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

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<tr>
<th>Company Overview</th>
<th>Northern Ontario Community Experience</th>
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<td>• Telecommunications Company offering high-speed internet, television, and telephone services.</td>
<td>• City of Sudbury (250 km fibre, servicing 700 business customers, passing 5000 homes triple-play)</td>
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<td>• In business for 31 years, 175 employees throughout Ontario</td>
<td>• City of Parry Sound (FTTH 900 homes passed)</td>
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<td>• Operate 170 Tower Sites</td>
<td>• Municipality of Chapleau (1100 homes, 70% penetration)</td>
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<td>• Built over 900 km of fibre in more than 12 communities</td>
<td>• Small fibre builds in Huntsville, Bracebridge, Sturgeon Falls, Gravenhurst, and Timmins</td>
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<td>• Own their own Horizontal Directional Drilling firm.</td>
<td>• Wireless Network Experience in Manitoulin Island, Sudbury, Gore Bay, and Elliot Lake</td>
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<td>• In-house aerial fibre optic capabilities (Capacity to build over 200 km of fibre annually).</td>
<td>• Offices in Timmins, North Bay, Sault Ste Marie, Fort Frances, Pembroke, Huntsville, Midland, Barrie, Peterborough, and Schomberg</td>
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<td>• Offer broadband service via cable, DSL, fixed wireless, and optical.</td>
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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**

- 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

$1.2 Million Cost Saving
Upgraded Pre-Existing 200’ 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 ink from a nearby high-capacity POP in Parry Sound to the Smart Tower as part of this project.

Upgraded existing 200’ SMART Tower

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 1.5Gbps microwave radios to connect to the new Carling Township tower 13 km away.
Installation of New Tower & Fibre Optic Ring

Northern Project#1
– New 200’ Tower and Fibre-Optic Ring Installation

New 200 ‘ Telecommunications Tower

June 04 - 06 2020

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

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
Using the same technology approach as the CENGN project, additional townships are being reached with new tower sites to extend improved broadband access to those communities.

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!