



# Call for Community Expressions of Interest: Northern Ontario Residential Broadband Project #1

## Focus

Northern Ontario Communities which need 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 required solution will extend broadband capacity from one part of the community to a remote site 3-10 km away such as a residential cluster, adjacent community, tourism site, mining site, forestry site, industrial park, etc.

Residential broadband service is defined as a high-speed internet access service to the home, that is faster than dial-up, and is “always on”. A POP is a high-capacity internet access point brought into a community building or equipment room from an Internet Service Provider (ISP). A POP can provide internet access supplied from an optical fibre backbone connection, a fixed wireless link from a tower, or other high-speed data transport technologies.

CENG, Canada’s Centre of Excellence in Next Generation Networks, under the Next Generation Network Program (NGNP), is looking to fund innovative technology projects across Northern Ontario that demonstrate flexible, cost-effective, and enhanced residential broadband technology solutions. Through this current call for a community “Expression of Interest” (EOI), CENG is looking for a Northern Ontario community interested in working with one or multiple technology applicant(s) to prove their solution will provide a lower cost, and high-performance solution meeting or exceeding the transport of 10 Gbps capacity levels to a secondary POP within 3-10 km of the primary broadband internet POP in the community.

## Process

The EOI responses from the interested communities will be evaluated by an independent External Review Panel (ERP) which will offer recommendations to a CENG Internal Review Panel (IRP) on best community candidates for this project.

One or more communities may be awarded a chance to host a middle kilometer (3-10 km) secondary POP extension technology project through this EOI evaluation. A separate EOI process will be issued to select a number of candidate technology applicants to propose technology solutions for the selected community(s).

The community and the technology applicant(s) that are selected through these EOI processes, will then be encouraged to work closely together to enable the selected technology applicant(s) to respond to a subsequent Request for Solution (RFS) process. The RFS process requires a more detailed technical response, which will be evaluated to determine which of the candidate technology applicant(s) selected from the EOI process, will be awarded the CENG funding to install a solution in the selected community(s).

For more details on the EOI process, please refer to the CENG document titled “Northern Ontario Residential Broadband Program - EOI and RFS Process Document - Project #1”.

## Investment

CENG will be providing funding for individual projects up to \$500,000 from its Northern Ontario Residential

Broadband Program as part of the NGNP. Eligible technology applicant(s) must agree to co-invest by contributing cash and/or in-kind to the project of an equivalent amount to the CENGN funding.

Technology applicants are welcome to submit proposals not exceeding a CENGN ask of \$500,000. These funds must be expensed by the technology applicant to be applied against eligible expenses associated with supporting a 3-6 month project in the community.

### Application Focus

Technologies under consideration must address the requirement for lower-cost, higher performance residential broadband last-kilometer or middle-kilometer access technology solutions for Northern Ontario communities. These communities often have either no broadband internet residential access, or limited access to only part of the community, and often at performance levels far below 50/10 Mbps. In addition, the business case for getting broadband internet services into these communities is very difficult since the population density is very low, and the size of the resident populations is often well below 1000 residents. With the increasing demand for real-time video, voice-over-IP communications, tele-medicine, distance-learning, and home-based on-line businesses, there is an increasing need for broadband internet support to the home (last kilometer) infrastructure that can meet all of these needs.

The objective for this CENGN project will be to provide equipment/technology that will prove and document installation, equipment, and/or operational costs that are significantly lower than other commonly available technology solutions, while supplying a middle-kilometer POP extension solution with sufficient capacity (meet or exceed 10Gbps throughput) to meet or exceed the new CRTC recommendations of 50 Mbps Download, and 10 Mbps Upload performance levels per residence supported from that remote POP location.

In order to provide a real-world environment to effectively demonstrate the value of the technology proposed by the candidate technology applicant(s), CENGN will select a Northern Ontario community, through this call for a community EOI which is intended to receive applications from communities interested in participating in a residential broadband project. The purpose of the installed equipment deployment will be to demonstrate the effectiveness of the proposed middle-kilometer POP extension residential broadband technology, but also provide a proven solution that works for the selected community. The live network installation allows the technology applicant to measure and document performance levels that are designed to meet or exceed the target internet access performance levels, provide 10Gbps or higher throughput capacity, while reducing installation complexity/cost, lower equipment cost, and/or lower operational cost targets.

It will also be important that the solution includes tests and use cases that proves the technology would be able to scale to meet the community's needs through wider residential deployment after the project is complete. The proposed technology solutions and associated infrastructure must be flexible and scalable, so that the demonstrated system can be shown to be adaptable enough to be used across a range of communities with a similar residential broadband middle kilometer POP extension business-case, and technical challenges.

In order to be considered as a project site, community applicants must respond with the following details:

### **Northern Ontario Community Middle-Kilometer Residential Broadband Needs**

- Where this community lacks broadband internet residential access (whole or part of community)
- The type(s) of residential internet access currently available in the community and the desired remote POP location
- Identify if a broadband POP currently exists in the community and where

- Identify where the desired POP extension location(s) are that the project will need to address
- The population of the community, current level of broadband service, and population of remote location

#### **Community Commitment and Readiness to Support a CENGN Project**

- State the level of municipal or community government support that will be available for the project
- Identify which POP location and remote candidate POP extension locations in the community would be available for equipment supporting the project
- Availability and location of a secure climate-controlled equipment room(s) for project equipment/racks at both locations
- Willingness to consider tower or other outdoor installations, and ability to make two sites available if necessary
- Ability to work with one or more technology applicants to provide the detailed community site information needed for the technology applicant(s) to accurately access the estimated costs of the project
- Propose how the community is prepared to work with the selected technology applicant to be “shovel ready” by June of 2019

#### **Other Considerations for the Project**

- Any community partner(s) that would be available and interested in participating or supporting the project
- Any bylaw or regulatory issues that could delay start of the project
- Other existing or planned broadband projects for the community
- Willingness to work with CENGN and the selected equipment/technology technology applicant(s) to promote the successful project results and technology solution used in your community, as a proof-of-concept showcase network approach for other Northern Ontario communities

#### **Community Commitment Beyond the Project**

- Interest in working with one or more technology applicants to develop a plan to keep the equipment in the community and plan subsequent expansion phases following the successful completion of the technology project

#### **Application Details**

CENGN is soliciting EOIs from communities interested in participating in a Northern Ontario Residential Broadband Project, which will provide a high-capacity, lower-cost, residential broadband 3-10 middle-kilometer POP extension solution.

The EOIs must be submitted by 5:00pm on Friday, March 29, 2019. Submissions are to be provided by email to [info@cengn.ca](mailto:info@cengn.ca) in the form of a written proposal not to exceed three (3) pages.

The Expressions of Interest must succinctly describe any unique technical challenges, community or bylaw challenges, and/or community access issues. Due to the unique nature of the installation of the equipment in your Northern Ontario community, it is important that the applicant clearly indicates any things the community can do to ensure installation and operation of this project technology can be completed successfully within 3-6 months.

#### **Preference Will be Given to EOIs That**

- Are from a Northern Ontario community (defined as north and west of a line, from Parry Sound, east to Huntsville, and across to Renfrew Ontario)

- Demonstrate a complete lack of broadband residential internet support or extremely limited support that could be solved through a POP extension to the remote or separate part of the community or adjacent community
- Demonstrate clear economic, health, and education benefits to their Northern Ontario community
- Have broad Northern Ontario community applicability and impact (economically and/or socially)
- Demonstrate the ability and willingness of your community to work directly with one or more selected technology applicants to enable each technology applicant to propose a subsequent RFS solution that solves the specific middle kilometer residential broadband internet access issue for your community
- Confirm a willingness to work with technology applicant(s) to provide the community-specific information on how to scale or expand the original project solution configuration/installation to more completely meet the on-going residential broadband needs of your community after completion of the project.

#### Eligibility

All Northern Ontario communities.

#### Next Steps

All interested parties are invited to submit their written EOIs as noted above.

All applicants will be informed about the status of their EOI submissions by 5:00pm, Tuesday April 30, 2019. If you have any questions, please email us at [info@cengn.ca](mailto:info@cengn.ca).