B R O A D B A N D

ESSENTIAL INFRASTRUCTURE FOR ALBERTA AND CANADA'S ECONOMIC RECOVERY

Edmonton Metropolitan Region Board
Regional Action. Global Opportunity.

GERCC
Greater Edmonton Region Chambers of Commerce

Edmonton Global

RECOMMENDATIONS

To guarantee future economic prosperity and improved quality of life for Canadian, broadband must be treated as essential infrastructure. It is fully acknowledged that the costs associated with delivering broadband across Canada are significant, which is why there has not been enough of a business case to merit broad private sector investment. This is why, now more than ever, this is a capital investment that requires government leadership and support to bring the right partners to the table with a plan that will work for Canada. We are pleased to submit the following two recommendations for consideration:

1. As part of Canada's economic and social recovery, and its emphasis on building strategic and essential infrastructure, that the Government of Canada invest in capital construction of broadband infrastructure. This broadband infrastructure would be delivered through a public-private partnership (P3), incorporating a partnership between telecommunications companies and all levels of government.

2. That the Government of Canada develop a broadband infrastructure plan to be incorporated into its capital plan focusing on both rural and urban underserved areas and placing a high priority on business and commercial areas. This supports a vision of a connected and globally competitive Canada, where your postcode does not determine your ability to expand your business, access education, training and healthcare, or ensure connection to government services.

A GLOBAL DIGITAL TRANSFORMATION

Even before the onset of COVID-19, the global economy was going through a major transformation.

The coronavirus pandemic has accelerated many of the existing digitization trends in all industries and has driven consumers, businesses, students, healthcare and government services online.

> *"What we found is that the COVID-19 story isn't so much "before and after" as it is "before and faster."*
>
> **DELOITTE**

Digital Shifts From the Pandemic:

- **E-COMMERCE:** Since February, Canada's e-commerce volume has doubled – and nearly half of all consumers were first-time online buyers of new products or services and as many intended to continue.
- **E-LEARNING:** In March, 2020, all of Alberta's post-secondary and K-12 educational institutions went to online learning, and most of Alberta's post-secondary institutions have declared they will continue online for the fall semester.
- **E-HEALTH:** Healthcare transitioned to virtual as well: Calgary's PurposeMed launched in March 2020 to support healthcare access. Its 25 Alberta doctors frequently have caseloads of 400 patients a day, with appointments booked through their online platform and "visits" occurring through video call.
- **DIGITAL GOVERNMENT:** Within Alberta, 24 essential government services (from tenancy disputes, to income support, to apprenticeship applications and government surplus sales) transitioned from an in-person to an online model.
- **DIGITIZED SUPPLY CHAINS:** Manufacturers who previously looked at data, IoT and robotics to drive efficiency now see them as tools to increase resiliency during uncertain times. Industrial products and pharmaceutical manufacturers looked to smart factory initiatives while consumer-oriented companies focused on demand-sensing technologies and preventative maintenance solutions for machinery and equipment.

  Everything from groceries to government services to education to daily office operations has shifted online, and though economies and borders are reopening, the digital trends will remain strong and continue to grow. All of this means broadband has gone from being a competitive advantage to being essential infrastructure and imperative to Alberta's economic recovery.

OPPORTUNITY COST OF THE STATUS QUO

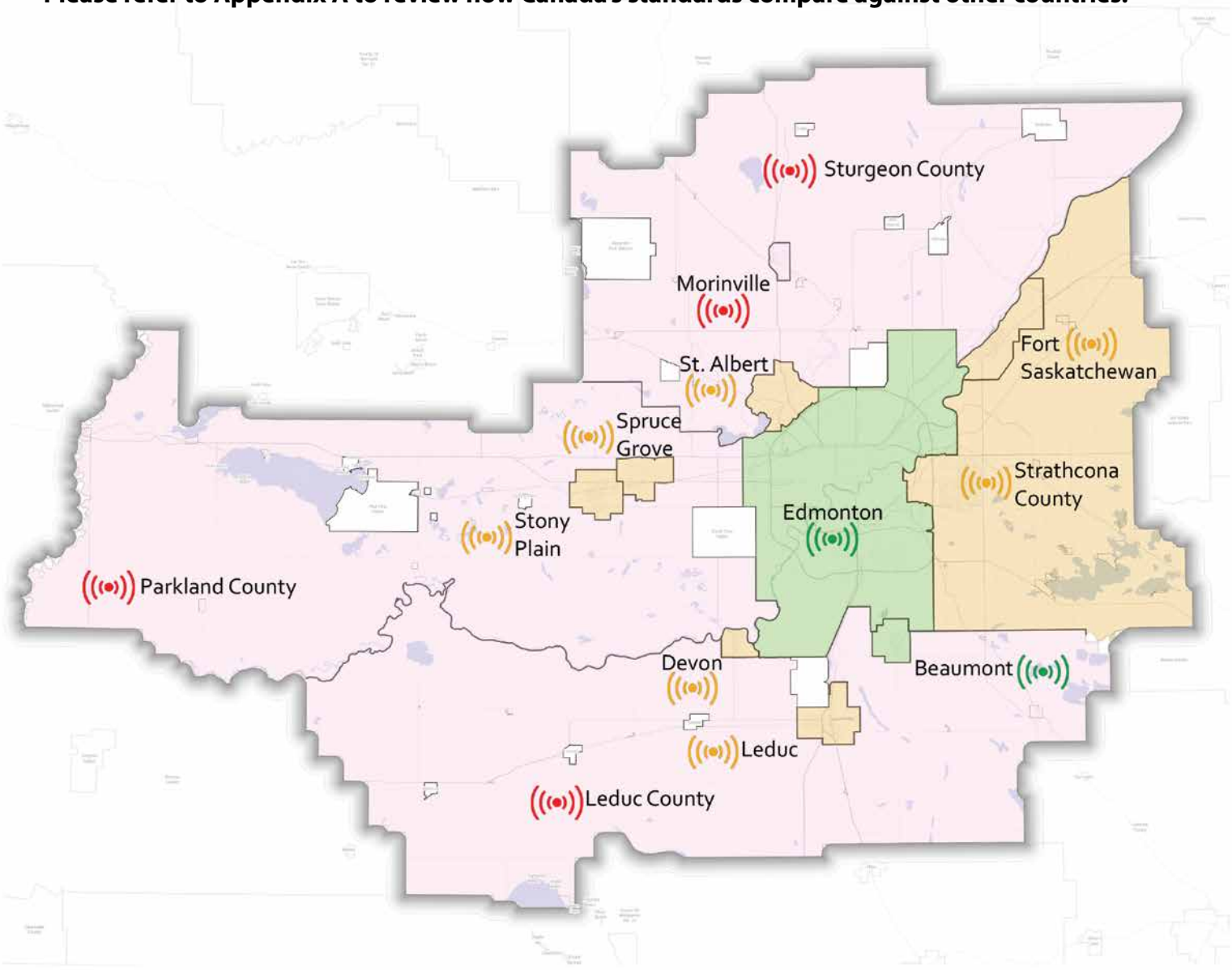
In March, 2020, citizens across the globe were forced online for basic essential goods and services, to run their businesses, for employment, and to access healthcare and education. Too many Albertans – business owners, consumers, farmers/rural residents, students, and healthcare providers alike – struggled or were cut off because of insufficient, or entirely unavailable, internet connectivity.

The Canadian Radio-television and Telecommunications Commission (CRTC) has set their targeted internet speeds (of at least 50 Mbps for downloads and 10 Mbps for uploads) based on the minimum required for Canadians to be able to access technologies and services offered online like telehealth and business support services. But many communities across Canada, Alberta and specifically, the Edmonton Metropolitan Region, do not even meet these minimum standards.

In fact, outside of the cities of Calgary and Edmonton, only 63% of Albertans have access to broadband, which includes even the communities that directly border Alberta's two largest cities. This is affecting Alberta's bottom-line and the health, well-being and day to day lives of so many Albertans.

The Digital Divide: Broadband Deficiencies in the Edmonton Metropolitan Region

The national average download speed across the United States is 64 Mbps – with most urban areas far exceeding that speed[1]. Based on the average speeds in our neighbouring and competing nations, the CRTC's minimum targeted speed of 50 Mbps is the digital infrastructure equivalent of having access to running water and electricity. **However, as the map below illustrates, many of the communities – both urban and rural – in the Edmonton Metropolitan Region, don't even meet those basic thresholds. Please refer to Appendix A to review how Canada's standards compare against other countries.**



[1] *https://www.popsci.com/story/technology/work-from-home-broadband-connection-internet-fcc/*

OPPORTUNITY COST OF STATUS QUO

Investment Attraction

Alberta's lack of broadband has led to a slow degradation over time of our ability to participate and compete in the increasingly digital global economy.

International site selectors and investors have indicated:

> ***"It is an expectation now that metro regions will be well equipped with broadband access. It used to be an initial screening process but now it is just assumed to be available. Municipalities that have a higher chance of facing issues with broadband or aren't wired for it will not be shortlisted when it come to site selection."***

> ***"Data infrastructure is becoming more and more common when it comes to transportation, logistics (tracking delivery packages, Industry 4.0), food manufacturing (traceability) and many other industries. It will become inherently difficult to find functions that don't require secure broadband access."***

Business Retention and Expansion

In recent years, our small and medium enterprises (SMEs) have also struggled with global competitiveness and productivity from lack of technology adoption and digitization, which is in part attributed to the lack of broadband.

As of 2018, Canada productivity rate was 12% below the G7 average. A BDC study in 2015 noted that SME productivity is lower still, operating at 47% of the productivity rate of Canada's larger businesses on a per-unit basis. (By contrast, in the USA, SME productivity is 67% that of large businesses.) Even though SMEs create and maintain many jobs, these jobs are operating at roughly half the efficiency of their larger-enterprise counterparts—partly due to a lack of adequate and up-to-date technology. From 2014 to 2018, labour productivity in Alberta grew by just 0.5% – by far the slowest rate of growth in the country.

Societal

- As more post-secondary institutions transition to online course delivery through 2020 and will increase online offerings in future years, students without broadband access at home will be unable to complete coursework and have limited access to future courses.
- As supply chains continue to be strained and stores struggle to maintain stock, lack of broadband in certain communities limits their access to online shopping for goods and services and markets outside their community.
- As public health and maintaining social distance protocols continue for the foreseeable future, lack of broadband means limited connectivity to family, friends and community and could result in seniors isolation and loneliness and compound mental health struggles across all demographics.

BENEFITS OF INVESTING IN BROADBAND

ECONOMIC

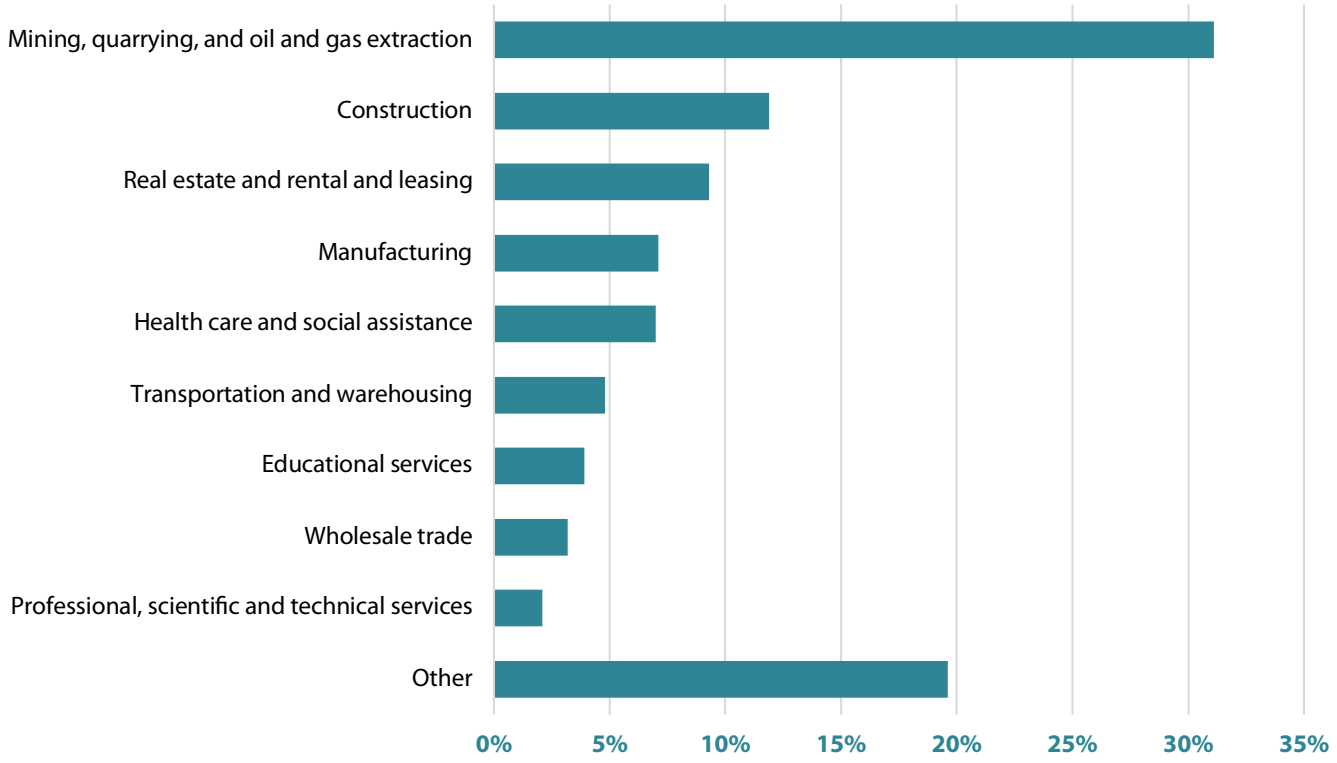
Increase to GDP

Improving broadband connectivity across the Edmonton Region could increase GDP by up to $1 billion per year, which translates to, approximately, an incremental increase of 1%. The potential impact of wider adoption of digital technologies could boost Alberta's GDP by $44.3 billion over the next ten-years.

- **Growing export activity and revenue**
  Alberta's exporting businesses earn nearly double the annual revenue of the average Canadian exporting business. Adding digital enablement and capacity will enhance Alberta's strong exporting capacity, making it even more competitive.
- **Increasing productivity of Alberta companies**
  A 10% increase in the number of staff using computers improved productivity by 1.3%, and companies with multiple digital technology investments improved productivity by 12%.

ALL INDUSTRIES BENEFIT FROM BROADBAND

Percentage improvement by industry from improved broadband connectivity



Source: Edmonton Metropolitan Region Board Broadband Situation Analysis – socioeconomic implications, June 2020 (EMRB Broadband Analysis)

INCREASING FARMING INCOME

In Alberta, increased adoption of precision agriculture through improved broadband connectivity and use of big data analytics could increase Alberta's net farm income by nearly $225 million per year.

Source: Edmonton Metropolitan Region Board Broadband Situation Analysis – socioeconomic implications, June 2020

IMPROVING PIPELINE MONITORING & LEAK DETECTION

Internet of Things (IoT) pipeline monitoring can bolster competitive edge in the oil & gas market by Accelerating troubleshooting and responses, Enabling advanced maintenance strategies, Automating manual tasks, and Optimizing asset utilization and future design.

Source: "4 Ways IoT Reimagines Pipeline Monitoring in Oil & Gas, BehrTech

REDUCING HEALTHCARE COSTS

Based on a study measuring the impact of e-health on the health outcome of elderly veterans, it was estimated that such digital solutions could lead to a 63% reduction in hospital admissions, a 60% reduction in length of stay and 40% reduction in emergency room visits by the elderly in Alberta.

Source: Robert E. Litan; Vital signs via broadband: remote health monitoring transmits savings, enhances lives; 2008 (cited in EMRB Broadband Analysis)

SOCIAL

- **Emergency Response/Preparedness**
  High-speed internet enables public service groups and first responders to receive and share text, pictures and videos with colleagues and the broader public, enabling them to better prepare for emergency situations.

- **Education and Skills**
  Broadband improves education and skills through distance learning and access to online information. High-speed internet enables videoconference communication between teachers and students.

- **Healthcare**
  Improved broadband connectivity reduces the cost of providing health and social care services and improves outcomes through remote diagnosis and monitoring. A crucial part of effective telehealth services is the transmission of high-definition medical images, possible by high-speed internet.

APPENDIX A

INTERNATIONAL COMPARISON OF TARGET SPEEDS[1]

COUNTRY	DOWNLOAD TARGET (MPBS)	COVERAGE TARGET (HOUSEHOLDS)	TIMEFRAME
Canada	5	Most, with some exceptions in the North	2017
	3	Northern	
United States	100	95%	2020
Australia	12	93%	2020
	100	7%	
Finland	100	100%	2016
Germany	50	100%	2020
Denmark	100	100%	2020
Japan	100	100%	2016
Sweden	100	90%	2020
United Kingdom	24	95%	2017
New Zealand	100	75%	2019
Germany	50	100%	2020
EU guidance	30	100%	2020
	100	50%	
Egypt	25	90%	2021
Israel	100	66%	2019
Spain	100	100%	2020

[1] Intervention – Telecom Notice of Hearing CRTC 2015-134-5, Review of basic telecommunications services CRTC File No.: 8663-C12-201503186, May 25, 2016."