
<b>Halifax</b>	<b>No</b>	<b>No</b>	<b>Yes</b>	<b>No</b>	<b>No</b>

Source: Primary research collected in fall 2020

**Municipal governments are critical to the development of fibre optic and digital infrastructure. While 5G and its applications are still not fully realized in Canada, Calgary has demonstrated the policy and process foresight needed to make the city an attractive place to develop technologies and applications.**

