

City of Mississauga
Corporate Report



<p>Date: May 19, 2021</p> <p>To: Chair and Members of General Committee</p>	<p>Originator's files:</p>
<p>From: Shawn Slack, MBA, Acting Commissioner of Corporate Services and Chief Financial Officer</p>	<p>Meeting date: June 23, 2021</p>

Subject

Public Sector Network Update

Recommendation

That the corporate report entitled, "Public Sector Network Update" dated May 19, 2021, from the Acting Commissioner of Corporate Services and Chief Financial Officer, be received.

Executive Summary

- The fibre optic network, named the Public Sector Network (PSN), involves the effort of the four municipal agencies operating within the Region of Peel (City of Mississauga, City of Brampton, Town of Caledon and the Region of Peel).
- Under the PSN Partnership Agreement, an annual PSN Budget is required to be submitted to the respective municipal Council PSN Partners. The 2021 PSN Proposed Budget has no impact on the overall City Budget. In accordance with the PSN Partnership Agreement, subscriber revenues are applied to offset shared costs for operation and support of the network, thereby reducing partners' cost of ownership.
- The Reserve Fund balance at the end of 2020 was \$822,497 and is anticipated to reach \$852,859 by the end of 2021. PSN in Mississauga provides an annual cost avoidance of \$4,278,000 annually and provides a superior level of service.
- Plans to align technology with new development projects such as Lakeside Community Partners, Brightwater and Business Improvement Areas (BIA) will ensure success in new communities and allow strategic positioning to support residents, business and innovation corridors and build back better for economic recovery post Pandemic.

- The PSN is the largest municipally owned fibre network in Canada. The underlying foundation of a High-speed network has given Mississauga the ability to build Canada's largest free public Wi-Fi network – Wireless Mississauga.

Background

The fibre optic network, named the Public Sector Network (PSN), involves the effort of the four municipal agencies operating within the Region of Peel (City of Mississauga, City of Brampton, Town of Caledon and the Region of Peel). Established in 1996, the network is designed to meet the need to provide high-speed telecommunications between municipal facilities across City of Mississauga, City of Brampton and the Town of Caledon. In addition to providing operational connectivity between facilities of its owners (Peel Region and local municipalities), PSN provides connectivity for other public sector agencies operating within Peel.

Despite the impact of COVID-19, which limited some PSN activity, PSN continued to expand during 2020:

- 15 kilometers of new fibre optic cables were installed, representing almost 1,000 new strand-kilometers.
- 36 partner connections were added – 8 sites (locations with staff) and 28 nodes (traffic controllers, bus stops, SCADA sites, etc.)
- 4 City of Mississauga sites, Fire Station 111, Cooksville GO Station, Victory Hall and a critical redundant connection to 950 Burnhamthorpe Rd.
- 16 Traffic Controllers were added to the expanding City's outdoor Network Infrastructure to provision for improved ATMS communications and enabling other Smart City technology opportunities.

Much PSN activity during 2020 continued to be focused on responding to externally imposed requirements:

- Completing bypasses (alternate routes) for key sites along the Hurontario corridor, to minimize the risk of service disruptions resulting from the Hurontario LRT construction.
- Working with Metrolinx and other utilities to design and implement alternatives to existing overhead GO Rail crossings, which will need to be replaced as part of planned GO Rail electrification.
- Working with Alectra and other utilities to relocate PSN fibre from Alectra poles scheduled for replacement.

In 2020, a milestone was reached when the 1,000th municipal site was connected to PSN. PSN's 842 kilometers of fibre (almost 50,000 strand-kilometers) of fibre now connects 1,031 partner and subscriber facilities, as follows:

Partner Connections (1,016):

- City of Mississauga (395)
- City of Brampton (374)
- Region of Peel (204)
- Peel Regional Police (24)
- Town of Caledon (19)
- Subscriber Connections (15)

PSN provides highly reliable service. During 2020, there were 15 incidents where fibre was damaged. Eight of these incidents involved damage caused to buried fibre by contractors digging, despite locate services. Another three incidents were caused by vehicles snagging overhead fibre. Incidents are generally repaired within a few hours. However, since most critical facilities have redundant connections, many resulted in no loss of service to connected facilities. Overall, PSN maintains availability exceeding 99.99% for connected sites.

Comments

In early 2021, additional fibre connections were provided for six sites across Peel Region that were being readied as potential COVID vaccination clinics. With the wide availability of PSN fibre, these additional fibre connections could be activated on short notice and at minimal cost.

In addition to addressing ongoing municipal and/or subscriber needs, a significant area of focus in 2021 will be working with Metrolinx/Mobilinx, both to relocate existing PSN fibre located in the path of the Hurontario LRT, now under construction, as well as addressing new municipal and Metrolinx needs associated with the LRT and its transit infrastructure.

Technical Architecture and PSN Infrastructure

The Public Sector Network (PSN) fibre infrastructure architecture has changed in recent years for Mississauga to minimize interruptions to facilities in the event of unexpected fibre breaks. This architectural change allows for better route diversity and redundancy to key buildings, mitigates unexpected downtime, and limits outages to other City facilities to ensure Business Continuity throughout the communications network.

City staff and PSN partners collectively manage this infrastructure and continually expand to new facilities or network nodes and can quickly pivot to accommodate unique demands, such as communication requirements for Covid-19 Vaccination clinics. This arrangement allows staff to be most responsive to new requirements or communication interruptions without dependency on service providers.

PSN Budget

Under the PSN Owners' Agreement, the PSN Steering Committee is required to submit an annual proposed budget and a statement of actual revenues and expenditures to their

respective municipal councils for approval. The PSN Steering Committee consists of staff representatives from the PSN Owners: Region of Peel and the three local municipalities in Peel. Appendix 1: Public Sector Network, Revenue and Expenditure Statement for 2020 includes a Revenue and Expenditure statement for the year ending December 31, 2020 with commentary on budget variances.

Appendix 2: Public Sector Network, Proposed 2021 Operating Budget includes the PSN Proposed Budget detailing the proposed allocation of revenues in 2021. In accordance with the PSN Owners' Agreement, revenues received from PSN Subscribers are used to offset shared costs incurred for operation and support of the network, thereby reducing the partners' cost of ownership.

As noted in these Appendices, PSN incurred a decrease in subscriber revenue in 2020 due to discontinuation by Trillium Hospital of its connections to the Mississauga Academy of Medicine. As a result, some operating costs previously covered by subscriber revenue will need to be borne by the owners. While some opportunities to generate additional revenue from subscribers are currently being explored, revenue generation is not the primary focus of PSN. While the owners have benefited from the fact that some of their operating costs have been, and will continue to be, offset by subscriber revenue, the network generates an estimated ten million dollars in annual savings/cost avoidance for the owners with or without these revenues.

Cost Avoidance

With the growth of the PSN network since 1996 and the number of City facilities all connected by the Fibre optic network provides for significant cost avoidance for telecommunications services from other communications providers. It can be estimated that the communication services provided by PSN could have a value of \$356,500 per month, if this were leased from service providers. PSN in Mississauga provides an annual cost avoidance of \$4,278,000 annually and provides a superior level of service.

Innovation and Strategic Alignment to Smart City Master Plan

Mississauga is a municipal leader in Canada with the ability to leverage PSN to deliver unique services. The PSN is the largest municipally owned fibre network in Canada. The underlying foundation of a High-speed network has given Mississauga the ability to build Canada's largest free public Wi-Fi network – Wireless Mississauga. The existing infrastructure has been optimized to create Canada's first Virtual Campus and provide wireless connectivity to support post secondary students with eduroam. During the Pandemic, there was a pivot and the wireless network was repositioned to support over 330 outdoor Wireless Hot Spots in Mississauga to Connect the Unconnected and address issues of digital divide and restrictions of public access into City Facilities and Libraries for free internet access.

Mississauga continues to embed itself into the standard build forms of new Development projects such as Lakeside Community Partners, Brightwater and Business Improvement Areas (BIA). There is clear vision to secure a technology presence and develop infrastructure plans to support City Wi-Fi, 5G technologies with telecommunications carriers and City Street light team enabling delivery of new services, in new ways. Plans to align technology with new development will ensure success in new communities and allow strategic positioning to support residents, business and innovation corridors and build back better for economic recovery post Pandemic.

Financial Impact

Revenues received from PSN subscribers are used to offset PSN shared operating costs, which would otherwise be borne by PSN partners. Surplus funds are deposited to the PSN Reserve Fund and will be applied as determined by the PSN steering committee in accordance with the established partner agreements. The PSN reserve is external and is managed by the Region of Peel. The Region holds the reserve and manages all the funds. In 2021, the network is estimated to increase its Reserve Fund by \$30,362 and will end the year with a Reserve Fund balance of \$852,859.

Mississauga PSN Fibre Capital budget (PN 21524) for 2021 will absorb \$5,725 for three (3) Network Management software licence fees as a cost pressure being deferred to the PSN owner from the PSN budget in 2021.

PSN in Mississauga provides an annual cost avoidance of \$4,278,000 annually and provides a superior level of service.

Conclusion

PSN remains an outstanding example of technological innovation and of the benefits derived through co-operation and partnership among the City of Mississauga and The Public Sector Network partners and within the broader public sector in Peel. Access fees from subscribers to the network continue to fund many shared costs associated with network operations, while providing a small surplus for future network operations or replacement costs.

Attachments

Appendix 1: Public Sector Network, Revenue and Expenditure Statement for 2020

Appendix 2: Public Sector Network, Proposed 2021 Operating Budget



Shawn Slack, MBA, Acting Commissioner of Corporate Services and Chief Financial Officer

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