Solving the Rural Broadband Problem for a Generation

EORN GIG PROJECT SUMMARY

EORN
EASTERN ONTARIO
REGIONAL NETWORK

EORN
EASTERN ONTARIO
REGIONAL NETWORK

Table of Contents

Introduction

Now is the time to truly solve the lack of access to modern, high-speed broadband for rural Ontarians and businesses. This investment will help grow the regional, provincial, and national economy and facilitate the post-pandemic economic recovery. Investing in the Eastern Ontario Regional Network (EORN) Gig Project will address current needs and those of the next generation.

Today's economy is digital, and it is a key component in the economic development of rural regions. The COVID-19 pandemic laid bare the massive divide between rural and urban Canadians when it comes to accessing high-speed internet services. Rural residents need high-speed broadband to work from home, participate in online education and access online medical care. In a recent online business survey conducted by the Eastern Ontario Leadership Council (EOLC), 57 per cent of the more than 250 participants identified internet connectivity and high-speed internet as the most significant barrier to growth in our region.

In December 2016, the Canadian Radio-television and Telecommunications Commission's universal service objective proposed that: "the Commission expects fixed broadband Internet access services, based on the criteria set out above (speeds of at least 50 Mbps download and 10 Mbps upload, known as 50/10) to be available in 90% of Canadian premises by the end of 2021, and in the remaining 10% of Canadian premises within 10 to 15 years."

In 2019, only 46 per cent of rural homes and businesses in eastern Ontario had access to 50/10 across the region. Just 63 per cent of households and businesses in eastern Ontario including separated cities had that access.

By the time eastern Ontario achieves the universal service objective, which would be 2030 to 2035 under the CRTC timeframes, access to 50/10 will be outdated and new investments will be needed. The EORN Gig Project aims to solve the problem for a generation. It's a solution based on our proven model of market failure analysis and it can be implemented immediately.

The cost to get 1 Gbps service to 95 per cent of the residences and businesses in eastern Ontario could be as high as $1.6 billion, with a contribution of $450 million each from both the federal and provincial governments. The total project cost could be reduced to $1.2 billion if:

- The Province of Ontario, working with Hydro One and other utilities, reduced current high rates for utility pole replacement to align with that of other provinces, and reduced the cost of hanging broadband fibre from utility poles.

- The Canada Infrastructure Bank (CIB) provided a $400 million to $600 million loan to telecom service providers (TSPs) through an EORN model special purpose vehicle (SPV). This involves creating a subsidiary to flow through the funding as per CIB requirements. This would reduce the federal and provincial contribution to as low as $200 million each.

Project description

EORN has an evidence-based solution for eastern Ontario that will level the playing field for rural residents and businesses in the digital economy. Delivering up to 1,000 Mbps through a fibre-based solution makes good sense and avoids the need for further investments long into the future. The EORN Gig Project is a made-in-eastern Ontario solution that has caught the imagination of local leaders and residents. It has garnered strong support across the business, health care, education, and government sectors.

Once the funding commitments are in place, EORN will extend its existing market failure analysis and divide the region into several mixed high and low-density project zones. EORN will then issue several fair, open and competitive requests for proposals (RFPs) for these zones to contract with TSPs to construct, maintain and operate the Gig Project. Small, medium and large service providers will all be eligible and encouraged to provide competitive bids to build the project. EORN will also enter into long-term contracts with TSPs to ensure that service level agreements are fulfilled, and that ongoing private sector investment keep the network current and up to date.

Even with less federal and provincial funding, and limited participation from the CIB, EORN is confident it can develop a project that pushes 1 Gig broadband service to a substantial part of the region. This approach would serve less than the 95 per cent coverage target, with remaining areas only receiving a 50/10 solution. However, these areas would get access to this national target significantly faster than 2035. Even in this form, the project would deliver value to the region. With the project's investment in a fibre infrastructure, and the continuing improvements in last mile technologies, the remaining areas may get speeds even better than 50/10.

"The urgency to invest in the Gig Project in eastern Ontario is akin to the priority governments place on urban transit. Quality of life, access to education and training, jobs, economic productivity, and the retention and expansion of local business will absolutely suffer unless we fix this problem for a generation now."

- Nancy Peckford, Mayor of the Municipality of North Grenville

Why eastern Ontario? Why now?

- EORN has a well-developed, evidence-based market failure analysis process. This helps minimize the amount of public funding needed to deliver the essential infrastructure that the private sector cannot provide economically. It also ensures accurate project cost estimates so that the funding requested is sufficient to achieve the project goals.

- EORN can leverage funding. EORN's approach of combining federal, provincial, municipal, and private funding to solve the market failure problem is unique across Canada.

- EORN has a proven record of delivering solid return on investment. EORN's first project between 2010 and 2015 (also known as Phase 1) invested $175 million of federal, provincial, municipal and private broadband funding, which triggered more than $100 million in additional investment to date.

- The Gig Project includes loans from the CIB, that combined with the federal and provincial grants, provides a unique and cost-effective way to solve the market failure problem. It helps the CIB fulfil its mandate to invest $1 billion in broadband and quickly proceed with a significant regional investment.

- EORN has a track record of success in Ontario and beyond: $175 million broadband Phase 1 project completed in 2015; $213 million regional Cell Gap Project in progress; development of a $300 million strategic plan, market failure analysis and governance model to establish a crown corporation in Nova Scotia.

- EORN already has a plan. To be effective, COVID-19 economic stimulus recovery funding needs to be invested in the short term not the long term. EORN has a core team and a plan to get Gig broadband to the home and business in five years.

- EORN provides a model for all of Canada. The EORN regional public-private partnership (PPP) model based on market failure analysis could be replicated across the country. EORN has already demonstrated this in Nova Scotia.

- The COVID-19 pandemic has created the need to act quickly. From the July 24, 2020 Economic Recovery Update delivered by the EOLC:
  - "Total projected impact of COVID on annual decrease in Gross Domestic Product (GDP) in Eastern Ontario is about $3.1 billion, which could increase to between $5.4 billion and $6.7 billion by January 2021."
  - "Lack of adequate broadband and cellular impacting all sectors; capacity is being stressed due to lockdown/work from home and use of cell services has increased operational costs dramatically."

Why a Gig and not 50/10?

Participation in the digital economy requires access to high-speed fixed and mobile broadband. Economic development depends on access to digital infrastructure for residents to work online, for students to study online, and for businesses to sell products and services online. Residents, businesses, health care workers, students and educators in eastern Ontario are calling and writing their wardens, mayors, MPs and MPPs every day to ask for better broadband access.

Eastern Ontario cannot wait 15 years to get access to the CRTC service goal of 50/10. It's understood that by then, it will be too little too late. Building the EORN Gig Project now will help ensure that municipal, provincial, and federal COVID-19 economic recovery funding programs succeed not just in Toronto and Ottawa, but also in rural eastern Ontario.

Importantly, this coordinated regional Gig Project will eliminate a piecemeal approach from other sectors, government departments and agencies, and minimize the funding required to solve this problem. Imagine the chaos if school boards, colleges, universities and the Ministry of Education all have to invest new funds to ensure that rural students can study online, while at the same time health care agencies have to provide funding for internet access to telemedicine and for families to connect online with their loved ones in long-term care.

Federal and provincial broadband funding programs are often oversubscribed ($4.5 billion in applications for the 2016 Connect to Innovate $500 million program) and require a long timeline to review, make decisions, award contracts, and deliver projects. Federal and provincial levels of government have not historically entered into long-term service level agreements that have to be monitored to ensure ongoing investment by the TSPs.

Funding EORN now as a trusted partner to deliver the Gig Project for eastern Ontario will allow the federal and provincial governments to focus on delivery of their own new broadband funding programs for the rest of the province and the rest of the country.

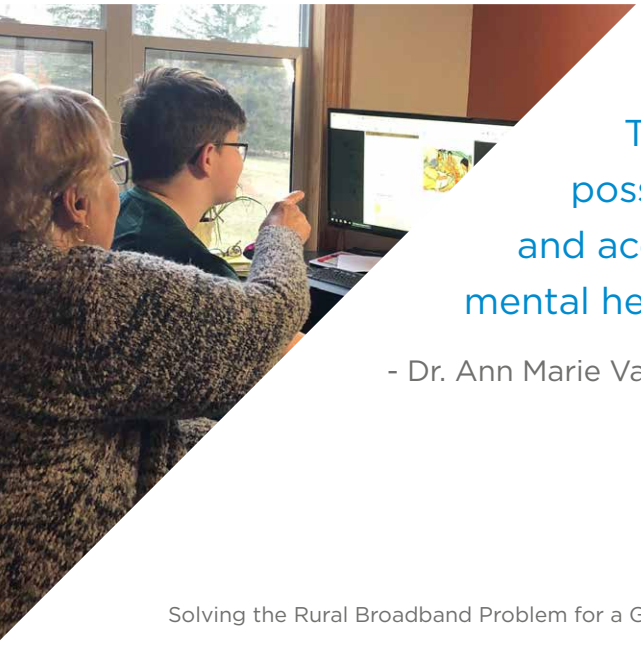
1 Gig goals and objective

EORN's aspirational goal is to build infrastructure in partnerships with TSPs that will deliver a service capable of 1 Gbps speeds and with sufficient capacity for 95 per cent of the 577,300 homes and businesses across the entire eastern Ontario region, including both the rural areas and the separated municipalities.

EORN's costing model was based on providing a solution to 95 per cent of the demand area which includes both coverage and capacity required to service the households and businesses. It also included an analysis, with some assumptions about TSP financial models, to determine the amount of subsidy investment required to ensure the likelihood of a positive business case, and thus investment by the TSPs.

The EORN Gig Project goals are not meant to be an all or nothing solution. The desire to get 1 Gig to 95 per cent of the region is our aspirational goal. Making that a reality will require all the funding identified. EORN and the Eastern Ontario Wardens' Caucus (EOWC) believe that with this level of funding, our residents and businesses will be well served for years to come and additional public subsidy can be avoided. Should governments opt to provide a lower level of funding, EORN is confident it can still develop a project that pushes 1 Gig broadband service to a substantial part of the region but at less than the 95 per cent coverage target. The remaining areas would receive a 50/10 solution, providing access to this national target significantly faster than 2035. As a result, the project would still be extremely valuable for the region.

Detailed project objectives can only be finalized once the funding details and eligibility requirements of a funding program are understood, and the next level of details on the solution model are completed.



"The need for flexible and effective distance learning is only going to grow. The EORN Gig Project would make it possible for our students to remotely learn and access student success services, including mental health supports."

- Dr. Ann Marie Vaughan, President and CEO, Loyalist College

An evidence-based approach: Market failure analysis

The EORN PPP model is based on a fundamental principle of market failure. The private sector is not meeting public demand for telecommunications access in rural regions due to the high cost of building needed infrastructure. Using an evidence-based approach to identify market failure in a region allows governments to invest the minimum amount of public funding necessary to stimulate the maximum amount of private investment required to close the market failure gap. “A significant market failure is the failure to produce some goods and services, despite being needed or wanted. Markets can only form under certain conditions, and when these conditions are absent markets may struggle to exist.“ (Source: www.economicsonline.co.uk/Market_failures/Missing_markets.html, last accessed 2018-02-08)

Market failure analysis and solution modeling includes the following steps:

1. Demand mapping: Identify where coverage is required and at what capacity.

2. Supply mapping: Identify what exists currently.

3. Gap analysis: Determine the difference between supply and demand.

4. Solution modelling: Model a solution to fix the problem.

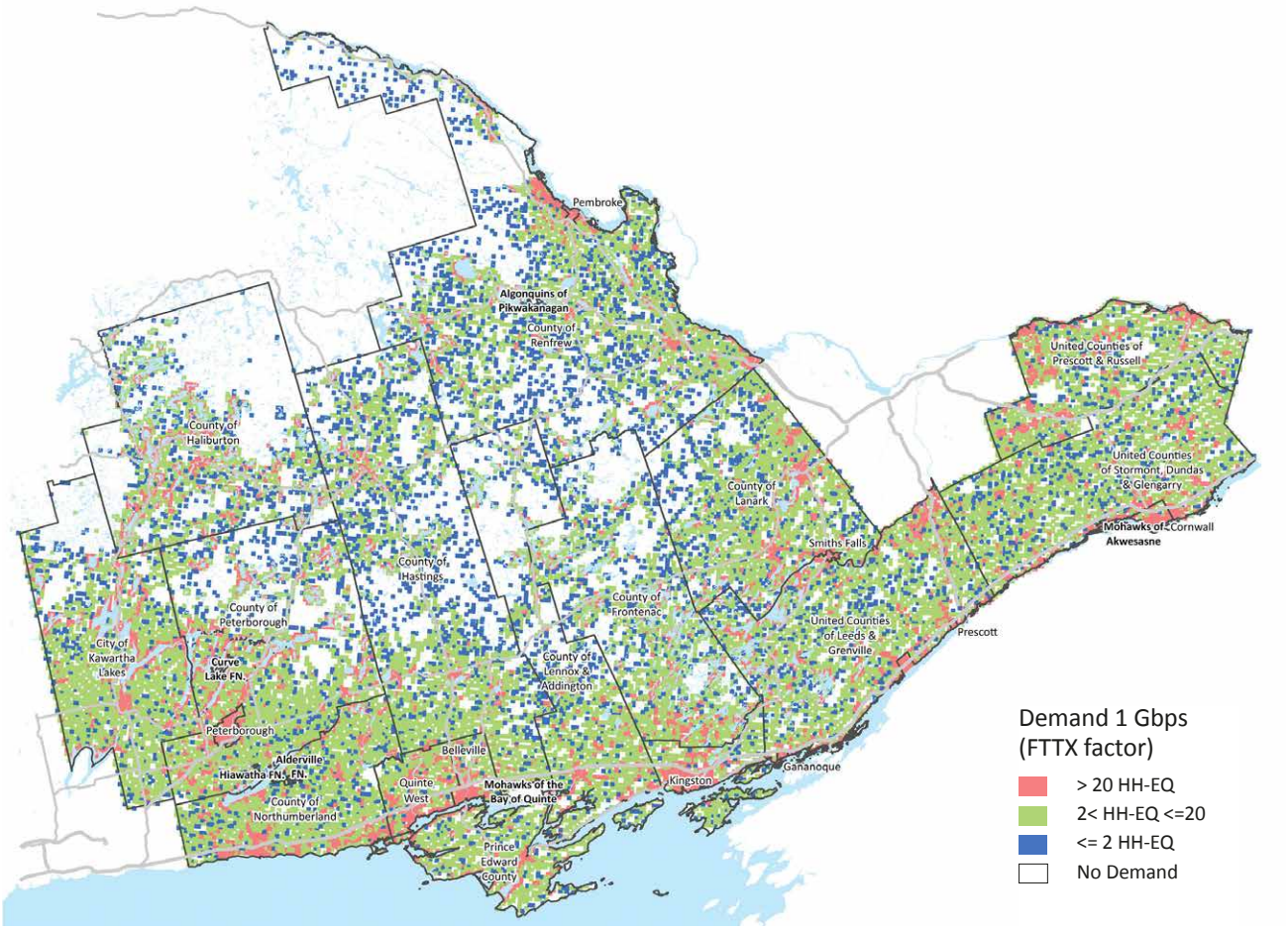
5. Solution costing: Identify the cost to close the gap, which includes capital expenditure (CAPEX), operating expenditure (OPEX) and average revenue per user (ARPU).

6. Market failure analysis: Determine how much public investment is required as part of the solution, using the simplified formula: (CAPEX + OPEX) - ARPU = NPV. If net present value (NPV) is negative, then a subsidy is likely required.

In 2019, EORN and its consultants completed a market failure analysis for a project to deliver a wired solution capable of 1 Gbps service to 95 per cent of the demand area across the region. This analysis used Municipal Property Assessment Corporation (MPAC) data to identify households and businesses, where service would be required. We also modeled capacity requirements using industry predictions for internet growth, peak demand times and population growth, all projected to 2027.

This demand mapping information is shown in the map on the following page, using a 1 km x 1 km grid system. The white areas on the map have no demand, as there are no households or businesses, or it is outside of our scope. This represents 43.1 per cent of the region’s area. The coloured areas show capacity required, based on a unit that represents the amount of capacity required by an average household at peak demand, or the household equivalent (HH-EQ).

Eastern Ontario Regional Network Demand 1 Gbps



To determine supply mapping, EORN reached out to most of the small, medium and large TSPs about their existing coverage across the region. Most were unwilling to give EORN coverage data in spatial format. However, a few key TSPs, under non-disclosure agreements (NDAs), did provide EORN sufficient data to model 1 Gbps coverage or infrastructure that could be easily upgraded.

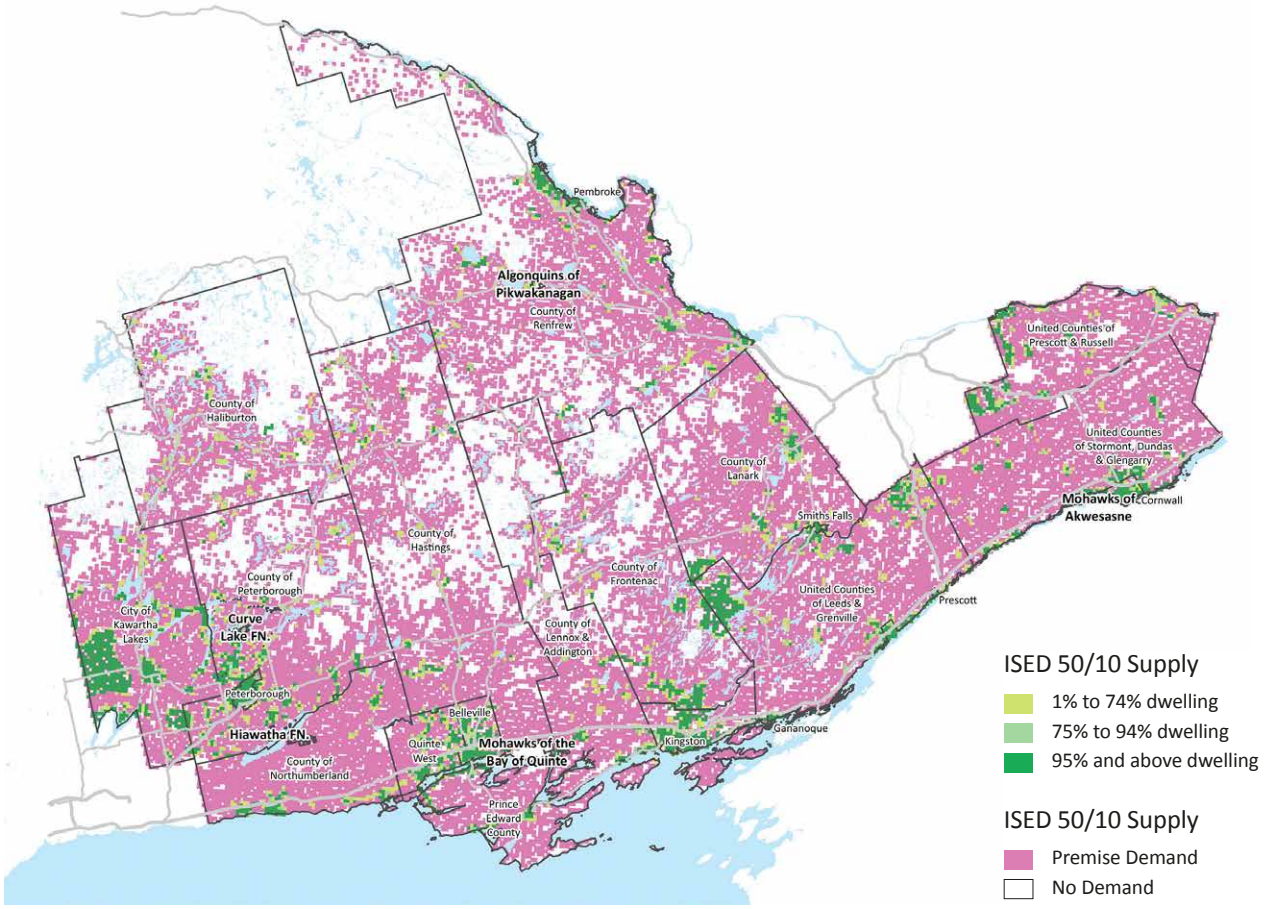
EORN used the supply data to determine the gap between demand and supply (existing service). This is the gap that the project needs to fill.

While EORN is restricted by NDAs to show our actual gap data, EORN completed a subsequent analysis and comparison of the National Broadband Internet Service Availability data, and more specifically the rural road broadband coverage data from Innovation, Science and Economic Development Canada (ISED).

For visualisation purposes, EORN mapped the very granular ISED data into our 1 km x 1 km grid system and counted the number of dwellings in each grid who had service of 50/10 Mbps or higher. We compared this data against our supply data and found that it was very similar, confirming the validity of our modeling.

The following map shows the comparison between the ISED supply data and the EORN demand mapping from a coverage view. The pink areas on the map indicate where there is demand based on coverage for either for 50/10 services or 1 Gbps services, highlighting the huge gap.

EORN Demand Comparison to 50/10 ISED Supply



While the ISED supply data is a significant positive step forward for national broadband analysis, it only identifies where coverage exists. It does not address the much more complex component of whether there is actually capacity to meet the requirements of the households covered.

EORN has developed a solution model that would bring a 1 Gbps capable service to 95 per cent of the coverage and capacity demand across the region. This consists of middle mile fibre and network equipment, the backbone built during EORN's first project, as well as wired last mile. The last mile assumes significant fibre penetration, with the final delivery through any number of potential technology solutions.

Using information supplied by TSPs and industry data, the solution model was costed. The most variable aspect of the model was the cost of fibre installation. It is well documented that in Ontario, the cost of using utility pole infrastructure for building an aerial fibre network is highly variable. This is because a TSP wishing to use the pole infrastructure may be required to pay the full costs to upgrade the poles to address structure issues or safety standards, at the sole discretion of the utility. EORN was given several estimates for the cost of fibre installation ranging from $15 per metre to more than $40 per metre. We did two models, one at $20 per metre and one at $30 per metre. This is the range in our costing models.

In addition to the capital costs, based on feedback from TSPs and industry experience, the EORN team developed models of the operating costs and associated revenue opportunities across the region.

The final step was to develop a market failure analysis, by understanding the overall business case associated with the infrastructure build and determining what if anything is required as a public investment to get the infrastructure built. Our analysis shows that this may range from about 70 to 80 per cent.

TSPs are financially stable and profitable private companies and their revenue and profit margins will not be as negatively affected by the pandemic as other industries and companies. Waiving data caps and increasing speeds is an opportunity cost and will have a minimal impact on revenue. Governments will have a hard time justifying a handout of tax dollars directly to private sector TSPs that are already profitable, without analysis such as EORN's market failure approach.

"Through the COVID-19 pandemic, we have seen that virtual healthcare programs have the potential to dramatically impact how healthcare is provided across our community. "

- Linda Davis, President and CEO, Northumberland Hills Hospital, and spokesperson for Ontario Health Team for Northumberland

Financial model

The detailed market failure analysis indicates that EORN will need between $1.2 and $1.6 billion in capital costs to successfully deliver the Gig Project. We have developed two financial models to capture our aspirational goals. The range in total capital costs is directly due to the cost of utility pole replacement outlined in the section: *Reducing the project cost: utility pole replacement and access costs.*

Both financial models would require an operating budget for EORN eligible and ineligible administrative and project management expenses of approximately $25 million or two per cent of the minimum total project value.

Model A	Model B
Assumes CIB financial contribution • $200 million provincial funding • $200 million federal funding • $400 - $600 million loan from CIB • $400 - $600 million raised from TSPs through a competitive RFP	Without CIB financial contribution • $450 million provincial funding • $450 million federal funding • $300 - $700 million raised from TSPs through a competitive RFP
$1.2 - $1.6 billion in rural broadband	**$1.2 - $1.6 billion in rural broadband**

Risks and assumptions

- Both the federal and provincial governments will want to minimize the grant funding subsidies that will be required to generate the best available increased broadband coverage. The goal is for total investment to come from a variety of sources.

- To lower the total capital cost of the project, the CIB needs to provide a $400 million to $600 million loan to TSPs through an EORN model SPV.

- To lower the total capital cost of the project, the Province of Ontario will have to work with Hydro One and other utilities to reduce the current hydro pole replacement costs and reduce the cost of hanging broadband fibre and other utilities poles.

- The EORN Gig Project goals are not an all or nothing solution. Getting 1 Gig capability to 95 per cent of the region is our aspirational goal. If total funding is somewhat less than we have identified, we believe that EORN can deliver 1 Gig broadband service to a substantial part of the region, but at less than the 95 per cent coverage target. The remaining areas would receive a 50/10 solution, providing them access to this national standard significantly faster than 2035. As a result, the project would still be extremely valuable for the region.

- The EORN market failure analysis suggests that there may need to be flexibility in terms of the proportion of government funding to TSP contribution. It may need to be higher than the two-thirds government contribution typical of broadband infrastructure.

"While the EORN Gig Project represents a major investment by the public sector in partnership with the private sector, it's necessary infrastructure for the future of education and training, and for the future of businesses in rural communities."

- Maureen Adamson, President, Fleming College

Role of the Canada Infrastructure Bank (CIB)

> "In partnership with the Government, the Canada Infrastructure Bank is examining opportunities to apply its innovative financing tools to stimulate private sector investment in high-speed internet infrastructure in unserved and underserved communities. Working to maximize the contribution of private capital, the Bank will seek to invest $1 billion over the next 10 years, and leverage at least $2 billion in additional private sector investment to increase broadband access for Canadians."
> *Source: Federal Budget 2019*.

With this mandate, the CIB has a variety of models that it can draw on to invest in broadband projects. The EORN approach, with a mixture of public subsidy and private investment, is one of the models identified by CIB. EORN anticipates that it will be able to address and incorporate all the CIB project funding requirements, as we understand them, through the following approach:

- Creating an EORN Special Purpose Vehicle (SPV) which is specific to the operation and delivery of the 1 Gig broadband project and is time limited.
- Aggregating all zone-based projects into a regional funding envelope, which would satisfy the CIB minimum investment of $50 million.
- Leveraging a CIB loan of $400 million into a total broadband investment of $1.2 billion and a minimum TSP investment of $400 million.
- Leveraging the low cost of CIB financing which lowers the cost of capital of projects and offers much longer investment timelines. Loans to TSPs at sub-prime for 10 to 20 years.
- Separating infrastructure risk from revenue and uptake risk.
- Ensuring future upgrades through service level agreements.

"This would be a game-changer for eastern Ontario to attract and retain businesses and residents, and to compete globally over the long term."

- Andy Letham, Chair of the Eastern Ontario Wardens' Caucus

Timelines for the EORN Gig Project

EORN has proven experience in negotiating transfer payment agreements (TPAs), developing and negotiating TSP contacts, and managing the construction and claim process. As a result, EORN and its region-wide process can deliver services faster and more economically than other project funding models.

If EORN receives a letter from the Minister of Infrastructure in September approving the Gig Project, we can meet the following timelines:

Description	Date
Minister's letter approving project	September 1, 2020
TPA signed	December 2020
First RFP issued	February 2021
Contract with TSP(s) signed	August 2021
Construction starts	September 2021
First in-service areas	Fall 2022
Construction completed	2026
Final 51 % ownership completed	2031
Project monitoring completed	2031

"Demand for broadband is growing exponentially. Half-measures and baby steps won't get us there. We need a long-term solution. The EORN Gig Project is a lasting investment in our prosperity."

- J. Murray Jones, EORN Chair

Reducing the EORN Gig Project cost: Utility pole replacement and access costs

Hydro One is Ontario's primary distributor of electricity to rural homes and businesses. Its electricity distribution network could also be the primary pathway for the expansion of high-speed broadband services to rural communities and rural customers. Building affordable wired broadband infrastructure that could deliver a gigabit of speed to a rural customer (business, institutional, government or residential) will largely depend on the "stringing" of fibre or cable on utility poles.

Working with the government, we see a significant opportunity to collaborate and potentially partner with both Hydro One and Hydro One Telecom to deliver EORN's Gig Project aimed at providing access up to 1,000 Mbps of broadband speeds to 95 per cent of the 577,300 homes and business across eastern Ontario.

Hydro One owns the majority of electric distribution poles across most of rural eastern Ontario. However, in the area served by EORN, there are another 12 local distribution companies who also have poles in municipalities. Attaching fibre, both transport (backhaul) and last mile, to Hydro One's poles, as well as the region's 12 local distribution companies, is likely the most expeditious way to deliver the EORN Gig Project.

The challenge faced by EORN and many of its project partners will be fourfold:

1. The cost of replacing poles should Hydro One and other utilities insist on it.

2. The cost of monthly attachment fees.

3. The time it takes to have plans and proposals reviewed and approved by Hydro One and the other utilities.

4. The length of time for Hydro One to start and complete the pole upgrade.

With the government's assistance, we are confident that Hydro One and Hydro One Telecom are both well positioned to be an active partner in EORN's Gig Project. Based on the experience of other jurisdictions, we believe both Hydro One's current pricing policies and their time for review can be reduced without sacrificing safety. This makes the project more affordable for all funding partners and would improve the speed to market for the project itself. Coordinated effort between EORN, the provincial government and Hydro One could reduce the cost of building the EORN Gig Project in eastern Ontario from $1.6 billion to $1.2 billion.

Technology sustainability

Radio technology has been and continues to evolve at a significant rate, as the equipment providing long-term evolution (LTE) solutions evolve with the usage of multiple-input and multiple-output (MIMO) and other technologies, and most significantly, with the introduction of 5G technologies. In fact, there have been four generations of equipment on some networks in eastern Ontario since 2008. We expect to see this trend continue over the next 10 years.

What has been consistent is the use of fibre. According to industry experts, optical fibre can last well over 25 years. Networking equipment to connect the fibre, has a shorter lifespan but is easier and cheaper to replace, especially if increased capacity is needed over time. But more importantly, properly engineered, a fibre network can address all the capacity thrown at it. A solution with fibre as the most significant part of its infrastructure will last a generation.

5G Technology

5G technology that will be rolled out in rural areas is likely to be based on low and mid-band spectrum, which has good coverage characteristics, and reasonable penetration through tree canopies as found in eastern Ontario.

This will likely be rolled out in a mix of mobile and fixed wireless applications with speeds technically capable of delivering up to 400 Mbps. What is not known, are the actual speeds and pricing that will be offered by service providers. Mobile TSPs are initially rolling out 5G services in selected areas, with speeds comparable to their better urban LTE services (approximately 100 Mbps download).

The rollout of services in rural areas is unclear, with focus expected to be in more urban areas, although some carriers are talking about a more significant penetration. The delay of the 3500 MHz spectrum auction until June 2021 provides further uncertainty into this rollout, as this is one of the key midband spectrums required for rural areas.

The key factor impacting use of this technology in rural areas will be that the cost of mobile data plans will likely remain about the same, making it unaffordable as a primary internet connection for most people. The pricing of this technology in a fixed wireless scenario remains to be seen but is expected to track the same as other fixed wireless services.

The downside of any wireless solution is the limited availability of the appropriate spectrum, and the capacity of the radios. These two factors limit the amount of capacity that can be offered.

5G networks are dependent on the deep rollout of fibre networks to deliver the high speed (bandwidth) and low latency that are the core characteristics of this technology.

Low earth orbit satellites

Low earth orbit (LEO) satellites are being proposed as a solution for rural broadband. At some point in the future they may very well be a solution for the last five per cent, or for those in remote areas where the cost per user for other types of connectivity is completely prohibitive. As per every generation of satellite, these have significantly increased capacity. In the case of the low earth orbit, they have much-reduced latency almost on par with acceptable terrestrial services.

LEO satellites are still an unproven technology, and not expected to be fully operational until somewhere between 2025 and 2027 depending upon the constellation, or arrangement, of the satellites. Packages available to residential customers are expected to offer up to 150 to 300 Mbps. Initial offerings may be lower based on the constellation's capacity.

LEO satellites will not meet the speed and capacity expectations of the residents of eastern Ontario, nor will they address the limitations identified by businesses across the region. As with current satellite technology, they will be viewed as expensive for rural residents and businesses. LEO satellites are a "do-nothing" solution that will not meet the expectations of the residents of eastern Ontario.

In summary:

- LEO satellites may be a solution for the five per cent that the EORN Gig Project cannot service with fibre.
- 5G technology may be a component of the last 100 metres delivering service, especially in a fixed wireless solution. However, it still requires a significant investment in fibre as per EORN's Gig Project.
- A fibre-based network will provide the best quality of service and deliver a solution for the next generation.

EORN model

EORN is a non-profit organization which aims to enhance economic opportunity and quality of life through improved broadband access in rural areas. EORN was created by the EOWC, and in collaboration with the Eastern Ontario Mayors' Caucus (EOMC), covers an area of nearly 50,000 square kilometres from Cobourg to the Quebec border. It unites the interests and shared goals of more one million residents in 103 municipalities. More information is available on our website at www.eorn.ca.

A decade ago, the EOWC recognized that a regional approach was needed to address the broadband gaps across the region. Working with our provincial and federal counterparts, the EOWC developed EORN, and with private and public-sector investment of more than $175 million, created a successful broadband project. It provided access to new or improved broadband services of up to 10 Mbps for 89 per cent of our households and a further nine per cent from 1.5 Mbps to 9 Mbps. The project was completed in late 2014 and was delivered on time and under budget.

Eastern Ontario is also home to six recognized First Nation communities. Our strong and growing relationships with these communities represent important opportunities to partner on projects that support improved prosperity for our respective communities. In our first project, we worked closely with all six First Nations in eastern Ontario to ensure their interests and concerns were identified and looked after. The same approach is being employed in the EORN Cell Gap Project. In an EORN Gig Project, we will continue to work with Indigenous groups to ensure they get the same kinds of benefits that access to ultra-highspeed services as municipalities across the region will.

EORN's first project was technology neutral. This meant that our procurement processes were designed to be open, fair and competitive, with a view to selecting service providers who would cover the largest number of households with a minimum speed requirement, for the most efficient use of our funding. At the time (2010), we required that the provider be able to provide speeds of at least 10 Mbps download and 1 Mbps upload with at least 100 gigabyte cap. This was during a time when the Province of Ontario defined broadband at a minimum 1.5 Mbps.

EORN realised that to deliver internet to our region, we had to invest in both backbone and last mile. With our backbone partner, chosen through a competitive RFP process, we leveraged existing infrastructure and added more fibre to create a network of more than 5,500 kilometres. We upgraded more than 160 points of presence (POPs) to 10 GigE (Gigabit Ethernet) and scalable to 100 GigE. This investment is the core for current and future services in our region and has also fostered competition and new fibre to the home (FTTH) projects in several areas.

EORN was able to create a partnership that brought together federal, provincial and municipal governments with private sector partners to deliver broadband access. Our success can be attributed to four main components of our model:

1. Regional leadership – Rural municipalities worked together to create sufficient critical mass.

2. Evidence based – Detailed mapping and economic analysis quantified the problem, allowing us to break the region into smaller zones and for local carriers to bid within their markets. We only intervened where there were clear cases of market failure and we addressed needs in both easy and hard to serve areas.

3. Efficient and effective oversight – A non-profit corporation with a consistent team of staff and consultants for the duration of the project resulted in overall management costs of less than six per cent of total project. Long-term binding contracts, which included service level agreements, provided further accountability.

4. Public-private partnership – Leveraged private investments and created diverse partnerships including major carriers and local service providers. The flexible funding model allowed the governments' share of funding to vary based on local needs, creating win-win relationships for project partners.

At its heart, a regional broadband initiative like EORN is not a technology-driven venture. Rather, it is a strategy for preventing further economic and social decline, indeed to stimulate economic activity and social vibrancy, in an era characterized by digital transformation.

In this sense, a regional broadband network is an economic and social platform for addressing the needs and aspirations of a region's citizens and organizations, in the absence of a conventional market-based approach. While technology-laden, the network is created not for the sake of technology but for the sake of an economy, businesses, and citizens.

EORN is nationally recognized as an exceedingly successful model for delivering improved access to high-speed broadband services.

Next steps

There is strong regional consensus that pursuing a Gig Project for eastern Ontario is critical to meeting the region's economic goals and aspirations. On May 29, 2020, the EOWC unanimously passed a resolution of endorsement and directed EORN to pursue a Gig Project for eastern Ontario.

Once funding commitments are secured from the federal and provincial governments, EORN could have an RFP in place by spring 2021.

Commitments right now would allow EORN to potentially leverage infrastructure proposed for EORN Cell Gap Project and find synergies between the two projects.

Through EORN Consulting Services, the EORN model could be replicated across the province and across Canada.

"Cottage residents have strong ties to their cottage communities. They represent an untapped resource in terms of creating new businesses and economic growth. The EORN Gig Project would tackle a major barrier to economic development in these communities, from attracting visitors and tourists, to converting cottagers to permanent residents and local business owners."

- Terry Rees, Executive Director, Federation of Ontario Cottagers' Associations

About EORN

EORN, a non-profit created by the Eastern Ontario Wardens' Caucus (EOWC), works with governments and community organizations to improve and leverage broadband access to fuel economic development and growth.

From 2010 to 2014, EORN helped to improve broadband access to nearly 90 per cent of eastern Ontario through a $175 million public-private partnership. The network was funded by federal, provincial and municipal governments and private sector service providers. As a result of the project, 423,000 homes and businesses are now able to access services of up to 10 Mbps download. It also spurred more than $100 million in additional private sector investment in the region, over and above their initial commitments.

EORN is currently working on a $213 million project, funded by public and private sector partners, to improve and expand cellular services across the region. Building on that project is expected to begin in early 2021.

EORN was created to serve the EOWC's 13 municipal members, including:

- County of Frontenac
- County of Haliburton
- County of Hastings
- City of Kawartha Lakes (single tier)
- County of Lanark
- United Counties of Leeds and Grenville
- County of Lennox and Addington
- County of Northumberland
- County of Peterborough
- United Counties of Prescott and Russell
- County of Prince Edward (single tier)
- County of Renfrew
- United Counties of Stormont, Dundas and Glengarry

It also works closely with interested single-tier municipalities in the Eastern Ontario Mayors' Caucus.

EORN

EASTERN ONTARIO
REGIONAL NETWORK

For more information, contact:

Lisa Severson

Director of Communications

Email: info@eorn.ca

www.eorn.ca