

Connecting Eastern Ontario to the World



Final Report 2014

“

The Eastern Ontario Regional Network is transforming rural Eastern Ontario by opening up new markets and opportunities for our economy and improving quality of life for our residents.

”

David Burton
2014 EORN Chair

Introduction

The Eastern Ontario Wardens' Caucus (EOWC) created the Eastern Ontario Regional Network (EORN) broadband project to improve quality of life and economic opportunity in rural Eastern Ontario.

When the project started construction in 2010, about one-third of the region's population had either no access or low-speed, dial-up access to the internet. Local businesses surveyed also said the lack of broadband access was a significant barrier to growth and prosperity. However, for internet service providers (ISPs), the cost of building new infrastructure to serve small markets scattered across the region outweighed the benefits.

The EOWC created EORN to bridge that gap by partnering with ISPs to help build new services. Like the expansion of railroads and highways in the past, broadband infrastructure helps to connect communities and opens up new investment opportunities.

The project has exceeded its goals and gained international profile for its success. In 2013, EORN was one of five organizations short-listed for an award from the World Broadband Forum that recognizes efforts to improve broadband penetration.



“ Our communities developed a shared vision. Working with the support of the federal, provincial and municipal governments, and in partnership with the private sector, we have made that vision a reality. ”

Jean Paul St. Pierre
2014 EOWC Chair


Understanding Bandwidth:


Speed Range	Applications
1.5 Mbps to 5 Mbps	Business: Web browsing, file sharing, internet banking Telecommunications: Voice over IP such as Skype Entertainment: iTunes and streaming music
5 Mbps to 10 Mbps	Business: Large file sharing such as AutoCAD Telecommunications: Video conferencing Entertainment: Netflix and video streaming (two to three channels); gaming Healthcare: Basic medical file sharing and remote medical diagnosis
10 Mbps to 50 Mbps	Business: remote training, high quality video, “smart” building control and HD surveillance Entertainment: HD video streaming, complex multi-player gaming Healthcare: remote operation of medical and scientific instruments


What can you do with one Gigabyte (1 GB)?


1 GB


=



view **26,000** web pages



Send **105,000** emails



Download more than **200** songs


Receive up to **500** digital photos


Attach over **2,000** 10-page Microsoft Word document to emails


Download **1.5** movies or 2/3 of movie in HD


Stream **18** hours of music from the web


Play games online for **240** hours (10 days)

Achievements

Exceeding Expectations

- The Eastern Ontario Regional Network has expanded broadband access to cover 99 per cent of rural Eastern Ontario – surpassing its goal of expanding access of at least 1.5 Mbps to 95 per cent of the region:
 - Nearly 90 per cent – some 415,000 homes and businesses – can access DSL or fixed wireless internet services with speeds of at least 10 Mbps, exceeding EORN's target of 85 per cent.
 - An additional 12,000 households can access internet speeds ranging from 6 to 10 Mbps with these technologies.
 - The remaining households can access these same speeds through improved satellite services, available at special pricing for anyone in rural Eastern Ontario.
- New high-speed fibre optic internet has been built directly to more than 50 business parks and commercial areas across the region, delivering high-quality and reliable broadband to support enterprise-level solutions.

Creating Added Value

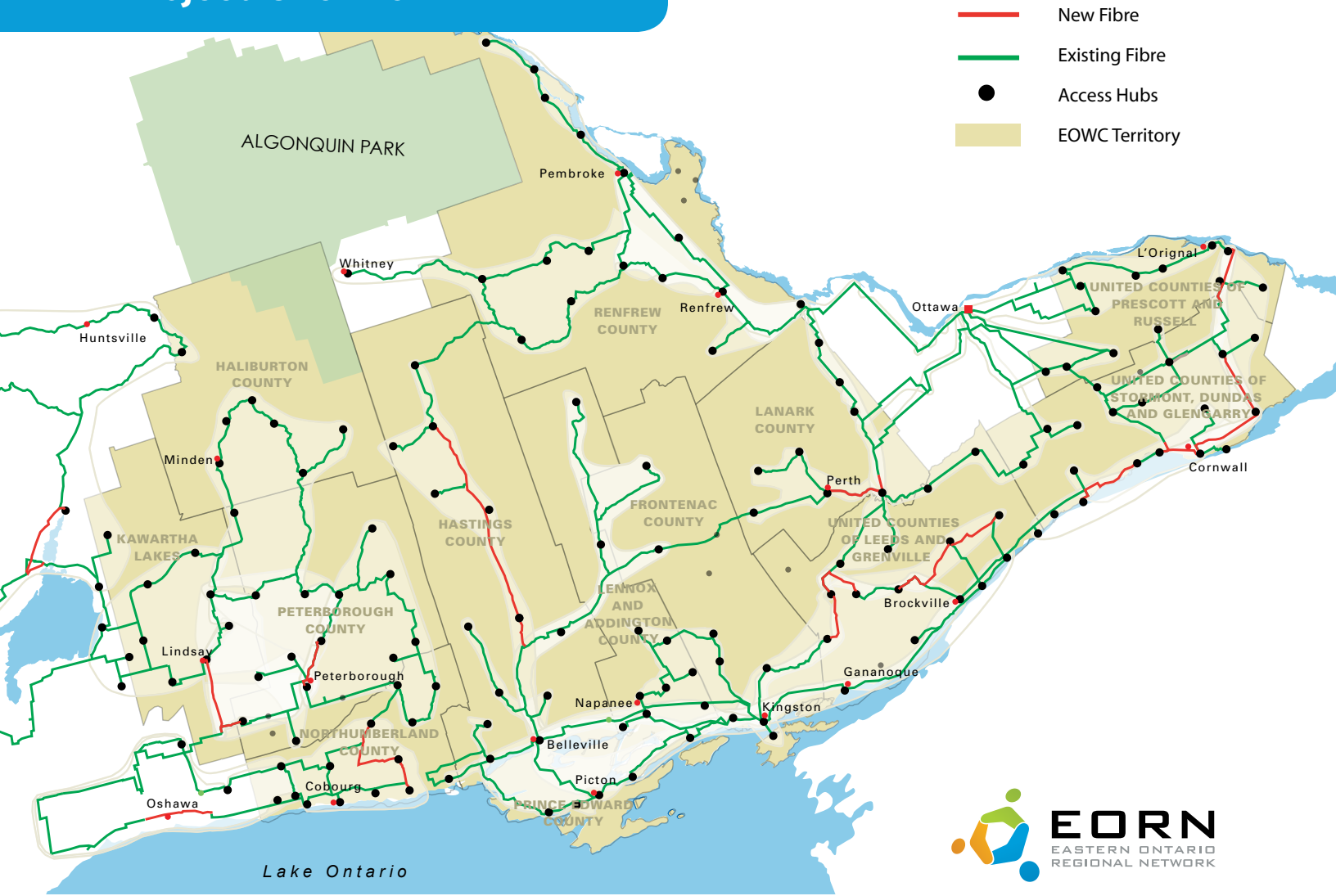
- As a result of EORN, new fibre-to-home projects in Kingston and Peterborough have recently been announced, at an estimated investment of some \$75 million.
- EORN's small, dedicated professional team kept management costs of the project to less than 5 per cent, channeling the savings back into building more broadband infrastructure.
- The \$170 million program, funded by federal, provincial and municipal governments and private sector partners is now valued at more than \$260 million when private sector, in-kind contributions are considered.
- Expansion of wired internet services also resulted in improvements to about 1,000 aging hydro poles that also carry phone and internet cables.

Rural Eastern Ontarians are pleased with improved broadband access

A telephone survey of rural eastern Ontario households conducted in 2014, after EORN was built, reported that:

- 88 per cent believe broadband is important
- 82 per cent use high-speed internet at home
- 86 per cent are satisfied with home internet access
- Reliability and affordability are the top two most important factors in choosing an ISP

Project Overview



The Eastern Ontario Regional Network is comprised of:

- A 5,500-kilometre fibre optic backhaul network that forms the backbone of the entire regional network. It is scalable to grow and support future needs.
- 160 new or improved hubs that provide wholesale internet access to ISPs.
- 22 local access networks that connect homes and businesses to the backbone using a combination of wired (DSL) and wireless services.
- Improved satellite services and packages to reach those that the network could not connect due to terrain or sparse population.
- New high-speed fibre connections to more than 50 additional business parks and commercial areas across the region, to help attract and retain businesses.
- High-speed internet improvements in three First Nations communities that worked in collaboration with EORN.

Accountability

Every local access contract had specific milestones, deliverables and timeframes. EORN's engineering team worked closely with providers to ensure work was completed on time and on budget.

EORN is also responsible for monitoring and ensuring that long-term technical and customer service requirements, set out until 2024, are met.

As part of the process, proponents are required to report regularly on the performance of their network, including service level measures, subscriber numbers, as well as outages and other technical information.

EORN can require proponents to upgrade their capacity, at the proponent's sole cost, if the network is becoming over-subscribed – meaning there are too many users for the available bandwidth. As well, EORN tracks the performance feedback it receives from residential and business users.

Open Access Policy

EORN is also committed to an open access policy. This allows any registered internet service provider to buy wholesale bandwidth on the backbone at the same rates, co-locate on EORN-funded sites, or resell the access services in order to create a level playing field.

First Nations

Improving First Nations' access to affordable broadband was important to EORN and project staff worked collaboratively with these communities to ensure that they shared in the benefits of the network.

Highlights include:

- The Curve Lake First Nation has a new internet access point and local fibre network, which is providing broadband connections to key community buildings, such as the school, community centre, business centre and administration offices.
 - The Algonquins of Pikwàkanagàn First Nation has received new DSL services through the project, an expansion that also improved telephone lines to the community.
- The Alderville First Nation has direct fibre connectivity at its community centre, health services, student services and administrative offices. These access points connect to portions of new fibre optic cable that were laid by Bell Aliant and Bell through Alderville First Nation's traditional lands and treaty area. The community has further benefited from expanded fixed wireless broadband built in Northumberland County through EORN.

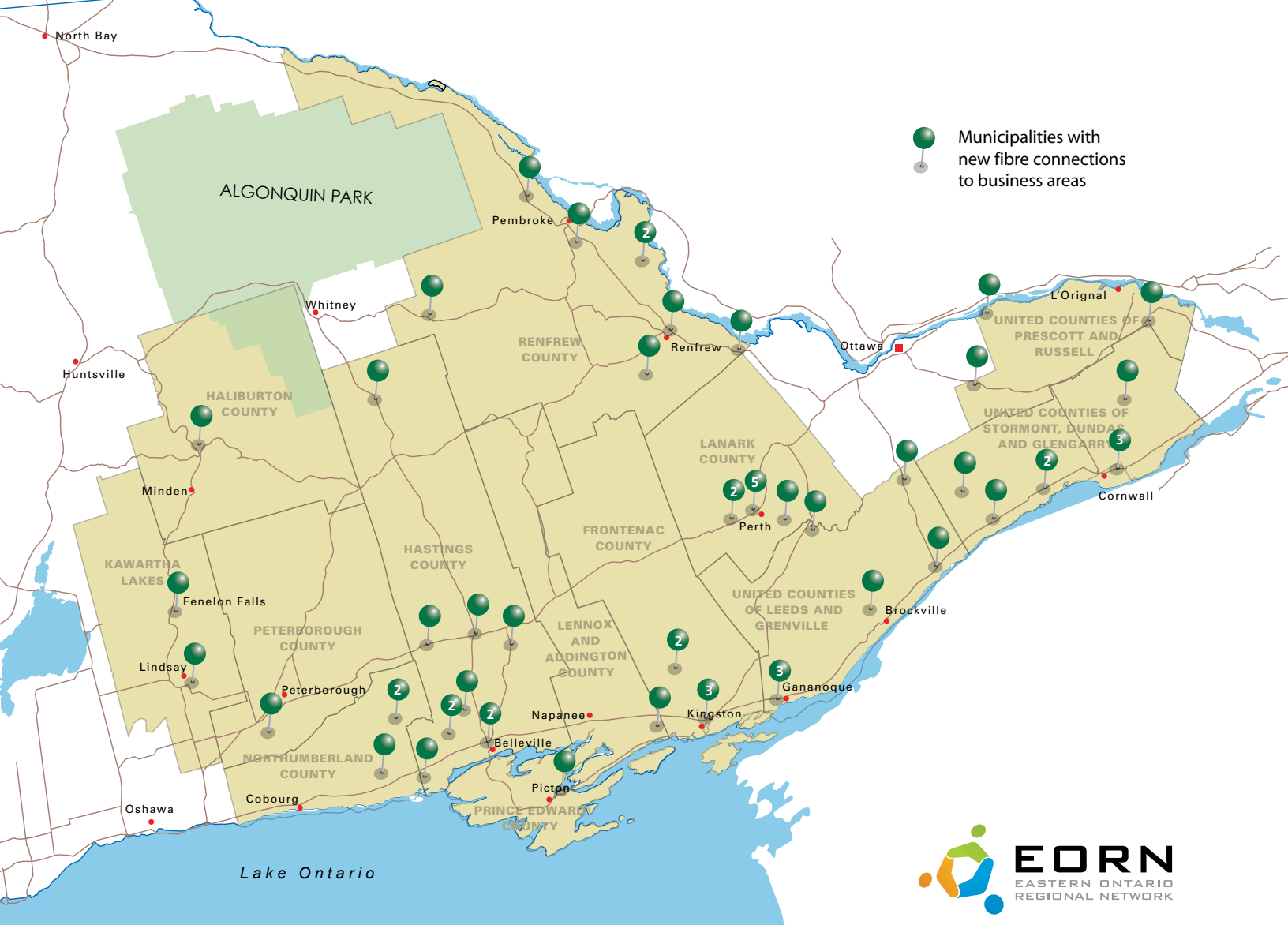
Satellite

Regardless of how difficult the terrain or how remote the location, EORN was committed to trying to improve high-speed internet access to homes and businesses across the region, as economically as possible.

Satellite internet serves areas with low population density or where difficult topography means that neither wired nor wireless options were possible. This would include, for example, where valleys or trees block the "line of sight" to fixed wireless towers. In very sparsely populated areas, satellite is simply the most cost-effective means of delivering high-speed internet services.

To provide more affordable access to satellite technology, EORN went through a competitive bidding process and negotiated improved pricing and packages for Eastern Ontario residents with Xplornet Communications.

Satellite technology continues to evolve and improve. Xplornet Communications Inc. has launched a new 4G satellite network based on high throughput satellite (HTS) technology that further closes the gap between urban and rural internet service in terms of speed, capacity and quality. Their new satellites represent a five-year leap in advanced technologies, delivering significantly more capacity, which is essential to internet users.



Business Parks and Areas

EORN has extended fibre optic internet connections at more than 50 business parks and commercial areas across the region. The fibre is delivering high quality broadband that can support enterprise-level technology, further expanding the economic development potential of the project.



The \$11.1 million extension was funded through the existing project budget as a result of prudent financial management and project oversight. EORN worked with municipalities to identify business parks and areas that needed improvement and awarded contracts to a number of ISPs, including Bell Aliant, Cogeco, Utilities Kingston, Storm Internet and Nexicom.

Next Steps

The Eastern Ontario Regional Network created an exceptional partnership that brought together multiple governments and private sector partners to deliver tangible results. EORN would not have been successful without all of these partners working cooperatively towards a common goal.

The number of households and businesses with access to broadband speeds of 10 Mbps has nearly quadrupled in the EORN area as a direct result of the project. The indirect benefits are immeasurable, in terms of building a foundation for future broadband expansion, creating opportunities for economic growth and improving quality of life.

EORN continues to work with public sector organizations and businesses to improve the adoption of broadband technologies and to look at opportunities to apply this technology in critical sectors such as health and education.

The reality is that technology is constantly evolving. As a next step, EORN has developed a 10-year Digital Strategy to ensure that Eastern Ontario keeps pace with that change and leverages the wise investments made today to build communities that continue to grow and thrive.



“EORN is built to grow and meet future needs. It’s put a foundation in place that paves the way for future expansion in broadband services through a variety of technologies, including wireless, cellular and fibre.”

J. Murray Jones
EORN Secretary

Understanding Broadband Technology

Given the size of the region, EORN relied on a mix of technologies to improve high-speed internet access to the greatest number of residents. In some cases, different parts of the same community have different technologies, due to distances to the fibre backbone, wireless equipment locations, treelines and terrain.



DSL

- DSL, or “digital subscriber line,” is a high-speed digital internet connection over existing telephone lines that does not interrupt voice conversations.
- DSL services for locations close to the fibre optic backbone have improved significantly. Delivering DSL service to all locations wasn’t feasible given the size, terrain and low population densities of Eastern Ontario.



Wireless

- Wireless access uses radio waves to transmit and receive broadband internet signals from a nearby tower. ISPs connect these towers to the fibre optic backbone and then transmit the signal to subscribers.
- Wireless services can reach a broader area more efficiently, as long as the terrain doesn’t interfere with the signal.

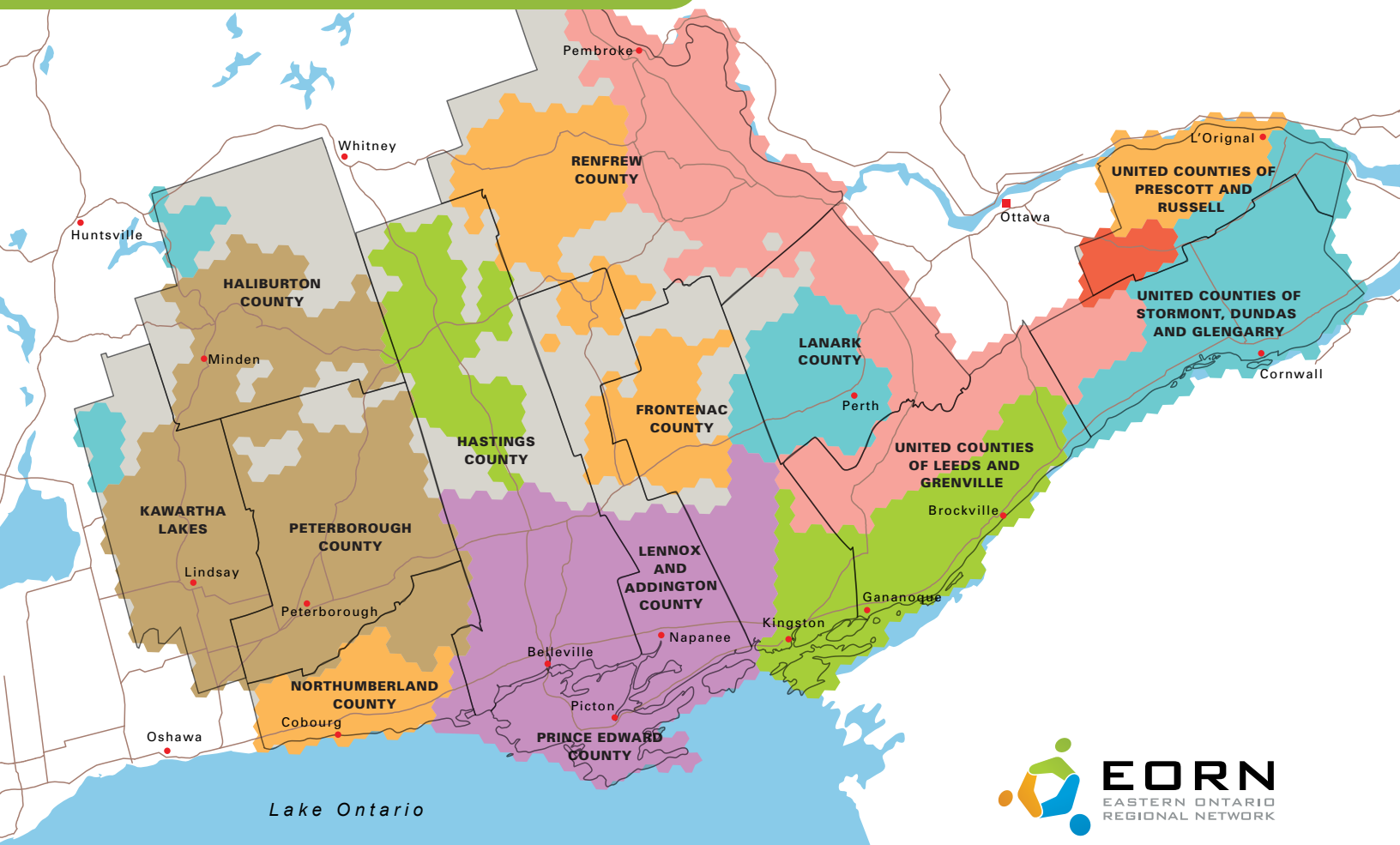


Satellite

- Satellite internet access is available widely because the signal can be beamed down to satellite dishes at homes and businesses located almost anywhere, much like satellite television.
- Satellite technology has improved significantly thanks to new high throughput satellite (HTS) technology that improves speed, capacity and quality.
- EORN has negotiated improved pricing with Xplornet Communications Inc. for all residents and businesses in rural Eastern Ontario.

Cable and mobile phone companies also provide internet access in parts of the region. Having a greater number of options available will make rural markets more competitive and improve consumer choice and affordability.

Building Local Access



Local Access Networks

To build the network, the region was divided into 15 zones. Through an open and competitive bidding process, contracts were then awarded to internet service providers (ISPs) to build local networks in each of these zones, using new infrastructure to connect residents and businesses to the backbone.

Key criteria for awarding the contracts included:

- the geographic reach and number of households covered by the network;
- the speeds and bandwidth that would be achieved;
- competitive consumer pricing;
- the financial investment by EORN; and,
- the investment to be made by the company.

EORN Zone Names	Contract Awarded to
■ Satellite Services*	Xplornet
■ Embrun	Xplornet
■ Quinte-Loyalist	Xplornet
■ Northumberland	Xplornet
■ Highlands	Bell Aliant
■ South Nation	Bell Aliant & Xplornet
■ Sebright	Xplornet
■ Kawartha	Bell Aliant, Nexicom & Xplornet
■ Haliburton	Bell Aliant
■ Ottawa Valley South	Bell Aliant & Storm
■ Ottawa Valley North	Bell Aliant
■ Dorset	Bell Aliant
■ Lanark	Bell Aliant & Storm
■ SD&G	Bell Aliant & Xplornet
■ Thousand Islands	Xplornet
■ Hastings North	Bell Aliant



Gord Rodgers

Township of South Frontenac, Ontario

Gord Rodgers enjoys the view from his home office on the shores of Fourteen Island Lake. From this idyllic corner of the world, the experienced environmental planner runs GKR Consulting, serving clients and working with partners located hours away.

It's the realization of a long-time dream to live in the country, while continuing a productive, working retirement. It took years of planning and hard work for Gord and his wife Barb to find the right spot and build their home in South Frontenac – with the waterfront she craved and the forest he coveted.

But there was a challenge – it only had dial-up internet.

Environmental planning requires reviewing, writing and sharing large documents. By necessity, there are photos, maps, and graphs – files too large to send on dial-up or older satellite technology.

Then, through the Eastern Ontario Regional Network, Xplornet built new wireless service in the area. Gord has been impressed with the results.

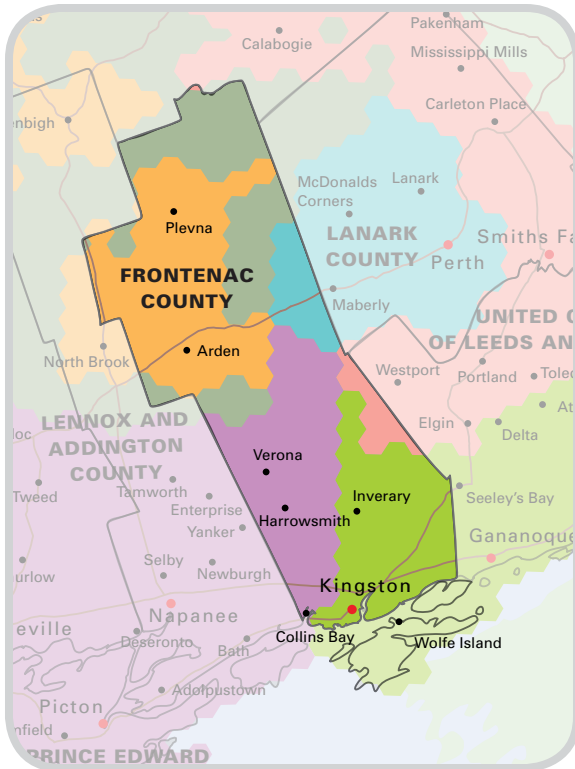
"It's made a huge difference and importantly, it's been reliable. That's key," he said. "I work routinely with a partner in Bracebridge. We're often working under tight timeframes and in the early days, it was a real struggle to share our files. That's a problem that's now gone, and happily forgotten."

Supporting entrepreneurs and attracting small businesses is an important part of EORN's economic development goals. Small businesses account for 48 per cent of Canada's total private sector jobs and contribute about 30 per cent of the nation's GDP, according to Industry Canada.

Gord noted that some of his seasonal neighbours are entertaining a permanent move because of the improved internet services, and others have been able to move their home businesses here for the same reason.

Small communities in Eastern Ontario offer entrepreneurs like Gord reasonable real estate prices, an affordable cost of living and a great quality of life. Improved internet now connects them to markets, partners and clients all over the world, without ever having to leave home.

Frontenac County



- Xplornet
- Xplornet
- Xplornet
- Bell Aliant & Storm

Frontenac County is comprised of four lower-tier townships. It is located at the mouth of the St. Lawrence River, encompassing the scenic Thousand Islands region. Farms and small towns dominate the southern part of the County, while northward, towards the Renfrew County border, mining and logging predominate. Seasonal residents comprise nearly half of the County's households.

Broadband access in Frontenac County was improved through eight new or improved internet access points along the fibre optic backbone in the County and the City of Kingston.

Building off these access points, local access was delivered by three EORN contracts:

- In the south, Xplornet launched new fixed wireless services in the spring of 2012.
- Bell Aliant provided a wired DSL solution in the more sparsely populated northern part of the County in summer 2013.
- In southeastern Frontenac, expanded wireless service from Xplornet was completed in spring 2014.

In all, improved DSL and wireless services provide access to internet speeds of 10 Mbps to 14,870 of the County's households, and to nearly all of rural Kingston's 3,680 households. About 500 County households can access speeds of 6 Mbps to 10 Mbps and the remaining 2,500 households can access satellite internet services at improved speeds and pricing negotiated by EORN.

Business Parks

Business clusters in Sydenham and Verona have new fibre based high-speed internet through Bell Aliant.

Three Kingston business parks, Alcan, Cataraqui Estates and St. Lawrence, have improved fibre services through a contract with Utilities Kingston.



Bell Aliant

Bell Aliant, along with Bell Canada, partnered with EORN to build the project's fibre optic backbone – a 5,500-kilometre “transport” network that forms the foundation of the entire project and is built to meet both current and future broadband needs.

“The Eastern Ontario Regional Network has addressed a key barrier to improving broadband service in the region – the lack of a strong transport network,” said John Swantee, Director of Network Strategy for Bell Aliant.

John explained that Bell Aliant had already been serving areas where it was economically feasible for it to build infrastructure. But the challenge was serving those smaller communities that were just too few and far between. There simply was no business case to justify the capital investment.

“The program funding allowed us to build a future-proof transport network that will serve the region for the foreseeable future,” John said. “It is really important to invest wisely and pick the right technology. The backbone is built to grow from 10G to 100G.”

Building this piece allowed Bell Aliant to expand the reach of its own DSL networks through the EORN project. As well, other internet service providers have leveraged the backbone to build EORN's local access networks, substantially expanding broadband access region wide.

It has also improved existing data services. Businesses, school boards and health care providers, for example, who already had broadband, were able to access increased speeds as a result of the project.

In the future, the backbone network will also pave the way for cellular growth in the region. As cellular companies look to deliver LTE technology, they need the higher bandwidth provided by the fibre optic backbone. Similarly, expanded fibre-to-home projects in the region are more feasible because the foundation is in place to support the technology.



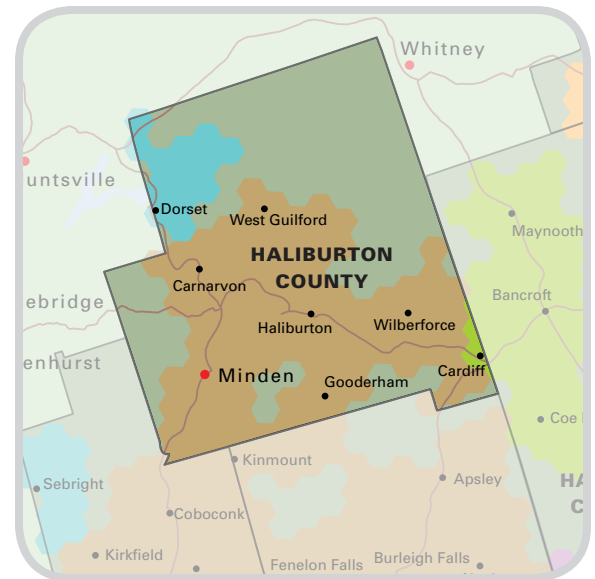
BellAliant

Haliburton County

Haliburton County, also known as the Haliburton Highlands, is comprised of four municipalities and includes over 600 lakes, rivers and streams and dramatic terrain. It is one of the larger and more sparsely populated areas of Eastern Ontario and given its natural beauty, has a high number of seasonal properties.

EORN was able to expand access by building off the previous Rural Connections broadband project. Eight new or improved internet access points were built in the County as part of the fibre optic backbone. Bell Aliant finished building expanded DSL service in the spring of 2014.

In all, about 10,000 households in Haliburton County have access to internet speeds of at least 10 Mbps through DSL, with an additional 2,760 having access to internet speeds in the 6 to 10 Mbps range. Most of the County's remaining 8,980 households can access these speeds via satellite services, with improved pricing and packages negotiated by EORN.



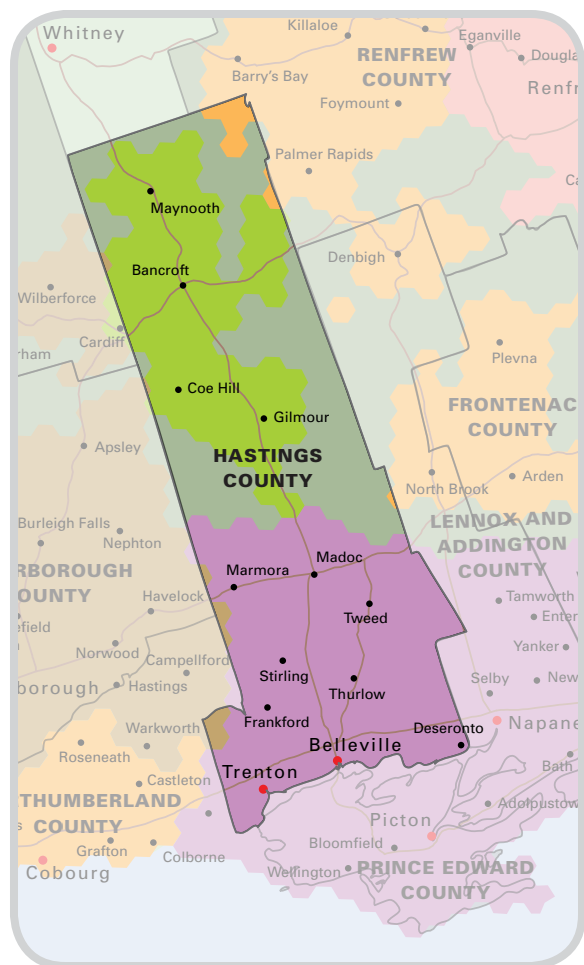
- Bell Aliant
- Bell Aliant
- Bell Aliant

Business Parks

The Stanhope Airport area business hub in Algonquin Highlands has new fibre high-speed internet access through Bell Aliant.



Hastings County



- Xplornet
- Bell Aliant

Hastings County is the second largest County in Ontario. It encompasses 14 lower-tier municipalities and stretches 160 kilometres from north to south. The separated cities of Belleville & Quinte West are within its borders.

Hastings County is benefitting from 13 new or improved internet access points on the fibre optic backbone. Improved local access was built through a number of contracts:

- Wireless services in the southern half of the County were expanded by Xplornet and started to go live in the spring of 2012.
- In the north, Bell Aliant expanded its wired DSL services by spring 2014.

In all, 13,910 Hastings County households have access to internet speeds of at least 10 Mbps through DSL or wireless service and about 1,590 can access services of 6 to 10 Mbps. In addition, 14,950 households in the City of Belleville and 14,620 households in Quinte West have 10 Mbps access. The remaining 5,330 County households have access to improved satellite packages negotiated by EORN.

Business Parks

Five Hastings County business parks have new fibre optic high-speed internet access from Bell Aliant, including:

- the Burnside Street area in Madoc
- the Enterprise Crescent/Y Road area in Hastings Highlands
- the Industry Lane Business Park in Marmora
- the Tweed Industrial Park in Tweed
- the West Front Street Business Park in Stirling

As well, Cogeco has delivered fibre broadband to two business hubs in Quinte West: the Frankford Industrial Park and Trenton's North Murray Industrial Park.

In the City of Belleville, Cogeco has built fibre connections to the Jamieson Bone Road and Bell Boulevard business areas.



Nexicom

In one form or another, Nexicom has been serving the communication needs of rural Eastern Ontario communities for generations. The small telecom started out as the area's first phone service in 1898. Since then, the business has grown to offer not just phone, but business and residential internet, digital television and residential and business security systems.

"Partnering with EORN was just a natural extension of what we've been doing for more than 100 years," said President Paul Downs. Paul's father bought the business in the mid-1940s and it has been in the family ever since.

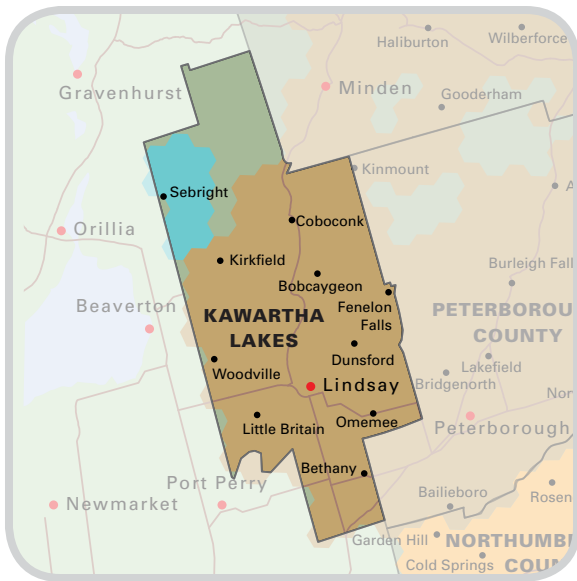
"It goes back to our roots of serving rural customers. Businesses here needed broadband not just to grow, but to survive," Paul said.



Nexicom had worked on several projects to deliver improved broadband to specific communities and business areas around Peterborough and the Kawarthas. The company brought that experience to the table when it was selected to build parts of EORN's local access network, leveraging its existing wireless services. It also connected fibre to Peterborough County's Lang Pioneer Village and the commercial areas around Highway 7 and County Road 28.

In partnership with EORN, which included making its own investments, Nexicom has expanded its coverage area by about 35 per cent. In the process, many residents in the area who could only get dial-up internet services can now access speeds of up to 10 Mbps or even higher.



City of Kawartha Lakes



-  Xplornet
-  Bell Aliant, Nexicom & Xplornet

The City of Kawartha Lakes is located on the northeast border of the Greater Toronto Area. The sprawling municipality covers 3,000 square kilometres, with a mix of urban and rural areas. There are more than 250 lakes in the municipality and the Trent Severn Waterway crosses through the centre of the City via a network of navigable rivers and locks. Manufacturing, agriculture and tourism are the City's main industries.

There were 10 new or improved internet access points created in Kawartha Lakes. Bell Aliant, Nexicom and Xplornet built local access throughout the region off of these hubs by spring 2014.

In all, 30,770 households have access to internet speeds of at least 10 Mbps through wireless or DSL service, about 310 have access to 6 to 10 Mbps services and the remaining 6,090 households can access improved satellite packages.

Business Parks

Bell Aliant has built new fibre connections to the Fenelon Falls Industrial Park area and Cogeco has built fibre to the Needham Street area in Lindsay.



Government support is essential because of the high costs of expanding in rural communities and the low population density. This is much like building the national railroad – this is how people connect now. It's absolutely essential to these communities.



Paul Downs

President, Nexicom

Lanark County

Lanark County, which borders the Ottawa capital region, is home to over 100 lakes, rivers and waterfalls. It is an area rich in history, boasting over 140 designated heritage properties, often by water's edge. It is also Ontario's Maple Syrup Capital. Its picturesque small towns host a range of small businesses, events and festivals.

Eight new or improved internet access points were built in Lanark County. A number of ISPs built off of these hubs to deliver improved services:

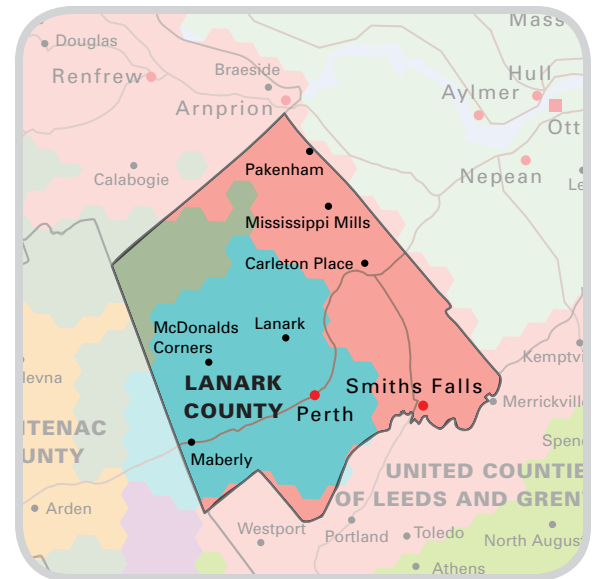
- Bell Aliant expanded service to more densely populated areas around Perth, Lanark, MacDonald's Corners and Maberly, as well as in the eastern part of the County, by spring 2014.
- Storm Internet, a regional internet service provider with a base in Perth, expanded their existing wireless network in the balance of the County, by spring 2014.

In all, 30,790 households have access to speeds of 10 Mbps or higher through DSL or wireless services, about 40 can access 6 to 10 Mbps service, and the remaining 840 can access these speeds via improved satellite packages.

Business Parks

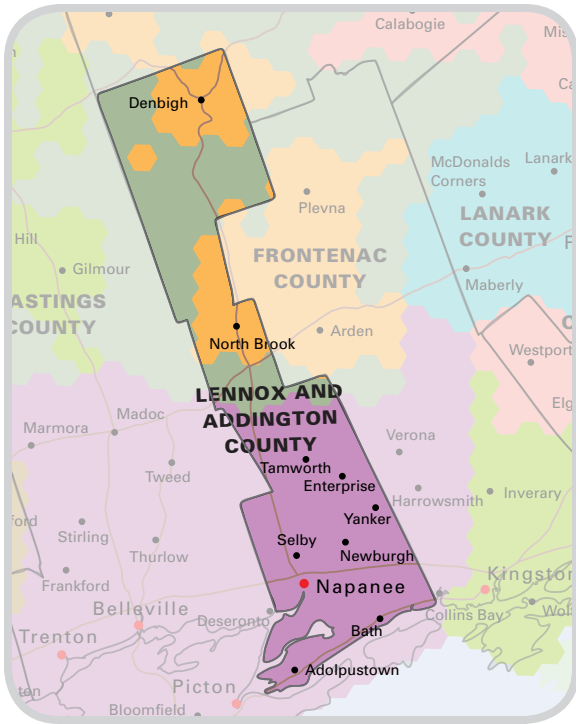
Several different business clusters have new fibre optic, high-speed internet access from Bell Aliant, including:

- Christie Lake Road in Tay Valley
- Hwy. 7 commercial area in Tay Valley
- Perth core and business areas
- Ewart Ave. area in Drummond/North Elmsley



- Bell Aliant & Storm
- Bell Aliant & Storm

Lennox and Addington County



- Xplornet
- Bell Aliant

Lennox and Addington County stretches from Lake Ontario northward over 130 kilometres to Renfrew County. It encompasses four municipalities and nearly 2,800 square kilometres. Its rugged, rocky north is a popular outdoor destination while the south is rural, with a number of small communities and heritage towns.

In all, 11 new or improved internet access points were built in Lennox and Addington County. Local access networks have been built by two ISPs:

- Xplornet launched expanded wireless services in the south in spring 2013.
- Northern areas of the County received expanded DSL services from Bell Aliant in summer 2013.

In all, 13,640 households have access to internet speeds of 10 Mbps or higher, about 80 can access 6 to 10 Mbps service, and the remaining 1,490 households have access to similar speeds via satellite services.

Business Parks

The Loyalist East Business Park, in Loyalist Township, has improved fibre broadband services from Utilities Kingston.





Xplornet Communications Inc.

Xplornet Communications has carved its niche in delivering high-speed internet to rural communities across Canada. It was already providing satellite and wireless services in Eastern Ontario when the Eastern Ontario Regional Network came along to expand broadband access.

“There’s no doubt that we share a common vision and common cause with EORN,” said President Allison Lenehan. “We are strong believers in the power of the internet and providing access to even those hard to reach corners of Canada.”

Xplornet was awarded contracts to build a number of local access networks in the region that leveraged its existing fixed-wireless services. These services use radio signals to connect homes and businesses to the fibre optic backbone.

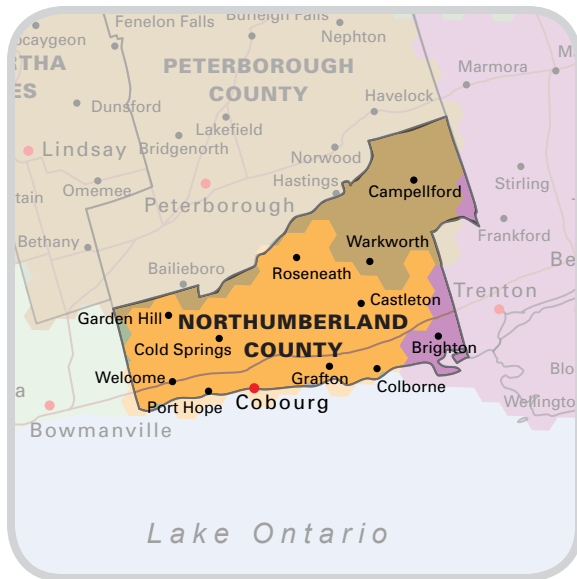
For customers who cannot be reached by 4G fixed wireless or other technologies, the company offers 4G satellite internet with special packages for rural Eastern Ontario customers, which were negotiated by EORN. Xplornet has invested heavily in deploying next-generation satellites to deliver state-of-the-art 10 Mbps services, and plans are already underway to deliver even higher speeds.




“EORN was a catalyst that helped bring new solutions to the market,” Lenehan said. “It was very helpful that their approach was to use a mix of technologies to serve the area.”

Lenehan also noted that the network’s structure maximizes the benefit to the community, particularly the number and location of new access points for internet service providers to connect to the fibre optic network.

“We will be able to tap into the fibre optic network as we upgrade our network to LTE technology over the next two years. It really opens the door for new and improved services,” Lenehan said.

Northumberland County



-  Xplornet
-  Xplornet
-  Bell Aliant & Xplornet

Located just east of the Greater Toronto area, Northumberland County is bordered on the south by Lake Ontario and on the north by Rice Lake, part of Canada's longest inland waterway. The County covers 1,900 square kilometres and seven lower-tier municipalities featuring rolling farmland, historic towns and lakefront communities.

A dozen new internet access points were built in Northumberland County as part of the fibre optic backbone. Building off the backbone, improved local access is delivered in the County through two contracts:

- Xplornet completed expansion of its wireless services in most of the County in fall 2012.
- A couple of areas in Trent Hills have received expanded DSL service from Bell Aliant as of fall 2012.

Nearly all 30,870 households in the County have access to internet speeds of 10 Mbps or higher through wireless or DSL. Those who are unable to get service due to terrain issues can get access through satellite services.

Business Parks

Cogeco has built new high-speed fibre access to the Brighton Industrial Park and to the Purdy Industrial Park Road area in Cramahe. Bell Aliant has connected high-speed fibre to the Campbellford Industrial Park and the Tanner Industrial Park in Trent Hills.



PONY
RIDES
\$5.00

Lang Pioneer Village Museum

Keene, Ontario

With its quaint roads, historic buildings and period costumes, Lang Pioneer Village Museum transports visitors back to rural life in the 19th century. The historic village, owned and operated by the County of Peterborough, was established nearly fifty years ago as part of a Canadian Centennial project in 1967. Last year, the village attracted some 20,000 visitors from as close as Peterborough and as far away as the United States and Europe.

Even as the clang of the blacksmith's hammer echoes through the village, Lang is using a modern, 21st century tool to preserve this local gem.

Lang Pioneer Village Museum worked with Nexicom to build a Wi-Fi network for visitors and improved broadband access and speeds for administration. The effort was made possible through the expanded broadband services provided by EORN.

"The high-speed internet access is key to our future and to being a financially sustainable destination that will benefit the community for generations to come," said Karen Jopling, operations manager.

While Wi-Fi service in a pioneer village may seem contradictory, modern-day visitors expect the convenience of mobile internet access. It's also a marketing necessity, as prospective visitors from near and far increasingly look to social media to choose their next destination. Lang can only benefit from making it easier for visitors to post and share their experience of the village in real time.

Improved broadband has other marketing applications as well. Lang Pioneer Village Museum is building a new agricultural barn and the current plan is to offer a conference facility within this new interpretive building. While it will have the look and feel of a traditional barn, it needs to offer modern amenities to successfully attract and host events and to be sustainable.

Internet is also the key to accessing new educational opportunities. Jopling noted that the village hopes to use webinars and other online tools to market to the secondary and post-secondary institutions.

"We'll be able to show academics and educators the kinds of artifacts we have available for research, so that they can come and physically touch, test and better understand our rural Peterborough history. Lang Pioneer Village Museum is well known for our Grade 3 Pioneer program, and we have so much more to share with all grades. This technology is setting us up to do just that," Jopling said.



Peterborough County

Peterborough County is comprised of eight townships in central-Eastern Ontario, about 90 minutes northeast of the Greater Toronto area. It is home to small urban communities, heritage towns and farmland, as well as seasonal cottage communities on its many waterways.

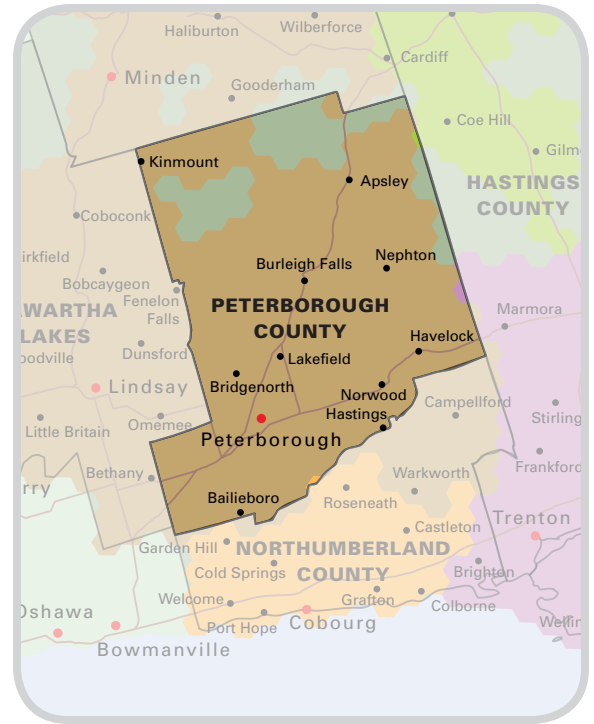
Eleven new internet access points were built in the County as part of the fibre optic backbone, as well as one in the City of Peterborough.

Improved local access through much of the County was delivered through DSL services by Bell Aliant and wireless services from Nexicom and Xplornet. All local networks were completed by or before spring of 2014.

In all, 29,780 households have access to internet services of 10 Mbps or higher through wireless and DSL services and 900 can access 6 to 10 Mbps service. The remaining 2,180 have access to the same speeds via satellite services.

Business Parks

Nexicom has built fibre connections to the area around Highway 7 and County Road 28.



● Bell Aliant, Nexicom & Xplornet



Prince Edward County



 Xplornet

Prince Edward County is a unique island community. Encompassing just 700 square kilometres, it boasts over 800 kilometres of shoreline. A growing wine industry is adding to the farming tradition of the community. The local economy also benefits from a strong tourism, arts and culture focus.

Three new or improved internet access points were built in Prince Edward County as part of the fibre optic backbone. Improved local access was created by Xplornet, with new wireless internet services that went live throughout the area in spring 2012.

Nearly all households in the County, about 11,860, have access to internet speeds of 10 Mbps or higher through expanded wireless services. Those who are unable to get service due to terrain issues can get access through satellite services.

Business Parks

The McFarland Development has received improved fibre internet access from Cogeco.



Expanding high-capacity, high-speed internet fibre to key commercial areas is helping us attract and retain local businesses. It is a real boost for our community and economic development.



Peter Mertens

Mayor, Prince Edward County



Wilderness Tours

Foresters Falls, Ontario

Wilderness Tours pioneered rafting and kayaking on the Ottawa River nearly forty years ago and since then, they have guided more than a million rafters down its now world-famous rapids.

Located in scenic Forester Falls, Renfrew County, Wilderness Tour is one of many tourism operators in the area getting new fibre connections from Cogeco through EORN's initiative to expand services to business parks and commercial areas.

It is a "game changer" according to Wilderness Tours' founder and owner, Joe Kowalski.

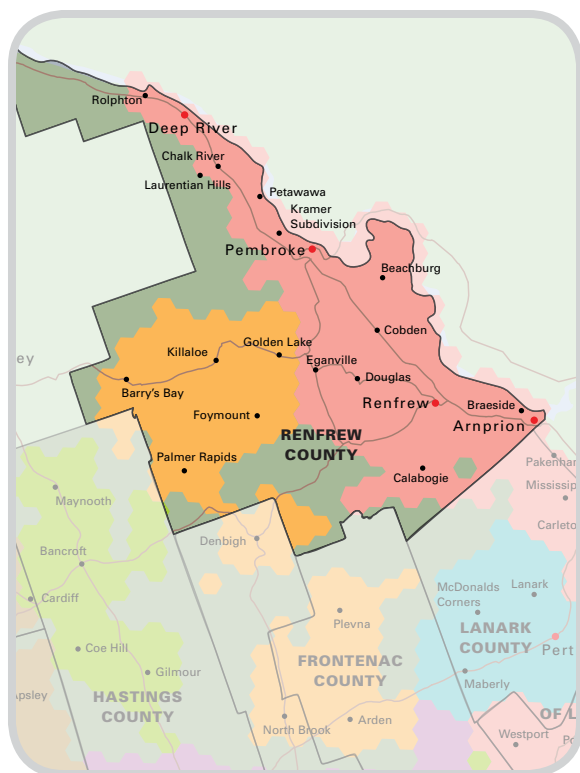
Whitewater rafting attracts more than 60,000 visitors to Renfrew County every year. And increasingly, they expect high-speed internet access – even in remote areas.

For the average adventure tourist, access to social media is the latest must-have for any resort, Joe notes. Wilderness Tours is building expanded Wi-Fi services across its extensive property, so that whether bungee jumping or riding the rapids, adventurers can post their selfies in real time. Visitors also expect to connect with work or check in with family during their downtime at the resort.

But that's not the only change Joe has seen in nearly 40 years in the business. In the past, the personal touch of a reservation agent used to make the difference. Now, visitors want the convenience of booking online wherever, whenever they want. Better broadband service will improve reliability of the online booking system, so that they never lose a potential visitor because the system is down. Joe is also looking at ways to improve efficiency and cost-savings, such as through internet phone services.

These broadband improvements are putting Eastern Ontario on the map when it comes to offering a world-class rafting and kayaking experience, with all of the digital amenities visitors expect.

Renfrew County



- Bell Aliant
- Bell Aliant

Renfrew County is the largest county in Ontario, encompassing 17 municipalities over 7,645 square kilometres. Bordered by the Ottawa River to the north, the County stretches from the outskirts of the Capital region of Ottawa to Algonquin Park. Its local economy includes agriculture, forestry and manufacturing, as well as a unique nuclear industry. It is also home to a large military base at Petawawa.

EORN expanded service by building on the previous Rural Connections broadband project. Sixteen new or improved internet access points were built off the fibre optic backbone in the County.

Local access was built through two zone contracts:

- In the west, expanded wired DSL access was completed by Bell Aliant in the fall of 2013.
- In the eastern and upper reaches of the County, Bell Aliant expanded access by spring 2014.

In all, 26,930 households have access to internet speeds of at least 10 Mbps through DSL services, with an additional 5,260 having access to internet speeds in the 6 to 10 Mbps range. The remaining 7,390 households have access to similar speeds through enhanced satellite packages.

Business Parks

A total of seven business parks or clusters in Renfrew County have enhanced fibre optic internet connections from either Bell Aliant or Cogeco.

Bell Aliant has built improved access to:

- Petawawa Industrial Park
- Renfrew Industrial Park
- Highway 41/Highway 17 cluster in the Township of Laurentian Valley
- Barry's Bay Business Park
- Pine Grove Business Park in McNab-Braeside
- Chalk River Business Park

Cogeco has built improved access to the following Whitewater business areas:

- Grant Settlement Road area
- Greenwood Road area



Storm Internet

EORN partnered with a range of internet service providers to expand broadband across the region, from large national firms to smaller, local operations. Storm Internet was one of those local firms, based in Eastern Ontario and operating largely in the south Ottawa Valley.

Storm Internet was the successful bidder on two local access networks that covered areas of Lanark County, the United Counties of Leeds and Grenville and the United Counties of Stormont, Dundas and Glengarry. Storm also built new fibre connections inside the 417 Industrial Park in the Township of Russell, which help attract new businesses to that rural community.

"The EORN project allowed us to expand much faster and build out further than we could have done on our own," said Jonathan Black, Storm's Chief Financial Officer. "We wanted to grow and expand our services. By partnering with the program, Storm Internet's own investment was leveraged for greater reach and impact."

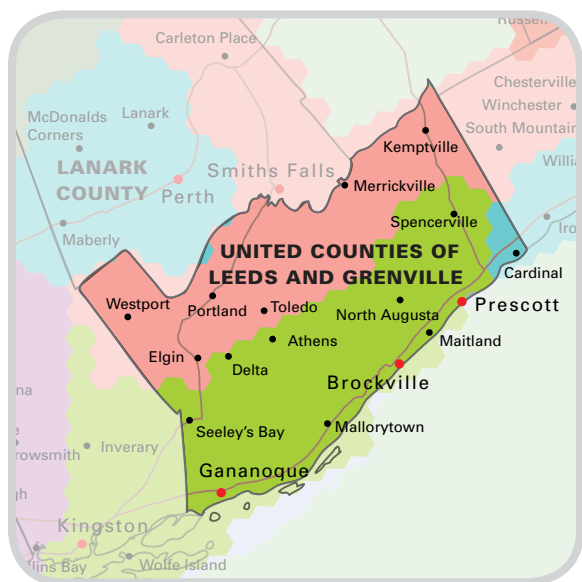
Through the project, Storm built new access points via wireless towers and roughly doubled its coverage area. The expansion and equipment upgrades boosted service to existing customers from 3 Mbps to up to 10 Mbps and introduced the 10 Mbps service to new customers in their expanded coverage area.

The company opened a new office in Chesterville as a result of the project and increased its staff from about 32 employees to 40.

The increased speeds have opened up a world of opportunity for the community, Jonathan said. He recalled how Storm's network hit new highs, in terms of usage, during the 2014 Winter Olympics – specifically the historic men's and women's gold medal hockey games.

"It was a watershed moment in a way, because the usage rates never actually returned to pre-Olympic levels," Jonathan said. "Once people got a taste of what they could do with the higher bandwidth, they really embraced it."

United Counties of Leeds and Grenville



- Bell Aliant & Storm
- Xplornet
- Bell Aliant

Located halfway between Montreal and Toronto, along the scenic St. Lawrence River, the United Counties of Leeds and Grenville is defined by its strategic location. Its two international bridges and major waterways form the foundation of the local economy – driving a strong transportation and logistics industry, as well as manufacturing and tourism. Covering 3,350 square kilometres of prime farmland and scenic cottage country, it is comprised of 10 lower-tier municipalities.

The fibre optic backbone created sixteen new or improved internet access hubs in the United Counties of Leeds and Grenville. Local connections from these access points were completed in spring 2014 by several ISPs:

- Storm expanded its wireless services and Bell expanded DSL services in the northern part of the United Counties.
- Xplornet expanded its wireless network in the southern half of the United Counties.

In all, 39,760 households have access to internet speeds of 10 Mbps or higher, about 250 can access 6 to 10 Mbps service and the remaining 2,030 households can access similar speeds through improved satellite packages negotiated by EORN.

Business Parks

Bell Aliant has connected new high-speed fibre to the Elizabethtown-Kitley Business Park, the Kemptville Business Park and the Gallipeau Business Park in Rideau Lakes. It has also put in fibre connections at three Prescott business park locations. Cogeco has built fibre connections to business areas in Gananoque.





Beau's All Natural Brewery

Vankleek Hill, Ontario

Beau's All Natural Brewery is a classic family success story. Father and son, Tim and Steve Beauchesne, enjoyed a pint one day and decided to open their own brewery. Their dream turned into reality in 2006, when they poured the first pint of their own craft brew. Last year, they sold three million litres of beer.

But that kind of exponential growth comes with its own challenges. For Beau's, that included finding an internet connection in Vankleek Hill that could keep up with their company's success.

As their business took off, they often found themselves literally grounded by slow internet. Sometimes, they had to choose between allowing sales staff to place their orders and letting marketing staff online to update the website, noted Steve, Beau's CEO.

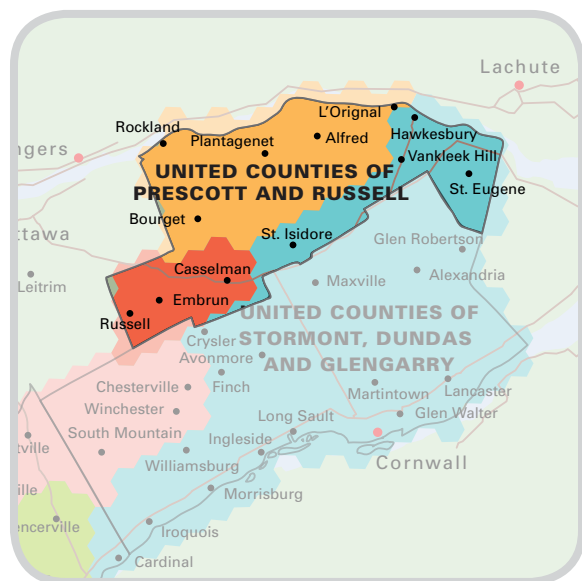
"We'd ship in bulk to Toronto. But our internet speed was so slow, the folks in Toronto couldn't access the orders to distribute locally. It was putting about \$4 million of annual sales in jeopardy," said Steve. They couldn't even hire new sales staff because their internet connection couldn't handle more users.

Fortunately, help was on the way. At the same time that Beau's was struggling, Bell Aliant was expanding local internet infrastructure through the EORN project. That included extending fibre optic cable nearby, and eventually, bringing fibre to the site.

The difference has been transformative. The company has gone from 86 employees to 120 since the new fibre was put in place – a growth enabled by the fact that there were no longer limits on their connectivity. The company is looking forward to embracing new online marketing tools, such as video – all from their home base in Vankleek Hill.

"Being in Vankleek Hill is part of our identity – not just as a business, but as people. We're from here and we're not interested in leaving," Steve said.

United Counties of Prescott and Russell



- Bell Aliant & Xplornet
- Xplornet
- Bell Aliant & Xplornet

The United Counties of Prescott and Russell (UCPR) is located at the eastern tip of Ontario, surrounded by the City of Ottawa, the Ottawa River, the province of Quebec and the United Counties of Stormont, Dundas and Glengarry. About two-thirds of the population is French speaking, making Prescott and Russell the only predominantly francophone county in Ontario.

It encompasses about 2,000 square kilometres and eight lower-tier municipalities. These are largely agricultural communities that also boast great swaths of public and private forests. Recent economic development projects include a Larose Forest interpretative ecology centre, a 72-kilometre recreational trail and other cycling trails, as well as a development plan to develop the banks, docks and sites along the Ottawa River.

There are 13 new or improved internet access hubs located in the United Counties of Prescott and Russell. Local access was improved by several ISPs:

- Xplornet expanded wireless services in the area around Embrun. These were the first new services built through EORN, launched in December 2011.
- Xplornet and Bell Aliant built new wireless and DSL services, respectively, across most of the United Counties by summer 2013 and spring 2014.

Nearly all of the 26,630 households in Prescott and Russell will have access to services at 10 Mbps or more through wireless or DSL. The remaining households can access these speeds through satellite services.

Business Parks

Two business parks, Vankleek Hill Industrial Park and the Rockland Business Park, have been connected to improved high-speed fibre from Bell Aliant. The 417 Industrial Park in Russell received improved services from Storm Internet.

United Counties of Stormont, Dundas and Glengarry

The United Counties of Stormont, Dundas and Glengarry is comprised of six lower tier municipalities situated on the St. Lawrence River, bordering both Quebec and the United States. The local economy is defined by its proximity to the famous seaway and has strengths in manufacturing and technology, food and beverage processing, bio-products manufacturing, and distribution and warehousing.

There are 18 new or improved internet access hubs located in the United Counties of Stormont, Dundas and Glengarry.

Local access was improved by several ISPs:

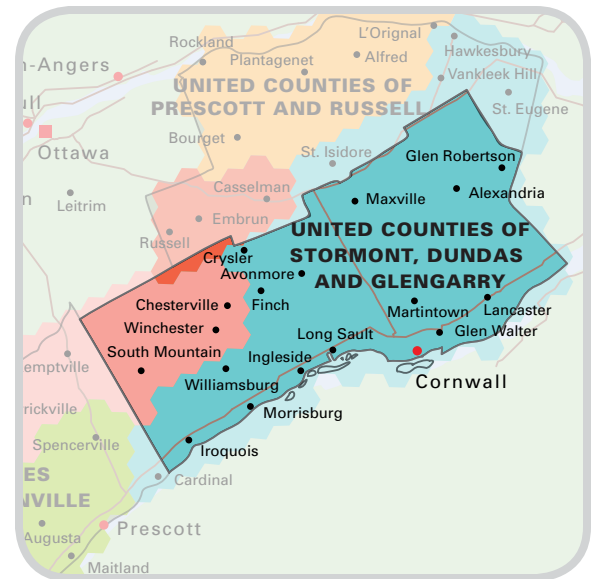
- Most of the United Counties received improved services from Bell Aliant and Xplornet, which completed expanding DSL and wireless expanded services, respectively, by spring 2014.
- Storm Internet, a locally based ISP, expanded its new wireless network in the northwestern part of the Counties.

In all, 24,990 households have access to wireless or DSL internet services at 10 Mbps or higher, 620 can access 6 to 10 Mbps service, and the remaining 1,190 households can access these speeds through improved satellite packages.

Business Parks

Bell Aliant has built fibre connections to the following business parks:

- Winchester Cove Business Park
- Alexandria Industrial Boulevard area
- Morrisburg Industrial Park
- Ingleside Industrial Park
- Long Sault East Industrial Park in South Stormont
- Cornwall Business Park, Saunders Drive Business Park and Walrich Business Park, all in Cornwall



- Bell Aliant & Storm
- Bell Aliant & Xplornet

“ The next step will be to harness the potential of the network and realize the benefits for families, business, healthcare, education and government services. We are pleased to be opening a new chapter for Eastern Ontario. ”

Rick Philips
Past Chair, EOWC



Internet Service Partners Contact Information:

Bell:	310-BELL
Xplornet Communications Inc.:	1-866-943-8632
Storm Internet:	1-866-257-8676
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