RPLC RGN POLICY BRIEF

CONNECTING RURAL CANADA

A DIGITAL NEW DEAL FOR RURAL CANADA:

Exploring Opportunities for Local Governments to Invest in Critical Broadband Infrastructure

Prepared for the Rural Policy Learning Commons Rural Governance Network

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POLICY BRIEF

The pronounced digital divide between rural and urban communities in Canada remains a persistent and challenging issue despite decades of program announcements and policy statements. Faced with this challenge, how can local governments build their futures through investing in this critical infrastructure and promote a digital new deal for rural Canada?

BROADBAND: AN ESSENTIAL CONNECTION

Reliable high-speed Internet connectivity - powered by broadband infrastructure - is as critical to modern community economic development as well-maintained roads, safe water, and electricity (BDO, 2017; CRRF, 2017). Despite decades of calls for investments in broadband infrastructure that have intensified in recent years (Jeffords, 2019; Middleton, 2017; FCM, 2019) and recognition of the critical role of the Internet in our everyday lives, Canada continues to lack universal broadband access. Rural communities are disproportionately affected by uneven access to high-speed Internet services (Black, 2019). While much advice focuses on federal and provincial policy, local governments may find that advancing their own agendas is just as important as advocating to other orders of government. As chief stewards of both core infrastructure and quality-of-life initiatives that promote social, cultural, and economic development, local governments are uniquely and ideally positioned to lead the way in implementing strategic policies and investments in broadband infrastructure and connect rural and remote Canadians to the modern services that they require to thrive in an increasingly digital world.

WHAT CAN LOCAL GOVERNMENTS DO?

This policy brief provides critical background information and ideas to help local government leaders and policy makers in rural areas explore opportunities for working both within current policy and funding frameworks (wherever possible) and around these frameworks, where they are either insufficient or create barriers to building broadband infrastructure in a timely or effective manner. The policy options discussed in this brief include:

-1-
PLAN FOR BROADBAND INFRASTRUCTURE

-2-
AGGREGATE DEMAND

-3-
COMMIT TO COMMUNITY OWNERSHIP

CONTEXT: WHY BROADBAND

WHY SHOULD LOCAL GOVERNMENTS CARE ABOUT CONNECTIVITY? WHAT ARE THE KEY CHALLENGES & INVESTMENT OPPORTUNITIES?

Broadband has become the common term for talking about the infrastructure that enables Internet connectivity. It's the type of Internet connection that goes beyond dial-up (or "narrowband") connections that operated through legacy telecommunications infrastructure as the standard way people access digital services. Although the term 'broadband' can be used to describe a wide variety of technologies that transfer data, it refers mostly to wide bandwidth data transmission services that are capable of transporting multiple signals and traffic types (NRC, 2002). These high-speed transmission technologies can include DSL (Digital Subscribe Line), cable, satellite, wireless, Broadband-Over-Powerlines (BPL), and fibre-optics. Unlike dial-up, where only one connection could take place at a time (i.e., users could either use their service to make phone-calls or connect to the Internet, but not both at the same time), broadband connectivity is "always on" and can be access at any time. Many areas of the world are advance from 3G to 4G and now 5G, where the 'G' stands for 'generation', indicating each step forward in cellular networks that first allowed voice communication, then text and multimedia messaging, to networks that are now capable of handling enormous transfers of data. These 'next generation' broadband cellular networks cannot function without sufficient physical infrastructure (i.e. fibre-optic connectivity to cellular towers). In practical terms, broadband infrastructure is the type of connectivity required to stream videos, access online education, delivery tele-medicine, or access nearly any modern digital service.

In June 2016, the United Nations declared Internet access a basic human right (UN, 2016). However, the digitization of the Canadian economy remains both uneven and and incomplete due in large part to a persistent imbalance in broadband access between urban and rural communities (Middleton, 2017). Many communities are being left behind both in terms of access and adoption. The lack of universal access to affordable, reliable, high-quality, high-speed broadband services remains a serious barrier to rural Canadians' ability to benefit from advances in tele-medicine, virtual education, tele-commuting (Hambly & Lee, 2019), accessing important information about current events both locally and globally, cultural resources and programs, and the full range of public and private digital services. As the federal and provincial governments in Canada pursue plans to deliver services through digital-first and digital-by-default approaches (Government of Ontario, 2019; Government of Canada, 2018), equitable access to broadband connectivity must remain a top priority for policy makers across all orders of government.

There has been some progress, as broadband was recognized as critical infrastructure for the first time in the Government of Canada's 2016 Budget and (Government of Canada, 2016) and a new Minister for Rural Economic Development was introduced in 2019, housed within the Ministry of Infrastructure. This new office released two new strategies within its first six months: "Rural Opportunities, National Prosperity: An Economic Development Strategy for Rural Canada" and "High-Speed Access for All: Canada's Connectivity Strategy" (Government of Canada, 2020). Similarly, the Governments of Ontario and Saskatchewan are both moving forward with their own complementary rural broadband strategies (Government of Canada, 2018b). These initiatives indicate that awareness of rural Canada's broadband deficit has reached an all-time high. However, analysis of Canadian broadband funding programs from 1994 to 2016 completed by McNally, Rathi, Evaniew & Wu (2018) reveals concerns about the long-term effectiveness and lack of continuity and meaningful change brought about by these kinds of initiatives. The typical outcome of these programs has been to support private gains for telecommunications firms while not fully realizing the democratic potential of broadband infrastructure as a public good. As evidenced by Bell Canada's recent threat to pull back from building rural broadband infrastructure after a CRTC decision about opening the whole-sale market to smaller firms, the de-regulation of the telecommunications market in Canada has resulted in a landscape where a handful of companies determine which communities get connected (Bickis, 2019).

Despite winning considerable attention for the issue of rural Canada's massive broadband deficit through the focused advocacy of organizations like the Federation of Canadian Municipalities and its provincial equivalents, rural Canadians and the local governments that serve them must not wait for someone else to lead the way on connectivity; as Dr. Ryan Gibson has argued, "Queen's Park is not coming to the rescue" (Craig, 2020). Local governments must not only be the voice for what rural Canadians and rural communities need, but must also lead the way in taking meaningful action in building their own futures through local policy, programming, and strategic investment.

THE STATE OF BROADBAND IN RURAL CANADA

Canada was once a leader in broadband connectivity (McNally, Rathi, Evaniew & Wu, 2018). However, despite eight federal broadband programs over the last twenty-plus years, Canada has experienced declining performance in the extension and adoption of the latest advances in broadband technologies. Rural communities remain at a disadvantage and have yet to accrue the full socio-economic benefits of being connected to modern broadband infrastructure (Hallstrom, Heinrich & Pearson, 2017).

The latest federal broadband program arrived three years after the Canadian Radio-Television and Telecommunications Commission (CRTC) declared broadband a basic telecommunications service and the Government of Canada committed $500 million to funding broadband infrastructure through the Connect to Innovate program (Kupfer, 2016; ISED, 2016). Since 2016, both the Government of Canada and provincial governments across Canada have announced continued investments in rural broadband, with the federal government committing to $5-6 billion over 10 years, including $1.7 billion in a Universal Broadband Fund (FCM, 2019) and the Government of Ontario announcing $150 million over four years to expand broadband and cellular access (Government of Ontario, 2019). However, the broadband infrastructure deficit is estimated to be $4-7 billion in Southwestern Ontario alone, indicating a general trend of massively under-investing in this critical infrastructure by both the public and private sectors (SWIFT, 2012). Additionally, as funding programs are announced, they often obscure funding that has been previously committed in prior budgets or programs and continue to promote target speeds in rural Canada that are well-below current urban standards (50 Mpbs download/5 Mbps upload speeds). Further, these investments are essentially programmatic responses to structural and systemic challenges and do little to alter the current regulatory landscape that has resulted in de-facto monopoly markets for the major telecommunications service providers in Canada. As a result, despite the importance of broadband as critical infrastructure being recognized in Canadian policy frameworks from as early as 1992 and despite decades of investment strategies, access to reliable, high-quality, affordable broadband service remains out of reach for many rural Canadians (Middleton, 2017).

CHALLENGES TO BUILDING RURAL BRAODBAND

PHYSICAL

Most rural Canadians don't have access to fibre connectivity or even older Internet technologies like cable or DSL. While many rural areas are serviced by telephone lines, DSL infrastructure does not support modern data requirements over long distances (Cybera, 2017). Many rural areas are heavily forested, bounded by water or supported by the Canadian Shield, creating environmental obstacles to installing fibre-optic cables underground or using 3G, 4G, or 5G transmission signals.

FINANCIAL

Rural service delivery is challenging,. Broadband services are no different (CRRF, 2017; Middleton, 2017). The return on investment for broadband capital projects in rural areas is often not profitable enough to attract private sector investment due the low number of potential customers and the physical distance that must be covered (CRRF, 2017; Pant & Hambly Odame, 2017). Rural municipalities already facing already challenging budgetary constraints may not be able to handle additional financial burdens associated with added infrastructure costs.

CAPACITY

Rural communities vary enormously in their capacities to manage current and future infrastructure challenges. Because broadband is not considered a core municipal service (yet), local governments may not have the internal skills or capacity to manage a network or assertively pursue appropriate service arrangements. Further, lack of digital literacy sometimes means that decision makers are unsure of justifications for large public investments in broadband infrastructure (Middleton, 2017; Pant & Hambly Odame, 2017).

POLICY OPTIONS

WHAT CAN LOCAL GOVERNMENTS DO?

Challenges to broadband deployment vary according to place-based factors such as the unique physical and/or human capacity endowments specific to a given community (CWTA, n.d.). Local governments are increasingly responsible for their own development and, as such, are uniquely positioned to advocate for and develop broadband infrastructure investment mechanisms that reflect their community's specific place-based contexts, needs, and aspirations (cf. CRRF, 2015; Carter & Vodden, 2017; Halseth, Markey, & Bruce, 2009; Knickel, Brunori, Rand, & Proost, 2009; OECD, 2014; Reimer, 2006; Spears, 2016; Speer & Jivani, 2017; Vodden, Gibson & Baldacchio, 2015). Now, more than ever, local governments must invest in broadband infrastructure to enable local innovation and support access to critical advances in virtual health, education, and public service delivery as well as access to important social, cultural, and economic opportunities both at home and around the world (cf. Annis & Gibson, 2006; CRRF, 2017; Middleton, 2017; Pant & Hambly Odame, 2017; Weeden, 2016).

There are many actions local governments can take to make their communities investment-ready for broadband infrastructure. Three critical options will be presented in detail in this policy brief and include:

1

Ensure broadband infrastructure is included in Official Plans, Strategic Plans, Economic Development Plans and, most importantly, Asset Management Plans

There is a reason that the old adage "failure to plan is a plan to fail" often rings true. Local governments must ensure broadband infrastructure is included in critical planning processes, particularly capital planning and asset management processes so they can be as 'shovel ready' as possible whenever new investment opportunities become available. For example, local governments should consider "dig once" policies that encourage installing "dark fibre" (conduit) during road maintenance or municipal servicing construction activities.

2

Work regionally to aggregate demand and negotiate from a position of power.

Local governments should work collaboratively with regional public sector partners, such as health care and educational institutions, and other broader public-, private-, and non-profit sector stakeholders to aggregate demand for services. By negotiating as a collective, these networks create more attractive service areas, with higher returns on investment and greater market clout, which enables local actors to negotiate better terms with service providers.

3

Create a municipally-owned open-access network to connect the community.

Treating broadband infrastructure as a public good and investing in building a local network gives local governments the ability to provide public stewardship of this critical infrastructure. Options range from creating a municipally owned and operated network that functions like a utility to leasing/selling bandwidth to private sector service providers based on community-determined service requirements to encourage competition.

POLICY OPTION 1: PLANNING FOR BROADBAND INFRASTRUCTURE

WHAT CAN LOCAL GOVERNMENTS DO?

PUT BROADBAND ON THE LOCAL AGENDA: ENSURE BROADBAND IS INCLUDED AS PART OF CORE INFRASTRUCTURE & ASSET MANAGEMENT PLANS, STRATEGIC INVESTMENT PLANS, AND COMMUNITY ECONOMIC DEVELOPMENT STRATEGIES.

One way that local governments can immediately begin seizing their digital destines is by planning for the broadband infrastructure that serves as the primary enabling foundation for technological innovation and virtual service delivery. For many individuals and families looking to relocate, access to reliable and affordable Internet service is as important as municipally serviced lots or well-maintained roads.

BROADBAND LEVY & RESERVES

The Town of Caledon has successfully begun the process of planning for broadband infrastructure investments by adding a Broadband Levy to its property taxes. At 1% of the total tax rate, the Broadband Levy is intended to ensure Caledon is ready to support broadband infrastructure investments through its participation in initiatives like the SouthWestern Integrated Fibre Technology Initiative or to ensure that the required funds are available to leverage future broadband infrastructure investment programs and partnerships. Other communities, like Grey County, have set aside specific reserve funds to ensure funds are available for broadband initiatives as they develop into the future.

DARK FIBRE

One of the lowest cost and lowest risk options is for local governments to ensure that conduit and fibre-optic cables are installed as part of other capital projects, such as road maintenance or servicing development sites, making the infrastructure easily accessible to ISPs to lease in the future (or ensure the infrastructure is available for future government use). Typically, this approach is used in specific areas of a community, like a business park or mandated as part of development charges and approvals. However, cities like Stockholm, Sweden and Huntsville, Alabama have employed dark fibre to lay the foundation for connectivity to nearly every premise in their communities (ILSR, n.d.).

PLANNING AHEAD

Finally, ensure that broadband is listed as a key priority in your local government's strategic plan so that it remains top of mind during decision making processes. Begin investigating ways that broadband might be accounted for in an asset management plan, and consider any zoning or development requirements need to be included in your Official Plan to account for broadband infrastructure.

POLICY OPTION 2: AGGREGATE DEMAND

WHAT CAN LOCAL GOVERNMENTS DO?

LEVERAGE RELATIONSHIPS WITH STAKEHOLDERS TO FORM A BUYING GROUP OR JOIN A REGIONAL INFRASTRUCTURE INVESTMENT INITIATIVE.

Local governments often share strong relationships with other public sector organizations in their communities and are well connected to private sector stakeholders who they aim to support as part of their economic development strategies. Every single one of these critical institutions, service organizations, and businesses require reliable and affordable connectivity. Often, each organization or corporation is left on its own to negotiate service agreements with ISPs, limiting their ability to influence the terms of service and leaving these core community institutions at the mercy of severely limited market choices (if there are choices at all). In many respects, this is like the individual consumer negotiating a service contract - even large organizations are often left with little influence over the their service prices and level.

Local governments can lead their communities by leveraging these relationships to aggregate demand by forming a purchasing collective or co-operative model for procuring broadband services. By combining core public sector sites and key private sector locations with high demand for broadband, community institutions increase their purchasing influence and become a much larger negotiating body. Harnessing the true power of community means this collective can function like a consortium or co-operative to get the best deal for all members.

LEARN FROM SUCCESS: SWIFT & EORN

This model has been adopted to differing extents by the SouthWestern Integrated Fibre Technology (SWIFT) Initiative and the Eastern Ontario Regional Network (EORN) to support large-scale public-private-partnerships that both procure capital investments in physical infrastructure as well as aggregating demand for purchasing services on behalf of members (SWIFT, 2017). By working together with regional partners, local governments have championed transformational broadband infrastructure investments in both of these regions. EORN was spearheaded by the Eastern Ontario Wardens' Caucus, representing 13 upper- and single-tier municipalities in Eastern Ontario, and worked with ISPs to build a 5,500-km network of new and existing fibre optic, with 160 new access points. SWIFT was spearheaded by the Western Ontario Wardens' Caucus, representing 15 upper- and single-tier municipalities in Western Ontario, and was quickly joined by members from First Nations, healthcare, education, and the Ontario Federation of Agriculture. SWIFT aims to invest $300 million to connect over 350 communities to fibre optic broadband.

Visit www.swiftnetwork.ca to learn more about SWIFT or visit www.eorn.ca to learn more about EORN.

POLICY OPTION 3: COMMUNITY OWNERSHIP

WHAT CAN LOCAL GOVERNMENTS DO?

BUILD THE NETWORK AS A MUNICIPAL ASSET, RUN THE NETWORK LIKE A UTILITY OR LEASE BANDWIDTH TO PRIVATE SERVICE PROVIDERS TO INCREASE COMPETITION.

"Open Access Networks' typically take the form of a local government building and operating a fibre-optic network and making it available to multiple ISPs that compete for subscribers/customers. The local government typically does not offer services directly to subscribers in this model.

In an open access network, any provider - of any size - is offered the same opportunity to deliver services across municipally owned infrastructure. Rather than relying on service providers to build their own infrastructure, this model allows greater competition by opening the market to smaller providers who may not have the capital to invest in large networks of their own. More competition in the market should result in lower prices and better services for consumers. For ISPs, community owned open access networks offer the opportunity to see higher return-on-investment or profits from infrastructure they didn't have to build from their own funds. Residents, businesses and community organizations receive better terms of service and the local ISP market has the opportunity to grow their businesses - everybody wins.

Alternatively, some communities have opted to run their own full service networks as utilities, like Chattanooga, TN and Stratford, ON. For local governments that already operate a public utility or have the capacity to do so, this is often an attractive way of ensuring community-wide service at affordable rates.

WHO DOES WHAT? HOW DOES A NETWORK WORK?

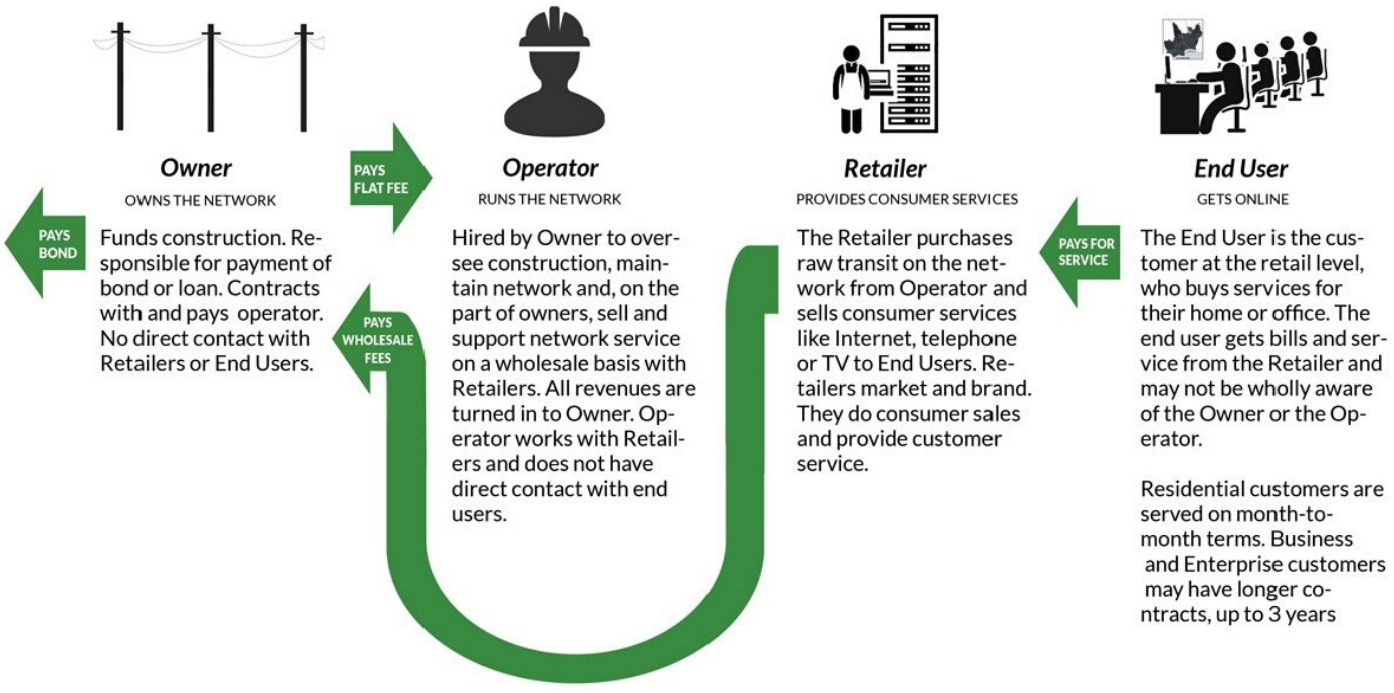

Image Source: MuniNetworks, 2016

SUMMARY RECOMMENDATIONS

HOW DO LOCAL GOVERNMENTS GET STARTED?

This brief has highlight some of the key challenges and opportunities facing Canada's local governments as they seek to respond to current and future infrastructure demands, including the new and increasingly pressing importance of broadband infrastructure (Weeden & Gibson, 2019). While some communities may be just beginning to incorporate broadband into key infrastructure investment plans, some may have the capacity to pursue collaborative service procurement or even build their own networks, while others may be part of regional networks that are actively managing service relationships for member communities and organizations. There are three things that all local governments can do to increase their capacity and increase the effectiveness and efficiency of any current or future broadband initiatives

1

Assess the state of connectivity in your community:
While international data on broadband availability and adoption has grown in recent years, Canadian assessments of rural broadband availability and adoption are still in their early stages (Pant & Hambly Odame, 2017). As trusted public institutions, local governments are ideally positioned to partner with research institutions to collect and analyze data about local connectivity needs, challenges, gaps and opportunities. This data is invaluable to supporting funding applications, determining where investments are most needed, and bench-marking progress toward achieving community connectivity goals.

2

Identify and pursue funding opportunities and partnerships:
There have been several funding opportunities announced in the last several years that focus on supporting local governments involvement in stewarding broadband infrastructure investments. Local governments must evaluate and prepare to respond to these funding opportunities as early as possible while being prepared to advocate for place-responsive applications of these programs that may deviate from their prescribed frameworks. Local governments should consider local or regional partners that may help support funding applications and should involve partners and expert advisors (through networks such as the Rural Policy Learning Commons or the Canadian Rural Revitalization Foundation) early in the process to build capacity.

3

Plan for the future, act for today:
The worst possible thing that local governments can do is assume that someone else will take care of their broadband infrastructure needs – whether that's the provincial or federal governments or the private sector. As local governments become responsible for more of their own community economic development investments, broadband must be considered as a critical enabling technology for modern business development and public sector service delivery. Connectivity must be made a priority in key local government strategies to ensure investment decisions match community priorities and are front of mind during decision making processes.

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