



FINAL REPORT

Introduction

This report marks the culmination of a journey that began with the township's call for proposals to enhance broadband infrastructure in Rideau Lakes. Through a competitive bidding process that attracted interest from five telecom providers, WTC emerged as the selected partner, offering a proposal that not only covered more homes with gigabit fiber to the home (FTTH) but also required significantly less financial contribution from the township compared to other bidders. In addition, WTC contributed over \$400,000 over budget costs as a result of unforeseen costs due to higher inflation costs due to COVID-19 related costs.

The project has reached its completion milestone, now capable of providing FTTH services to over 1600 homes across the township. The project was also successful in attracting funding from other levels of government through the Universal Broadband Fund and the ICON Fund. These contributions also leveraged the fibre network to improve fixed wireless service to an additional 600 homes.

In this report, we will review the network coverage, review the technology used and discuss the budget results.

Coverage

The FTTH network, initially intended to pass 933 homes, exceeded expectations by reaching 1251 homes. This extension was facilitated by the network's expansion along more roads than originally planned, with only around 30 homes left out from the original plan due to private road access issues. Moreover, the project capitalized on further government support, securing additional funding from both federal and provincial sources. Through initiatives like the Universal Broadband Fund and the ICON program, over 400 more homes were integrated into the FTTH network, while nearly 600 received enhanced fixed wireless service. This means that over 2200 homes and businesses have improved broadband service in Rideau Lakes.

Presently, 640 homes have been equipped with upgraded service, with installations scheduled for another 200 residences. The network continues to attract new customers daily, showcasing its value and contribution to bridging the digital divide. WTC anticipates it is only a matter of time before the vast majority of homes passed by the network are connected.

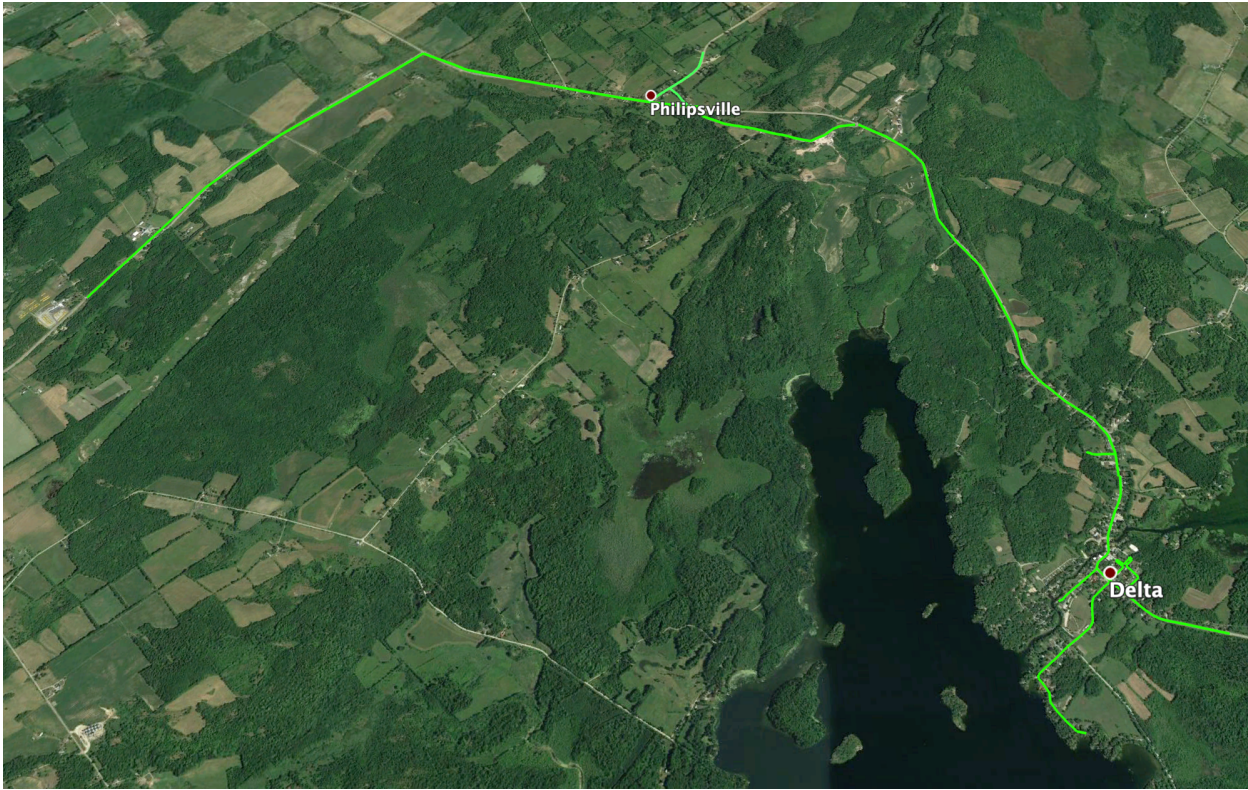
The following maps show the project's network coverage throughout Rideau Lakes.



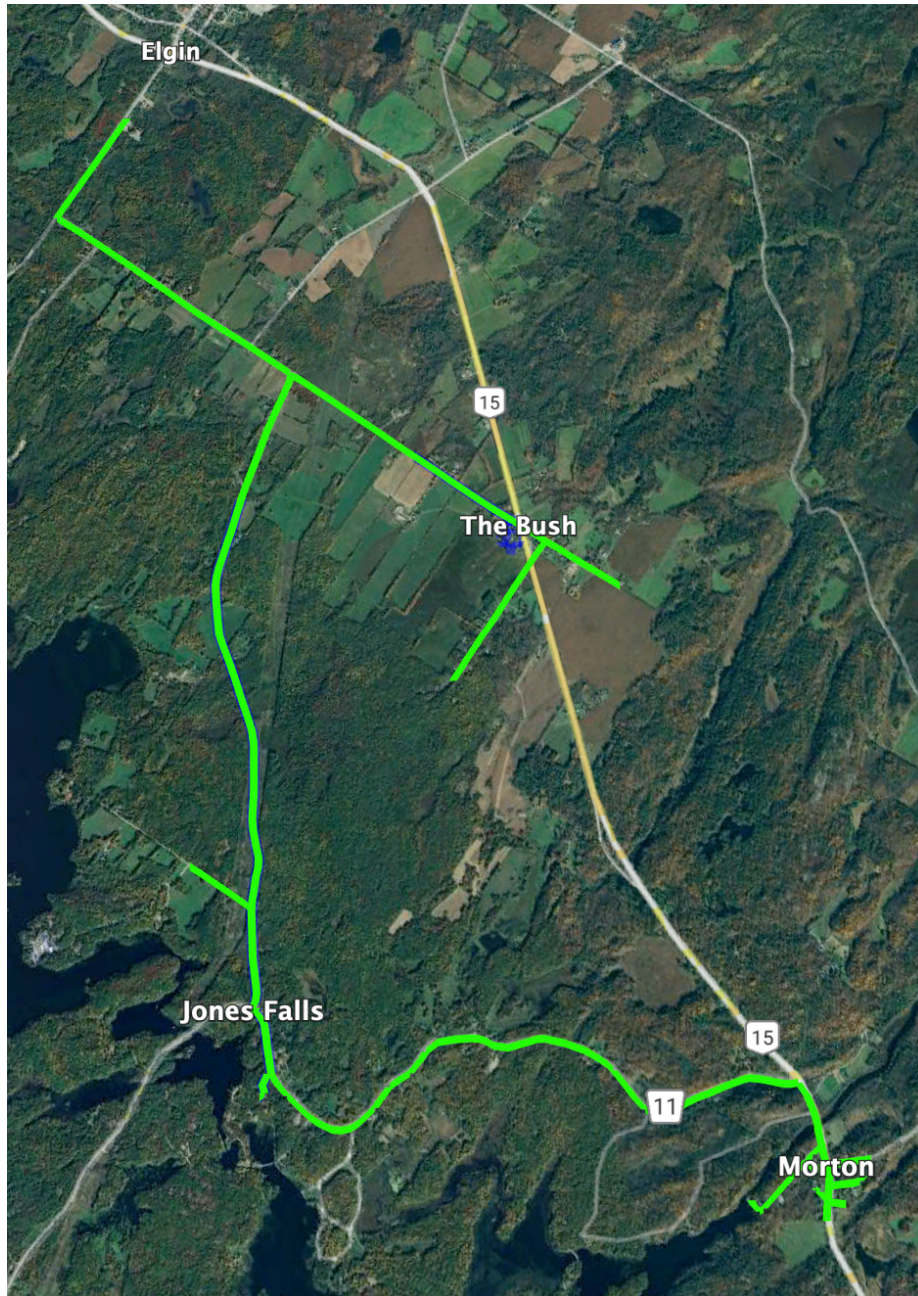
Elgin, Crosby and Forfar



Portland



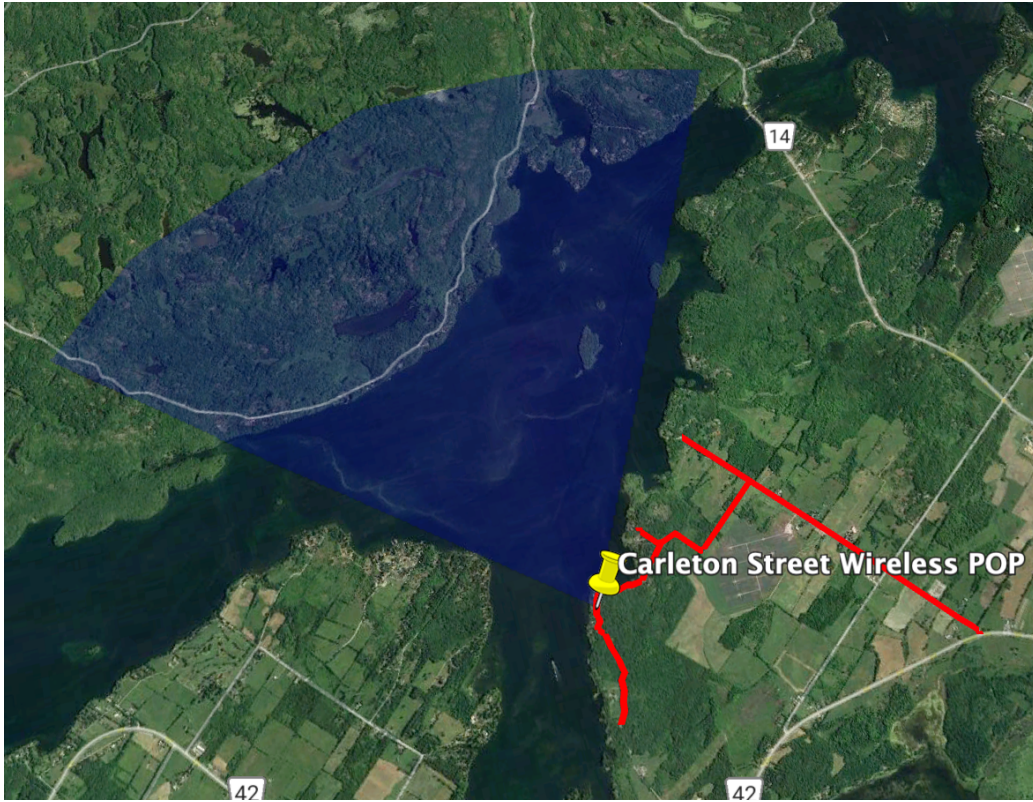
Philippsville & Delta



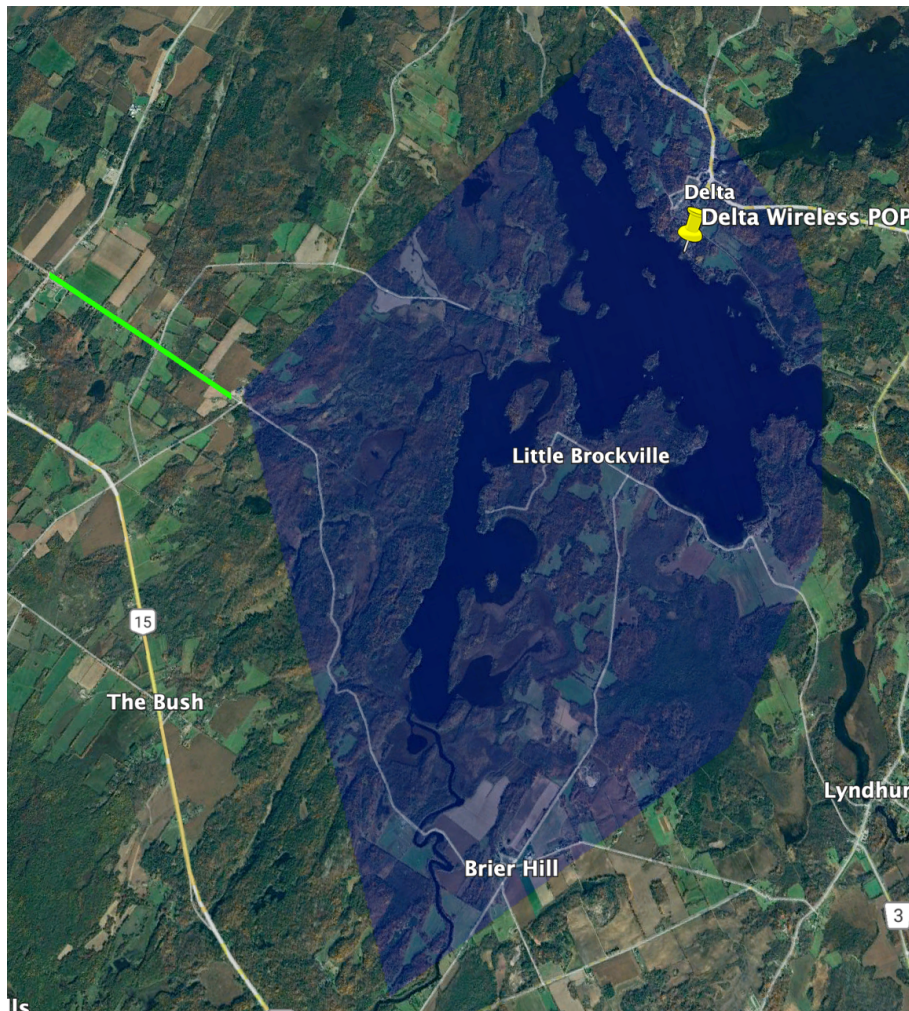
Jones Falls & Morton



Rideau Ferry and Lombardy Map



Upper Rideau Lake Project Map



Summers Road Project Map

Technological Solution

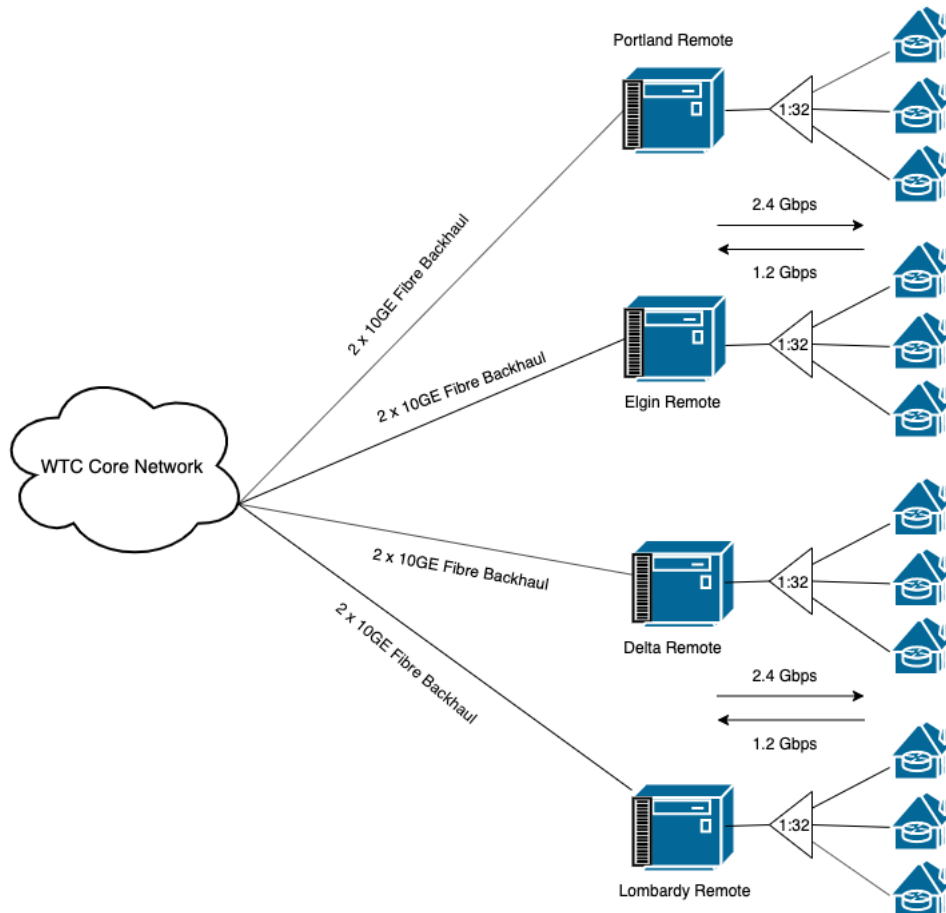
WTC's final network implementation utilizes GPON FTTH architecture. Telecom remotes located in Elgin, Portland, Delta, and Lombardy serve as hubs, equipped with the necessary electronics, power, and backup supplies to deliver services to nearby homes and businesses. Each remote, utilizing the Calix E7-2 GPON platform, provides 10 Gbps downstream and 10 Gbps upstream.

Fibre lines run from these remotes to vaults dispersed throughout the villages, ensuring coverage for every household and business in the coverage areas and allowing for future expansion. Upon signing up for service, WTC technicians install fiber-optic in customers' home, where a Calix ONT enables internet, television, and phone connectivity.



Telecom Remote Cabinet

The remotes, housed in metal boxes measuring 137 cm tall and 96 cm by 86 cm, serve as crucial connection points to WTC's core network. This core network spans eastern Ontario with redundant rings and multiple physically diverse routes back to various geo-diverse internet peering points.



WTC GPON Architecture

Utilizing GPON architecture, WTC employs multiple 10 Gbps backhauls to each remote in Rideau Lakes. Each GPON port features a 1 to 32 port split, configured to support download speeds of 2.4 Gbps and upload speeds of 1.2 Gbps, effectively accommodating all WTC internet plans up to 1 Gbps.

Project Budget

The fiber-to-the-home network build, jointly funded by Rideau Lakes and WTC, incurred a total cost of \$4,241,804, which was 10% higher than the initial budget of \$3,822,721. The increased costs were primarily attributed to higher-than-anticipated inflation rates throughout the project duration. Rideau Lakes contributed \$873,488, while WTC contributed \$3,282,002 towards the project. Additionally, the project received \$86,313 in contributions from the province of Ontario's ICON fund.

The following table outlines the actual spending on the project and breaks down the contributions by each party.



Rideau Lakes Broadband Project Budget

	Budget	Actual	Rideau Lakes	WTC	ICON
Elgin and Forfar – 320 homes (2020)	\$904,000.00	\$941,351.16	\$200,000.00	\$741,351.16	\$0
Portland, Delta and Philipsville – 553 homes (2021)	\$1,448,000.00	\$1,492,138.60	\$300,000.00	\$1,192,138.60	\$0
Rideau Ferry and Lombardy - 378 (2022)	\$1,079,800.00	\$1,390,381.90	\$300,000.00	\$1,090,381.90	\$0
Upper Rideau Lake, Summers Rd, and Beverly Lakes – 195 homes (2023)	\$390,921.00	\$417,932.36	\$73,488.14	\$258,130.64	\$86,313.58
Total (1,446 Homes)	\$3,822,721.00	\$4,241,804.02	\$873,488.14	\$3,282,002.30	\$86,313.58

Summary

The completion of the Rideau Lakes Broadband Project marks a significant milestone achieved through collaboration between the township and WTC. The project exceeded its initial scope, providing fiber-to-the-home (FTTH) services to 1,251 homes, surpassing the targeted 933 residences. Additional funding from the Universal Broadband Fund (UBF) and the ICON Fund enabled the expansion of coverage to over 2,200 homes and businesses, surpassing the original plan.

The project encountered a 10% budget overrun, totaling \$4,241,804, attributed mainly to inflation rates that were higher than anticipated during the project timeline. Rideau Lakes contributed \$873,488, with WTC contributing \$3,282,002, and an additional \$86,313 from the Ontario ICON fund.

The project was also able to secure additional funding from the Universal Broadband Fund which represented an additional \$1,582,415 investment in broadband in the township by the federal government and WTC. This additional investment brought improved broadband internet service to over 750 homes that were not a part of the original Rideau Lakes Broadband project plan. With the investments made through the UBF portion of the project, the total investment in broadband in Rideau Lakes totaled \$5,824,219.

Furthermore, ongoing investments by WTC in network upgrades demonstrate a commitment to providing cutting-edge connectivity solutions in Rideau Lakes. The FTTH network will support speeds higher than 1 Gbps with the addition of XGS PON technology being added to the network by the end of 2024. As well, the fixed wireless improvements were for 50/10 Mbps service have recently been upgraded to 100/20 Mbps service. Future upgrades over the coming years will allow for gigabit speeds over fixed wireless.



WTC looks forward to many more years of serving customers throughout the municipality. Our dedication to providing reliable, high-speed internet services remains steadfast, and we're excited about the possibilities that lie ahead for the Rideau Lakes community.