

CONNECTEDNORTH.CA

NORTHERN ONTARIO BROADBAND REPORT 2023



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About Blue Sky Net

The Blue Sky Economic Growth Corporation (Blue Sky Net) is a FedNor-funded not-for-profit organization with a mandate focused towards economic development and innovation through the promotion of technology adoption.

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About connectednorth.ca

Connectednorth.ca is a Blue Sky Net-led project that provides information resources and GIS mapping of broadband for all of Ontario with a focus on Northern Ontario.

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Blue Sky Net is proud to receive funding from the Federal Economic Development Agency for Northern Ontario.



Federal Economic Development
Agency for Northern Ontario

Agence fédérale de développement
économique pour le Nord de l'Ontario

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MESSAGE FROM THE EXECUTIVE DIRECTOR

Very high-speed broadband networks are seen as a key enabler for socio-economic development. Their roll-out has been made a priority worldwide and is considered as an investment for the future.

Higher connection speeds allow all users, households, businesses and administrations, regardless of their size or geographic location, to benefit from enhanced and more efficient broadband services. It shapes the way companies do business, enhancing their capacities, broadening their markets. It improves household online experiences, allowing them to use multiple connected devices at the same time, benefits from faster download speeds and increasingly important upload speeds that carry online transactions.

One of the existing pillars of our current work plan is a leadership role in coordinating and facilitating broadband infrastructure projects on behalf of communities, municipalities, and Indigenous groups.

Our efforts include:

- Conducting needs assessments of Northern Ontario broadband gaps using information from Blue Sky Net's Broadband and Associated Infrastructure Mapping Analysis project (BAIMAP) down to the property parcel level.
- Providing public Ontario-wide broadband data portals and mapping through Blue Sky Net's **connectednorth.ca** and Ontario Internet Access Map (OIAM).
- Hosting community consultations and engagement sessions to gather input.
- Developing terms of reference for requests for proposals;
 - and compiling any other information required to support proposals for Provincial and Federal funding and Regional Broadband Deployment.
- Additional efforts include working with Service Providers as they engage with municipalities throughout the course of broadband project development and construction and
 - Working with the municipalities to assist in the process of developing siting policies, permitting and infrastructure data.

MESSAGE FROM THE EXECUTIVE DIRECTOR

We know our municipalities, we know our Indigenous leaders, we work with these stakeholders every day.

In the North, Blue Sky Net has integrated more than 500,000 digital property parcel files from every municipality in Northern Ontario with the latest broadband coverage data from the Ministry of Innovation, Science and Economic Development (ISED) and census data.

In general, Northern Ontario presents some unique challenges when it comes to delivering technology services to home or business (High Speed Internet, Cellular telephone service,)etc. Blue Sky Net brings together service providers, potential customers, and government programs to understand why these services aren't available, and to develop a strategy to overcome these service gaps.

The internet offers access to information from every corner of the globe. Blue Sky Net is concerned about improving information and tools that will benefit Northerners specifically and so we work with stakeholders to develop common, beneficial applications that utilize ICT and provide a benefit in the lives of those who use it.

Broadband is part of cultivating a strong and diverse economy. It delivers greater educational opportunities, empowers citizens, provides higher paying jobs, and encourages entrepreneurship in our communities.

Blue Sky Net will continue our efforts to provide quality of life and helping to create effective, connected networks for all Northerners.

Blue Sky Net
Executive Director, Susan Church

INTRODUCTION

According to the Auditor General, although as of 2021, 91% of Canadian households have access to this level of broadband. Although this appears positive, a digital divide exists between urban communities and rural and First Nation communities where there is respectively 59.5% and 42.9% access to 50/10Mbps broadband (Government of Canada, 2023).

Both the Federal Canadian Government and Ontario Provincial Government recognize the importance of broadband access. The Federal Government has set a goal of every Canadian household having access to 50/10Mbps by 2030 (Government of Canada, Innovation, Science and Economic Development Canada, Office of the Deputy Minister, Digital Transformation Service Sector, 2023) and the Government of Ontario has set a 2025 (Government of Ontario, n.d.) target for this level of access for every Ontario household. The Federal and Provincial governments both consider broadband access as having access to fixed broadband infrastructure and connections such as satellite and cellular are not counted towards access to 50/10Mbps (Government of Canada, 2019).

Governments on both the Federal and Provincial levels are investing in broadband projects. They have both identified the economic and social importance of access to high-speed internet and as well understand the cost-linked barriers associated with developing networks for Internet Service Providers in rural and remote regions. Due to the low population density and diverse topography and geography of Northern Ontario, subsidies and unique technology solutions are required to meet the goal of 50/10Mbps broadband access for all Ontarians (Theckedath et al., 2019).



INTRODUCTION

METHODOLOGY

SPEED TESTS

Connectednorth.ca has partnered with CIRA's Internet Performance Test, to collect the most detailed information relating to Northern Ontario's internet speeds. We use the crowd-sourced information about speeds to show the need and the impact improved Broadband Infrastructure will have. This helps in supporting applications to funding agencies, it helps show a business case for ISP's to develop their networks and sometimes it can point out that there are networks issues that can be repaired.

BROADBAND ACCESS INFORMATION

Blue Sky Net has consolidated publicly available information from both ISED's National Broadband data portal and Census Canada community data to perform an analysis on broadband availability throughout all of Ontario. This analysis utilizes pseudo-households and broadband road-segment data to provide a look at district, community and neighbourhood-level broadband access availability.

ANNOUNCED AND IN-PROGRESS BROADBAND PROJECTS

Data is joined together from public information made available by ISED's Universal Broadband Fund (UBF), the Province of Ontario's "Ontario Builds" page and the Accelerated Highspeed Internet Program (AHSIP) map data page.



METHODOLOGY

KEY FINDINGS

Of the 285 communities within the Federally defined region of Northern Ontario, 74 have at least 50% of households with access to 50/10Mbps broadband speeds.

Through the 31,895 recorded Northern Ontario speed tests from 2020-2022:

- *The median download speed increased from 4.88Mbps to 20.21Mbps*
- *The number of speed tests taken increased and decreased in-step with COVID-19 health measures and access to in-person work, study and entertainment.*

Governments are making significant investments in bridging the digital divide.

- *There are presently 73 announced, in-progress or recently completed broadband projects throughout the Northern Ontario region.*



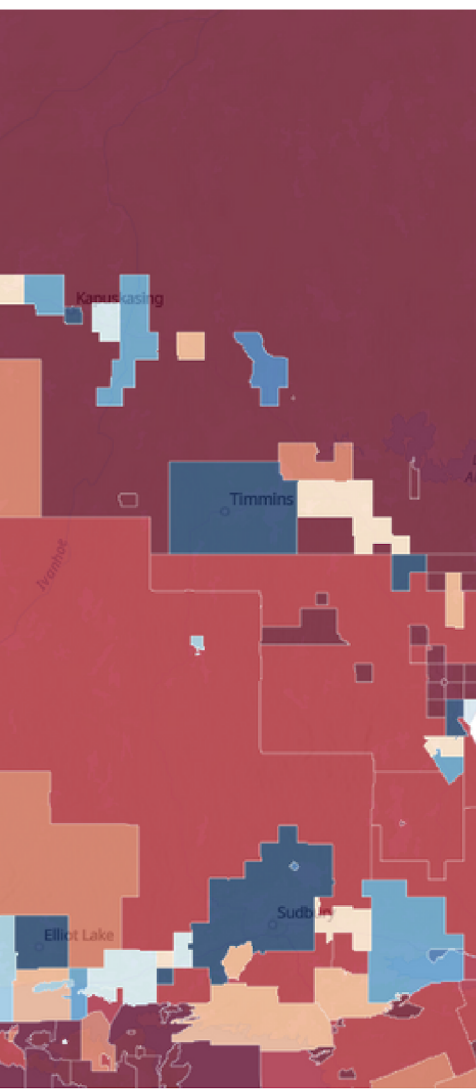
KEY
FINDINGS



NORTHERN ONTARIO BROADBAND ACCESS

Blue Sky Net has performed an analysis using the latest publicly available data from ISED's National Broadband data portal to produce a better understanding of the state of broadband access throughout all of Ontario. This public data is combined with census information to form an assessment of available broadband access by district, community, and neighbourhoods. A geospatial analysis is performed in order to combine the data and provides an estimate for the number of households receiving coverage for: 50/10Mbps, 25/5Mbps, 10/2Mbps, 5/1Mbps, less than 5/1Mbps and no service availability.

This analysis and mapping product can be viewed publicly on www.connectednorth.ca within the **Ontario Internet Access Map** and the **Ontario Broadband Reporting** tool.



It is important to note that this data only includes broadband access information of the infrastructure owners and not broadband re-sellers. A further important consideration when forming the analysis from the data provided by ISED is the exclusion of satellite and cellular internet access providers - ISED does not recognize these options as part of broadband infrastructure.

This analysis provides a snapshot of broadband access throughout Northern Ontario as measured against the 50/10Mbps standard that was set by the CRTC and is adhered to by both the Federal and Ontario Provincial governments when considering a household has sufficient broadband access.

Fig. 1 - A visual snapshot of community access levels on the Ontario Internet Access Map

NORTHERN ONTARIO BROADBAND ACCESS

Summary

The geographic boundary of Northern Ontario as defined by the federal government includes **12 districts** and within those 12 districts there are **285 communities**.

Of these 285 communities, **74 communities have at least 50% households able to access 50/10Mbps**. Of these 74 communities, **47 communities have at least 75% households able to access 50/10Mbps**.

By population, Northern Ontario has **187 communities with fewer than 1,000 people according to census reporting**, (this also includes optional census reporting for First Nation communities).

There are **93 communities with populations ranging from 1,000 - 29,999**, **3 communities with populations 30,000 - 99,999** and **2 communities with populations larger than 100,000**. This presents a challenge that is amplified in Northern Ontario for Internet Service Providers seeking to expand their networks as population density is lower than larger urban centers elsewhere in the country and the business case is diminished (Theckedath et al, 2019).

The following data summaries utilize the data from connectednorth.ca to form an analysis of Northern Ontario broadband availability by district, community and populations.

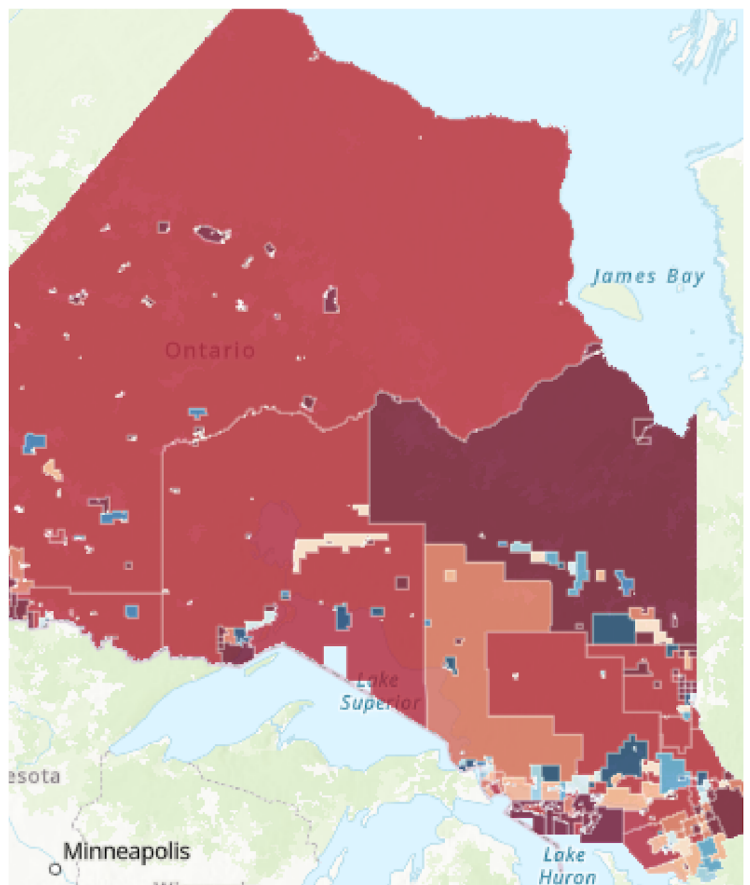


Fig. 2 - Ontario Broadband Report Tool visualizing Northern Ontario broadband access.

NORTHERN ONTARIO BROADBAND ACCESS

District Overview

*Of Northern Ontario communities able to access
50/10Mbps fixed broadband.*

Algoma District

32 Communities
16 Communities with at least 50% household coverage
8 Communities with at least 75% household coverage

Cochrane District

23 Communities
8 Communities with at least 50% household coverage
4 Communities with at least 75% household coverage

Greater Sudbury District

2 Communities
2 Communities with at least 75% household coverage

Kenora District

59 Communities
8 Communities with at least 75% household coverage

Manitoulin District

17 Communities
1 Community with at least 50% household coverage

Muskoka District

8 Communities
3 Communities with at least 50% household coverage
1 Community with at least 75% household coverage



NORTHERN ONTARIO BROADBAND ACCESS

District Overview

*Of Northern Ontario communities able to access
50/10Mbps fixed broadband.*

Nipissing District

15 Communities
4 Communities with at least 50% household coverage
3 Communities with at least 75% household coverage

Parry Sound District

30 Communities
9 Communities with at least 50% household coverage
5 Communities with at least 75% household coverage

Rainy River District

25 Communities
4 Communities with at least 50% household coverage
3 Communities with at least 75% household coverage

Sudbury District

15 Communities
5 Communities with at least 50% household coverage
2 Communities with at least 75% household coverage

Temiskaming District

26 Communities
5 Communities with at least 50% household coverage
3 Communities with at least 75% household coverage

Thunder Bay District

33 Communities
9 Communities with at least 50% household coverage
8 Communities with at least 75% household coverage



NORTHERN ONTARIO BROADBAND ACCESS

By Population

Of the 285 communities in Northern Ontario, 187 have populations under 1,000 and from these communities, 28 have at least 50% of their households covered by 50/10Mbps internet.

There are 93 communities with populations ranging from 1,000 - 29,999 and 41 of these communities have at least 50% of their households covered by 50/10Mbps internet.

Three communities in Northern Ontario have populations from 30,000 - 99,999 and two over 100,000. All five of these communities have at least 75% of their households able to access 50/10Mbps.

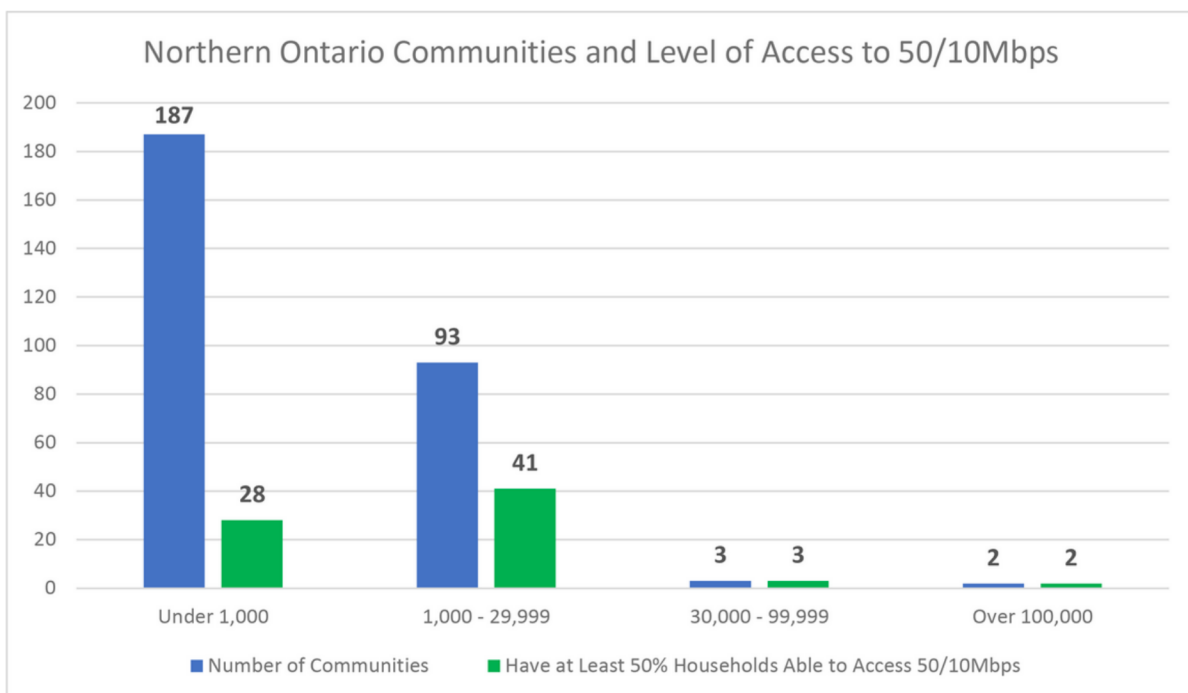


Fig. 3 - Data from connectednorth.ca Ontario Broadband Report tool visualizing the relationship between population and levels of household access to 50/10Mbps fixed broadband.

NORTHERN ONTARIO SPEED TEST RESULTS

Through the Blue Sky Net partnership with CIRA and its Internet Performance Test, we were able to analyze 31,895 speed tests that were conducted throughout Northern Ontario during 2020, 2021, and 2022.

During this time, the increase and decrease of speed tests taken in Northern Ontario appeared to correspond with restrictions associated with the COVID-19 pandemic. Within the first three months of 2020, approximately 500 speed tests were taken, by March -April of the same year, an additional 500 tests were performed as more people were required to work, study or seek entertainment from home. As restrictions began to ease by mid-2022, speed tests taken began to once again decline in alignment with people returning to work places and students returning to schools.

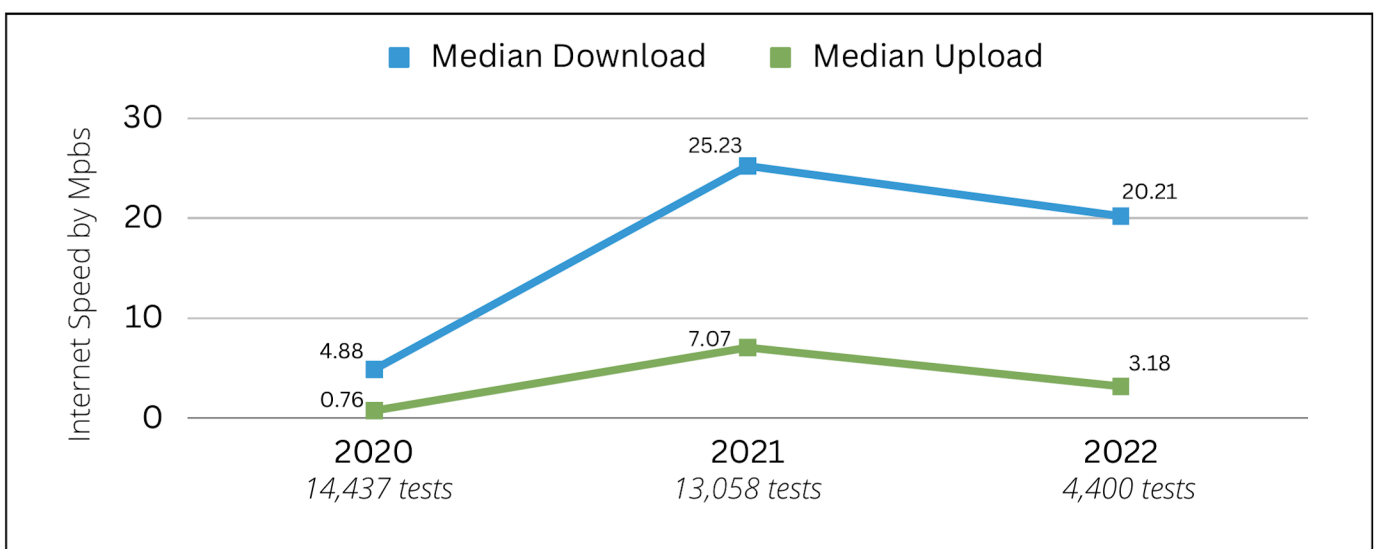


Fig. 4 - Data from connectednorth.ca CIRA-powered speed tests displaying speed tests trends in Northern Ontario from 2020-2022.

NORTHERN ONTARIO SPEED TEST RESULTS

As shown in the by-district year-by-year glance at Northern Ontario speed tests, there has been a drastic improvement between the years 2020 and 2021/2022.

Key considerations during this time period include:

- *The COVID-19 pandemic emphasized the need for improved broadband and may have forced users to upgrade their packages if available.*
- *Governments further investing and implementing broadband projects.*
- *New entrants into the market, most notably Starlink satellite internet.*

Year and District	Median Download	Median Upload	Number of Speed Tests
2020			
Algoma	10.74	1.80	1035
Cochrane	5.82	0.98	806
Greater Sudbury	28.88	3.13	674
Kenora	8.42	1.42	493
Manitoulin	4.56	0.89	283
Muskoka	8.11	1.03	3659
Nipissing	1.73	0.58	4302
Parry Sound	4.95	0.99	1637
Rainy River	11.39	2.90	82
Sudbury	4.63	0.84	98
Thunder Bay	6.72	0.67	935
Timiskaming	56.96	10.64	433
2021			
Algoma	35.33	8.63	923
Cochrane	23.89	5.13	458
Greater Sudbury	56.26	10.01	5914
Kenora	15.22	3.83	221
Manitoulin	7.44	0.97	338
Muskoka	10.20	0.86	2073
Nipissing	6.24	1.06	585
Parry Sound	5.56	1.23	1125
Rainy River	10.15	1.96	80
Sudbury	9.96	1.21	483
Thunder Bay	23.72	5.36	652
Timiskaming	33.56	10.13	206
2022			
Algoma	40.07	7.81	245
Cochrane	68.42	7.23	103
Greater Sudbury	80.30	10.28	370
Kenora	5.75	0.92	236
Manitoulin	48.87	3.30	113
Muskoka	15.84	2.10	1244
Nipissing	20.99	4.40	647
Parry Sound	9.21	1.97	875
Rainy River	43.26	5.28	56
Sudbury	13.24	1.50	139
Thunder Bay	24.08	5.33	299
Timiskaming	30.65	5.03	73

Fig. 5 - Data from connectednorth.ca CIRA-powered speed tests displaying speed tests trends in Northern Ontario from 2020-2022 by Northern Ontario census district.

ANNOUNCED, IN- PROGRESS & COMPLETED BROADBAND PROJECTS

Both the Canadian Federal Government and the Ontario Provincial Government have committed to ensuring every household in Ontario has access to 50/10Mbps fixed broadband infrastructure. The Federal Government has set the date of 2030 for all of Canada and the Ontario Provincial Government has committed to every Ontario household by 2025.

The Federal and Provincial governments have made financial contributions pursuant to realizing these broadband access targets and to-date there are 73 projects throughout Northern Ontario in varying states of planning, construction and completion. These 73 projects represent projects from the Universal Broadband Fund and the Accelerated High-Speed Internet Program.

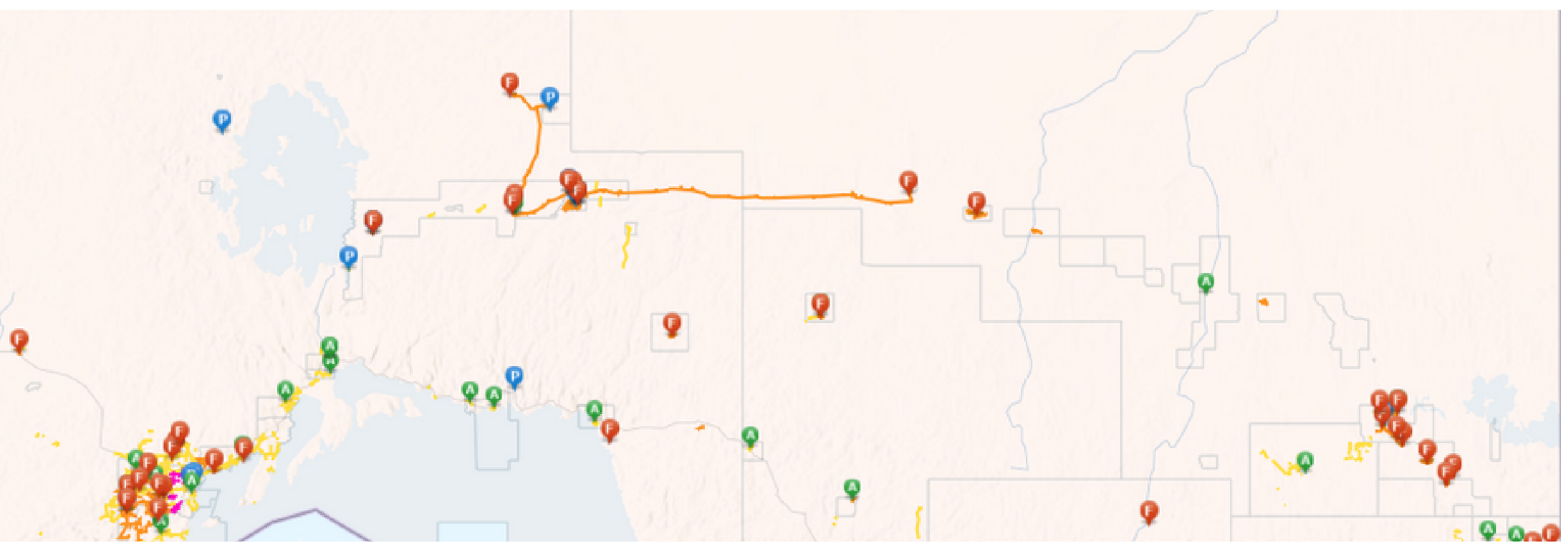
Northern Ontario Broadband Projects

**UNIVERSAL
BROADBAND FUND**

52 Projects

**ACCELERATED HIGH-SPEED
INTERNET PROGRAM**

21 Projects



CLOSING REMARKS

Blue Sky Net recognizes that high-speed broadband is not a "one solution fixes all" landscape and that a diverse array of technologies will be required in order to ensure the 50/10Mbps broadband access target for every household is achieved. There are many benefits and advantages to living in Northern Ontario - from its thriving economy and diverse communities to its natural wonders, lakes, forests, and the hills that are formed by the Canadian Shield. The geography and topography of Northern Ontario are both unique and beautiful, but as well present challenges to network developers as the hard bedrock is costly to blast through for fibre and cable and our forests and hills may block line-of-sight technologies such as fixed-wireless broadband. It is positioned by Blue Sky Net that a diversity in technology deployment for broadband will be required in order to meet the 50/10Mbps targets that both the Federal and Provincial governments have agreed to.

The majority of regions throughout Northern Ontario still do not benefit from 50/10Mbps access and this issue is further exacerbated when viewing communities further away from urban centres. One of the major contributing factors in this digital divide between rural and urban centres is the cost of developing fixed networks in areas where the return on investment for Internet Service Providers is diminished due to the longer distances between households and communities, lower population density and the cost of overcoming geographic challenges.

Optimism in both the present and future for Northern Ontario broadband.

Both the Federal and Provincial governments have made high-speed broadband access a priority and significant investments into infrastructure throughout Northern Ontario have already been made. It is encouraging to see both signs of improvement from users taking the connectednorth.ca CIRA speed tests and seeing investments made by governments to help subsidize the cost of developing broadband networks in areas where Internet Service Providers require financial support to access communities and households. The 73 identified announced, in-progress and recently completed projects indicate that improvements to broadband access are imminent and we look forward to tracking these results upon the release of updated ISED National Broadband data.

Blue Sky Net is continuously committed to mapping Northern Ontario broadband access to the property level and monitoring broadband projects in order to ensure that governments and Internet Service Providers are not only reaching as many households as possible but also doing so with cost-efficiency.

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DATA FOR SUMMARIES AND SPEED TESTS

Community Summary data utilizes mapping tools from connectednorth.ca. The Ontario Broadband Report Tool is used to generate summary reports by Ontario district and community.

Northern Ontario speed test data is gathered in partnership with CIRA and the Internet Performance Test.