CITY OF TORONTO

PUBLIC SECTOR FIBER OPTIC NETWORK

OPPORTUNITY

Date (DD/MM/YY)	24/11/20
Met-Scan Project No.	5502
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1. Executive Summary

1.1 About Us

Met-Scan Canada Ltd. (Met-Scan) is a Toronto headquartered engineering firm focused on security integration and fiber/wireless communications.

Our team of engineers have over thirty-five years of experience in providing turn-key solutions, from design to commissioning, to all levels of the public sector, including but not limited to Correctional Service of Canada, Custom and Border Services Agency, Royal Canadian Mounted Police, and Toronto Police Services.

1.2 City of Toronto - Today

Over the last decade, municipalities have identified that a fast, reliable, accessible and available internet connectivity is a priority for economic development and social equity. Broadband affordability has become the new catalyst for the evolution of the "digital divide" with access and affordability being the predominant influencing factors.

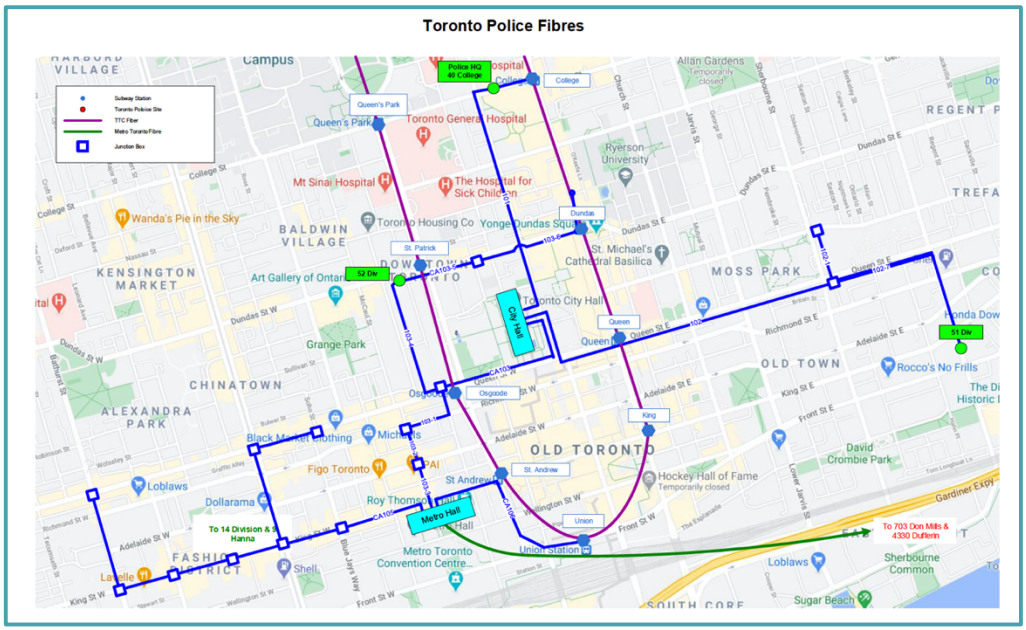
The City of Toronto (COT) with its untapped fiber-optic network infrastructure assets is capable to create its own fiber network to meet anticipated service demands, and ensure access and affordability for residents.

1.3 Proof of Concept

City of Toronto has fiber infrastructure assets across its agencies that are not being utilized to their capacity and as such are stranded assets.

Met-Scan assessed the fiber assets in the downtown core ten years ago for Toronto Police Services (TPS) to meet the needs for the G20/G8 summit. Based on the findings, a private fiber infrastructure spanning 650 km utilizing predominantly existing fiber assets was designed and implemented to create TPS's private Public Sector Fiber Optic Infrastructure (Figure 1 – in blue).

Figure 1. *TPS Private Public Safety Infrastructure*



Over the last ten years, TPS has overlaid many services over this fiber infrastructure, including Emergency Management Services radios and their Digital Video Management System providing an annual cost savings of $16 million in telecommunication costs.

By utilizing the untapped fiber assets TPS has had significant cost savings and can further leverage this asset for revenue generation opportunities.

1.4 City of Toronto – Pilot Sites

Two pilot site locations have been identified by COT for Met-Scan to assess the feasibility of implementing a private fiber infrastructure, Jane-Finch and Scarborough.

Met-Scan reviewed the existing fiber infrastructure assets in these two pilot areas and developed the fiber requirements to create a private infrastructure by connecting them.

High-level fiber designs are depicted in Figures 2 and 3 for two possible routes to the pilot areas based on existing fiber infrastructures. Figures 4 to 7 provide examples of connection to specific municipal buildings.

This same design was applied for TPS resulting in a successful and functional fiber infrastructure with minimal maintenance requirements.

Figure 2. *Option 1 – Fiber design utilizing existing Transportation Department's fiber infrastructure (Green). New COT fiber requirements displayed as the dotted black lines.*

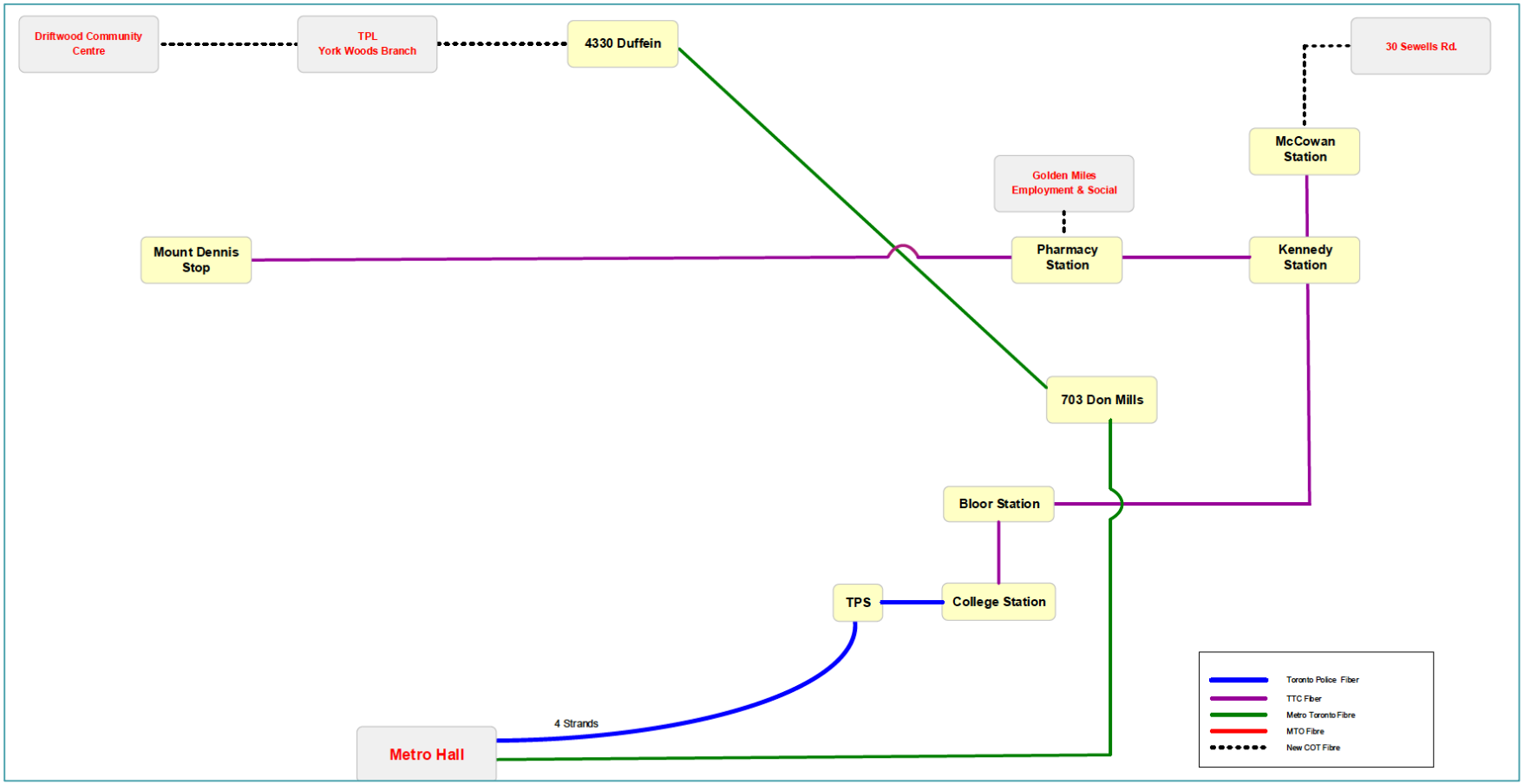


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Figure 3. *Option 2 – Fiber design utilizing existing Toronto Transit Commission's (TTC) fiber infrastructure (Purple). New COT fiber requirements displayed as the dotted black lines.*

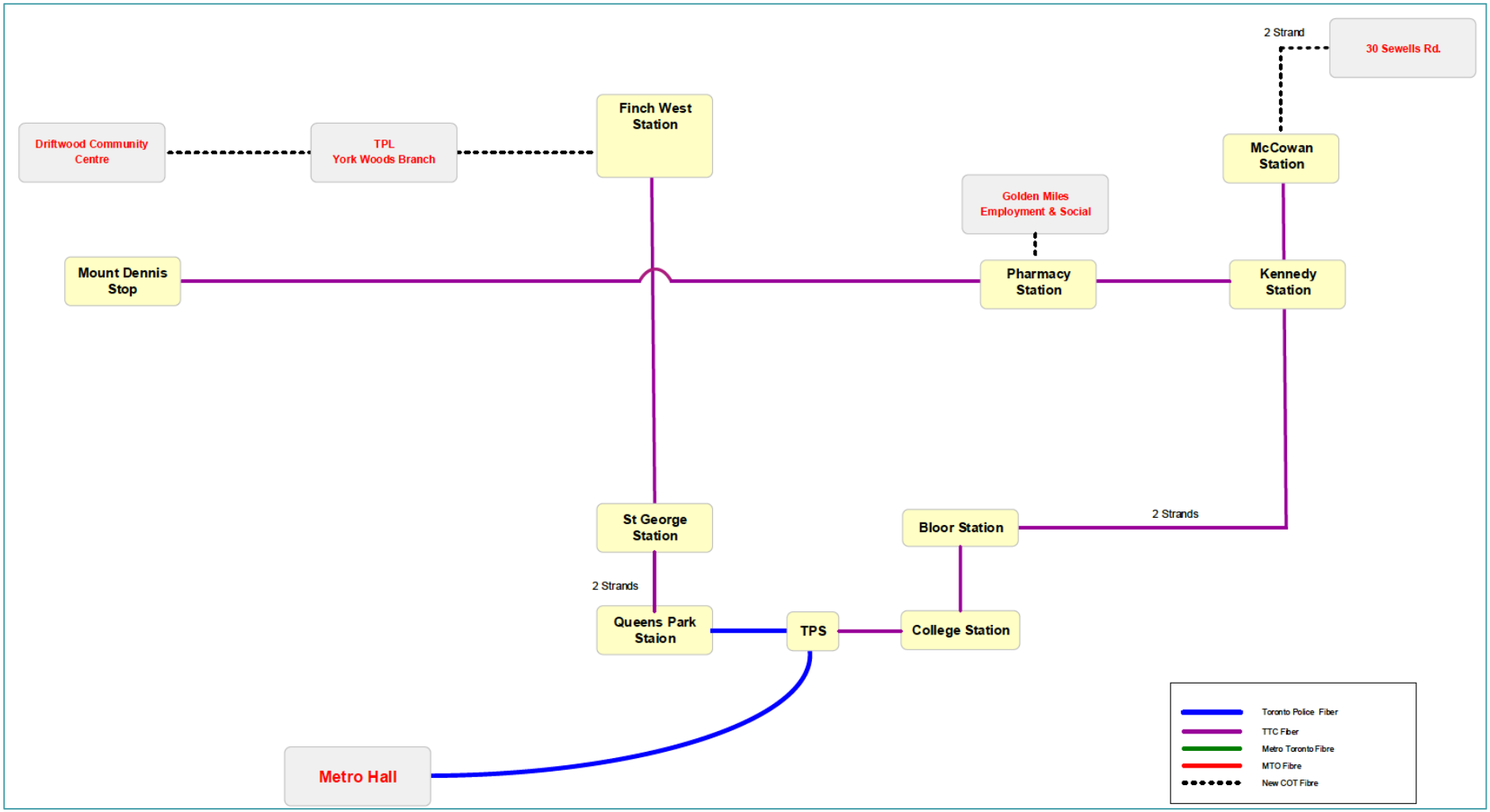

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Figure 4. *Jane & Finch - Example 1 - Fiber Requirements to Toronto Public Library York Woods Branch via TTC's infrastructure. Total of 1.6 km of fiber required from Finch subway station.*

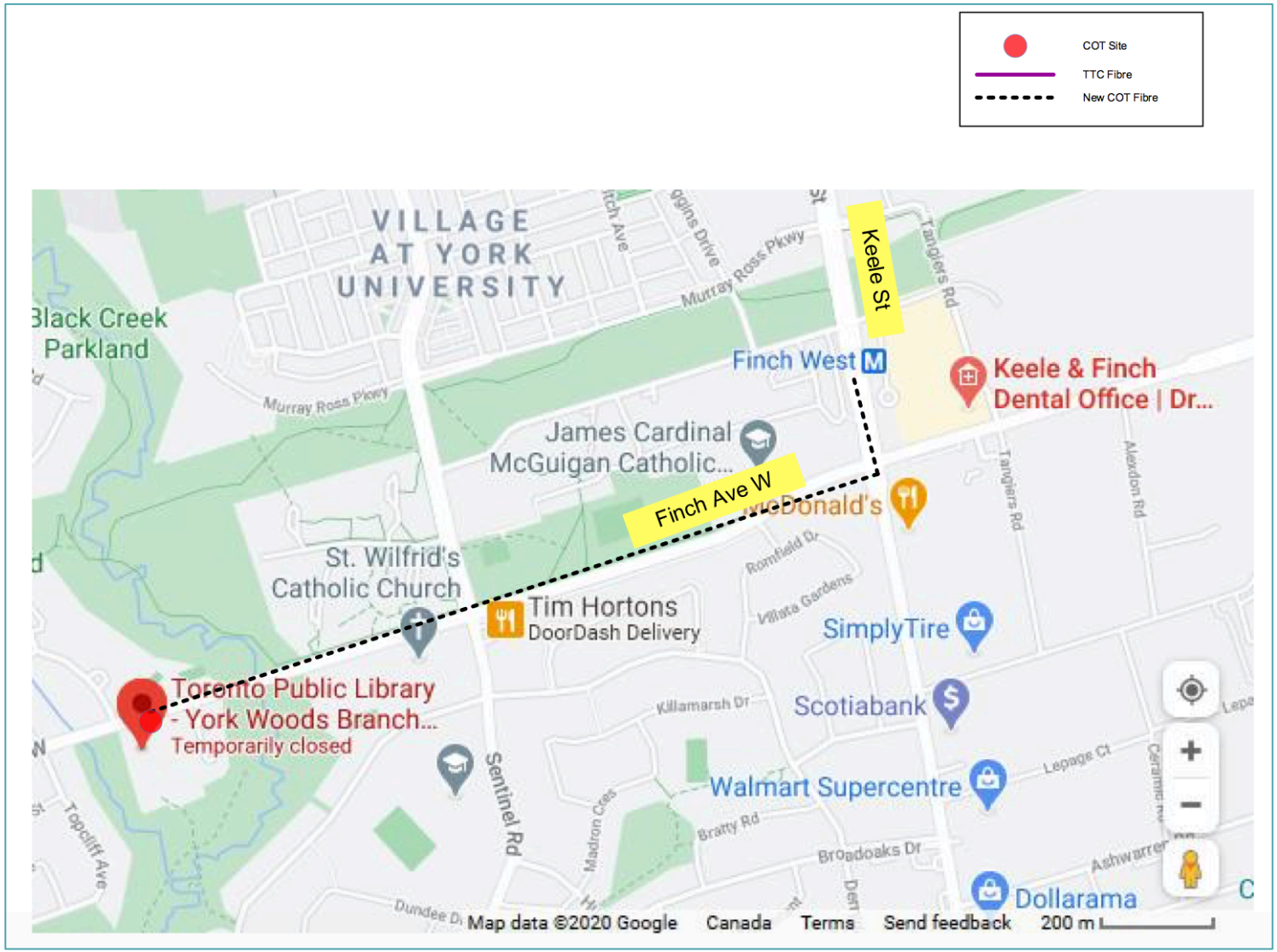

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Figure 5. *Jane & Finch - Example 2 - Fiber requirements to Driftwood Community Recreation Centre via Toronto Public Library. Total of 3.6 km of fiber required (2 km from Toronto Public Library York Woods Branch & 1.6 km from Finch subway station to Toronto Public Library York Woods Branch)*

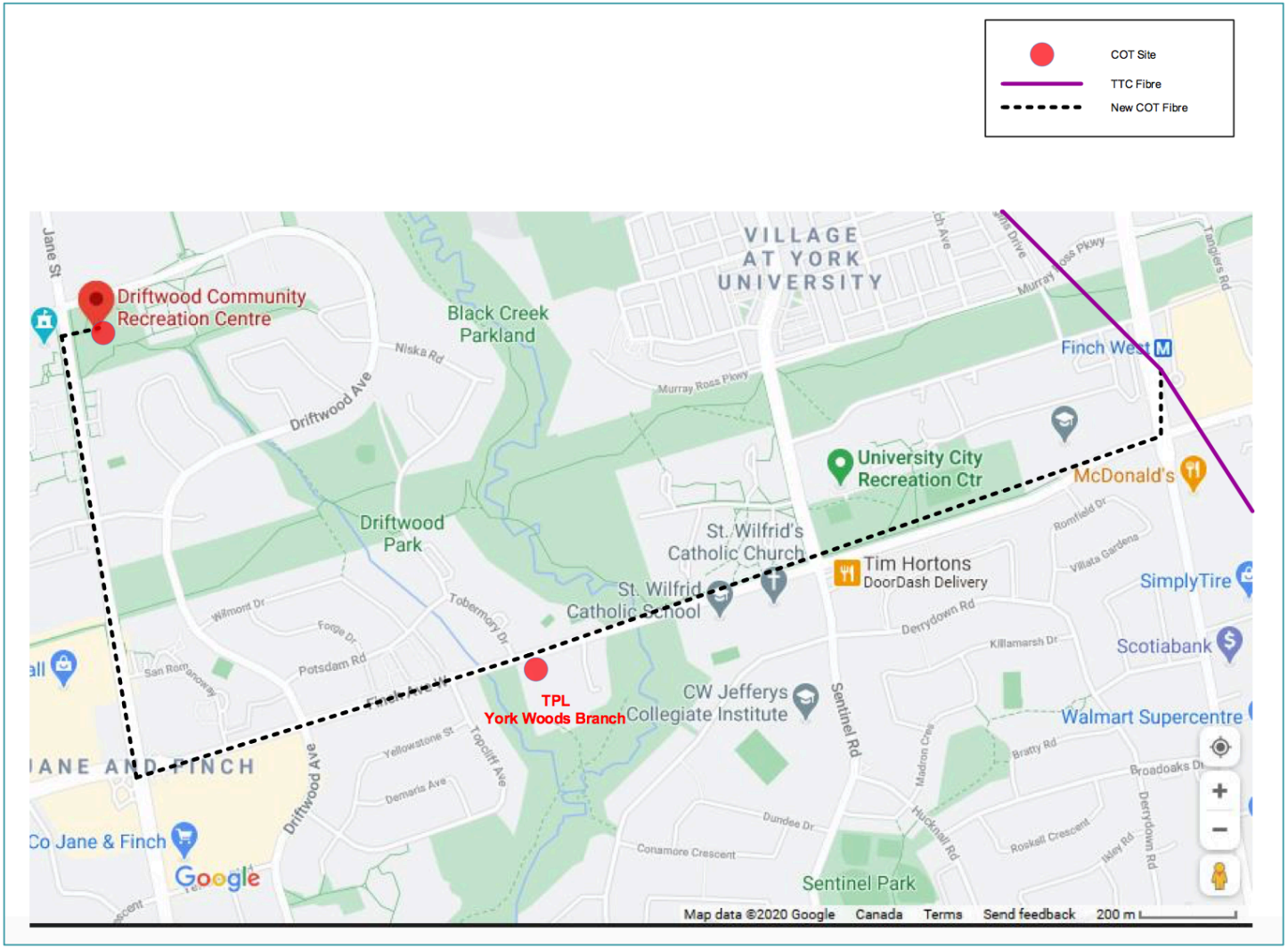

Figure 6. *Scarborough – Example 1 - South-West & Centre Areas – Fiber requirements to Golden Miles Employment & Social Services utilizing the new Eglinton Crosstown LRT fiber. Total of 200 meters of fiber required.*

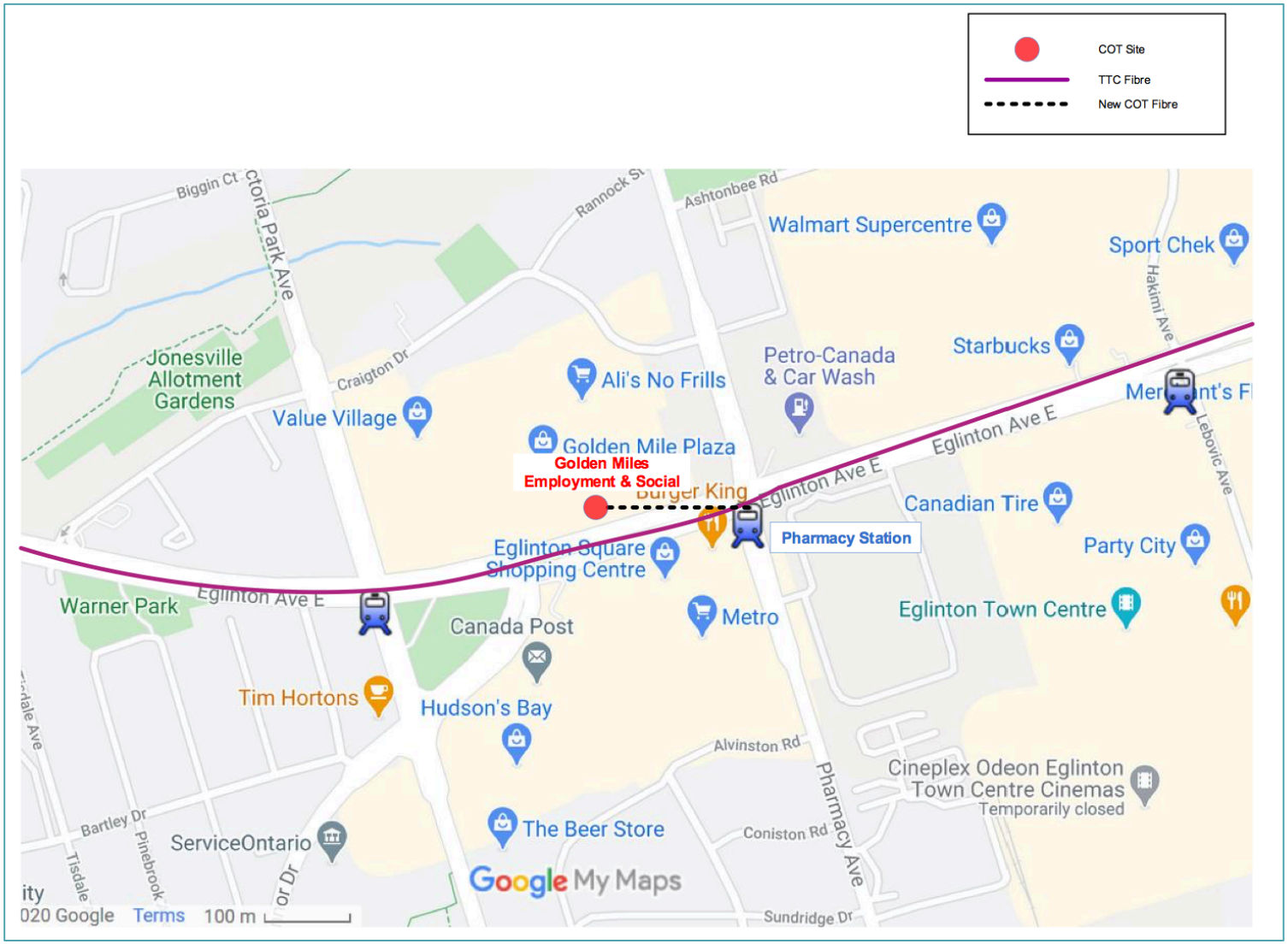

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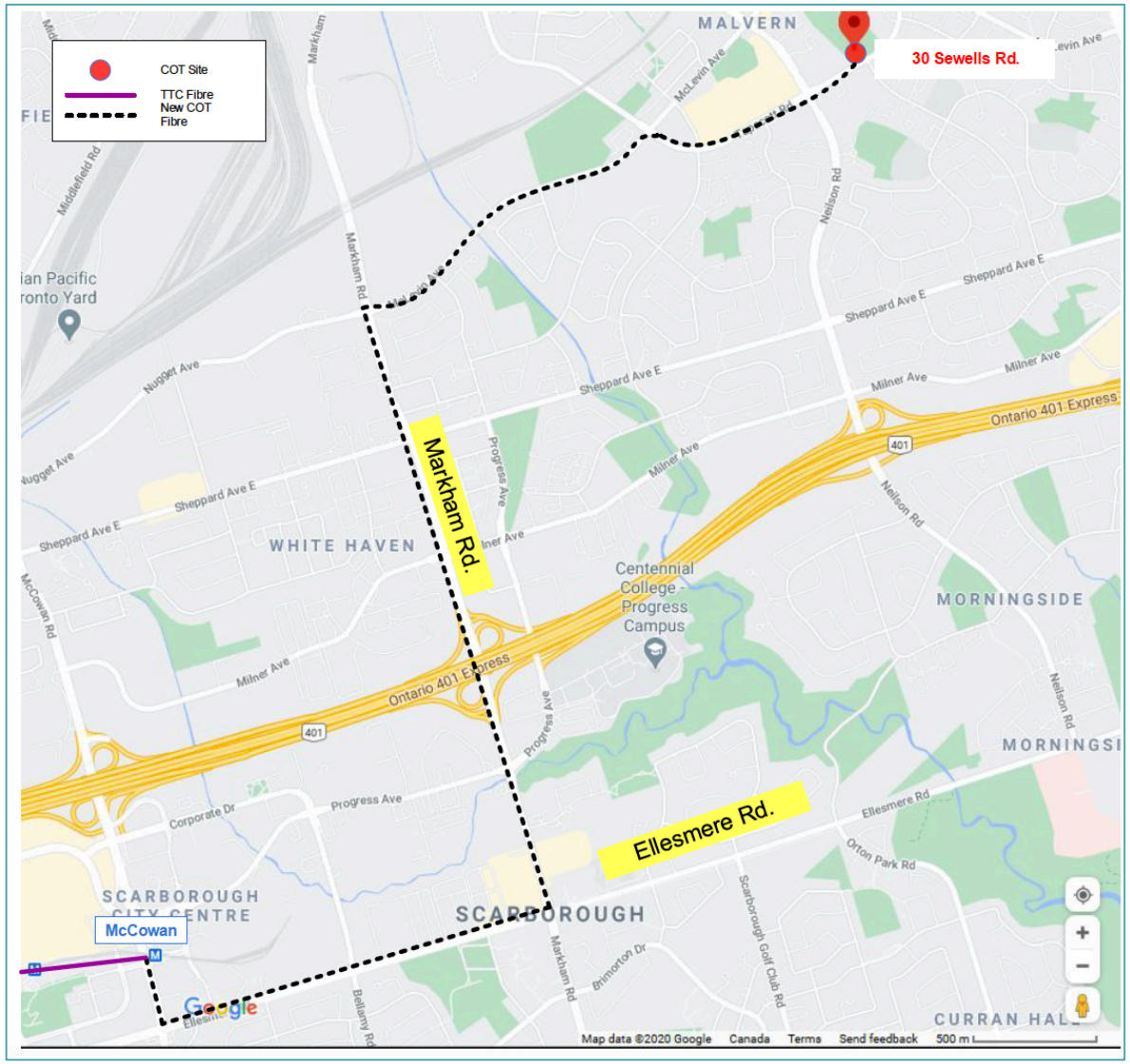
Figure 7. *Scarborough – Example 2 - North Area - Fiber Requirements to Toronto Public Library Malvern Branch (30 Sewells Rd.) via TTC's infrastructure. Total of 7 km of fiber required.*



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1.5 Next Steps

The pilot sites' high-level designs indicate minimal additional fiber is required when leveraging existing stranded assets to create a network. At a small cost a private fiber network can be created with affordable and equitable access for low income and under serviced communities of COT.

Note: it is fully feasible to go to any neighbourhood/site along the routes selected through fiber splicing and cable additions to the specific location (e.g. community housing buildings, recreation centres etc.)

The success of this project is reliant on the buy-in and collaboration of COT's Agencies, Boards and Commissions to leverage the stranded fiber assets to benefit Toronto's citizens.