



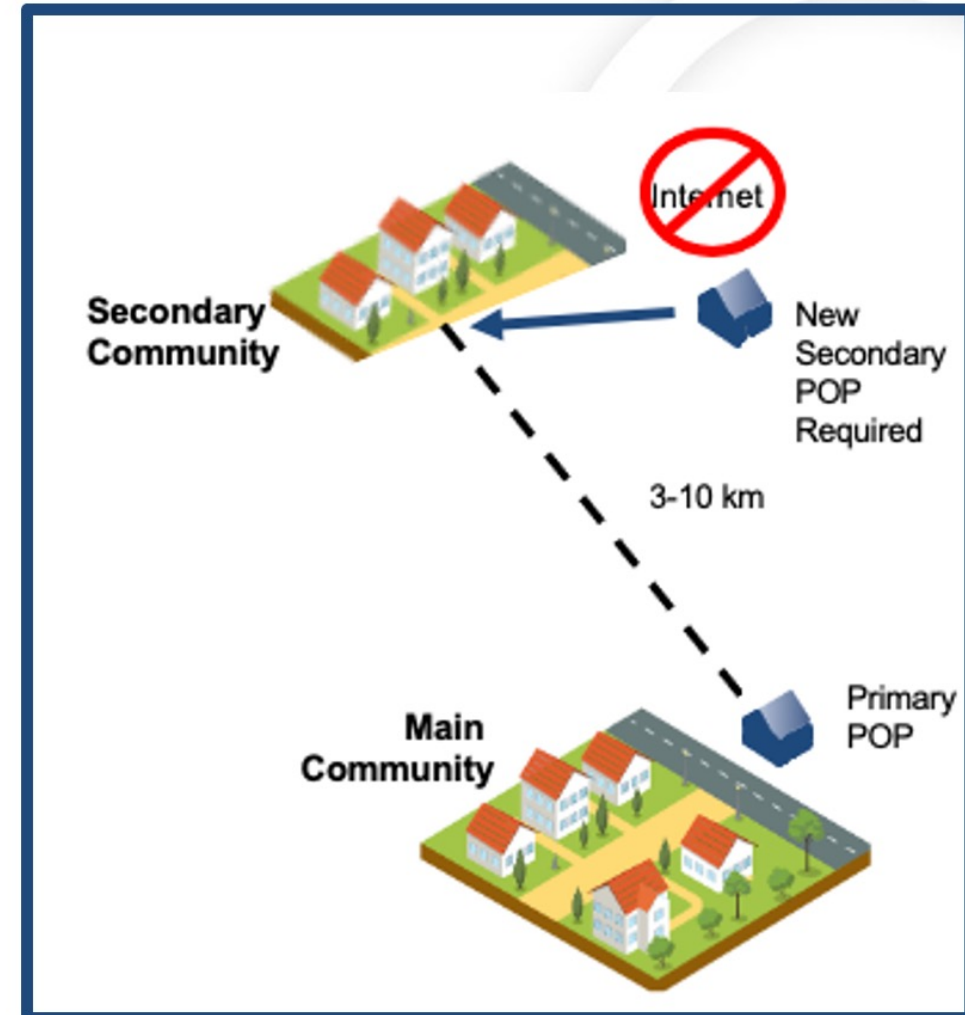
Solving a Broadband POP Extension Requirement in Carling Township

Northern Project #1 – Problem Statement

A Middle-km Broadband Problem Statement

A technology solution required to extend broadband or high-speed internet access out to a secondary Point of Presence (POP) that is 3-10 km away, for a low cost, high-capacity middle-kilometer solution.

The solution will extend broadband capacity from one part of the community to a remote site 3-10 km away such as a residential cluster, or adjacent residential community with limited or no internet access.



Selected Technology Partner



Headquartered in
Sudbury, Ontario

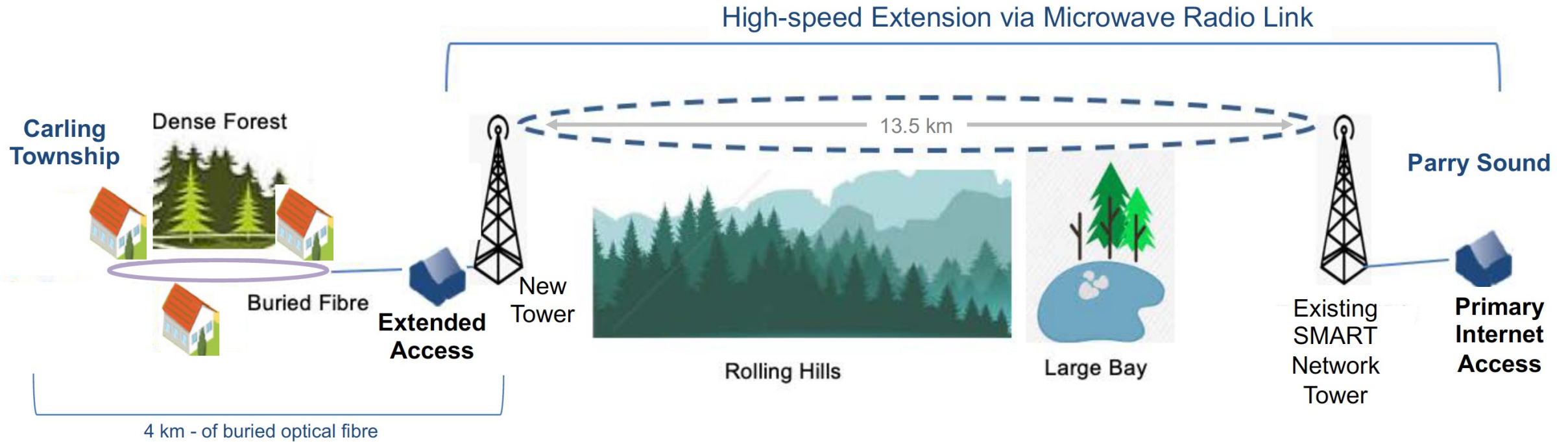
Company Overview

- Telecommunications Company offering high-speed internet, television, and telephone services.
- In business for 31 years, 175 employees throughout Ontario
- Operate 170 Tower Sites
- Built over 900 km of fibre in more than 12 communities
- Own their own Horizontal Directional Drilling firm.
- In-house aerial fibre optic capabilities (Capacity to build over 200 km of fibre annually).
- Offer broadband service via cable, DSL, fixed wireless, and optical.

Northern Ontario Community Experience

- City of Sudbury (250 km fibre, servicing 700 business customers, passing 5000 homes triple-play)
- City of Parry Sound (FTTH 900 homes passed)
- Municipality of Chapleau (1100 homes, 70% penetration)
- Small fibre builds in Huntsville, Bracebridge, Sturgeon Falls, Gravenhurst, and Timmins
- Wireless Network Experience in Manitoulin Island, Sudbury, Gore Bay, and Elliot Lake
- Offices in Timmins, North Bay, Sault Ste Marie, Fort Frances, Pembroke, Huntsville, Midland, Barrie, Peterborough, and Schomberg

Extending Broadband to Carling Township



- ✓ **FTTH - Future-Proof Last-kilometer Solution**
 - Cost-limited 4 km buried optical fibre ring

- ✓ **Low-cost Solution to get Bandwidth to Carling**
 - High-bandwidth, fixed-wireless, microwave radio link

- ✓ **Avoided Fixed-Wireless Challenges**
 - Towers ensure Line of Sight above dense tree canopy, large water bodies, & hills of rock/forests
 - Buried optical fibre in gravel shoulder of roads means dense tree cover for last km not an issue

Project Cost Innovation

Fixed Wireless POP Extension, with FTTH loop in Carling Township

Significant Last Km Cost Reduction

- ✓ **No Last Km Pole Costs** - road shoulder plowing and horizontal drilling for fibre

Very Large Middle Km Cost Reduction



\$1.2 Million Cost Saving

- ✓ **Very Large Reduction in Middle Km POP Extension Costs** - reduced by 85%
- ✓ **No Middle Km Pole Costs** – no poles required, no pole replacements, no pole engineering
- ✓ **No Middle Km Fibre Costs** – no fibre required for middle km

Upgraded Pre-Existing 200' Tower



Upgraded existing 200 ' SMART Tower

This is the existing 200' tower near the old Forest Fire Watch Tower in Parry Sound and was formerly an MNR tower. This tower was purchased by the "Township of the Archipelago". The tower is now part of the West Parry Sound SMART Community Network.

Vianet connected a fibre optic back-haul link from a nearby high-capacity POP in Parry Sound to the Smart Tower as part of this project.



The radio base station equipment, UPS, and other supporting equipment was also upgraded as part of this project.



Old radio equipment was removed as part of the project, replaced with 15Gbps microwave radios to connect to the new Carling Township tower 13 km away.

Installation of New Tower & Fibre Optic Ring



New 200 ' Telecommunications Tower



4 km of Fibre Optic Cable Installed to reach up to 300 homes

June 04 - 06 2020

Completed End of August 2020

Carling Township Fibre Installation



Current Project

- Over 250 residences nearby

135 Optical Customer Connections, 29 Wireless Customers so far

As part of the CENGN project, optical fibre has been installed along Bayview Drive and Rockcliffe Drive to provide fibre to the home, to support high speed broadband access to residents.

New Spin-off Projects Underway (from New Tower)

- New Tower for Parry Sound Industrial Park
- New Internet Service for Shawanaga First Nation
- New Tower for Community of Pointe au Baril
- 10 km UBF Funded Optical Fiber Extension for additional 89 homes

Community Benefits of Project

High-speed Reliable Broadband Internet Services to Underserved Residents

- Fibre to the home access by up to 300 residents

Future-proof Fibre Access for Residents

- Use of fibre to the home ensures even higher speed services could be offered in the future

This technology solution could be extended to the other 6 communities easily

- Significantly reduced incremental cost per community (4 other projects underway using this blueprint)

This technology solution is being extended to the nearby Industrial Park

- Access will be extended from this new Carling tower if a new tower being built in the Industrial park

New Tower also offers Lower Cost Wireless Broadband Services

- Vianet is also offer lower cost internet access services via wireless 5GHz services

Subsequent Area Spin-off Expansion Projects



The “West Parry Sound SMART Community Network” group of volunteers were key advocates and facilitators working closely with Vianet, CENGN, and the respective communities. They succeeded in getting 5 new projects funded within 2 years.

Legend



CENGN Project#1
Service Areas



CENGN Project#1
Tower Sites



New or Upgraded Tower Sites



Active
Expansion
Prospects



Possible
Expansion
Prospects

Overall Impact of the Project



High-speed Reliable Broadband FTTH Internet Services to Underserved Residents

- Fibre to the home access by up to 300 residents



High-speed Reliable Broadband FWA Internet Services to Underserved Residents

- Wireless access for up to 500 additional residents



Approximately \$250,000 CENGN Investment resulted in over \$1,200,000 Investment

- Vianet and Surrounding Communities invested almost \$1,000,000 into broadband in this and 4 other spin-off projects using the same technology solution blueprint used for this project



4 Other Spin-Off Projects for West Parry Sound Area

- New broadband service expansion to Parry Sound Area business park, Sequin Township, Point au Barel, and additional 10 km FTTH project north of the new tower in Carling Township



500% Business Growth for Vianet in the West Parry Sound Area

- Vianet is also offer lower cost internet access services via wireless 5GHz services



THANK YOU!