



## CENG N Northern Ontario Residential Broadband Program - Temagami Project Overview

**NGNP Powered by CENG N** – Next Generation Networks Program (NGNP) is a partnership with Ontario and Industry to advance development of NGN innovation and talent. The program drives technology validation to scale up small and medium tech enterprises (SMEs) and bridges the talent gap through new high-quality jobs, intern opportunities for students, and hands-on skills training. NGNP also advances tech innovation and adoption across industry verticals like Smart Mining, Smart Agriculture, and Autonomous Vehicles, as well as enables Rural & Northern Broadband connectivity solutions.

**CENG N Residential Broadband Program** – Through NGNP, CENG N funds innovative projects across Northern and Rural Ontario to provide solutions that improve connectivity and close the digital divide between remote communities and urban centres in Canada. The CENG N Residential Broadband Program offers flexible, lower-cost, higher-performance broadband access to residences within Rural Ontario communities.

### The Temagami Broadband Project –

The Temagami Broadband Project will support broadband access in 3 Temagami area lake communities. The results of this project will be made available through a solution blueprint for use by other lakeside communities facing similar broadband issues. The following are the direct benefits to the Temagami and Temagami First Nation residents of this project:

- Broadband extension to the Temagami First Nation community with a new tower, that will also reach throughout Lake Temagami
- High-reliability, high-performance broadband internet access for residents extended across all 3 arms of Lake Temagami (north, south, & east)
- Use of two types of new wireless technologies, including new TVWS technology, to ensure the best quality internet access service
- Implementation will use 3 existing towers in North Temagami, and Temagami to distribute the signals in those communities
- Model for low cost expansion to surrounding communities with investments of \$250,000 – \$500,000 for each expansion phase (with matching industry investments)

**Technology Innovation Used in the Project** – The CENG N project will drive installation of multiple fixed-wireless microwave radio links between the Temagami Fire Tower, the Temagami Water Tower, the Temagami North Water Tower, a new small tower at the Temagami Ambulance Garage, and a new 200' tower near the hub of Lake Temagami. The links will distribute internet access services to Temagami, Temagami North, Temagami First Nation and to other residents of Lake Temagami. This connectivity will offer high-speed internet access to over 300 residences. The broadband deployment includes the following innovations:

- New 200 ft radio tower in the hub region of the lake (will also allow for future expansion opportunities to other communities)
- 700 MHz TVWS radio technology over 10 km distances (with excellent tree cover penetration for higher internet access speeds)
- 5 GHz radio technology for even higher speeds (up to 200Mbps Down / 20 Mbps Up) over distances of up to 20 kms to the residents of Bear Island and the rest of the Temagami Lake area

**Business Model Innovation Used in the Project** – The CENG N project will result in the significantly reduced cost of extending the broadband access to Lake Temagami, with the following business modelling techniques:

- Extensive use of existing towers in the community to reduce costs of deploying services, saving up to \$1 million installation costs (50% saving)
- Use two types of radio technology on towers to increase the number of subscribers that can receive services
  - Using 5GHz and 700MHz radio technologies will boost subscriber access by up to 50%
- Use of 5GHz technology to extend services over wide lakeside areas across all parts of Lake Temagami
- Triple play services: high speed internet access, low cost nation-wide VOIP phone service, and low cost pick your channel TV services

### Virtual Announcement at Temagami Town Council Meeting – Thursday Nov.27,2021 - 6:30 pm

Will be a Zoom Video Call <https://zoom.us/j/92158571815>

### Roles of Main Players

- CENG N: Driving business and technology innovation through project definition, host community selection, technology partner selection, joint funding, project management, and solution promotion.
- Municipality of Temagami: Host community organization, collaboration with Temagami First Nation for the broadband expansion project.
- Leapfrog Telecom: Technology partner headquartered in Richmond Hill Ontario, providing joint funding, engineering, design, installation, technology, and ISP services.

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