City of Mississauga
Corporate Report

MISSISSAUGA

Date: June 2, 2023	Originator's files:
To: Chair and Members of General Committee	
From: Raj Sheth, P.Eng, Commissioner of Corporate Services	Meeting date: September 20, 2023

Subject

Designation of Network, Voice Communication and Collaboration Infrastructure Hardware and Software City Standards and Associated Single Source Approvals; File Ref: PRC001284 (Cisco), PRC001292 (OnX)

Recommendation

1. That the report from the Commissioner of Corporate Services dated June 2, 2023 entitled "Designation of Network, Voice Communication and Collaboration Infrastructure Hardware and Software City Standards and Associated Single Source Approvals; File Ref: PRC001284 (Cisco), PRC001292 (OnX)" be received.

2. That Council approve the Network, Voice Communication and Collaboration Infrastructure Hardware and Software, as described in Appendix 1, as City Standards for the term of ten (10) years in accordance with the City's Procurement By-law 0013-2022, as amended.

3. That the Chief Procurement Officer, or designate, be authorized to specify the Network, Voice Communication and Collaboration Infrastructure Hardware and Software City Standards in procurement processes to: (1) leverage Cisco's authorized value added reseller channels in competitive processes; or (2) procure directly from Cisco Systems Canada Co.; in accordance with the City's Procurement By-law 0013-2022, as amended.

4. That the Chief Procurement Officer, or designate, be authorized to execute any contracts resulting from the procurement processes described in Recommendation 3, in accordance with the City's Procurement By-law 0013-2022, as amended, in a form satisfactory to Legal Services, for a term of up to ten (10) years, and subject to the funding for such procurements (estimated value of $60 Million) being approved by Council.

Executive Summary

- Original Equipment Manufacturer (OEM) Cisco produces the recommended and required technology to continue to maintain and expand the City's network architecture for Voice and Data communications.
- The City standardized on Cisco equipment for both wired and wireless Networks and awarded replacement initiatives through a competitive procurement process to OnX Enterprise Solutions Ltd. with Cisco being the foundation technology for the City's network.
- Cisco Systems Canada Co. (Cisco) and OnX Enterprise Solutions Ltd. (Onx) contracts and authority are in place or currently in progress, with Cisco anticipated to expire on December 31st, 2024 and OnX expiring on September 26th, 2024 respectively.
- Funding is from IT operating and capital budgets, with any increases subject to future budget approvals.
- Additional Network and Wi-Fi growth pressures include Office Space Strategy (OSS) project, Network Core Replacement, Network Security, Voice Infrastructure Collaboration, among other capabilities.
- Between 2021 to 2023, about $5.5 M was invested in updating the City's Data Centers and Network Core Technologies. Replacing this intricate infrastructure would be expensive and challenging, needing years of planning and migration.
- The City continues to review and evaluate the existing on-premises solutions and Cisco cloud offerings to determine the Best Value for traditional hardware life-cycle replacement.

Background

The City of Mississauga (CoM) serves citizens through facilities like Libraries, Community Centres, Arenas, and open spaces such as Parks and Pathways. Reliable network infrastructure is vital for these services. The City's internal operations, including Transit, Fire Services, and more, also rely on secure network connectivity. Cisco technology supports Voice Communications, Phones, WebEx services, Call Centers, and more to deliver these services.

Wireless technology has become a standard, connecting offices, public spaces, and promoting collaboration. The City's wireless network has rapidly expanded, connecting various devices and the public to the internet. Cisco's security technologies are crucial to safeguard this network.

The City has standardized on OEM Cisco equipment for both wired and wireless network infrastructure and awarded Network Replacement initiatives through a competitive procurement process to OnX Enterprise Solutions Ltd. with Cisco being the foundation technology for the City network.

In 2012, Council approved around $3 million over five years with Cisco Systems Canada Co. for network upgrade (GC-0378-2012).
In 2014, Council extended the Cisco contract until 2023, increasing the contract value to $12.6 million (GC-0345-2014).
In 2021, Council approved an additional $10.6 million for both Cisco Systems Canada Co. and OnX Enterprise Solutions Ltd., raising the total contract value to approximately $35.3 million for network expansion and lifecycle management (GC-0259-2021).

Comments

Cisco Systems Canada Co. is the City's current sole supplier until the end of 2023, with a potential extension to 2024. The City has chosen OEM Cisco technologies for its network and voice communication equipment. Cisco's technology is vital for managing and expanding the City's network, including components like switches, routers, firewalls, wireless controllers, and access points. This technology supports voice and data communications, as well as video conferencing and collaboration tools. Both on-premises and cloud solutions are offered by Cisco.

The City awarded the Network Replacement project to OnX Enterprise Solutions Ltd., partnering with Cisco technology.

Contracts with Cisco Systems Canada Co. and OnX Enterprise Solutions Ltd. are in place or underway, expiring on December 31st, 2024, and September 26th, 2024, respectively.

The City's IT budget has tripled in the past decade, with Network Services budget growing due to technology demands, security, and cloud adoption. Network components are now refreshed every 5-7 years due to rapid technology changes.

A $5.5 million investment was made in 2021 to modernize the Network Data Center technology. The assessment emphasized high availability, flexibility, security, and access to hybrid cloud options.

The City's cloud expansion includes Amazon Web Services, Microsoft Azure, and Office 365, driving the need for network equipment upgrades to support the bandwidth required.

Projects like Wi-Fi expansion, Network Core Replacement, Office Space Strategy, and Video Conferencing & Collaboration, etc., contribute to the network's growth.

Significant Investments, Integration in Network & Wi-Fi Growth:

- **Public Wi-Fi:** Outdoor Wi-Fi brings services to residents in parks and more. It's expanding to over 300 locations, promoting outreach and citizen access. The increasing number of connected devices impacts network hardware and maintenance. Currently,

the City has 9 controllers and 1435 Access Points for indoor and outdoor use, requiring replacement every 5 years.

- **New Developments:** Fire Halls, Community Centres need new Network Infrastructure like Wi-Fi, Switching, Routing, Voice Communications.
- **Network Data Centers:** The City has many devices connecting over 120 facilities. A modernized Cisco Data Center Network Infrastructure handles growth, applications, and bandwidth needs.
- **Voice Infrastructure:** Cisco Voice was modernized, improving its public switched telephone network (PSTN) calling and adding WebEx Calling & Collaboration.
- **Mobile workforce and Office Space Strategy:** WebEx technology meets the needs of a mobile workforce. More Collaboration licenses and Video Conference devices support this strategy.
- **Advanced Traffic Management System (ATMS):** Over 800 intersections use our network, with planned hardware replacement in 2024.
- **Network Security:** Enhancements are planned based on network assessment and collaboration with the Cyber Security team.
- **Internet and Cloud Connectivity with Sheridan:** City reviews on-premises and Cisco cloud offerings for best value. Using Cisco hardware, the City partnered with Sheridan College for low-cost internet bandwidth and cloud connectivity.
- **Cisco Enterprise Agreements:** Evaluating cost-saving opportunities by bundling existing offerings.

Over the past 20 years, the City invested in Cisco Network and Voice Technologies. Between 2021-2023, $5.5M was invested in modernizing Data Centers. Cisco Systems Canada Co. is a market leader in Networking, Voice Communications and Collaboration Technologies and it is highly recommended that the City continue to deploy Cisco Technologies as their platforms are robust, secure and have historically served the City well.

Procurement By-law Authorization
Any subsequent contract as a result of procuring directly from Cisco Systems Canada Co will be executed under Procurement By-law 0013-2022, Schedule "A" (1) using the Single Source Procurement justification clauses shown below, as applicable:

    (c) The Goods and/or Services are unique to one particular supplier and no reasonable alternative or substitute exists due to exclusive rights such as patent, copyright or license;

    (m) A need exists for compatibility with, or for the maintenance and support of, a City Standard;

    (n) A need exists to avoid violating warranties and guarantees where support or Service is required for a City Standard.

Information Technology, Legal Services and Procurement Services staff will collaborate to establish the detailed requirements, negotiate the final arrangements and prepare the contract agreements.

Financial Impact

Network Services has four categories of network technologies: Switching & Routing, Network Security, Wireless and Voice Communications & Collaboration. The next 10 years will have an estimated $50 million for capital projects and $10 million for operating expenses in Network Services. These assumptions have been built into the 2024 Proposed Budget and are subject to Council approval.
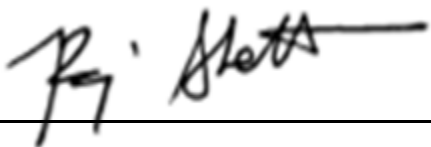
Conclusion

The City has invested in Cisco Technologies. Moving away from Cisco would demand substantial resources and finances. A recent $5.5 million investment was made in a modern Network for our data centers. Given the close integration of various Cisco Network Technologies (Routing/Switching, Network Security, Wireless, and Voice Collaboration), shifting to another solution would be costly and disruptive.

The City's Network continues to evolve to meet technology needs, growth, and cloud adoption. Cisco has been City's Standards for both wired and wireless infrastructure for over twenty years. The Network and Voice Infrastructure are expanding, needing increased capacity and hardware replacement every 5-7 years. Current Cisco and OnX contracts end in December 2024 and September 2024 respectively.

Cisco Systems is a leader in Networking and Voice Communication and Collaboration. Recent investments ensure our core network is in good condition for business continuity. It is recommended approving Cisco Network, Voice Communication, and Collaboration Infrastructure Hardware and Software (Appendix 1) as City Standards for the next ten year period (approximately 2025-2034).

Attachments

Appendix 1: Network, Voice Communication and Collaboration Infrastructure Hardware and Software

Raj Sheth, P.Eng, Commissioner of Corporate Services

Prepared by: Jeff Rowsell, Senior Manager, Infrastructure Services & Marisa Franchino, Program Manager Network and Voice Services