Clause 4 in Report No. 5 of Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on March 23, 2017.

4

Connect to Innovate Broadband Funding Application

Committee of the Whole recommends:

1. Receipt of the presentation by Doug Lindeblom, Director, Economic Strategy.
2. Adoption of the following recommendations contained in the report dated February 24, 2017 from the Commissioner of Corporate Services and Chief Planner:
    1. Staff be authorized to submit a funding application to the Federal Ministry of Innovation, Science and Economic Development under the Connect to Innovate Program as outlined in Attachment 1 to expand the Region's broadband network in the Towns of Georgina, East Gwillimbury, Whitchurch-Stouffville, and King Township.
    2. The Region's cost share totalling up to $6,000,000 be addressed in the annual budget process.
    3. This report be circulated to the local municipalities and Federal members of parliament representing York Region.

Report dated February 24, 2017 from the Commissioner of Corporate Services and Chief Planner now follows:

1. Recommendations

It is recommended that:

1. Staff be authorized to submit a funding application to the Federal Ministry of Innovation, Science and Economic Development under the Connect to Innovate Program as outlined in Attachment 1 to expand the Region's broadband network in the Towns of Georgina, East Gwillimbury, Whitchurch-Stouffville, and King Township.

2. The Region's cost share totalling up to $6,000,000 be addressed in the annual budget process.

3. This report be circulated to the local municipalities and Federal members of parliament representing York Region.

2. Purpose

This report outlines a proposal to submit a funding application to the Federal Government under the Connect to Innovate Program to extend York Region's fibre network to increase connectivity in the more rural, underserved areas of the Region.

3. Background and Previous Council Direction

Supporting increased connectivity in the rural areas of the Region is an identified objective of the York Region Broadband Strategy

Regional Council has identified increased broadband connectivity as a key priority in this term of Council. The vision of the Council approved Broadband Strategy is to establish York Region as a Gigabit Region, recognized for its leadership in fostering an eco-system of collaboration and business innovation within a connected lifestyle community. This means raising the bar where there is underservice and staying ahead of the curve to keep all parts of the Region competitive.

Council has already signalled to the Federal Government its interest in securing funding to support broadband network extensions through the York Telecom Network

In February of 2016, the Regional Chair led a delegation of members of Regional Council to Ottawa to meet with the Federal government and articulate the Region's priorities for federal infrastructure spending. The presentation delivered to the federal government identified four priority areas for infrastructure spending, including: Transit/Transportation; Water/Wastewater; Social Housing; and Broadband.

The presentation on broadband included information on the York Telecom Network, the Region's existing 200 km dark fibre network and focused on the opportunity to expand this network to facilitate economic development across the Region, particularly in more rural communities.

Council endorsed submitting funding applications to senior governments for broadband initiatives in June of 2016

In a report approved by Regional Council on June 23, 2016, broadband was identified as infrastructure that should be considered for Federal and Provincial funding support. The report indicated that staff would make applications to senior government programs that offer funding for infrastructure including broadband when they came available.

The Federal Government has announced the Connect to Innovate funding program, allocating $500M to increase broadband capacity across Canada's rural and remote areas

On December 15, 2016, the Ministry of Innovation, Science and Economic Development announced the Connect to Innovate funding program, replacing the previous Connecting Canadians program. The Connect to Innovate program will invest $500,000,000 by 2021, to bring high-speed Internet to rural and remote communities in Canada. In these communities, challenging geography and smaller populations present barriers to private sector investment in building, operating and maintaining infrastructure.

This program will support new "backbone" infrastructure to connect institutions like schools and hospitals with a portion of funding for upgrades and "last-mile" infrastructure to households and businesses. The program is designed to allow Canadians the opportunity to innovate and participate in the economy, democracy and way of life using new digital tools and cutting-edge services like tele-health and tele-learning.

Unlike the previous Connecting Canadians program, Connect to Innovate anticipates direct public sector and municipal involvement by requiring connections to institutions to act as anchors for rural networks.

4. Analysis and Implications

The Connect to Innovate program provides up to 75% of the cost of building new fibre backbone and last-mile infrastructure

Connect to Innovate will fund up to 75% of the cost of extending trunk fibre service to underserved communities, and up to 50% of the cost of providing last mile connections to customers or providing redundancy or secondary paths. The program also requires that the extended services must connect to institutional anchors such as municipal offices, libraries, schools, hospitals, etc. to create public points of presence for surrounding communities. This requirement is new to federal broadband funding

programs, and makes the participation of public entities such as municipalities and school boards a must.

Every application must have a network owner/builder/operator, either public or private, as a formal partner in the application. Ultimately the program requires that any service extensions also lead to serving residents and businesses along the way. Applications will be evaluated based on how many institutional sites, businesses and residents can ultimately be served. Private internet service providers may also apply for funding, or may choose to support applications led by public entities.

Eligibility mapping for the Connect to Innovate program identifies several locations in York Region that qualify for extension of high speed fibre

The Connect to Innovate program eligibility map indicates that well served urban areas of York Region are excluded from making an application (see Attachment 2). The named communities of Udora in Georgina and Brown Hill which straddles both Georgina and East Gwillimbury are specifically identified as being underserved and eligible for fibre backbone service extensions by the federal government. Any application from the Region should address fibre backbone extensions to these locations to meet the necessary criteria.

The Connect to Innovate program also provides flexibility to extend eligibility to other rural areas of York Region for trunk or last mile service if evidence of underservice can be provided. Typically evidence would be in the form of speed test results or direct communications from residences and businesses that clearly indicate under service. Evidence may also come from internet service providers that have surveyed potential service areas. The vast majority of York Region's rural areas would need to be qualified for eligibility based on this empirical evidence.

Based on the eligibility requirements, York Region is well positioned to make an application to the Connect to Innovate program

Through the York Telecom Network, York Region is an owner/builder/operator of a dark fibre network and a registered Non-Dominant Carrier through the CRTC, and qualifies as an applicant under the program. Private internet service providers can also apply to extend their networks, however staff canvassed all the active private providers that operate networks in the Region, and none indicated an interest in applying at this time. Many carriers have indicated they would support a York Region led application through letters of support, as they are interested in providing services to our rural communities.

There is strong municipal interest in submitting an application for fibre extension routes that may qualify under the program

Municipalities are keen to have fibre extensions into their communities to improve internet access and speeds, improving competitiveness and quality of life for businesses and residents. The municipalities have undertaken to reach out to residents and businesses to generate speed test data that supports the premise that these areas are underserved. The response from the communities has been strong, with significant speed data being collected across all four municipalities.

The municipalities are prepared to partner with the Region on a comprehensive funding application that creates the best case for securing federal funding.

Proposed fibre loops totalling approximately 175 kilometres have been developed covering underserved rural areas within the Region

Work has been progressing directly with the municipalities of Georgina, East Gwillimbury, Whitchurch-Stouffville and King, as well as internet service providers and other institutional partners to develop three proposed fibre extension routes to reach our rural areas (see Attachment 3). The proposed fibre loops include:

- **The Georgina/East Gwillimbury Loop** – connecting Udora and Brown Hill to the existing York Telecom Network at Davis Drive and Bales Road via a redundant path that also includes Pefferlaw, Sutton, and Keswick

- **The Whitchurch-Stouffville Loop** – connecting the Town of Stouffville to the existing York Telecom Network at Davis Drive and Bales Road via a redundant path that also includes Cedar Valley, Preston Lake, and Gormley

- **The King Loop** – connecting Nobleton and Schomberg to the existing York Telecom Network in King City

These fibre loops represent approximately 175 kms of new fibre, greatly increasing broadband capacity in the rural areas. The proposed loops extend beyond the originally anticipated future path for the York Telecom Network into the areas of the Region that would be difficult to service without financial assistance.

The proposed fibre routes will facilitate high speed broadband service to thousands of potential customers

The proposed fibre routes are designed to maximize internet access to Regional municipal infrastructure and facilities, police facilities, libraries, schools, and ultimately businesses and residents. (see Attachments 4, 5 and 6). These proposed routes also

reach some of the most rural areas and at the same time pass through areas that are projected to have significant residential and business growth.

The proposed fibre routes will facilitate high speed connections for:

- 174 Regional and local institutional anchor facilities (including schools)
- 1,980 businesses within 2 kilometres of the routes

It will also put thousands of existing and future households within 2 kilometres of the optical fibre backbone; placing them within reach of Internet service providers that leverage the network to deliver broadband services.

The fibre routes will make high speed broadband available for thousands of customers. Improved high speed service to rural residents has the additional benefit of supporting the many home-based businesses in these areas.

The Connect to Innovate program supports the next phase of development of the York Telecom Network

The York Telecom Network is a natural vehicle for leveraging the Connect to Innovate program. The review of the YTN suggests that it be created as a separate wholly owned entity of the Region, capable of working with public and private sector interests to deliver dark fibre services that support improved connectivity across the Region. The York Telecom Network can act as the backbone fibre provider, allowing private service providers leased access to the network to deliver services along the fibre path. Securing federal funding to extend the YTN fibre would help kick-start the new entity with an infusion of capital, supplemented by Regional funds, that almost doubles the size of the existing network. This expansion would create opportunities for both the YTN and private service providers to gain access to customers that were previously beyond reasonable reach.

It is imperative that the Region leverage the Connect to Innovate funding opportunity to advance its broadband strategy and objectives

The Connect to Innovate program creates an opportunity for the Region, municipalities, and other stakeholders to extend high speed connectivity into the areas of the Region that are the most difficult to service. Extending fibre closer to the edges of the communities not only improves services for those directly on the routes, but also increases services to areas further off the routes that are now closer to higher speeds provided through cellular service for example.

5. Financial Considerations

The total estimated cost to construct the proposed routes is approximately $14,000,000, of which approximately $8,000,000 could be recovered from the funding program

The cost to construct the additional 175 kilometers of fibre has been calculated using current average York Telecom Network capital costs. As illustrated in Table 1, Potential Connect to Innovate Project Costs, the three proposed fibre loops costs are identified separately.

The table also identifies the Region's potential share of the total cost, based on a blended average recovery from the Connect to Innovate program of 60%. New fibre trunk components of the proposed loops would likely qualify for the full 75% recovery, while redundancy and last mile components would likely only see 50% cost recovery.

Table 1
Potential Connect To Innovate Projects Costs and Recoveries

Fibre Loops	Fibre Length	Estimated Cost to Construct @$80,000/km	Regions Cost @ 60% average recovery
Georgina/East Gwillimbury Loop	103 km	$8,240,000	$3,296,000
Whitchurch-Stouffville Loop	36 km	$2,880,000	$1,152,000
King Loop	36 km	$2,880,000	$1,152,000
Total	**175 km**	**$14,000,000**	**$5,600,000**

Given that the detailed analysis of routes and eligibility are ongoing and subject to change, it is suggested that for Regional funding consideration purposes, a proposed Regional contribution rounded up to $6,000,000 be utilized in discussions.

York Region's share of the project can be spread out over the next three budget years

Capital builds approved under the Connect to Innovate program must be completed no later than March 31, 2021. This timing allows the Region to spread its share of the capital costs over the next three budget years from 2018 through 2020, or approximately $2,000,000 per year.

The Region's $6,000,000 share of the project remains unfunded at this time, and work is underway to identify potential funding sources. The necessary funding will be brought forward and incorporated as part of the 2018 budget process.

Ongoing operating costs for the new fibre routes can be recovered through revenues generated from subscriber fees

The York Telecom Network business model is designed to recover operating costs through revenues received from subscriber fees. Operating costs include staff salaries, maintenance, allocations for repair and asset replacement, and various other costs. The additional 175 km of fibre would not trigger the need for additional staff, but would add to overall maintenance, repair and replacement costs. These costs would be offset from the additional revenue generated from new subscribers secured in these rural areas that were not originally identified as sources of revenue for the York Telecom Network.

6. Local Municipal Impact

The Towns of Georgina, East Gwillimbury, Whitchurch-Stouffville and the Township of King have been directly involved in developing the Connect to Innovate funding application. The municipalities have generated significant evidence of under service directly from their businesses and residents, and have provided letters of support to include in the application package. These components are critical to a successful application.

In addition, the Town of Georgina has agreed to incorporate service improvements to their Southshore Community Broadband service as part of the broader Regional application. This partnership provides a link to the end user service delivery component that is crucial for any application. In this partnership, the Region will provide cost effective backhaul services to Southshore Community Broadband towers, increasing their service capacity, which in turn will result in better service for customers in Georgina.

7. Conclusion

Regional Council has signalled that improving broadband connectivity is a key priority. The Economic Development Action Plan, the Broadband Strategy, the Broadband Strategy Advisory Task Force, and the recent outreach by Council to the Federal government in February of 2016 on infrastructure funding priorities all demonstrate support for expanding broadband in York Region.

The Federal Government has announced the Connect to Innovate Program, designed to allow municipalities and internet service providers to access funding to build high speed broadband access to rural and remote areas of the country. The rural areas of York Region qualify for funding, and work has been undertaken with various partners to evaluate a potential $14,000,000 funding application that would require an estimated $6,000,000 contribution from the Region. The proposed application would leverage extensions of the existing York Telecom Network and create the opportunity for service providers to reach and improve internet access to rural customers.

The Connect to Innovate Program represents an opportunity to extend high speed connectivity into areas of York Region that would likely not be serviced appropriately in the foreseeable future. Costs of extending fibre to these areas without funding assistance are prohibitive. Accessing this funding will help advance the vision and objectives of the Council approved Broadband Strategy and positively impact the economic and social well-being of the Region's rural communities.

For more information on this report, please contact Doug Lindeblom, Director of Economic Strategy at 1-877-464-9675 ext. 71503.

The Senior Management Group has reviewed this report.

February 24, 2017

Attachments (6)

#7337774

Accessible formats or communication supports are available upon request.

INNOVATION FOR A *Better* CANADA

CONNECT TO INNOVATE

APPLICATION GUIDE

This publication is available online at https://www.canada.ca/en/innovation-science-economic-development/programs/computer-internet-access/connect-to-innovate.html

To obtain a copy of this publication, or to receive it in an alternate format (Braille, large print, etc.), please fill out the Publication Request Form or contact:

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Introduction

This guide has been developed to assist in the completion of applications for the Connect to Innovate (CTI) program and provides information on the assessment criteria against which applications will be assessed.

Prior to developing an application it is recommended that applicants first read this guide to ensure a clear understanding of CTI program objectives, eligibility criteria, and assessment process. A complete submission consists of the online form, required supporting documentation and templates.

Contact Us

Additional information on the program is available at the CTI website or by contacting Innovation, Science and Economic Development Canada (ISED) at:

Telephone: 1-800-328-6189.
E-mail: ic.cti-bpi.ic@canada.ca

Confidentiality

Any information in the application that, in the applicant's opinion, is of a proprietary or confidential nature must be clearly marked by the applicant as "Proprietary" or "Confidential" on each relevant item or page or in a statement covering the entire application. Notwithstanding the foregoing, information provided by program applicants may be accessible under the Access to Information Act. No commercially confidential information which is submitted will be disclosed unless otherwise authorized by the applicant; required to be released by law (including the Access to Information Act); or required by the Minister of ISED, to be released to an international or internal trade panel for the purposes of the conduct of a dispute in which Canada is a party or a third party intervener.

Information on the federal government's Access to Information Act is available on the following website: http://laws-lois.justice.gc.ca/eng/acts/A-1/.

About the Program

Budget 2016 committed up to $500 million until 2021, for a new program to extend and enhance broadband service in rural and remote communities. To deliver on this commitment, the Government of Canada launched the CTI program on December 15 2016.

The program will drive transformative change by bringing high-quality broadband connections into underserved rural and remote communities. Canadians living in these communities will benefit from faster Internet speeds needed to keep pace with changing technology and the growing demand of new applications and services, including e-commerce, tele-medicine and e-learning.

Previous ISED broadband programs have been designed to support high-speed connectivity to rural and remote households. The focus of CTI, however, is on robust **"backbone"** infrastructure that can better support the connectivity needs of a diverse range of end users such as community institutions, businesses, and households. These backbone connections provide leading-edge connectivity for a variety of uses and can scale to meet future demand. The intent of CTI is to bring these backbone connections to underserved communities in areas that would otherwise be left behind without targeted government support. Program funding will be provided to build the infrastructure and applicants must demonstrate that they have a reasonable plan and financial potential to maintain the infrastructure and services on an ongoing basis for five years after the project is completed.

While the emphasis of the program will be on extending new backbone connections, extensive stakeholder consultations confirmed additional needs that warrant eligibility. Backbone capacity upgrades are needed in some communities that already have access to high-capacity backbone but where the network is particularly old and/or congested. Resiliency projects will also be eligible to include the construction of fibre loop extensions to help mitigate the impact of potential fibre cuts in rural and remote areas. Finally, a portion of CTI funds will also support **"last-mile"** connectivity projects to households that do not have speeds of 5 Megabits per second (Mbps).

CTI is supporting new and upgraded backbone and last-mile infrastructure projects in rural and remote communities across Canada to ensure that our country is drawing on the strengths of all Canadians to drive innovation, growth, and the creation of new jobs.

Program Requirements

Applications must meet a number of program requirements to be considered for funding. This section describes these program requirements in greater detail, including eligible applicants, open access, eligible activities (backbone and last-mile) and eligible costs. Applications that do not meet all of the program requirements will not be assessed further.

Eligible Applicants

An Eligible Recipient is:

a) A corporation, either for profit or not for profit that is incorporated in Canada;
b) A Canadian provincial, territorial or municipal entity;
c) A band council within the meaning of section 2 of the Indian Act or an Indigenous government authority established by a Self-Government Agreement or a Comprehensive Land Claim Agreement;
d) A public sector body that is established by statute or by regulation or is wholly owned by a province, municipal or regional government which provides services to communities; or
e) A partnership, joint venture or consortium that is composed of parties identified in (a), (b), (c) and/or (d) above;

and that:

i. Builds, owns and operates broadband infrastructure; or
ii. Enters into a contractual arrangement with an entity identified in (a), (b), (c), (d) or (e) above to build, own and operate broadband infrastructure.

Federal entities, including Crown Corporations, are not eligible recipients.

Open Access

All projects funded under the program must be open to third parties for dedicated capacity purchases on a wholesale or retail basis. Applications that exclude open access will be deemed ineligible.

Eligible Activities: Backbone & Last-mile

The CTI program supports projects that must be completed by March 31, 2021. The core emphasis of CTI is on transformative high-capacity backbone connectivity, with additional eligibility for backbone capacity upgrades, resiliency projects, and last-mile oriented connectivity projects.

Applicants will be able to submit applications for projects in areas identified as underserved by ISED, or in other areas the applicant has identified if it can demonstrate that these are underserved or require backbone upgrades. The applicant may also submit a project that spans more than one province/territory as long as the applicant identifies each province/territory where the project is located.

Applicants may submit applications for backbone, last-mile, or a hybrid of both backbone and last-mile infrastructure and at least one (1) of the five (5) different eligible backbone and last-mile projects described below is required.

Backbone

For the purposes of the program, **backbone** infrastructure encompasses all equipment and materials required to establish a new point of presence (PoP) in an eligible community, as herein defined, to upgrade the capacity of, or provide path diversity to, an existing point of presence servicing a rural or remote community. Generally, new PoPs should be constructed within 2 km of an eligible community.

A **PoP** is a site in a network where a backbone network ends and connects to local last-mile infrastructure. The more capacity a given PoP has, the more bandwidth or higher speeds that a network can deliver to users connected through that point in the network.

Backbone infrastructure generally relates to transport fibre or high-capacity microwave links (1 Gigabit per second (Gbps) or more). Backbone infrastructure funded by CTI is expected to connect **anchor institutions**, which are broadly defined as facilities that serve a public function (e.g. school, medical facility, library, First Nations band office, or other anchors around which a community is formed), in addition to providing capacity for other uses, including residential, business, and/or mobile services. As such, applications proposing backbone infrastructure will provide a transformative level of improvement in service to underserved rural and remote communities.

Examples of delineation between backbone and access networks:

<table>
<tr><th>Application Type</th><th>Backbone Equipment</th><th>Last-Mile Equipment</th></tr>
<tr><td>Fibre backbone network with fibre-to-the-home last-mile access network</td><td rowspan="4">Network equipment upstream from the Optical Link Terminal (OLT) is considered backbone.
Transport fibre from existing network to the PoP location
Fibre amplifiers required for long link distances
Electronics to operationalize the fibre link, such as optical interfaces, routers, DWDM-related equipment
PoP physical infrastructure (shelter, hut, cabinet, etc.) and associated support infrastructure (power, HVAC, etc.)
Outdoor enclosures along the backbone fibre route as required</td><td>Network equipment downstream from the Optical Line Terminal (OLT) as well as the OLT itself is considered last-mile.
Optical line terminal and associated electronics
Feeder fibre, fibre drops, fibre splitters
Outdoor enclosures as required between end users and the OLT</td></tr>
<tr><td>Fibre backbone network with DSL last-mile</td><td>DSLAMs are considered as last-mile in such deployments.

If required, replacement of copper wiring to customer premises is considered last-mile.</td></tr>
<tr><td>Fibre backbone network with coaxial cable last-mile</td><td>Components interconnecting with the coaxial cable portions of the network are considered last-mile. For example:
Cable head-end
Hybrid cable node
Coaxial cable, splitters, amplifiers
Outdoor enclosures as required</td></tr>
<tr><td>Fibre backbone network with wireless last-mile</td><td>Wireless components and supporting infrastructure considered part of last-mile:
Radios, antennas, cabling, mounting equipment
Towers, poles or other structures required
Supporting infrastructure if not shared with the backbone portion (controllers, routers, power, shelters, etc.)</td></tr>
<tr><td>Microwave backbone network with wireless last-mile</td><td>Network equipment supporting microwave links are considered backbone. For example:
Towers, microwave radios, antennas, cabling, mounting brackets and such equipment</td><td>Point-to-multipoint wireless components and supporting infrastructure are considered part of last-mile. Any shared components such as towers, cabinets and power equipment should be accounted for as backbone components. Only equipment and material serving only last-mile should be included in this</td></tr>
</table>

Application Type	Backbone Equipment	Last-Mile Equipment
	required to extend connectivity from existing network to the PoP location. • Electronics to operationalize the fibre link, such as routers and switches • PoP physical infrastructure (shelter, hut, cabinet, etc.) and associated support infrastructure (power, HVAC, etc.)	category. • Radios, antennas, cabling, mounting equipment • Towers, poles or other structures required, if not shared by the microwave backbone. • Supporting infrastructure if not shared with the backbone portion (controller, routers, power, etc.)
NOTE: Support infrastructure such as equipment, cabinets, towers and power systems that support both backbone and last-mile connectivity should be included in the backbone section of the application. Infrastructure used to connect institutions to a PoP to provide dedicated capacity to an anchor institution is considered a backbone network expense.		

Eligible backbone communities

There are a number of communities across Canada that do not have access to high-capacity backbone networks offering 1 Gbps or more. CTI will draw on the Geographic Names Board of Canada's database of named places and Statistics Canada population data to highlight eligible communities. Eligible communities are identified on the eligibility maps on CTI's website. Eligibility has been assessed based on data from a number of sources, including Internet Service Providers (ISPs), provinces, territories and others to identify where PoPs delivering service of at least 1 Gbps are located. This data was then used to build a comprehensive map identifying underserved communities.

For the purposes of the program, **eligible communities** are eligible rural communities and eligible remote communities. An eligible **rural** community is defined as a named place with a population of less than 30,000 residents and that is 2 km or more from the nearest 1 Gbps PoP. An eligible **remote** community is a community that meets the definition of a rural community and does not have year-round road access and/or is included on the Canadian Radio-television and Telecommunications Commission's (CRTC) list of communities dependent on satellite for telecommunications services. Refer to the CRTC website for the most recent annual Communications Monitoring Report which identifies these communities.

Eligible backbone projects

There are three (3) types of backbone projects accepted as part of the CTI program.

- **New backbone applications:** The majority of CTI funding will be directed to new backbone applications targeting communities identified by ISED as lacking a backbone connection of 1 Gbps. If the proposed communities to connect are listed in *Template 5: New Backbone-Community Connectivity and Wholesale Pricing,* the portion of the proposed network connecting those communities is considered a new backbone build.

  New backbone applications:
  - Must provide at least 1 Gbps of capacity to at least one new PoP in each community. Applications providing less than 1 Gbps will be considered only for communities labelled as remote and will require an accompanying justification as to why 1 Gbps cannot be achieved for these communities.

- Must connect at least one anchor institution per project.
- Are eligible for up to 75% contribution of eligible costs. Communities labelled as remote are eligible for up to 90% contribution.

- **Backbone upgrade projects:** If the communities being proposed to connect are listed in *Template 6: Upgrade Backbone-Community Connectivity and Wholesale Pricing,* the portion of the network connecting these communities is considered a backbone upgrade. These communities have at least a 1 Gbps backbone connection, but will be considered eligible if the applicant can clearly demonstrate a capacity constraint.

  Backbone upgrade projects:
  - Must provide at least 10 Gbps of capacity to at least one PoP in each community.
  - Must provide improved dedicated capacity to at least one anchor institution as a result of the upgrade.
  - Must clearly demonstrate constrained capacity in communities for which upgrades are proposed. PoPs where utilization is 95% or higher for a minimum of two hours per day for 14 consecutive days are considered constrained for the purpose of the program. Network utilization graphs or logs will be accepted as justification for upgrade.
  - Are eligible for up to 50% contribution of eligible costs.

- **Network resiliency projects:** Network resiliency builds do not aim to extend backbone connectivity to unconnected communities nor to upgrade capacity in specific communities. Rather, **network resiliency** projects are defined as projects where a new fibre backbone route is deployed to provide an alternate data path, increasing path diversity and network reliability for all users. It will be important for these applications to demonstrate that service to specific communities is in jeopardy without the network resiliency build. Refer to *Template 7: Resiliency Backbone-Community Connectivity.*

  Network resiliency projects:
  - Must implement sufficient failover capacity to handle all network traffic in case of failure of the main path.
  - Are eligible for up to 50% contribution of eligible costs.

Last-mile

ISED's online eligibility map identifies areas, represented by hexagons that are *de facto* eligible for last-mile projects. Hexagons highlighted as eligible are those where households are completely underserved at 5 Mbps (i.e., 100% of households in the area lack 5 Mbps service). This eligibility is intended to target persistent last-mile broadband gaps in some of the most challenging rural and remote areas, many of which are Indigenous or have significant Indigenous populations. Applicants are requested to self-identify if they are an indigenous entity.

Hexagons that are not highlighted on the map are either unpopulated or partially/completely served at 5 Mbps (i.e., some or all of households in the area receive 5 Mbps service). In some cases, households in these areas may lack 5 Mbps service because of various coverage gaps, including local geography and terrain challenges that inhibit broadband coverage (e.g., trees blocking access to a cellular or fixed wireless signal delivering broadband service). Evidence to support a proposed project in these areas is important to minimize overbuild of existing service providers and to

ensure government funding is not allocated to areas where there is already sufficient broadband coverage.

Last-mile infrastructure includes all equipment and materials required to connect households, businesses and institutions to the nearest suitable PoP. Customer premise equipment (modems, antennas, optical network terminals, etc.) are not eligible.

Underserved households
For the purpose of the CTI program, an underserved household is a household that cannot access Internet service with a download speed of at least 5 Mbps and 1 Mbps upload (5/1 Mbps).

Eligible last-mile projects
Two (2) different types of last-mile projects are eligible for CTI program support:

- **New last-mile projects:** If the application proposes to connect households or businesses that are located within areas identified by coloured hexagons on the eligibility map or listed in *Template 8: Household Spreadsheet*, the application is considered to be a new last-mile build. The areas identified as eligible for new last-mile builds currently lack any terrestrial infrastructure that can provide service at speeds of 5/1 Mbps.

  New last-mile access applications:
  - Must be contained within the identified eligible areas.
  - Must deliver minimum speeds of 5/1 Mbps to households and businesses with a minimum monthly usage cap of 45GB.
  - Are eligible for up to 75% contribution of eligible costs.

- **Partially served last-mile projects:** If the application proposes to connect residences or businesses that are not located within areas identified by coloured hexagons on the eligibility map and are not included in the *Template 8: Household Spreadsheet*, the project is considered a "partially served" last-mile build. This means that there is already service available at 5/1 Mbps in at least part of the area (i.e., hexagon).

- *Partially served last-mile access applications:*
  - Must deliver minimum speeds of 5/1 Mbps to households and businesses with a minimum usage cap of 45GB; and
  - Are eligible for up to 50% contribution of eligible costs.

  For the application to be considered, the applicant must provide i) sufficient evidence to demonstrate that the specific area targeted by the proposed project does not have access to speeds of 5/1 Mbps and ii) documentation that demonstrates support for the project by affected communities (e.g., letter from a municipality, municipal resolution, etc.). A municipality signing a letter of support must confirm that it has seen or been briefed about the evidence that will be provided to support the justification for a partially served last-mile project and agrees with it.

  The following are different examples of the types of evidence that will be accepted as sufficient evidence to demonstrate the lack of 5/1 Mbps service:
  - An engineering report showing the current internet service(s) available throughout the area and identifying areas where service does not meet the 5/1 Mbps standard.

- A community survey through which residents and business owners within the targeted area confirm the lack of Internet connectivity at 5/1 Mbps. Street addresses or GPS coordinates should be recorded for all survey participants and plotted on a map with a colour code indicating whether the respondent indicated having service at 5/1 Mbps or not.
- A series of internet speed test results (such as www.speedtest.net), performed by residents spread throughout the targeted area and performed at various times of day. The street address or GPS coordinates corresponding to each speed test should be included with the results as well as the date and time of the measurement. All measurement locations should be plotted on a map, with a colour code indicating whether the test passed or failed the 5/1 Mbps threshold requirement. The following minimum requirements should ideally apply:
    - One speed test measurement is required for every 50 targeted households
    - Speed test measurements must be performed at locations throughout the targeted area
    - A minimum of 30% of measurements performed between 9 a.m. and 4 p.m.
    - A minimum of 30% of measurements performed between 7 p.m. and 11 p.m.

In addition to the above, other evidence will be considered if such evidence can demonstrate the area is underserved.

The program will be reviewing the specific area targeted by the proposed project and as such it is recommended that applicants include a list of ISPs currently operating in the targeted area and a map of the targeted area, including color-coded points showing locations at which 5/1 Mbps connectivity is available and is not available. Proposals that provide the most comprehensive and compelling evidence will be assessed more favorably. Applicants are encouraged to contact us (details above) if there are questions regarding the level of evidence to supply.

Eligible Costs

Eligible costs under the CTI program are the incremental, relevant, reasonable and essential expenses required to carry out the eligible activities to which they relate. Eligible costs will be **capital costs** for the deployment of broadband infrastructure, such as purchases of hardware and software, equipment, leases of satellite capacity, salaries and benefits, and fees for associated contracted services related to the build of the network.

Note:

- The determination of eligible expenses rests with the program.
- Expenses incurred prior to the effective date and after the project completion date established by the program will not be eligible for funding. Should the project be approved for funding, program officials will contact the applicant to establish the effective date and the project completion date for the project.
- Any costs incurred prior to signing of a contribution agreement will be incurred solely at the applicant's risk without any obligation of payment by the program.

Eligible expenses include, but are not limited to, the following:

- **Direct Labour Costs**, meaning the portion of gross wages or salaries incurred for work which can be specifically identified and measured as having been or to be used on the project;

- **Direct Material Costs**, meaning those costs of materials which can be specifically identified and measured as having been used or to be used on the implementation of the project;
- **Direct Equipment Costs**, meaning the cost of equipment required for the completion of the project, including but not limited to servers, switches, fibre optic cable, repeaters, radio equipment, towers, poles, back-up power supplies, shelters and network broadband connectivity devices including upgrades;
- **Direct Satellite Capacity Costs**, meaning the portion of the direct purchase or lease of bandwidth or capacity delivered over the physical medium of satellite which can be specifically identified and measured as having been used or to be used on the implementation of the project. These costs will be measured in units of Mbps, MHz, or a quantity of satellite transponders;
- **Direct Travel Costs**, meaning the cost of travel which is deemed necessary to the performance of the project. To be eligible, travel costs must be clearly documented as to the purpose of each trip. Travel expenses, at economy rates, shall be charged as actual costs; and
- **Other Direct Costs**, meaning those applicable costs, not falling within the categories of direct labour, direct equipment, direct material, direct satellite capacity, or direct travel costs, but which can be specifically identified and measured as having been incurred or to be incurred to implement the project.

Ineligible costs would include (but are not necessarily limited to):

- Expenditures incurred after the project completion date;
- Expenditures related to developing the CTI application for funding;
- Expenditures related to purchasing land, buildings (except for equipment shelters not meant for human occupation) and associated real estate and other fees;
- Leasing land, buildings and other facilities, including permanent shelters for housing network related equipment (except for temporary facilities directly related to the construction of the project);
- General repairs and ongoing maintenance resulting from the project and related structures;
- Legal fees;
- Operational costs to run infrastructure built as a result of the project;
- Taxes for which the applicant is eligible for a tax rebate and all other costs eligible for rebates;
- Contingency provisions;
- Insurance costs;
- Land purchase costs;
- Existing capital assets including land, buildings, vehicles and other indirect, fixed, and/or capital costs;
- Customer-Premises Equipment (CPE);
- Cost of any goods and services which are received through donations or in kind;
- Financing or carrying costs, loan and interest payments;
- General office space and equipment i.e. photocopiers, furniture, telephones, computers, printers and office software;
- Training to set up an Internet service provider or on-going training to implement the project;
- Advertising/promotion activities; and,
- Radio and Spectrum licensing fees.

Project Funding

The CTI program aims to build on existing initiatives and leverage other sources of funding where possible. Applicants are encouraged to seek out provincial and territorial programs that support connectivity to determine how they can contribute to overall project funding.

Applicants must clearly indicate all sources of funding for the project and that total funds are sufficient to support all eligible and ineligible project costs. Other sources of funding will be considered when assessing the application and in determining the cost share amount that the program will fund. The program will contribute minimum amounts toward the proposed project dependent on the type of project the applicant is submitting (see section on *Eligible Activities*). In preparing the project budget, applicants must fully cost their entire project to include all relevant eligible and ineligible project costs described in the previous section of this guide.

CTI Funding

Funding under the CTI program must only be used to support eligible costs. Although eligible cost items have been broadly crafted and include, among other things, expenses used to fund the construction or improvement of network facilities required to provide broadband service, they must also be reasonable, allocable and necessary to complete the project.

Funding under the program will be determined based on the minimum level required to ensure that the project proceeds in the proposed timing and scope. Typically the maximum amount of funding that an applicant can request for new backbone and new last-mile projects is up to 75% (the "**sharing ratio**") of the total eligible costs, and up to 90% for new backbone projects targeting remote communities. This amount is up to 50% for backbone upgrade and resiliency projects and partially served last-mile.

When proposing a project that is comprised of various components such as a new network build and upgrades to an existing network, the sharing ratio and the total amount requested will be determined by applying an overall sharing ratio to the total eligible costs of the new network component and to the total eligible costs of the network upgrades. *Template 2: Detailed Budget* is set up to assist applicants in determining the sharing ratio and amount that an applicant can request per project.

For example, an applicant has submitted an application to build a new backbone network as well as to upgrade an existing backbone network. The total eligible costs are as follows:

Project Components	Eligible Costs	Requested Amount	Sharing Ratio
Backbone New Build	$2,000,000	$1,5000,000	75%
Backbone Upgrades	$500,000	$250,000	50%
Total	$2,500,000	$1,750,000	70%

Note: The program reserves the right to determine the amount of funding for each project. Even if the application is approved, an applicant may not get the full amount requested from the program. The program may take into account overbuild and overlap with other applications as well as consideration to the impact on the overall budgetary envelope for the CTI program.

Other Funding

Applicants are strongly encouraged to secure other sources of funding. This could include financial assistance (grants, forgivable loans, etc.) from all levels of government, anticipated or granted. This would also include applications for financial assistance which are still pending. The level of funding from other sources is an element that will be reviewed when assessing comparative criteria.

In addition, when applicants identify other sources of funding there are limits on amounts that can be provided (also known as the **stacking limit**). The level of assistance from all federal sources to an eligible project will be up to 100% of the eligible costs supported by the contribution. For projects proposing to upgrade the capacity on existing transport infrastructure or network resiliency, the level of assistance from all federal sources will be up to 75% of the eligible costs supported.

When an applicant has identified other government sources of funding these amounts will be taken into consideration in determining the total Canadian government funding towards the supported eligible costs. **Total Canadian government funding** is the total funding available to an applicant from federal, provincial, territorial and municipal governments or their agencies towards eligible costs supported by the CTI program. The table below identifies limits on total federal funding and total Canadian government funding for each type of CTI project application.

Project	**CTI Funding Share**		**Total federal funding**		**Total of all government funding**	
	Rural	Remote	Rural	Remote	Rural	Remote
Backbone (New)	75%	90%	100%	100%	100%	100%
Backbone (Upgrade/Resiliency)	50%	50%	75%	75%	100%	100%
Last-mile (New)	75%	75%	100%	100%	100%	100%
Last-mile (partially-served)	50%	50%	75%	75%	100%	100%

Note: The maximum level of total government assistance (federal, provincial/territorial and municipal assistance for the same eligible expenditures) will not exceed 100 percent of eligible expenditures.

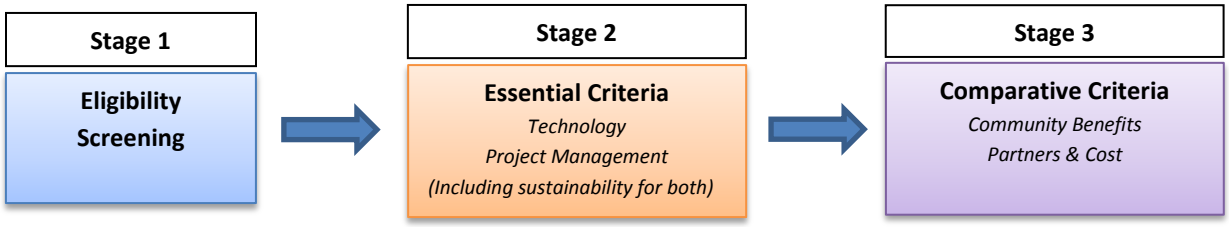
For example, an applicant is requesting $500,000 in funding from the CTI program to support $1,000,000 in eligible project costs. The applicant has also approached or been approved for a contribution of $250,000 from a provincial development agency. In this example, total government assistance is 75% ($500,000 + $250,000 / $1,000,000) while CTI program's share is 50% ($500,000 / $1,000,000). Both levels of funding fall within the levels allowed for under the Program.

For projects advanced by Indigenous applicants, with regard to financial support that the Indigenous organization receives from Indigenous and Northern Affairs Canada (INAC), only funding received from the First Nations Infrastructure Fund would be counted towards the federal stacking limits for the program. All other sources of funds received from INAC would not count towards the stacking limits. Also, when an applicant is an organization mainly funded by government but is not considered a government agency, the applicant's own share of the project costs do not count as part of total Canadian government funding.

Assessment Criteria

The program's assessment of projects is intended to offer the greatest value for Canadians in terms of extending robust, affordable broadband service to underserved communities. The assessment process has been designed to ensure that both network providers and projects of various sizes be considered. Ultimately, the Minister will select a mix of projects that best meet the objectives of the program.

Applications will be assessed using a three-stage assessment process:



Eligibility Screening

Applications will first be screened to ensure they meet the program requirements and are complete including templates, additional information, and supporting documents requested. The previous section on *Program Requirements* outlines the specific details for each proposed project type. At the screening stage, the assessment will determine whether:

- the applicant is an entity that is eligible for funding;
- eligible activities related to backbone (new, upgrade or resiliency) and last-mile (new or partially served) are proposed;
- applications identify eligible communities that have a population of less than 30,000 (backbone projects);
- applications identify at least one anchor institution per project to be connected (backbone, new or upgrade);
- applications propose to improve access for households with speeds of at least 5/1 Mbps (last-mile);
- evidence has been provided to support justification for partially served last-mile;
- eligible costs and a funding plan have been identified and funding request does not exceed amounts identified by the program; and
- applications identify a commitment to provide open access to infrastructure funded in whole or in part by the program.

Note: The fact that a project is screened as eligible does not guarantee that it will be funded. All eligible projects are subject to a comprehensive assessment process, which may or may not result in a positive funding decision.

Essential Criteria

Applications that are screened as eligible will undergo an assessment of essential criteria, including technological merit and the extent to which the application demonstrates a feasible project management plan. The assessment will also examine the sustainability of the proposed technology solution and whether the applicant has a reasonable plan and the financial potential to maintain the infrastructure and services on an ongoing basis for five years after the project is completed.

Technology and Sustainability
This includes the appropriateness of the chosen technology, in terms of implementing a high-capacity infrastructure that can deliver reliable speeds to users within a community, including anchor institutions. Projects will be assessed to ensure that **minimum capacity requirements are met**. The minimum required capacities are outlined in the previous section of this guide by project type. This analysis will be based on the proposed network information in the application form and from the equipment list, communities and institutions list, logical network diagram and geographic network map.

Further, the **sustainability of the chosen technology** over both the short- and long-term, will be taken into consideration. Projects will be assessed to ensure that the proposed networks will remain usable and serviceable at least five years after the project's end. Applications employing current, widely-adopted technologies are all expected to pass this criterion. In addition, a condition of receiving funding is that successful applicants will be required to make available broadband service(s) at the price(s) specified in their proposal for a minimum of five (5) years from the project completion date.

Projects proposing to use obsolete or end-of-life technologies may fail to meet the requirements for this criterion.

Project Management and Sustainability
The objective of this criterion is to assess the ability of an applicant to successfully implement a project on time and within budget, as well as how the resulting network will be sustained once in operation. Applicants will need to describe how they are prepared to implement, manage, and operate the proposed broadband network. The Pro Forma Financial Statements template will be used to assess the financial viability of the project and to understand what revenues and other income will be generated to operate the network over the longer term.

If multiple applicants are involved in a project, the application must describe the roles and responsibilities that each applicant will have in managing the project; and if applicable indicate who among the parties will retain ownership of the network assets, who will be responsible for building the network and who will be responsible for operating the network.

The applicant and, if applicable, co-applicants, must have strong project management, financial control and technical development skills. Where weaknesses exist, remedial measures must be explained.

Comparative Criteria

Those applications that pass the essential criteria will undergo an assessment using comparative criteria. The aim of the comparative assessment is to ensure that projects of various sizes will be considered, that all regions of the country will benefit from program funding and that projects that are best able to meet the program objectives are selected given the availability of program funding.

There are two broad categories of comparative criteria that will be examined:

- **community benefits** include factors such as number of communities and anchor institutions affected, level of improvement in broadband capacity, scalability, proposed community uses for the infrastructure proposed, and the degree of open access and pricing.
- **partners and contribution toward project costs** include factors such as the level of contribution and value to the Crown, and whether the project has other government funding and support.

The following provides additional details about comparative criteria that will be reviewed for each project type.

Backbone Projects
For backbone projects the following will be reviewed:

- *Number of targeted communities to be connected:* the more POPs to connect to eligible communities, the more favourably the application will be viewed where this is appropriate.
- *Number and type of anchor institutions to be connected:* applications must connect at least one anchor institution to a new, or upgrade project, the more anchors that are connected the more favourably a project will be viewed.
- *Level of service improvement and community uses:* The level of connectivity improvement that would result from the implementation of the proposed project includes potential impacts in the following areas: residential uses, small business uses; mobile wireless uses; enterprise/industrial uses; and other. Capacity used for multiple services will be viewed more favorably and will provide greater context on how the application will further benefit the community. All other aspects being equal, applications with a larger degree of improvement will be viewed more favourably. Information from the form, templates and existing ISED and CRTC data will be used in the review.
- *Open access pricing:* the monthly pricing charged to third parties, including anchors for dedicated capacity, all other aspects being equal, applications with better offers for dedicated capacity will be viewed more favourably.

Last-Mile Projects
For last-mile projects, the following will be reviewed:

- *Level of improvement:* comparing existing last-mile speed and new maximum residential and business speeds.
- *Population Coverage:* number of households and businesses to be connected and the number of hexagons covered, all other aspects being equal, applications with greater coverage that exceed the minimum speed requirements will be viewed more favourably.
- *Coverage ratio:* the extent to which the application demonstrates coverage saturation within the area to be served (i.e., percentage of underserved households within the targeted area).
- *Level of overbuild (partially served last-mile):* with existing service providers already providing 5/1 Mbps service, and the Government of Canada is seeking to minimize duplication and overbuild of existing networks.
- *Proposed service offerings:* the more competitive the advertised download and upload speeds and the standalone monthly price of service, the more favourably the application will be viewed.
- *Cost per household* is based on the funding amount contributed by CTI per household proposed to be served.
- *Overlap with other applications* proposing to serve the same area will be a consideration in reviewing proposals.
- *Level of evidence to justify partially-served last-mile projects:* a justification that is comprehensive and provides detailed evidence for each area targeted by the applicant will be viewed more favorably.

Both Backbone and Last-Mile Projects
For all project types, the following comparative criteria will be examined:

- *Scalability:* projects may be compared on their potential to scale to higher capacities to meet future demand without the need for a complete network overhaul. This analysis will be based on the proposed network information in the form such as the equipment list, communities and institutions list, logical network diagram and geographic network map. All other aspects being equal, projects able to handle higher traffic loads than the minimum required with little or no equipment upgrade will be viewed more favourably.
- *Level of funding*: consideration will be given to how much program funding is being requested, to maximize available resources and ensuring a mix of projects.
- *Leverage:* the CTI program aims to build on existing initiatives and leverage other sources of funding where possible. Applications will be compared on their ability to demonstrate financial support, from their own resources or from key stakeholders, such as other levels of government, community and Indigenous groups, economic development organizations, anchor institutions, or communities themselves.
- *Stated priority*: the degree to which an applicant can show that its application is a stated priority of a province or territory or other government (e.g., municipal, indigenous) will also be a consideration for comparative assessment.

Note:

- The applicant must list each anchor institution, if there is more than one, within each community that is to be connected, as well as additional anchor institutions that may be targeted for service.
- If applicable, list the last-mile service providers with whom the proposed network will interconnect.

Timelines

When to apply

The CTI program was launched on December 15, 2016.

Applicants must complete the online PDF application form and required attachments. Copies of the application can be saved as information is compiled and until the applicant is ready to submit the application.

CTI will accept applications as early as January 16, 2017. The deadline for all applications is **March 13, 2017 at 12 p.m. (Noon) Eastern Standard Time**.

Applications will be assessed in spring of 2017. When completing the application please ensure that the project start date is **not before** April 1, 2017. A project start date entered before April 1, 2017 will not be accepted.

Ministerial decisions on approval in principle are expected in summer 2017, with detailed due diligence and the negotiation of contribution agreements to follow in 2017.

Projects where the program's contribution would exceed $50 million are subject to Treasury Board approvals and may take longer to be approved. It is expected that applicants whose projects are screened out of the first phase of the assessment process (i.e. essential criteria) will be notified by summer 2017.

Once contribution agreements are signed, projects must be started no later than summer 2018 to allow sufficient time for completion of projects by March 31, 2021.

Submitting the Application

Applicants must apply directly to the online system using the CTI application form. The application must be completed in full. The form and the attachments are interactive and the online intake will not allow an incomplete application form to be submitted and will highlight discrepancies and identify relevant error messages.

Please ensure that all applicable documentation is attached when submitting the completed application form. For reference there is a *checklist of attachments* provided as an Annex to this guide, which lists the required templates and supporting documents that must be included upon submission of your application. The **size limit of all attachments is 100 MB**. If an application's attachments exceed the 100MB limit, applicants should contact CTI officials (refer to the *Contact Us section*) before the submission deadline to discuss the possibility of transmitting attachments in excess of 100MB by alternate means.

Applicants can remove and add attachments to the application form as many times as necessary until the application form is submitted. The application form does not know which attachment has been attached to a specific question; all attachments are stored in the same location in the form; therefore you can use any button labeled "Click to add Attachments" on the Form to add an attachment.

Supporting Documents: There are requested supporting documents throughout the application form that must be attached to the submission. For a list of documents refer to *Annex 2: Checklist of Attachments*. If electronic versions of the incorporation document, an engineering report, letters of support, or financial statements are not readily available, an applicant may simply scan the hard copy and attach it. However, applicants should not scan maps and technical documents (e.g., logical network diagram). Refer to the *Annex 1 : Application Form Completion Instructions* for specific requirements.

Templates: There are a number of templates that must be completed. For a list of templates refer to the *Annex 2 : Checklist of Attachments*. These templates, like the application form, can be saved and edited off-line. Each template comes with specific instructions on how to fill it in. It is important to complete the templates as presented in the given format to ensure consistent information is provided by applicants. Templates have been designed to easily extract information for the assessment process. Failure to provide the requested information in the templates may result in the application being deemed incomplete and makes it more difficult to assess the application.

Before submitting, applicants should consider other existing provincial and territorial programs that support connectivity to determine how they can contribute to overall project funding.

Upon submission of the electronic form, an acknowledgement email with a PDF confirmation page will be sent. Please keep the confirmation document as it contains a reference number for each proposal. This reference number should be retained and referred to in correspondence regarding the CTI program and should also be referenced if applying to other funding programs.

If a confirmation of receipt is not received, there might have been a problem submitting the application. Please verify that all fields are filled in correctly and that all required attachments are

all included. If problems persist please contact CTI for advice as soon as possible before the closing deadline to ensure that the application is submitted properly and on time.

Applicants may submit more than one proposal. Applications may target one or more province/territory and span multiple provinces/territories. Applicants submitting more than one proposal must ensure that each proposal is technologically and financially independent and that one proposal is not dependent on another for successful completion. Applications should be competitive and applicants should take into account who else is in a targeted area as they consider the scope and span of proposed project(s).

Submit before the deadline

Applicants should allow for a slight transmission delay when submitting the online application form. Depending on the size of the attached documents and the type of Internet connection in use, the delay can be anywhere from a few seconds to several minutes.

CTI's online intake system will begin accepting applications on January 16, 2017. It is strongly recommended that applicants take the time needed to complete the application but should not wait until the final hours to submit. Submitting in a reasonable time before the deadline will reduce the risk of the application not being transmitted / submitted in time, especially over slower Internet connections.

Other Requirements

Applicants whose projects are selected will be required to comply with a number of government policies and expectations.

Applicants will be expected to use a fair, competitive and transparent procurement process to ensure best value for money when supplies, equipment and services are purchased or personnel are hired.

Applicants are required to disclose any other government assistance received prior to or during the course of the agreement related to the eligible costs supported by the program. The contribution amount may be reduced or recovered for any amount exceeding the program's stacking limit.

Reporting Requirements

Successful recipients will be required to demonstrate accountability for use of the funds and must meet the reporting requirements on project expenditures and activities, the results/outcomes of the project, and achievement of performance indicators as identified in the contribution agreement.

Under the terms and conditions of the contribution agreement, a recipient will be required to provide: periodic progress reports describing the progress of project activities; and a final performance report at the end of the project describing the results of the project. The frequency of reports is determined based on the risk of the recipient/project as determined by the program. Other reports may be required at the Minister's discretion.

Aboriginal Consultation

There is a duty to consult Aboriginal groups when the Crown contemplates conduct (such as providing funding for a project) that might impact established or potential Aboriginal rights. If required, consultation must be taken into consideration very early in the process otherwise project delays can be expected if consultation is not completed satisfactorily or in a timely manner. The applicant will carry out the consultation and the Minister will determine if the consultation is adequate as well as whether or not accommodation is required.

Environmental Assessment

Projects funded by the program are subject to the provisions of the Canadian Environmental Assessment Act, 2012. The applicant shall ensure that all activities comply with federal, provincial/territorial and municipal laws and regulations, and related laws or guidelines with respect to environmental matters.

Activities to be carried out on federal lands may require an evaluation of environmental effects under the Canadian Environmental Assessment Act, 2012 prior to the start of the proposed project. If activities are to be carried out on federal lands, a CTI program officer will contact the applicant if additional information is required.

Communications and Promotion

In accordance with the Federal Identity program, applicants who receive federal funding are required to acknowledge the role and contribution of the Government of Canada in all of its and its project partners' public communications. Instructions on the form of acknowledgement and the use of official government identifiers will be provided to successful applicants.

Security

Information for the proposed project provided in the application form and attachments may be shared with other federal government departments and agencies as determined by the Minister in order to assess any potential risks related to the overall integrity of network security. Applicants must ensure compliance with national security requirements of the Government of Canada.

ANNEX 1: Application Form Completion Instructions

Things to Remember

Mandatory fields: fields marked with an asterisk (*) are mandatory fields and must be completed. Additional fields may become mandatory based on your answers to other fields.

Save as you go: Remember that the application form will allow an applicant to draft the application, save it and return later to complete or revise it, print it and submit it. To ensure that the uploading process runs smoothly, click "Save As" after attaching each file.

Applications have a maximum length: Applications have a set overall maximum length. Each section will display their respective maximum number of characters allowed. Note that spaces and hard returns are counted as characters and add to the total number of characters.

Review the application before submitting: Once the application is complete and is ready to submit, a thorough review is strongly recommended. Once the application form, templates and supporting documentation have been submitted ("Submit " button), the application is considered final and may not be amended.

Keep a record of the application: It is recommended that an applicant print their application before submitting it by using the "Print" button in the application form. The application can also be saved onto a desktop or data storage device (e.g. USB flash drive) by using the "Save As" button and naming it accordingly.

Attachments: When completing the form a list of attachments can be displayed by clicking the paperclip icon on the left side of the form.

Getting Started

Important information on using the application form:

- PDF reader: The application form is in Portable Document Format (PDF). To view a PDF document, an applicant must have a PDF reader installed. If an applicant does not already have such a reader, there are many available to download for free. However, since this PDF Form is an Electronic Form; some PDF Readers may not be compatible. The latest Adobe Reader software is compatible.
    - Download the application form: in order to download the PDF application form: go to the CTI website.
    - Right click on the link to the PDF document and select "Save Target As" (Internet Explorer) / "Save Link As" (Firefox) from the drop-down menu.
    - Save the file to a directory on your computer by clicking "Save".
    - It is important to work using the PDF file that you saved on your computer; some Internet browsers allow PDF to be opened directly on the browser but some functionality may be missing.

- Saving and editing the application form: An applicant can save, edit and complete the application form off-line by using PDF reader software.

- Active Internet connection: An applicant must be connected to the Internet in order to submit the application form to the program. If you are submitting large files with the

application form we recommend that you submit your application ahead of time due to increased loads on ISED servers towards the end of the application deadline.

The CTI online application form contains six (6) steps. Each step is explained below in further detail to assist with completing the online application form.

Step 1 – Applicant and Contact Information

Item 1*: Legal Name of Applicant
Identify the legal name of the applicant in English and French and subsequently verify that this is the primary legal name in the corresponding official language.

Item 2*: Operating Name
Identify if the operating name is the same as the legal name. If the operating name is different, indicate the operating name in the space provided.

Item 3*: Type of Organization
Select from the dropdown menu the legal type that best describes the organization applying for funding (i.e. incorporated company-private or public; partnership; limited partnership; joint venture/syndicate; cooperative; educational institution; other non-profit organization; municipality/municipal development corporation; province/provincial crown corporation; Indian band council; public body owned by local/regional government; and other).

If an "Indian band council" is the selected type of organization, then a subsequent box will appear asking that the applicant provide the band number.

If "other" is selected then the applicant will be provided space to specify the type of organization, this field cannot be left empty or an error message will occur.

Item 4*: Indigenous Entity
Identify if the applicant is an Indigenous entity. An **indigenous entity** may include a non-profit organization run by and for First Nation, Metis, or Inuit people. The entity must be incorporated.

Item 5*: Overview of the Organization
The applicant must provide in 2,000 characters or less an overview of the organization, including information on its current business model, years in business, experience in operating broadband services, previous federal broadband funding received (if applicable), mission/mandate/ vision, size of operation (e.g. annual revenue, assets, number of staff), membership (if applicable), current broadband coverage and subscription base.

Item 6*: Incorporation or registration
The applicant must provide the date of incorporation or registration in the following format YYYY-MM-DD. The 9 digit business identifier number provided by Canada Revenue Agency is also required.

There is one (1) required attachment for Step 1:
Attachment*

- Copies of registration and other relevant documents related to incorporation, limited partnership, joint venture, not-for-profit status, etc.

The relevant documents related to incorporation must be provided in PDF format and may be attached using the 'Click to Add Attachments' button.

Item 7*: Applicant Location
The applicant location must include complete information on the physical location, such as the floor, suite or room number, street number and name. Identify the city, and select from the drop down menu the Province and include the postal code. The applicant's 10-digit telephone number is required **without dashes, brackets or spaces**. Space has also been provided to include the extension number, if applicable. The corresponding email is required as well as the website address, if applicable.

Item 8*: Mailing Address of the Applicant
The applicant must select whether or not the mailing address is the same as the applicant location. If no, the applicant must identify the full details of the mailing address.

Item 9*: Authorized Contact
Provide the name, title, telephone number and email address of the primary contact person for liaising with ISED on matters involving the application. The person named should be an authorized official of the organization, who has **full authority to bind said organization** through funding agreements. One primary contact must be identified in the case of applications submitted on behalf of multiple organizations. Provide the first and last name, title, business telephone number, email and verify that this person is an authorized signing officer of the applicant.

Item 10: Alternate Contact
Include the first and last name, title, business telephone number and email of an alternate contact in the event that the primary contact becomes unreachable. If there is to be no alternate contact, leave this section blank.

Item 11* & 12*: Official Language
The applicant must select English or French for the respective official language preferred for correspondence and the official language of the applicant.

Step 2 – Project Information

For applicants that are successful in their applications for funding under the CTI program, the contribution amounts will be made public via government websites, media releases or other similar materials. Information provided in step two (2), item 1 to 3, may be used, in whole or in part to assist ISED in the preparation of any public announcements.

Item 1*: Multiple Provinces/Territories
The applicant must indicate whether the applicant's project will span more than one province/territory. The applicant must identify the province(s)/territory(ies) where the project will take place.

In cases where an applicant has identified that the project will span across more than one province/territory, check all that apply.

Item 2*: Project Title
In a maximum of 200 characters, provide the project title for the proposed project.

Item 3*: Project Type
In the checkboxes provided indicate the type(s) of project to be submitted. (i.e. backbone, last-mile, or select both backbone and last-mile, if applicable).

For further information, refer above to the *Eligible Activities* section of this guide. Depending on the type(s) of project selected, corresponding fields in the form will be automatically generated in steps 3-5 that are required to be completed by the applicant. (i.e. fields in steps 3-5 are tailored to the type of project that is being submitted).

In the event that the project type selected is both last-mile and backbone, note that the application will be assessed as a whole (i.e. the application will not be considered for funding in part).

Item 4*: Description of the Project
Using a maximum of 3,500 characters, in the text box provided include a brief description, of the project, (i.e. description of the project for the general public). Please avoid including any confidential or proprietary information in the description. It is useful for the project description to highlight the key theme or purpose of the project, along with briefly answering the 'who', 'what', 'where', 'when' and 'why' of the application.

Item 5*: Existing Network and Coverage Information (Backbone and Last-mile, if applicable)
Indicate if existing network and/or coverage information has been already submitted to ISED or the Canadian Radio-television and Telecommunications Commission (CRTC) in the past 12 months, or if the intention is to submit the information to ISED before the close of applications. This information is used by ISED to continually update broadband coverage data. If the applicant or its partners do not currently own or operate broadband infrastructure, please select the second option and use the linked form to inform ISED as such.

Item 6*: Open Access
Applicants will be subject to existing regulatory requirements. This includes any fees and or services subject to CRTC regulation and ISED licensing, tower policies and regulations. In addition, all networks must be in compliance with the requirements set out in the Telecommunications Act and the Radiocommunication Act. In the checkbox provided confirm that the applicant and its partners will make the networks described accessible to third parties on a wholesale basis. If the applicant does not check this box, the form will identify an error and the applicant will be unable to submit their application.

Item 7*: **Project Budget**
The applicant must demonstrate that a funding plan is in place to finance the proposed project.

Attachments*: Use the 'Click to Add Attachments' button to include the following:

- Independently prepared financial statements (audited, review engagement, or notice to reader) for the last three (3) years;
- Balance Sheet for the last three (3) years;
- *Template 1: Pro Forma Financial Forecast* broken down on an annual basis (for up to five (5) years after project completion) will be used to explain the financial viability of the project. Please note that the spreadsheet itself must be attached. PDF scans or printouts of the spreadsheet will not be accepted;

- Fill out *Template 2: Detailed Budget* and attach it to the application using the 'Click to Add Attachments' button. Please note that the spreadsheet itself must be attached. PDF scans or printouts of the spreadsheet will not be accepted.

Financial support from ISED is intended to complement, not replace, funding received from other sources for the proposed project. Applicants are required to disclose all actual and potential sources of funding for their project.

In completing *Template 2: Detailed Budget*, provide the following:

- An outline of all project components and their total estimated costs. This must include a financial breakdown, by component (new backbone, last-mile, if applicable etc.), by category of capital costs (labour, equipment, etc.), and eligible and ineligible expenditures.
- Identify all proposed funding sources as well as an assurance that funding to undertake and complete the project has been secured or can reasonably be secured. Funding assurance may include, but is not limited to a letter from a Chief Financial Officer/Chief Administrative Officer/Treasurer, a letter from a financial institution, or a Council Resolution of budget allocations.
- An estimated expenditure profile reflecting total eligible expenditures, by fiscal year and by funding source.
- Assurance of capacity to operate and maintain the service on a sustainable, long-term basis when the applicant is a not-for-profit organization or from a private sector.

All items in the budget are required to be allocated between backbone (new), backbone (upgrade), last-mile (new) and last-mile (partially served) components of the proposed project. For a project that will be exclusively backbone (new) or exclusively backbone (upgrade), the allocation is allocating 100 percent of the costs to the backbone (new) or backbone (upgrade) respectively.

For projects that include backbone (new or upgrade) and last-mile components, this exercise is slightly more detailed. The network equipment should be allocated between components based on the definition of backbone and last-mile referenced above in the *Eligible Activities* section of this guide. For all costs beyond network equipment, the applicant should explicitly divide costs where it makes sense. For example, it may be possible to determine how the engineering and project management costs will be allocated between these components. The applicant should exercise discretion to develop an allocation that supports the intent evidenced by the definitions of backbone and last-mile in this guide to the greatest extent possible.

The information provided in this template attachment must be used to respond to the remaining items in this step.

Item 8*: Project Costing
Copy the information from *Template 2: Detailed Budget* to identify the project costing, including the total eligible costs and total project cost. For a list refer to the *Eligible Costs section above*.

Item 9*: Project Funding
Copy the information from *Template 2: Detailed Budget* to identify the requested funding amount from the CTI program and the amount that the applicant will contribute to the project, if applicable.

If the applicant is seeking 100% funding support from external sources of funding including the CTI program, then input "$0" next to "amount applicant will contribute". An error message will occur if an amount, including 0, is not entered.

Applicants are strongly encouraged to seek other sources of funding for proposed projects. This includes financial assistance (grants, contributions, etc.) from all levels of government, anticipated or granted.

Item 10: Amount of Other Funding Sources
Applicants are required to identify sources of funding that can be secured or reasonably expected to be secured to cover all project costs. The amount of funding requested and the status of those applications must be clearly identified in the table provided.

Use the "+" and "-" buttons to add or remove an information line. If there are multiple items and the applicant would like to change the order in which they appear, use the arrows (▲▼) to move them. Ensure to include the name of the partner(s), the contact information, name of the program (if applicable) and amount for all other corresponding funding sources.

If other sources of funding are contingent on the applicant receiving funding under the CTI program, indicate in the drop down menu the status (e.g. submitted, received confirmation of eligibility, pending, or approved). As well, using the drop down menu the applicant is to also identify the funder type (e.g. federal, provincial/territorial, municipal, or private).

Item 11* & 12*: Project Start and End Date
Applicants must provide the proposed start and completion dates for the project. The start and end dates must be no earlier than April 1, 2017 and the end date must be no later than March 31, 2021. Information provided in this section will be used to determine whether the project meets the timeframe of the CTI program. This information will also be used to compare projects proposing to serve the same general underserved area.

Step 3 – Technological Solution

NOTE: The application form, at step 3 is tailored depending on the type of project proposed (i.e. backbone, last-mile or both). If the application is both backbone and last-mile there will be more item numbers to complete.

Items 1-4 in step 3 are required, regardless of the type of project. Instructions below, from item 5 and beyond, have been provided to assist specifically for each project type. Applicants should refer below only to the applicable instructions for a backbone, last-mile or both backbone and last-mile proposed project.

Item 1*: System Design
Provide a description of the system that must cover all key network components that enable connectivity from the start and end points (maximum 3,500 characters).

Item 2*: Logical Network Diagram
The applicant must provide a logical network diagram using the 'Click to Add Attachments' button.

Attachment*:

- Provide a logical network diagram**.** The logical network diagram must include all of the key network elements (showing the upgrade and/or new portions of the network). The following formats are accepted: PDF, PNG JPEG, VSD/VSDX, DOC/DOCX, PPT, PPTX.

Item 3*: Equipment Details
Attachment*:

- Fill out *Template 3: Equipment Details* and attach it to the application using the 'Click to Add Attachments' button. Please note that the spreadsheet itself must be attached. PDF scans or printouts of the spreadsheet will not be accepted.

This template will be used to evaluate the network capacity and to verify the high level network design, and is to be used in conjunction with the logical network diagram. All elements that are in the data path must be included in the template. The template contains further instructions on how to complete the document. All network equipment identifiers must be consistent throughout the application and align with the logical network diagram, fibre route/microwave links (where applicable), and the geographic coverage map. If a network element is shared between backbone and last-mile, select "backbone" in the drop-down menu box.

Item 4*: Scalability
Describe the ability of the network to adapt to forecasted increased network capacity and demand over the next (5) years from the project completion date, accommodating, additional subscribers and usage traffic, enhanced services and the network's ability to support speeds identified above in this guide (maximum 3,500 characters).

Note: In Step 3, from item 5 onwards requested fields will vary depending on the type of application proposed (i.e. backbone, last-mile or both backbone and last-mile). Please refer to the relevant form instructions below, as applicable.

BACKBONE INSTRUCTIONS (if applicable): Step 3, Items 5-8

Item 5*: Type of Backbone Project
Check the box that applies, if the proposed solution will be a new backbone, upgrade backbone or both.

If the backbone project's primary focus is to add resiliency to the existing network, without connecting new communities or upgrading capacity in constrained communities, the applicant must select the resiliency option. For details and definitions on new, upgrade, and resiliency backbone refer to the *Eligible Activities section* of this guide. Only applications that meet all eligibility criteria will be evaluated further under Assessment Criteria.

Attachments*:

- Fill out *Template 5: New Backbone-Community Connectivity and Wholesale Pricing* and attach it to the application using the 'Click to Add Attachments' button if the new backbone request box was checked. Please note that the spreadsheet itself must be attached. PDF scans or printouts of the spreadsheet will not be accepted.

The communities listed in this template are considered eligible for new backbone and are linked to eligible community points displayed on the reference map on the CTI website.

- Fill out *Template 6: Upgrade Backbone-Community Connectivity and Wholesale Pricing* and attach it to the application using the 'Click to Add Attachments' button if the upgrade backbone request box was checked. Please note that the spreadsheet itself must be attached. PDF scans or printouts of the spreadsheet will not be accepted.

If a request for a ***backbone upgrade*** is selected, please also attach a comprehensive justification for the required upgrade that includes traffic graphs and/or logs, as described above.

- Fill out *Template 7: Resiliency Backbone-Community Connectivity* and attach it to the application using the 'Click to Add Attachments' button if the primary focus of the backbone project is to add resiliency to the existing network.

Information collected through this template is intended to capture the aspect of the application in which the primary goal is to add redundancy to the network, rather than connect new communities or increase capacity. This template will be used to indicate the communities to which the resiliency backbone application will be adding redundancy.

Item 6*: Backbone Technology Type
Check all boxes that apply to specify the backbone technology(ies) proposed (i.e. Fibre, Satellite, Microwave).

Item 7*: Fibre Routes and Microwave Links Map

Attachment*:

- If fibre and/or microwave are selected, attach a map of the fibre routes/microwave links of the backbone network infrastructure using the 'Click to Add Attachments' button.

The fibre routes and/or microwave links of the backbone network infrastructure must be in one the following acceptable formats: Google Earth (kmz, kml), MapInfo, ArcGIS, or ESRI. The fibre routes/microwave links map files must be attached using the 'Click to Add Attachment Button'.

Item 8*: Open Access
In a maximum of 3,500 characters, describe how access will be accommodated with the proposed technology and list of open access services that may be offered to other third party service providers.

LAST-MILE INSTRUCTIONS (if applicable): Step 3, Item 5-9

For a last-mile application, it is required to identify if the application will be a new or partially-served last-mile project. A combination of both is also possible although justification and additional evidence is required if proposing last-mile in partially served areas. Details and definitions on both new and partially-served last-mile can be found in *the Eligible Activities* section of this guide. Only applications that meet all eligibility criteria will be evaluated further under Assessment Criteria

Item 5*: Household Spreadsheet
Attachment:

- Check and complete *Template 8: Household Spreadsheet* if a new last-mile request within the application is being submitted.

Applicants are required to select the hexagons that they are proposing to serve. The CTI program has developed maps overlaid with a hexagonal grid as well as a targeted household spreadsheet containing a listing of underserved hexagons to assist Applicants in their selection. The maps and spreadsheet are available at the CTI website. The spreadsheet contains further instructions on how

to complete the document. Only eligible hexagons are included in the spreadsheet. Projects that are located outside these hexagons should apply as a partially-served last-mile proposal.

This template is to be completed by applicants who will be proposing to build new last-mile broadband infrastructure in areas that have been identified by the CTI program as presently lacking existing terrestrial broadband services at 5 Mbps[1]. This template will be used to identify and evaluate the proposed coverage areas and the number of households which will be targeted by the application. This template will be used in conjunction with the applicant's proposed coverage maps which also form part of this application. A description of requirements for these coverage maps can be found in *Template 8*.

The template includes a listing of proposed service areas which have been presented based on a consistent grid of hexagons of equal size. Those hexagons which are listed in the template represent only those areas which, based on Census 2011 demographic data, appear populated and which, based on the latest coverage information provided by ISPs[2], have been determined to lack existing terrestrial residential broadband services at 5 Mbps. To further aid the applicant with the identification of specific areas, reference maps showing the locations of each of these hexagons can be found in the Application Toolkit that is available on the CTI website in both Google Earth KML and MapInfo formats.

Within the template, applicants can click on the specific Hexagon Identifier to be directed to that specific area on the online, interactive CTI map.

The applicant is required to indicate the number of targeted households that they will be able to offer service to in each hexagon. The applicant must verify that the intended number of hexagons and households have been selected by looking at the summary information shown at the top of the template spreadsheet.

Applicants *proposing to serve partially-served areas* are not required to complete the *Template 8: Household Spreadsheet*, but must provide a comprehensive justification for the required upgrade as defined in the *Eligible Activities section* of this guide. Check the box and provide a comprehensive justification if *a partially-served last-mile* request within the application is being submitted.

Attachment:

- If submitting a partially-served last-mile request within the application use the 'Click to Add Attachments' button to attach the documentation that make up the comprehensive justification required as defined in the guide.

Item 6*: Last-mile Technology Type

Check all boxes that apply to specify the last-mile technology type (i.e. Fibre, Cable, DSL, Mobile Wireless, Fixed Wireless).

[1] Terrestrial services include Fixed Wireless, xDSL, Cable, and Fibre service. It is understood that Satellite and Mobile Wireless services which may also deliver 5 Mbps may also be available throughout many areas.

[2] Coverage information is collected from public sources and from ISPs by Innovation, Science and Economic Development Canada and the Canadian Radio and Telecommunications Commission. Current ISP coverage information can be found at http://www.ic.gc.ca/app/sitt/bbmap/hm.html.

Item 7*: Geographic Coverage Maps
Attachment:

- Attach as a separate document to the application, a geographic coverage map that includes all network components.

This map must indicate towers (if wireless), central offices (COs), digital subscriber lines (DSL) remotes, remote digital subscriber line access multiplex (DSLAM) units, cable head-ends, fibre-optic line terminals, hybrid fibre nodes, etc., and the proposed targeted area.

The geographic coverage map must be in one of the following acceptable formats: Google Earth (kmz, kml), MapInfo, ArcGIS, or ESRI. The coverage map must be attached using the 'Click to Add Attachments' button.

Item 8*: Last-mile Internet Service Offerings
Attachment:

- Fill out *Template 9: Last-mile Internet Service Offerings* and attach it to the application using the 'Click to Add Attachments' button. Please note that the spreadsheet itself must be attached. PDF scans or printouts of the spreadsheet will not be accepted.

Use *Template 9: Last-mile Internet Service Offerings* to provide a list of service plans. The template contains further instructions on how to complete the document.

Item 9*: Open Access
Describe how open access will be accommodated using the above technology and list of open-access services that may be offered to other third party service providers.

BOTH BACKBONE & LAST-MILE INSTRUCTIONS (If applicable): Step 3, Item 5-13

BACKBONE PORTION

Item 5*: Type of Backbone Project
Check the box that applies, if the proposed solution will be a new backbone, upgrade backbone or both.

If the backbone project's primary focus is to add resiliency to the existing network, without connecting new communities or upgrading capacity in constrained communities, the applicant must select the resiliency option.

Attachments*:

- Fill out *Template 5: New Backbone-Community Connectivity and Wholesale Pricing* and attach it to the application using the 'Click to Add Attachments' button if the new backbone request box was checked. Please note that the spreadsheet itself must be attached. PDF scans or printouts of the spreadsheet will not be accepted.

The communities listed in this template are considered eligible for new backbone and are linked to eligible community points displayed on the reference map on the CTI website.

- Fill out *Template 6: Upgrade Backbone-Community Connectivity and Wholesale Pricing* and attach it to the application using the 'Click to Add Attachments' button if the upgrade

backbone request box was checked. Please note that the spreadsheet itself must be attached. PDF scans or printouts of the spreadsheet will not be accepted.

If a request for a ***backbone upgrade*** is selected, please also attach a comprehensive justification for the required upgrade that includes traffic graphs and/or logs, as described above.

- Fill out *Template 7: Resiliency Backbone-Community Connectivity* and attach it to the application using the 'Click to Add Attachments' button if the primary focus of the backbone project is to add resiliency to the existing network. Please note that the spreadsheet itself must be attached. PDF scans or printouts of the spreadsheet will not be accepted.

Information collected through this template is intended to capture the aspect of the application in which the primary goal is to add redundancy to the network, rather than connect new communities or increase capacity. This template will be used to indicate the communities to which the resiliency backbone application will be adding redundancy.

Item 6*: Backbone Technology Type
Check all boxes that apply to specify the backbone technology(ies) proposed (i.e. Fibre, Satellite, Microwave).

Item 7*: Fibre Routes and Microwave Links Map
Attachment*:

- If fibre and/or microwave is selected, attach a map of the fibre routes/microwave links of the backbone network infrastructure using the 'Click to Add Attachments' button.

The fibre routes and/or microwave links of the backbone network infrastructure must be in one the following acceptable formats: Google Earth (kmz, kml), MapInfo, ArcGIS, or ESRI. The fibre routes/microwave links map files must be attached using the 'click to add attachment button'.

Item 8*: Open Access
In a maximum of 3,500 characters, describe how access will be accommodated with the proposed technology and list of open access services that may be offered to other third party service providers.

LAST-MILE PORTION

For a last-mile application, it is required to identify if the application will be a new or partially-served last-mile project. A combination of both is also possible although justification and additional evidence is required if proposing last-mile in partially served areas.

Item 9*: Household Spreadsheet
Attachment:

- Check and complete *Template 8: Household Spreadsheet* if a new last-mile request within the application is being submitted.

Applicants are required to select the hexagons that they are proposing to serve. The CTI program has developed maps overlaid with a hexagonal grid as well as a targeted household spreadsheet containing a listing of underserved hexagons to assist Applicants in their selection. The maps and spreadsheet are available at the CTI website. The spreadsheet contains further instructions on how to complete the document. Only eligible hexagons are included in the spreadsheet. Projects that are located outside these hexagons should apply as a partially-served last-mile proposal.

This template is to be completed by applicants who will be proposing to build new last-mile broadband infrastructure in areas that have been identified by the CTI program as presently lacking existing terrestrial broadband services at 5 Mbps[3]. This template will be used to identify and evaluate the proposed coverage areas and the number of households which will be targeted by the application. This template will be used in conjunction with the applicant's proposed coverage maps which also form part of this application. A description of requirements for these coverage maps can be found in *Template 8*.

The template includes a listing of proposed service areas which have been presented based on a consistent grid of hexagons of equal size. Those hexagons which are listed in the template represent only those areas which, based on Census 2011 demographic data, appear populated and which, based on the latest coverage information provided by ISPs[4], have been determined to lack existing terrestrial residential broadband services at 5 Mbps. To further aid the applicant with the identification of specific areas, reference maps showing the locations of each of these hexagons can be found in the Application Toolkit that is available on the CTI website in both Google Earth KML and MapInfo formats.

Within the template, applicants can click on the specific Hexagon Identifier to be directed to that specific area on the online, interactive CTI map.

The applicant is required to indicate the number of targeted households that they will be able to offer service to in each hexagon. The applicant must verify that the intended number of hexagons and households have been selected by looking at the summary information shown at the top of the template spreadsheet.

Applicants *proposing to serve partially-served areas* are not required to complete the *Template 8: Household Spreadsheet*, but must provide a comprehensive justification for the required upgrade as defined in the *Eligible Activities section* of this guide. Check the box and provide a comprehensive justification if *a partially-served last-mile* request within the application is being submitted.

Attachment:

- If submitting a partially-served last-mile request within the application use the 'Click to Add Attachments' button to attach the documentation that make up the comprehensive justification as defined in the guide for the required upgrade.

Item 10*: Last-mile Technology Type

Check all boxes that apply to specify the last-mile technology type (i.e. Fibre, Cable, DSL, Mobile Wireless, Fixed Wireless).

Item 11*: Geographic Coverage Maps

Attachment:

- Attach as a separate document to the application, a geographic coverage map that includes all network components.

[3] Terrestrial services include Fixed Wireless, xDSL, Cable, and Fibre service. It is understood that Satellite and Mobile Wireless services which may also deliver 5Mbps may also be available throughout many areas.

[4] Coverage information is collected from public sources and from ISPs by Innovation, Science and Economic Development Canada and the Canadian Radio and Telecommunications Commission. Current ISP coverage information can be found at http://www.ic.gc.ca/app/sitt/bbmap/hm.html.

This map must indicate towers (if wireless), central offices (COs), digital subscriber lines (DSL) remotes, remote digital subscriber line access multiplex (DSLAM) units, cable head-ends, fibre-optic line terminals, hybrid fibre nodes, etc., and the proposed targeted area.

The geographic coverage map must be in one of the following acceptable formats: Google Earth (kmz, kml), MapInfo, ArcGIS, or ESRI. The coverage map must be attached using the 'Click to Add Attachments' button.

Item 12*: Last-mile Internet Service Offerings
Attachment:

- Fill out *Template 9: Last-mile Internet Service Offerings* and attach it to the application using the 'Click to Add Attachments' button. Please note that the spreadsheet itself must be attached. PDF scans or printouts of the spreadsheet will not be accepted.

Use *Template 9: Last-mile Internet Service Offerings* to provide a list of service plans. The template contains further instructions on how to complete the document.

Item 13*: Open Access
Describe how open access will be accommodated using the above technology and list of open-access services that may be offered to other third party service providers.

Step 4 – Community Benefits

NOTE: Description of Community Benefits that are anticipated as a result of the project is requested information regardless of the type of project proposed (i.e. backbone, last-mile, or both backbone and last-mile). Applicants proposing only last-mile will have no further fields to populate. For backbone and a combination of backbone and last-mile projects applicants are requested to populate additional fields outlined in the backbone instructions below (i.e. the Community Benefits and Community Uses items of step 4).

Item 1: Description of Community and Connectivity Improvements
Provide a description of community and connectivity improvements to be achieved. This information is requested regardless of the type of application being submitted (i.e. backbone, last-mile or both).

BACKBONE INSTRUCTIONS (if applicable): Step 4, Item 2-3

Item 2: Community Benefits
Attachment:

- Fill out *Template 4: Community Benefits-Anchor Institutions* and attach it to the application using the 'Click to Add Attachments' button. Please note that the spreadsheet itself must be attached. PDF scans or printouts of the spreadsheet will not be accepted.

This template is to be completed by applicants who are proposing a backbone component as part of their application (new/upgrade). Applicants are requested to identify community benefits by listing the anchor institution(s) that they will connect and /or provide service to.

The applicant must select the type of anchor institution that they will connect. The drop down menu includes the following options: Medical and healthcare provider; Community college; Public Housing; Other institutions of higher learning; Other community support organizations; Other

government facilities; Band office; Community Centre; Public Safety Institutions (i.e. fire or police stations); and Other.

Attachment:

- Mark a check in the box provided to declare that supporting documentation is attached.

Supporting documents include letters, contracts, or emails and can be attached using the 'Click to Add Attachments' button. This information is required to demonstrate commitment to connect to broadband infrastructure that will be built by the proposed project. The supporting documents must be provided in the following acceptable formats: pdf and doc.

Item 3: Community Uses
A table is provided for applicants to describe in 3500 characters and provide additional information on community uses resulting from the project. Information from this table will be used during the comparative assessment phase, to provide better context on how the project may further benefit the community. This includes potential impacts in the following areas:

- Residential uses: the type of technology anticipated for last-mile, the download/upload speeds, and the targeted households.
- Small Business uses: the type of technology anticipated for last-mile, the download/upload speeds, and the targeted households.
- Mobile Wireless uses: the number of towers and the number of clients targeted in the communities.
- Enterprise/Industrial uses: the type of technology anticipated and the download/upload speeds.
- Other uses: the type of technology anticipated and the download/upload speeds.

Step 5 - Planning & Management

If applying for **both backbone and last-mile**, in step 5, specify if any information applies to one or both types of the project (i.e. backbone or last-mile).

Item 1*: **Project Management**
An applicant must demonstrate that it has the capacity to manage the proposed project and bring it to successful completion. This capacity includes both administrative and technical capabilities. The applicant and collaborators must have strong project management, financial control and technical development skills. Where weaknesses exist, remedial measures must be explained.

There are **three** required fields.

- Describe the relationship between the project manager and applicant (maximum 2,500 characters);
- Overview of project management team-Identify the applicant's project lead and team members including name, title, roles and responsibilities and relevant experience (maximum 3,500 characters);
- Overview of project participants--Identify the applicant's project participants including builder(s), owner(s), and operator(s) if different. Indicate the names, titles, operating name (if applicable), legal type, contact information, and relevant portion of the network (maximum 3,500 characters).

Item 2*: Sustainability
In the space provided, using a maximum of 3,500 characters, describe key factors to indicate how the applicant will be prepared to operate, manage and maintain the proposed broadband network including any external managed services which will support network management or operations functions. Address how the applicant will ensure that the necessary sales, operational, technical and billing support systems are or will be in place to supply the proposed services.

Item 3: Contractors and/or Consultants
In some cases, the project team may not have the necessary experience or skill sets required to meet the essential criterion of 'Project Management'. In these cases, the applicant may choose to engage contractors and/or consultants who will support and contribute to the overall management of the project.

In the table provided, identify the names of key contractors/consultants (maximum 150 characters) and provide a description of the work to be performed (maximum 500 characters) and indicate how it relates to the corresponding project activity (maximum 150 characters).

Item 4*: Project Schedule
Applicants must be able to demonstrate an ability to adequately manage and plan a project through scheduling and timelines. Applicants are required to submit a project schedule, preferably a Gantt chart. The detailed project schedule must clearly indicate that the project is well planned and has defined activities and a critical path with key milestones for key project stages, including:

- Engineering and network design;
- Securing of all relevant licenses, permits, duty to consult obligations, tower consultations, co-location agreements and other regulatory requirements;
- Site preparation;
- Equipment procurement;
- Equipment deployment;
- Network testing; and
- Network completion and transition to operational status.

Activities must be logically sequenced with realistic timelines, and include a start date and a completion date for each of the key project stages.

If the project is comprised of both backbone and last-mile components, then the project schedule should indicate the segregation of the activities, milestones and dates belonging to the backbone component and those belonging to the last-mile component.

This information will be used to assess the reasonableness of project implementation as well as the feasibility of project timelines.

Attachment:

- Attach as a separate document a project schedule, preferably a Gantt chart that shows each activity and a critical path with key milestones for key project stages by using the 'Click to Add Attachments' button. The Gantt chart must be provided in a Microsoft Project format or Microsoft Excel.

Step 6 – Declarations

Applicants are required to check appropriate boxes in the declaration section of the application form. Please ensure to complete the signature block at the end of the form before submitting.

ANNEX 2: Checklist of Attachments

Templates

- ☐ Template 1: Pro-Forma Financial Statements (includes Subscriber Estimates for Last-mile)
- ☐ Template 2: Detailed Budget
- ☐ Template 3: Equipment Details
- ☐ Template 4: Community Benefits -Anchor Institutions

Backbone Applications (if applicable)

- ☐ Template 5: New Backbone-Community Connectivity and Wholesale Pricing
- ☐ Template 6: Upgrade Backbone-Community Connectivity and Wholesale Pricing
- ☐ Template 7: Resiliency Backbone-Community Connectivity

Last-mile Applications (if applicable)

- ☐ Template 8: Household Spreadsheet
- ☐ Template 9: Last-mile Internet Service Offerings

Supporting Documents

- ☐ Copies of registration and other relevant documents
- ☐ Independently prepared financial statements for the last three (3) years
- ☐ Balance sheet for the last three (3) years
- ☐ Logical network diagram
- ☐ Community benefits supporting documents
- ☐ Project schedule (preferably a Gantt chart)

Backbone Applications (if applicable)

- ☐ Map of the fibre routes/microwave links of the backbone network infrastructure

Last-mile Applications (if applicable)

- ☐ Partially-served justification
- ☐ Geographic coverage map that includes all network components

ANNEX 3: Application Form Q&As

I forgot to keep a copy of the proposal that I just submitted. How can I request a copy?
If you forgot to keep a copy of the proposal, please contact us by telephone: 1-800-328-6189 or email: ic.cti-bpi.ic@canada.ca.

I tried submitting my proposal but the system "times out" and I don't see a confirmation page. What should I do?
If a confirmation page was not displayed, there is a strong possibility that your proposal was not received. Please contact us by telephone: 1-800-328-6189 or email: ic.cti-bpi.ic@canada.ca.

I cannot view the attachments which I attached in the form. How can I see them?
To display a list of your attachments, click the paperclip icon on the left side of the form.

I submitted a proposal but have not received the confirmation yet. How can I ensure my proposal was sent to the program?
The confirmation is displayed on your screen after you have pressed the "Submit" button. If you did not receive a confirmation message that your proposal was submitted, please resubmit it using the "Submit" button on the last page. If there are continued difficulties please contact us by telephone: 1-800-328-6189 or email: ic.cti-bpi.ic@canada.ca.

Why do I have to wait until January 16, 2017 to submit my proposal?
You can start completing your application immediately however the online system receiving applications will only be available as of January 16, 2017. You can submit your application any time after that date until the application closing on March 13, 2017 at 12 p.m. (Noon) Eastern Standard Time.

Can I submit more than one proposal?
Applicants may submit more than one proposal.

Is there a maximum amount for one proposal that will be considered?
There is no maximum amount limit per project. Proposals over a certain amount will require additional approval and it is expected that there will be competitive proposals from across the country. Applicants should put forward a proposal that meets all the eligibility and essential requirements and offers good value.

Can I provide information requested in the templates in any other format?
You must complete the templates in the format provided. The templates are formatted to ensure proposals provide consistent information that can be easily compared so as to facilitate and expedite the assessment process.

When I paste content into a text box in the application form, the text cuts off. Why?
If inputting text from a word processing file (e.g. Microsoft Word, Notepad, etc.) into the PDF form, please remember that all fields have a maximum length which is displayed in each question. The application form character count feature takes into account all spaces and hidden characters, including hard returns. If there is a difference between the application form and the one included in the word processing document, the application form's count will prevail. It is always a good practice to remove unwanted spaces as this can help lower the character count.

When I try to open the application form (PDF) with Safari as the browser, a new screen opens and displays a message saying "Please Wait" indicating that my PDF viewer may not be able to display the content. What do I do?
If you move your mouse to the bottom-middle of the page, a new menu with four icons will appear that will give you the option to save it and download it to your computer.

When I try to open the application form using Chrome as the browser, a new screen opens and displays a message saying "Please Wait" indicating that my PDF viewer may not be able to display the content. What do I do?
If you move the mouse to the bottom-right or the top-right on the page, a downward arrow will appear that will give you the option to save it and download it to your computer.

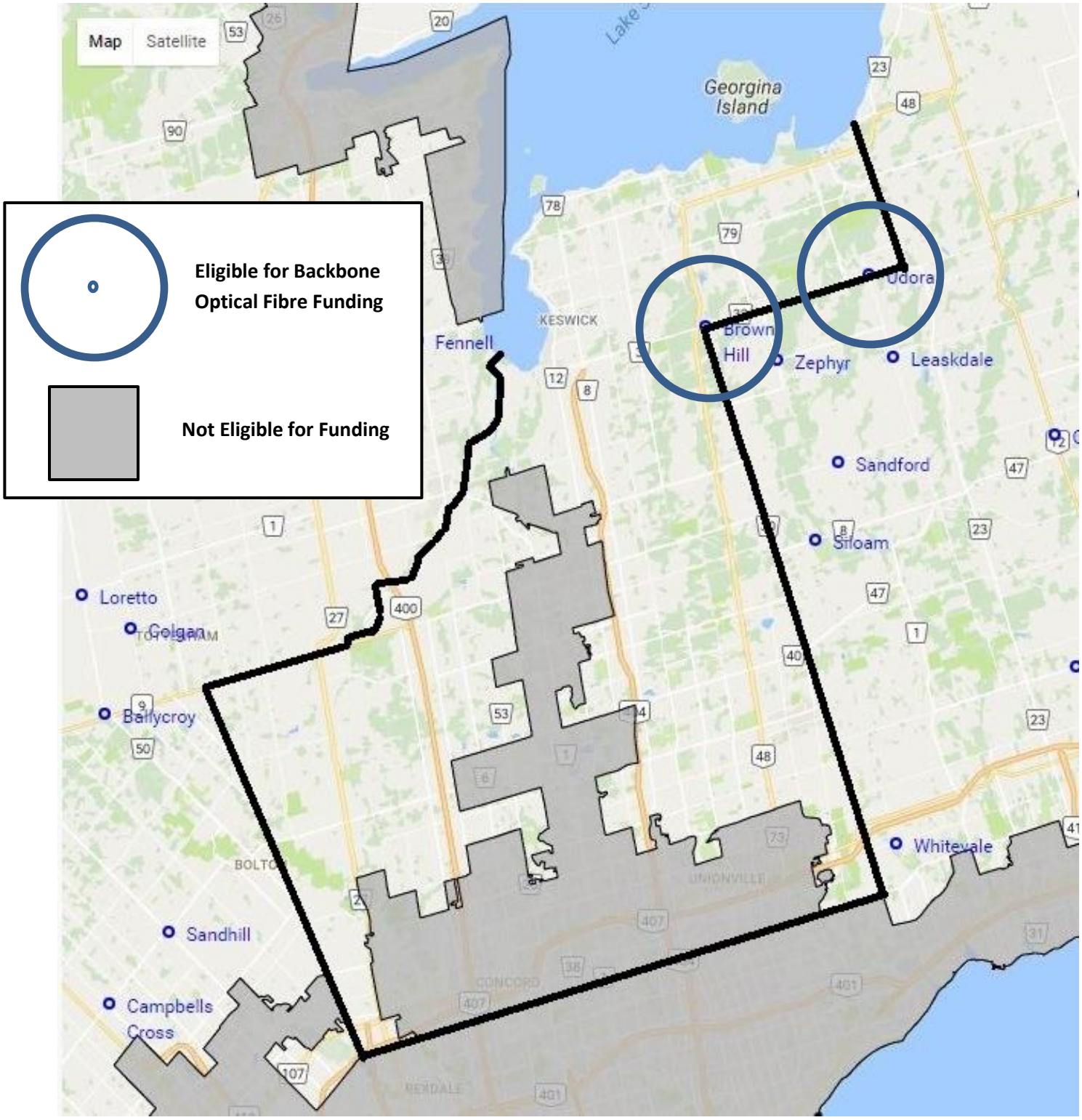
When I try to open the application form using Firefox or Opera as the browser, a new screen opens and displays a message saying "Please Wait" indicating that my PDF viewer may not be able to display the content. What do I do?
If you are trying to open the application form in the browser, a pop-up window will be displayed asking you to Open or to Save (download) the form to your computer. Please choose the option that is most convenient for you.

I received this error when inserting a document/text file (.txt, .doc, etc.) "Your AutoCorrect file, MSO2057.acl, could not be saved. The file may be read-only, or you may not have permission to modify the file."
Solution
For a permanent solution, you may consider disabling the security feature "Enable Protected Mode at startup".
Follow the instructions below:
1. Open Adobe Reader
2. Select Edit Preferences from the menu
3. Select Security Preferences
4. Uncheck the "Enable Protected Mode at startup" checkbox

I can't attach all the supporting documents we want to provide?
If you receive the error "Could not submit the file. You have attached files x KB over the allowable limit of 100 MB! Please delete the files and attach new files". The total of all attachments cannot exceed 100 MB limit. Please contact us by telephone: 1-800-328-6189 or email: ic.cti-bpi.ic@canada.ca.

Attachment 2

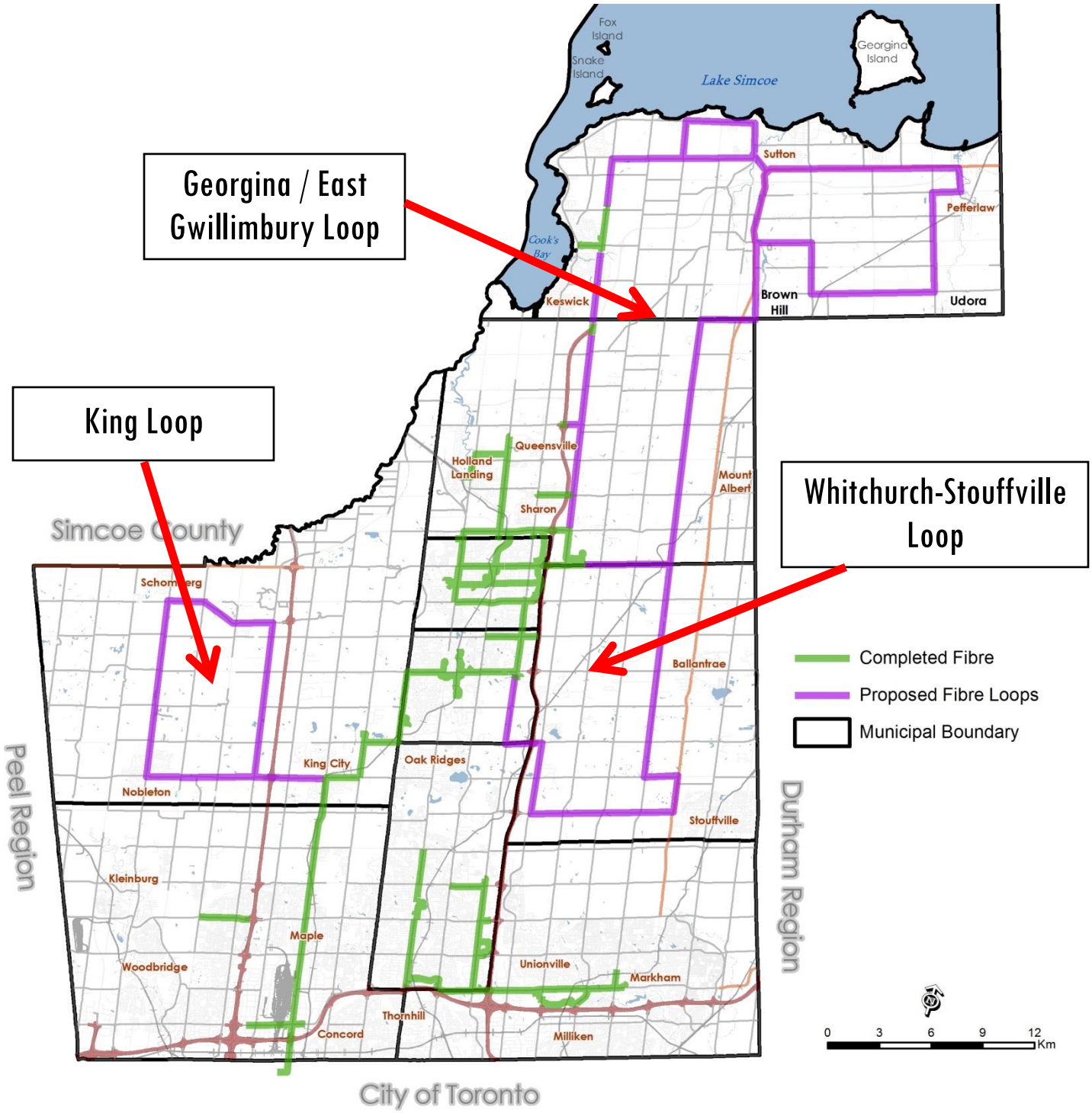
Connect to Innovate Eligibility Map



York Region

Attachment 3

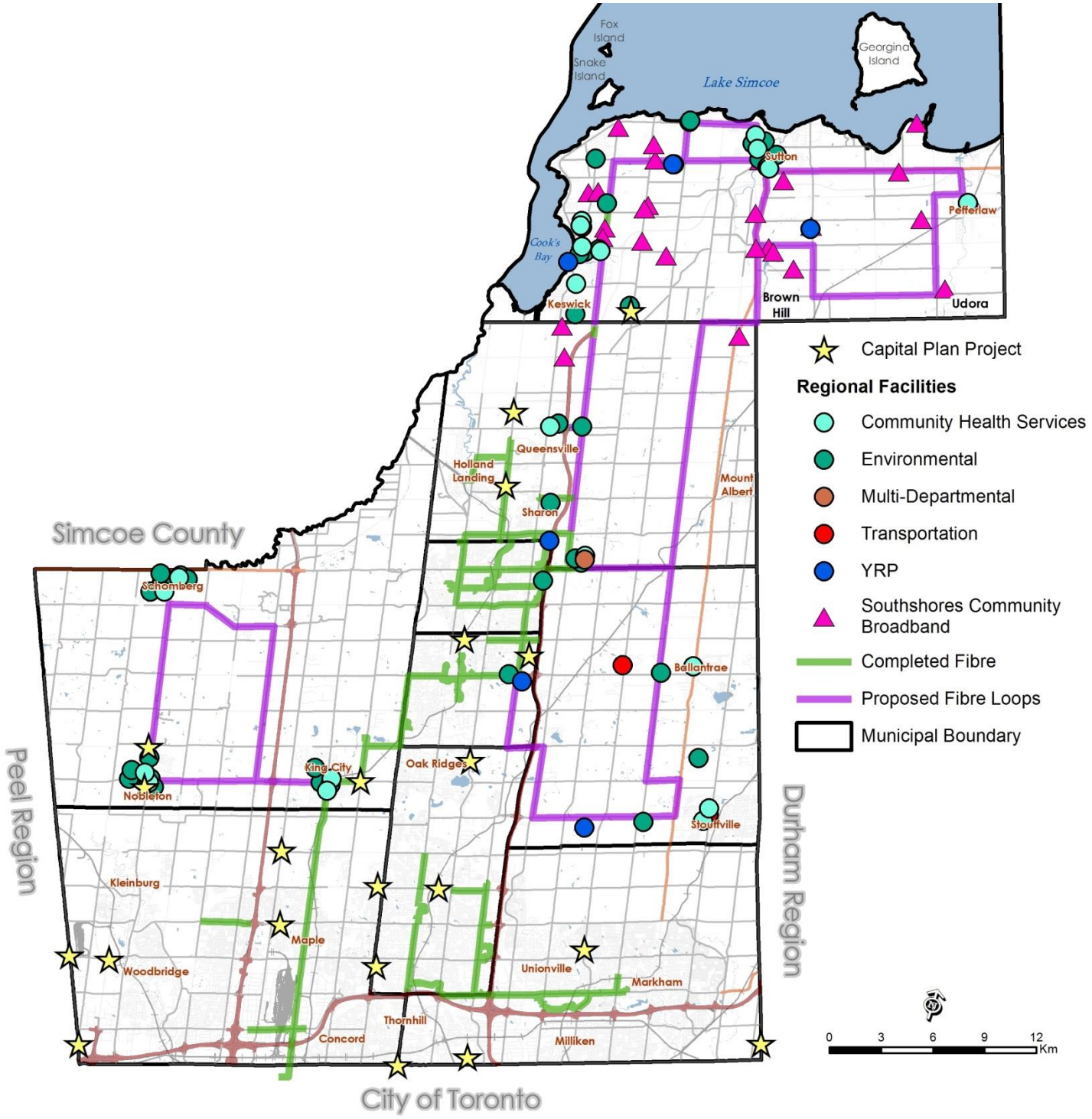
Proposed Fibre Routes



York Region

Attachment 4

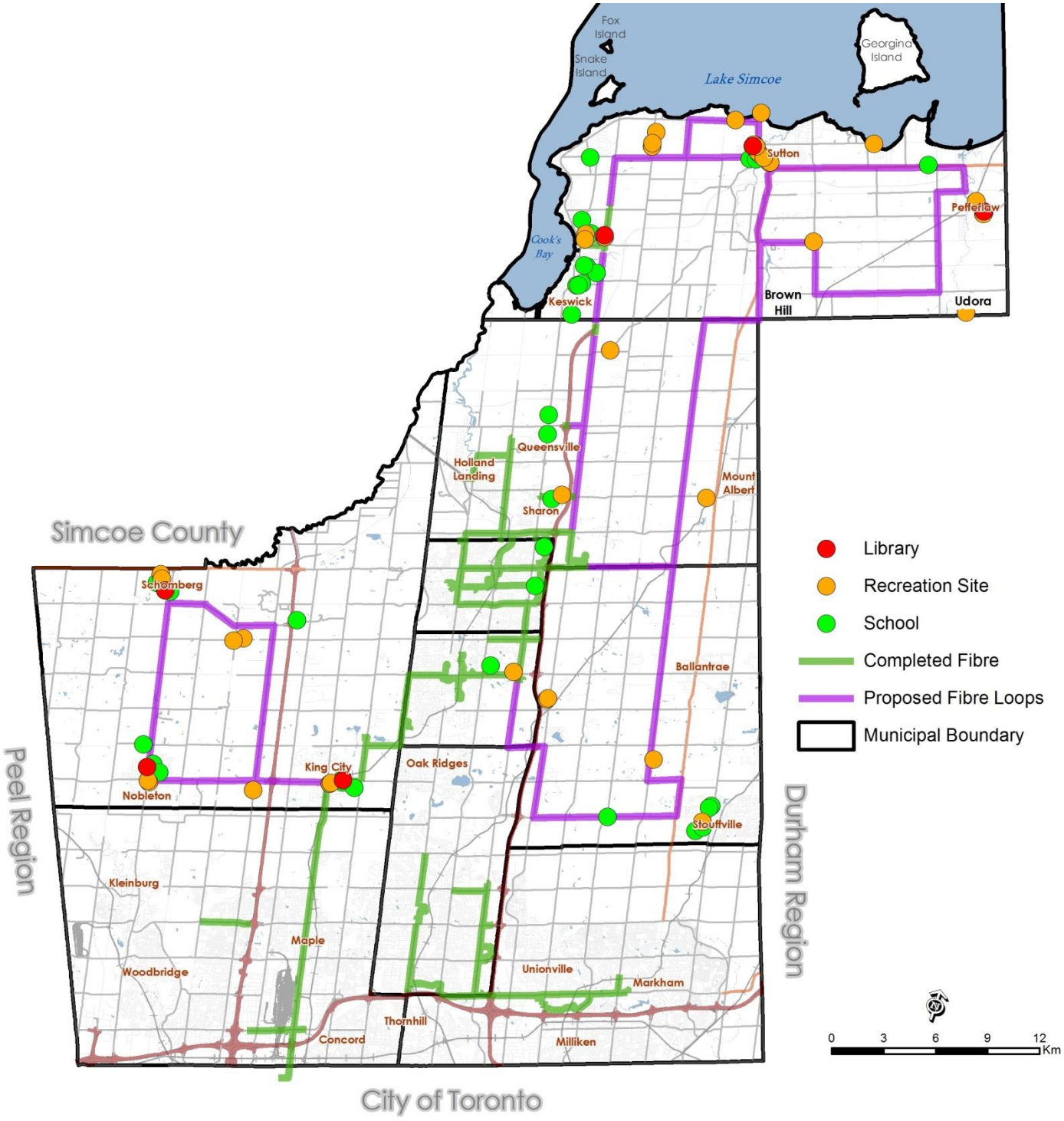
Regional Facilities on Proposed Fibre Routes



York Region

Attachment 5

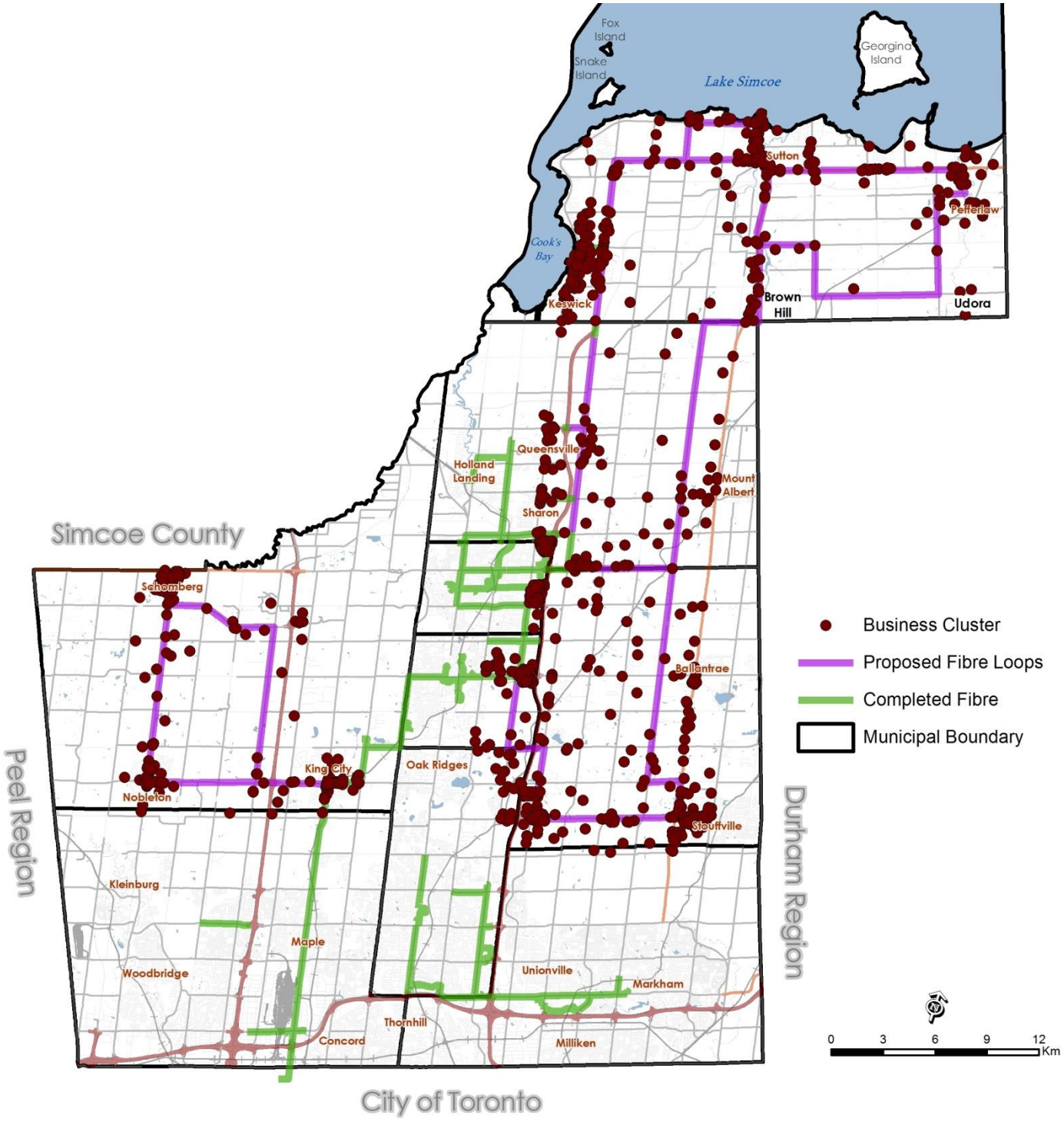
Municipal Facilities & Schools on Proposed Fibre Routes



York Region

Attachment 6

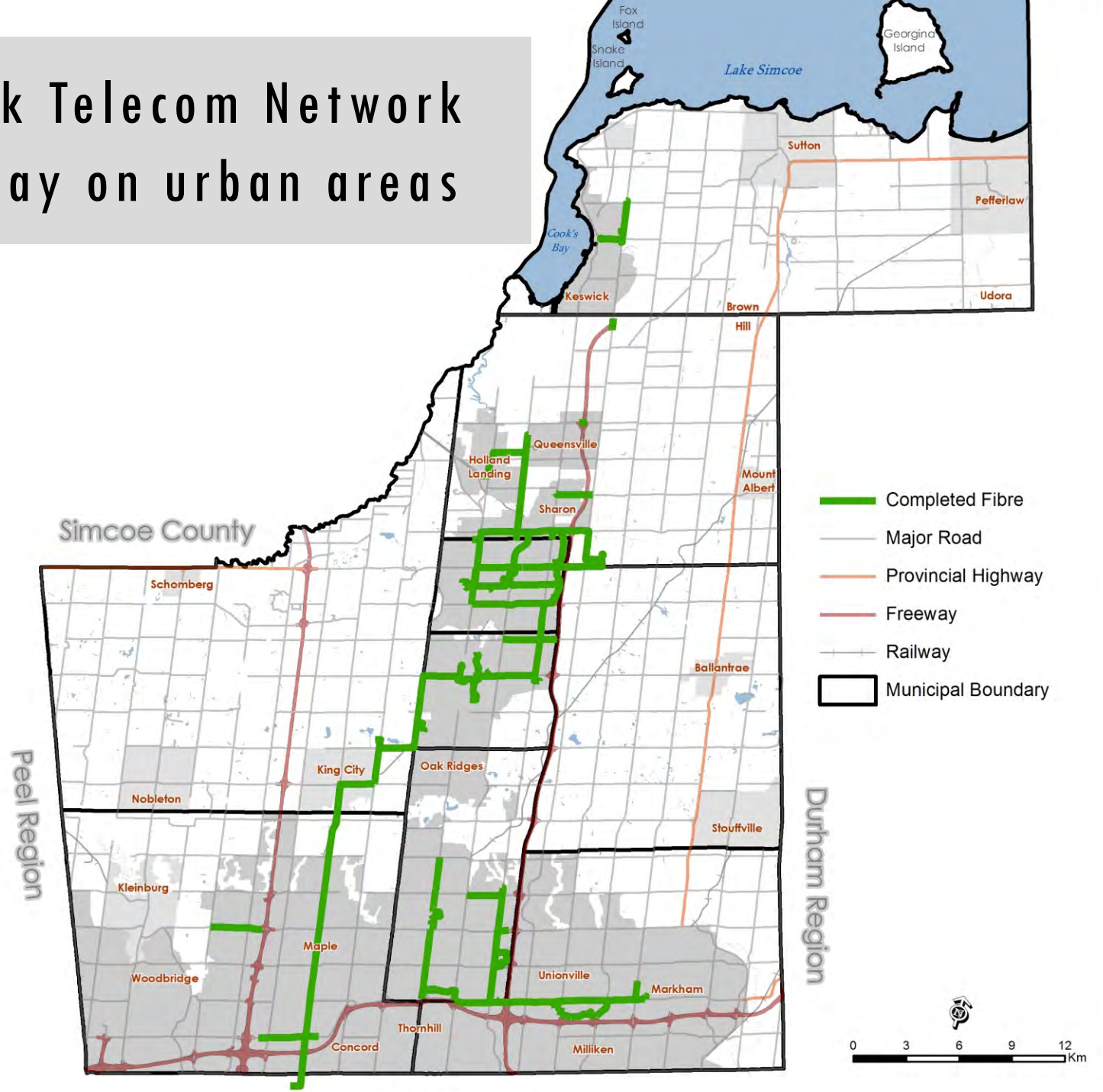
Businesses on Proposed Fibre Routes



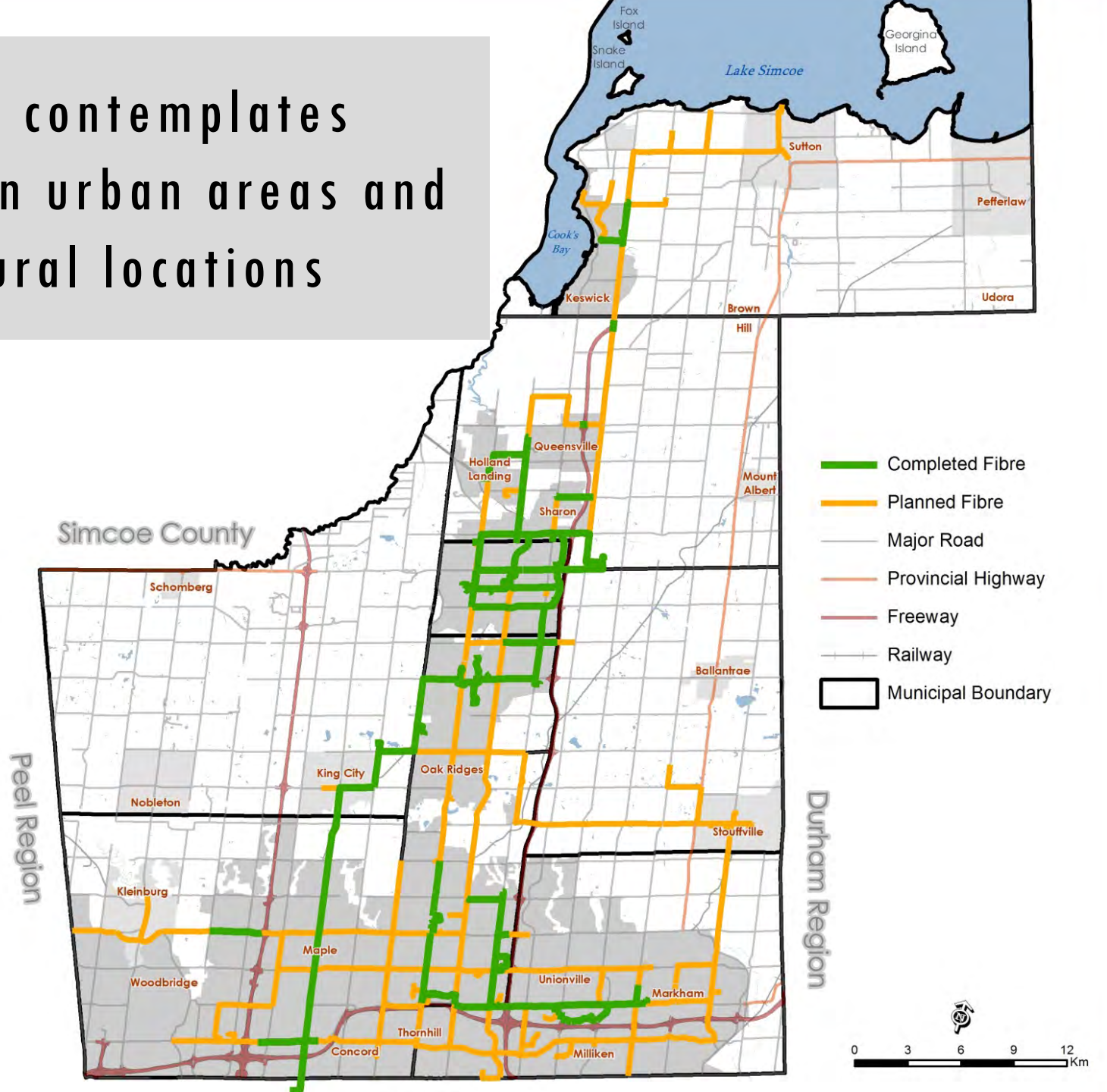
York Region

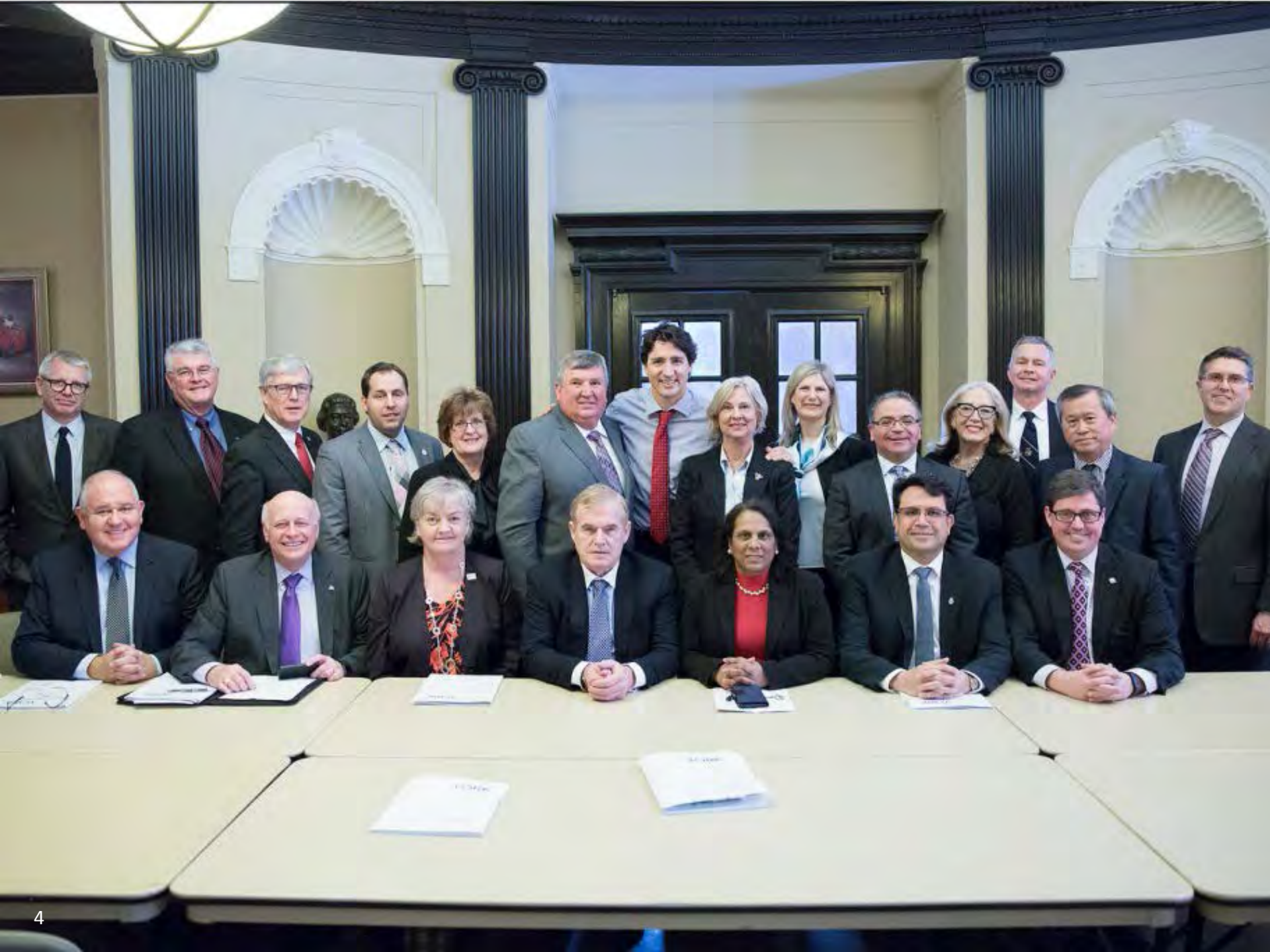
CONNECT TO INNOVATE
FEDERAL FUNDING PROGRAM
York Region

Current York Telecom Network focuses today on urban areas



YTN plan contemplates extensions in urban areas and some rural locations





CONNECT TO INNOVATE PROGRAM

CONNECT TO INNOVATE ELIGIBILITY MAP

Eligible for new backbone

Ineligible urban areas

ELIGIBILITY CRITERIA

- Must connect institutional anchors
- Must have a network owner/builder/operator partner
- Must provide access to business and residential customers
- Number of institutional sites, businesses and residents served is an important evaluation factor

EVIDENCE OF UNDER-SERVICE

East Gwillimbury

We're trying to speed things up!

Help the Town support a grant application to access federal grant money to build more high-speed internet infrastructure in East Gwillimbury.

How you can help!

We are asking EG residents and business owners with (and without!) internet service to provide their name, full street address, internet connection speed, and internet service provider. Visit www.speedtest.net to check your internet speed. Feedback can be provided in the following ways:

1. **Visit www.eastgwillimbury.ca/internetspeed to complete a quick survey**
2. **Email sartinian@eastgwillimbury.ca with the above details**
3. **If you do not have internet service at your house or business call 905-478-4283 ext. 3299 to leave a message stating your name, address and that no internet service is available in your area.**

Slow Internet? We need your help to speed things up in Georgina!

Canada's telecom regulator (CRTC) recently declared that high-speed internet is now a basic service, just like a current landline. The issue in Georgina is that large pockets of land – mainly in rural areas – don't currently have access to high-speed internet. Some areas don't have access to the internet at all.

That's why we are participating with the Regional Municipality of York on trying to access federal grant money to build more high-speed internet infrastructure throughout York Region.

We're asking all residents with internet service to complete the Speed Test & Survey below.

To provide your information, please conduct a Speed Test by visiting www.speedtest.net

Press the "Begin Test" button and wait for the speed information to display. The display will show your upload and download rates. ONCE YOU OBTAIN YOUR RESULTS PLEASE SUBMIT THEM THROUGH THE SURVEY AT: www.surveymonkey.com/r/BSSLSRP

If you do not have access to internet services at your home or business, we need to hear from you too. Please leave us a message stating your name, address and that no internet service is available in your area by calling Sean Columbus at 905-476-4301 ext. 2330

The deadline to complete the survey or provide your feedback is March 10th, 2017

Caution: speedtest.net is a third partied website. Only click the "Begin Test" icon - please ignore any pop up ads, etc.

***The Town of Georgina is committed to protecting your privacy. We do not sell, rent or exchange any personal information supplied by you to any third party. Nor do we use any of the information you provide for direct marketing.*

GEORGINA

We are trying to speed things up in King when it comes to internet service.

But we need your help.

Canada's telecom regulator (CRTC) recently declared that high-speed internet is now a basic service, just like a current landline.

The issue in King is that large pockets of land – mainly in rural areas – don't currently have access to high-speed internet. Some areas don't have access to the internet at all.

That's why we are trying to access federal grant money to build more high-speed internet infrastructure in King. To do this, we need to collect data on areas in King that don't currently have access to high-speed internet.

We're asking all residents with internet service to either call our dedicated phone number, email us or visit our website to provide us with your name, address, internet connection speed* and internet service provider.

If you do not have access to internet services at your home or business, we need to hear from you too. Please leave us a message stating your name, address and that no internet service is available in your area.**

To provide your information, please call 905-833-4020, email kingconnects@king.ca or visit www.king.ca by Feb. 24.

*If you do not know your internet connection speed, please visit www.speedtest.net – press the go button and wait for the speed information to display. The display will show your upload and download rates.

**King Township is committed to protecting your privacy. We do not sell, rent or exchange any personal information supplied by you to any third party. Nor do we use any of the information you provide for direct marketing.

HOW IS YOUR INTERNET SERVICE?

We need to know. We want to help.

Do you have internet service? If **no** leave us a phone message with your postal code: **1-855-642-8697, Ext 2262**, David Tuley.

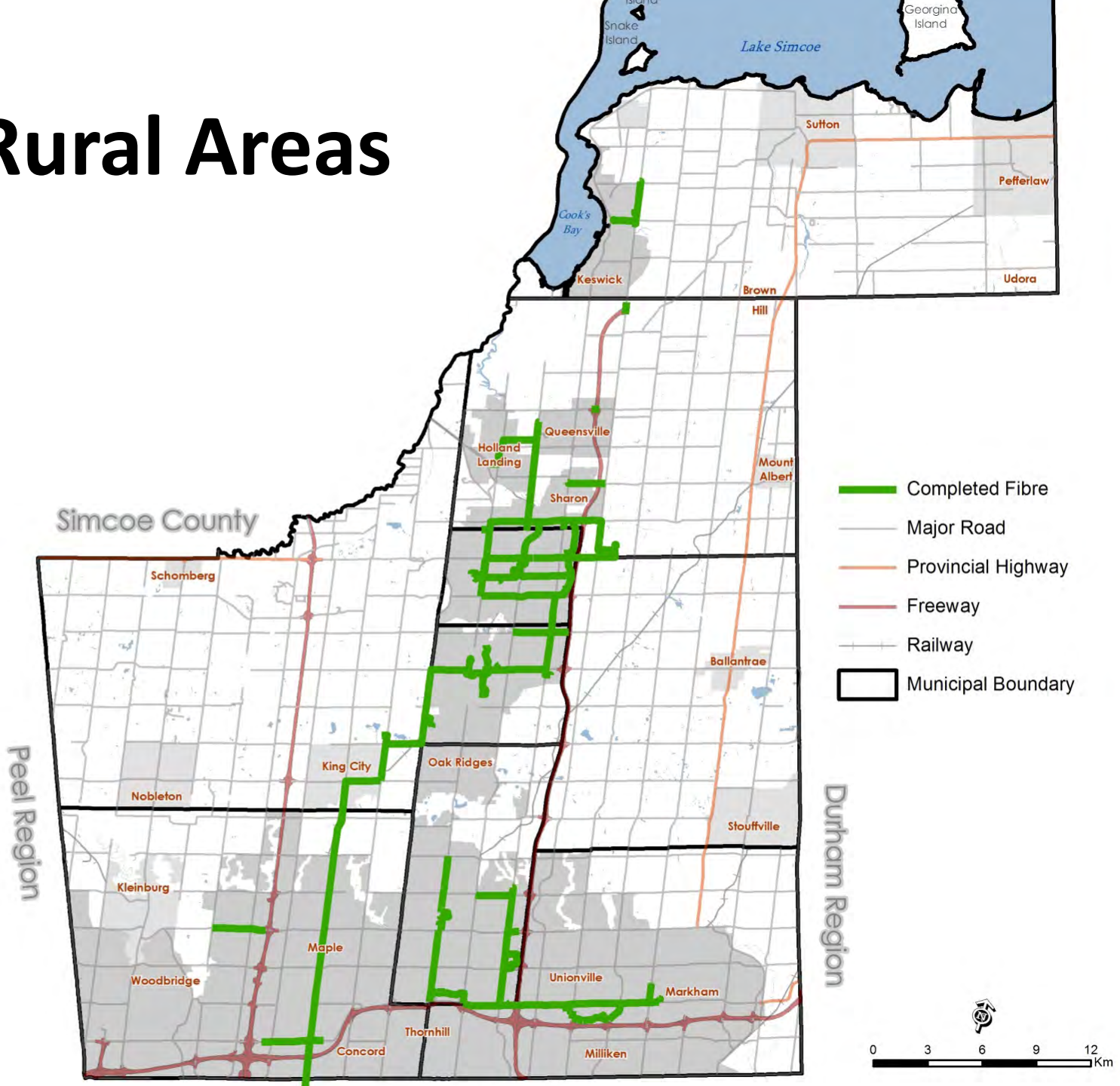
If **yes**, (1) Who is your provider?

(2) What is your download/upload speed? go to Speedtest.net, click on "**Begin Test**".

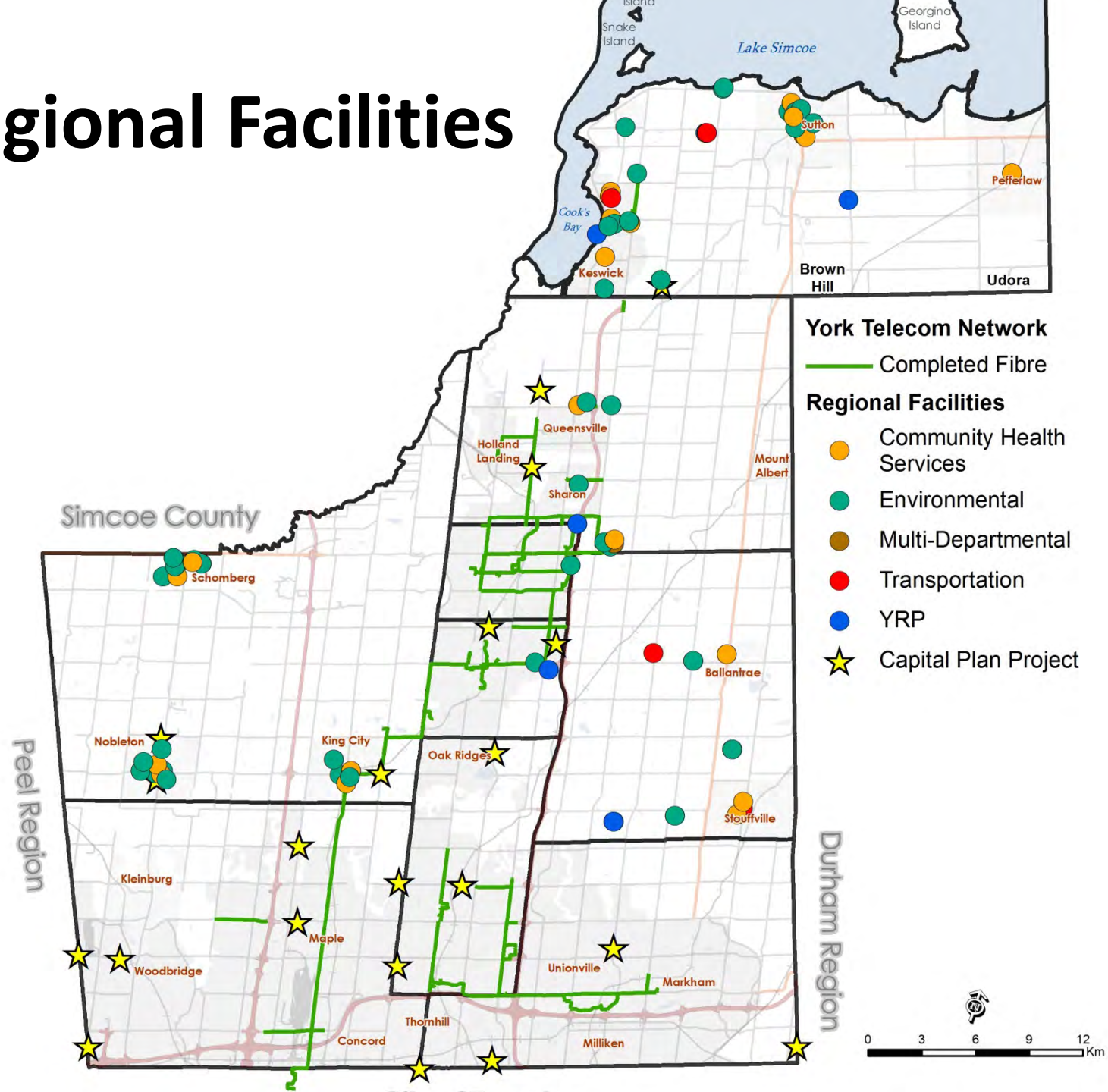
(3) What is your postal code?

Email answers to **ecdev@townofws.ca**

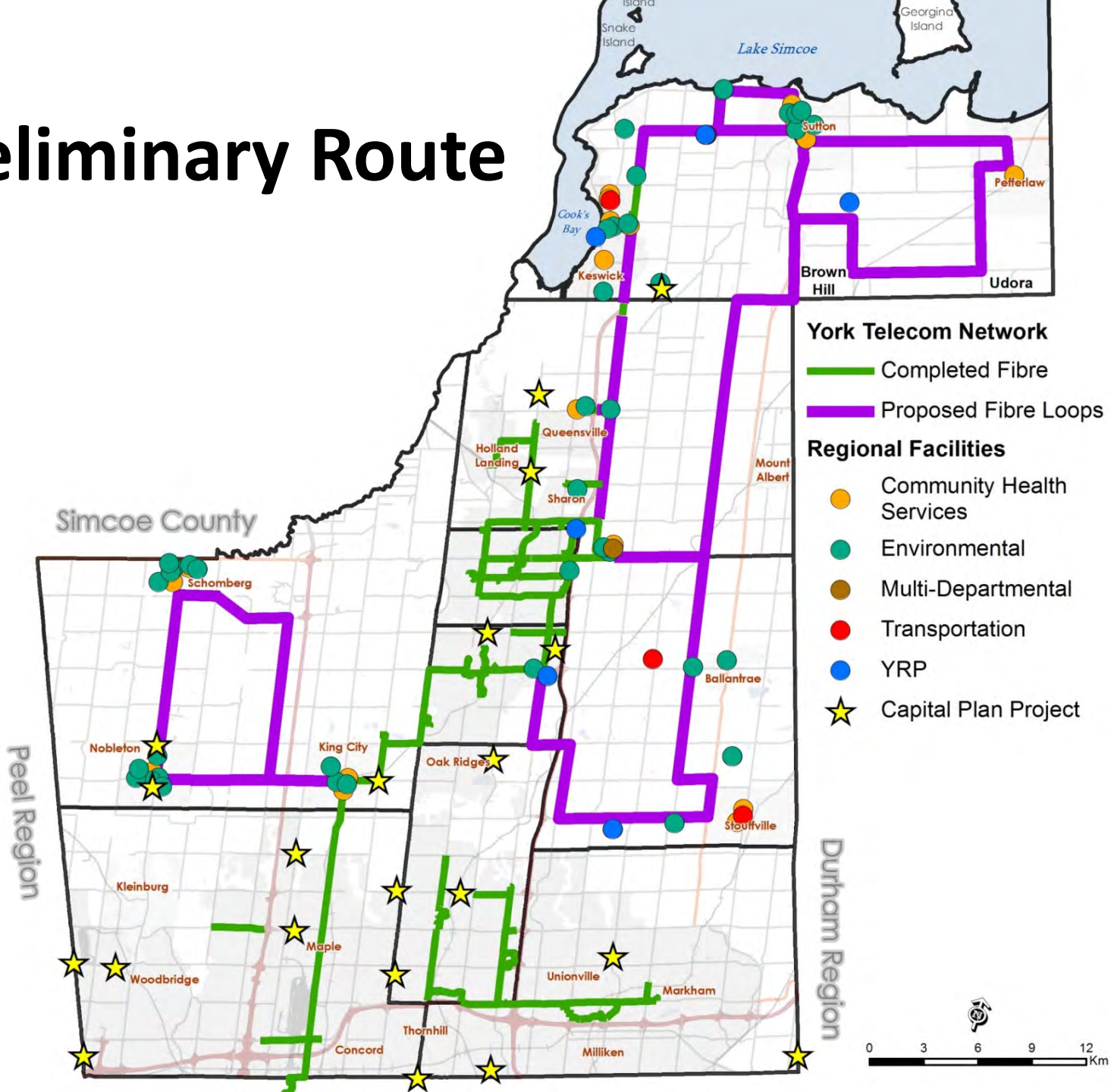
Rural Areas


Lake Simcoe
Snake Island
Georgina Island
Sutton
Pefferlaw
Cook's Bay
Keswick
Udora
Brown Hill
Queensville
Holland Landing
Sharon
Mount Albert
Simcoe County
Schomberg
Ballantrae
King City
Oak Ridges
Nobleton
Stouffville
Peel Region
Durham Region
Kleinburg
Maple
Woodbridge
Unionville
Markham
Thornhill
Concord
Milliken
Completed Fibre
Major Road
Provincial Highway
Freeway
Railway
Municipal Boundary
0 3 6 9 12
Km

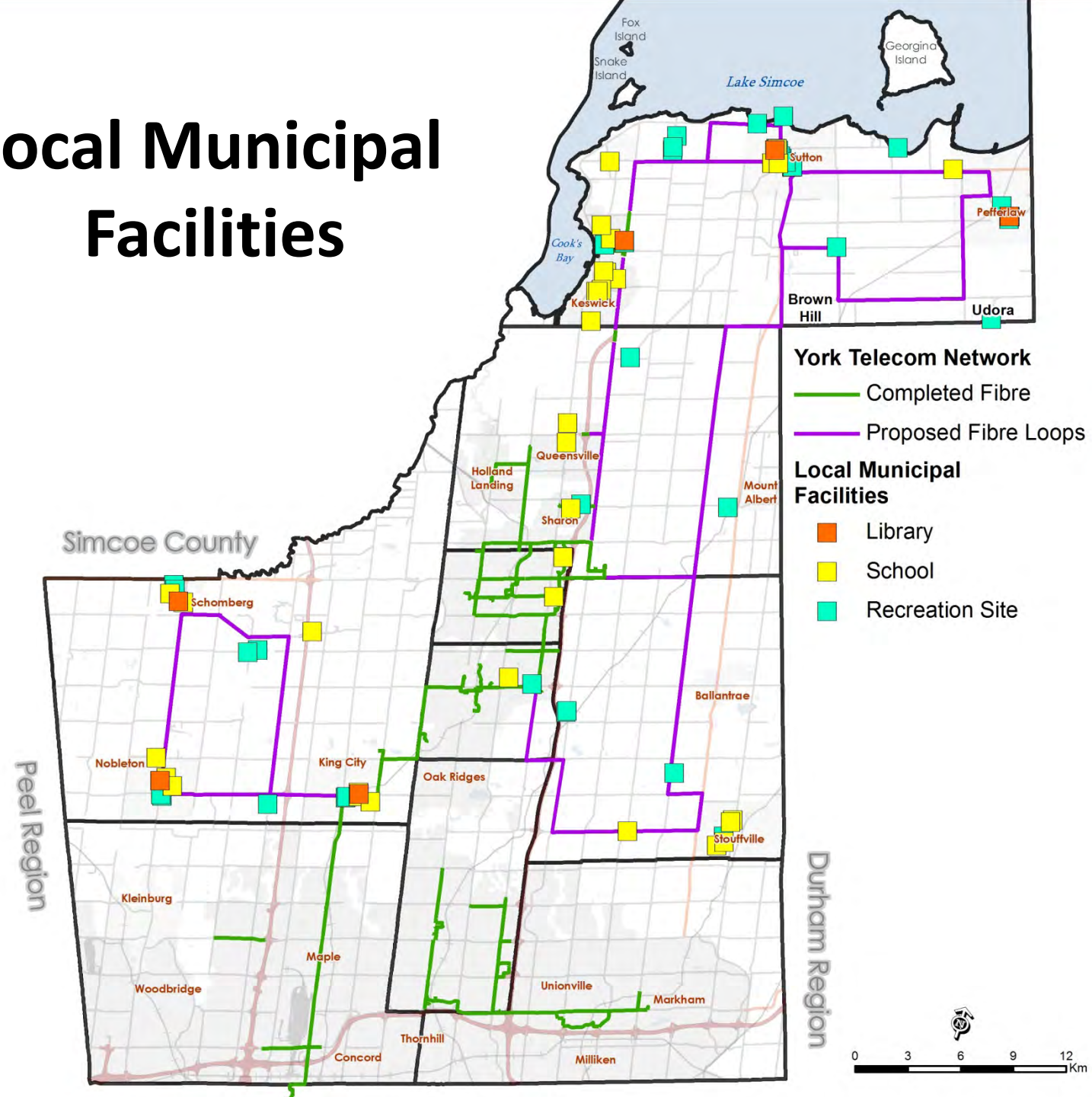
Regional Facilities



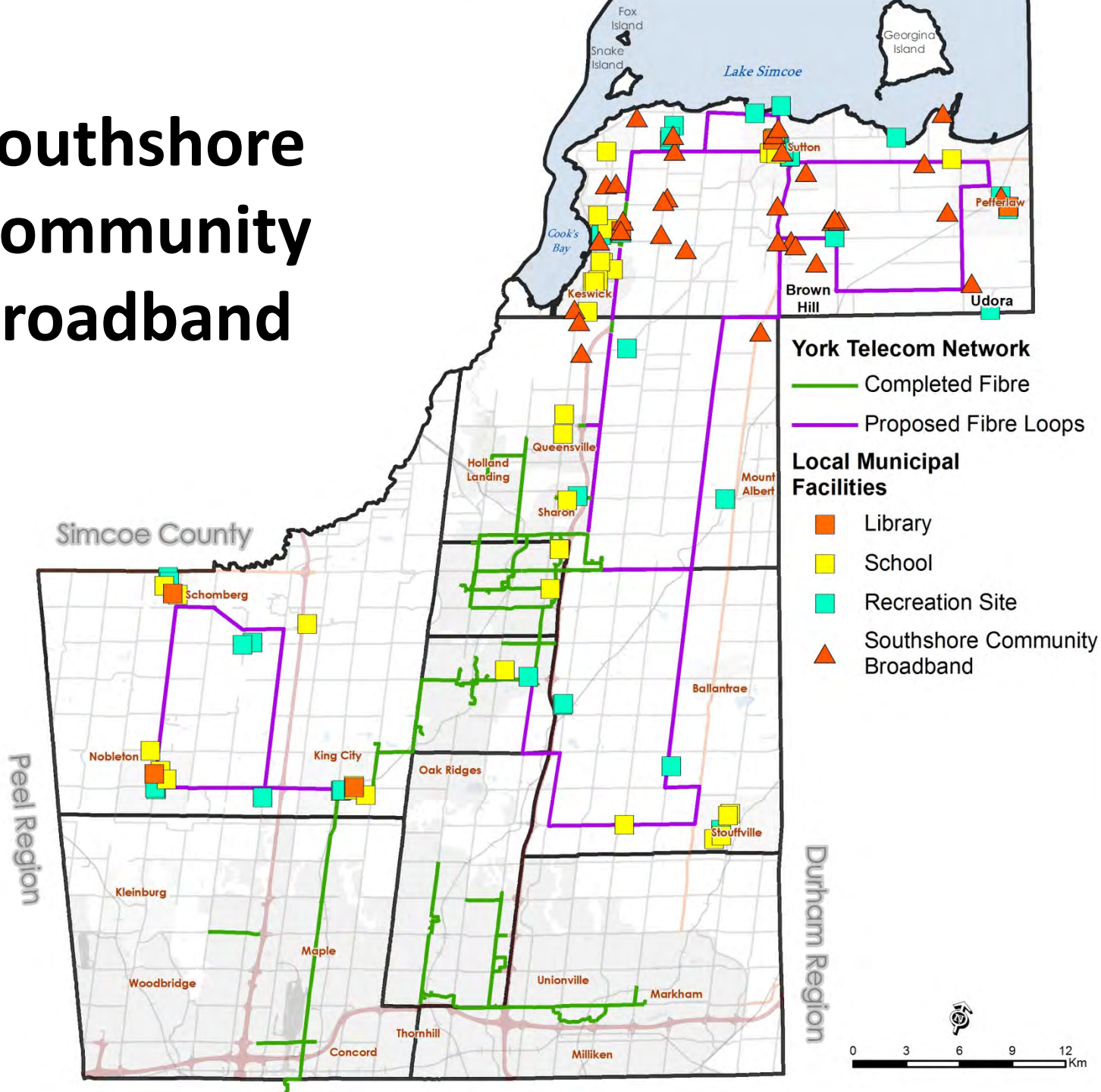
Preliminary Route



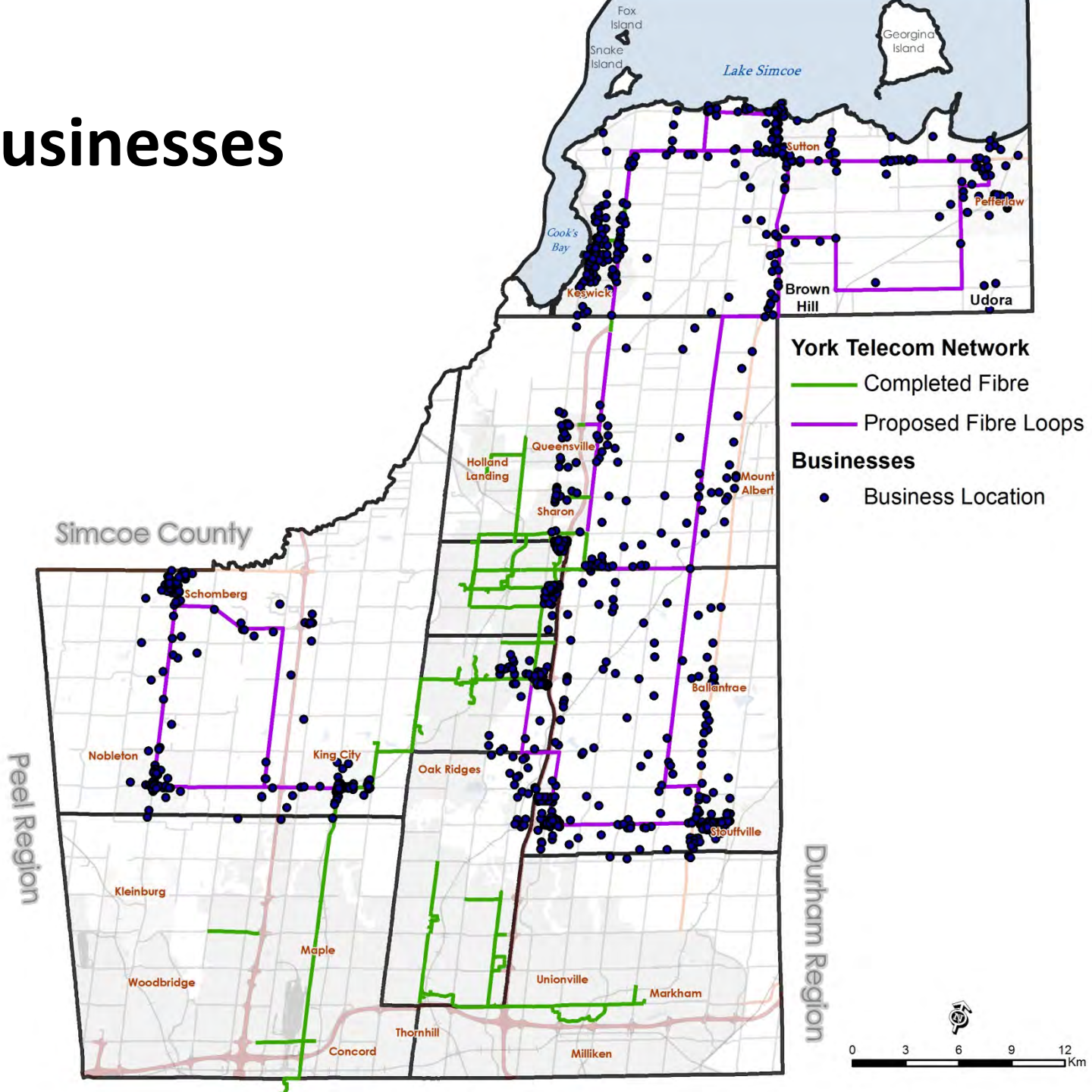
Local Municipal Facilities



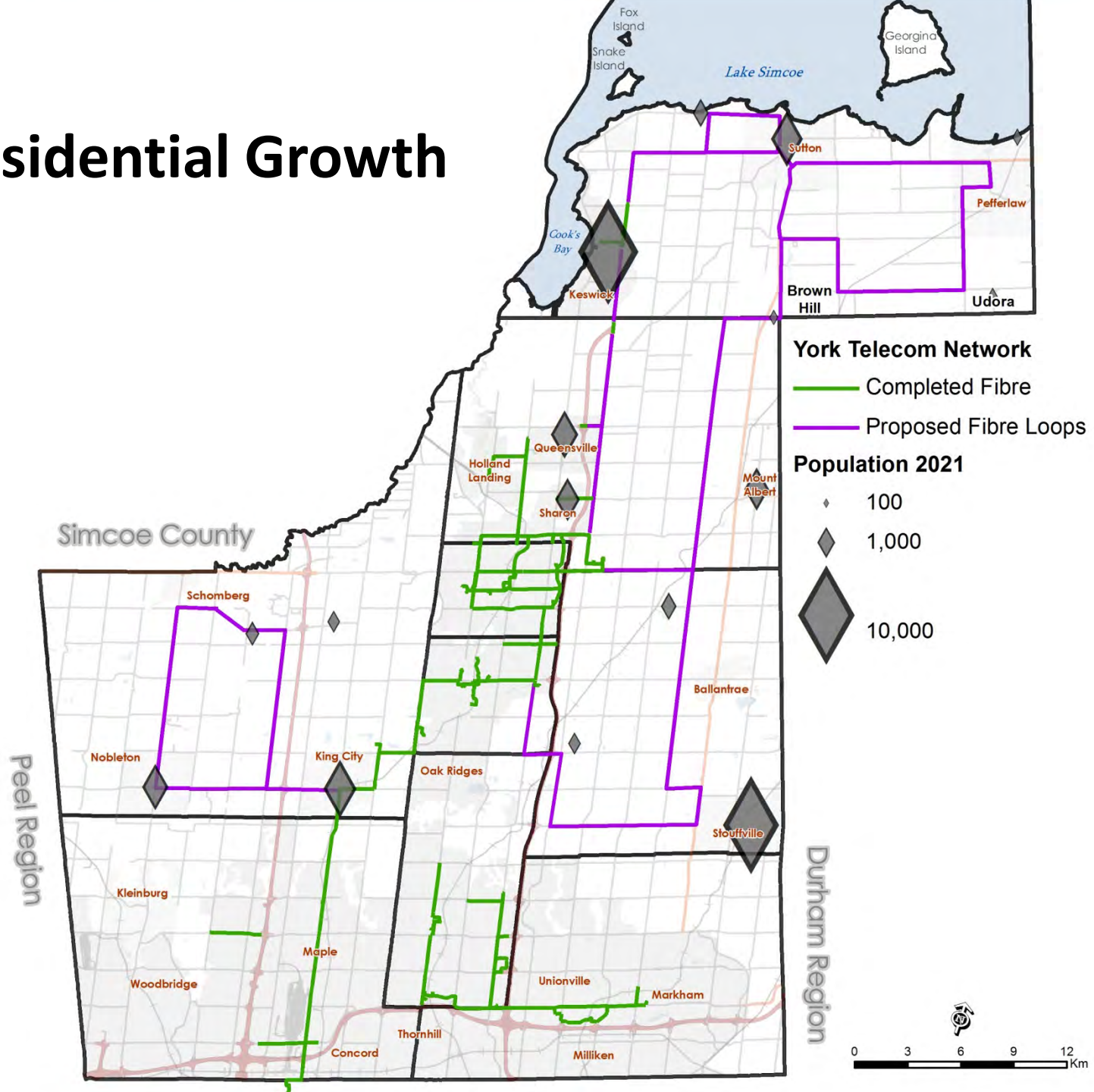
Southshore Community Broadband

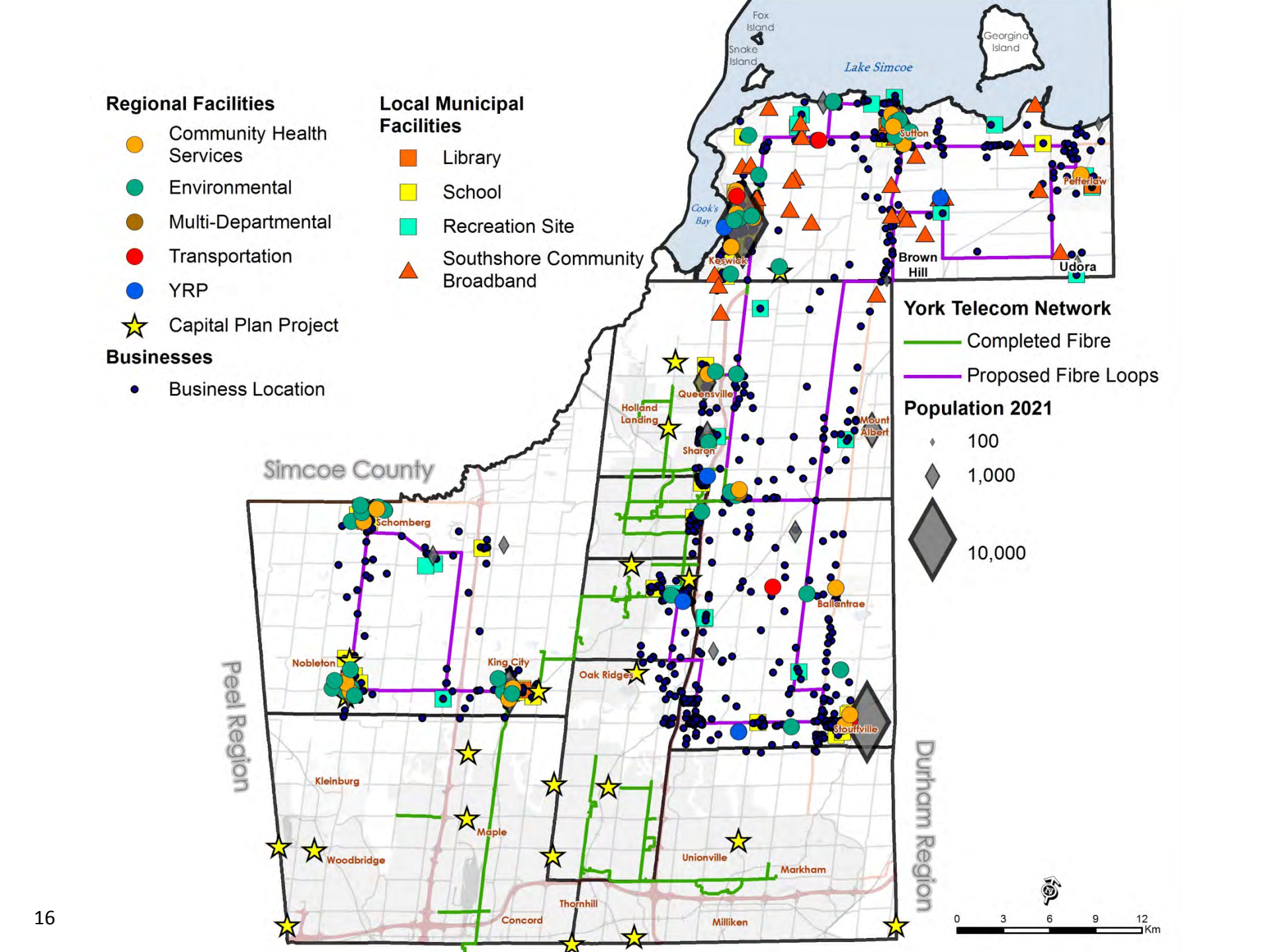


Businesses

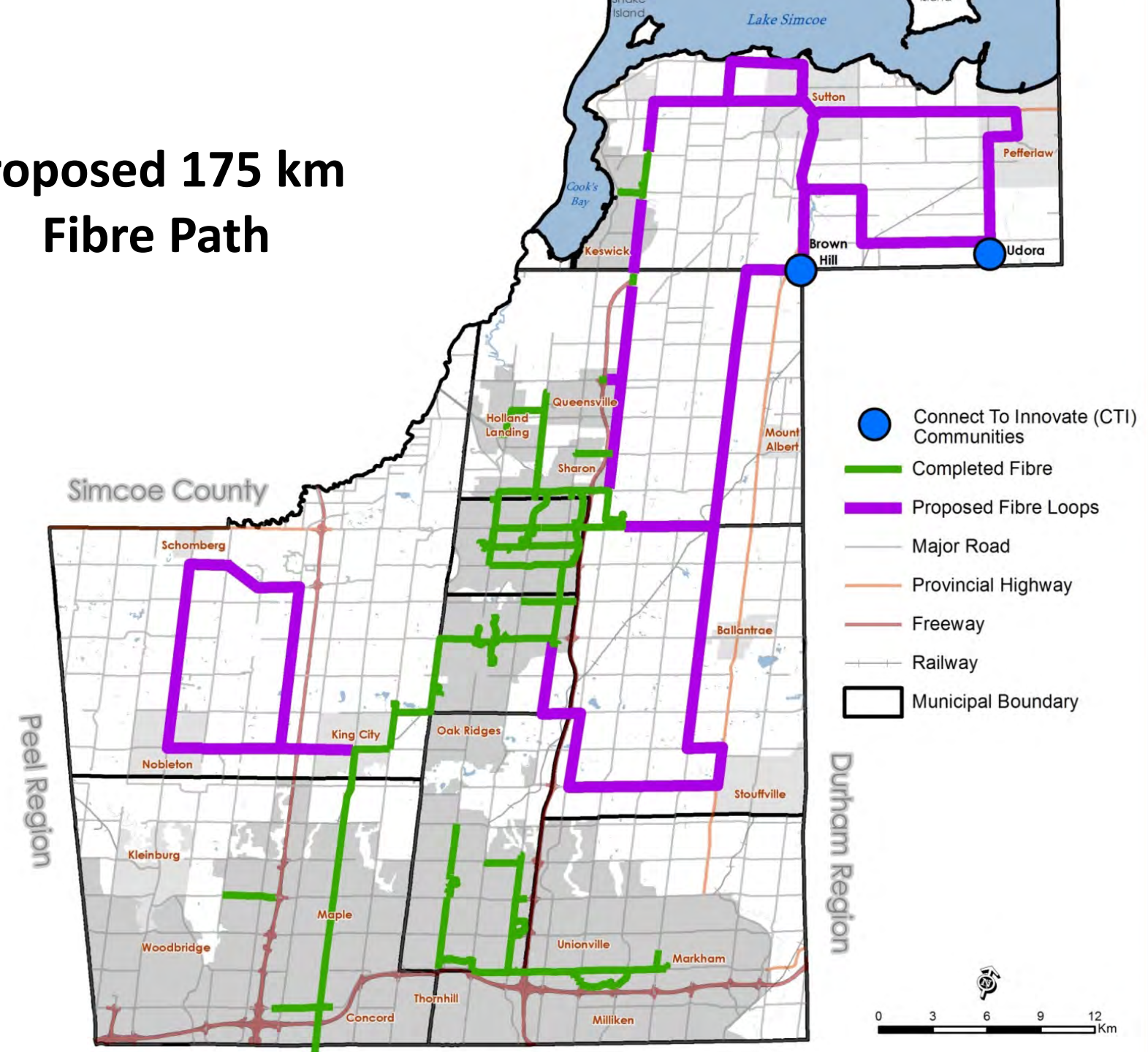

Fox Island
Snake Island
Lake Simcoe
Georgina Island
Sutton
Pefferlaw
Cook's Bay
Keswick
Brown Hill
Udora
York Telecom Network
Completed Fibre
Proposed Fibre Loops
Businesses
Business Location
Queensville
Holland Landing
Mount Albert
Sharon
Simcoe County
Schomberg
Ballantrae
Nobleton
King City
Oak Ridges
Stouffville
Peel Region
Durham Region
Kleinburg
Maple
Woodbridge
Unionville
Markham
Thornhill
Concord
Milliken
0 3 6 9 12 Km

Residential Growth




Regional Facilities
Community Health Services
Environmental
Multi-Departmental
Transportation
YRP
Capital Plan Project
Businesses
Business Location
Local Municipal Facilities
Library
School
Recreation Site
Southshore Community Broadband
York Telecom Network
Completed Fibre
Proposed Fibre Loops
Population 2021
100
1,000
10,000
Fox Island
Snake Island
Lake Simcoe
Georgina Island
Cook's Bay
Sutton
Pefferlaw
Keswick
Brown Hill
Udora
Queensville
Holland Landing
Sharon
Mount Albert
Simcoe County
Schomberg
Ballantrae
Nobleton
King City
Oak Ridges
Stouffville
Peel Region
Durham Region
Kleinburg
Maple
Woodbridge
Unionville
Markham
Thornhill
Concord
Milliken
0 3 6 9 12 Km

Proposed 175 km Fibre Path



ESTIMATED COSTS

Total Construction Cost (175 km)	$14M
Estimated Program Recovery at 60%	$ 8M
Regional Investment Required	$ 6M over 3 years

OPPORTUNITY:

- Help partners reach potential customers in rural areas
- Almost double the YTN Network at less than the typical cost

RECOMMENDATIONS

1. **Authorize application** to Connect to Innovate Federal funding program

2. **Allocate funds** through 2018 Budget Process to support a successful application