



# Information Technology

2018-2021 Business Plan  
& 2018 Budget

# Foreword

## Our Vision for the Future

Mississauga will inspire the world as a dynamic and beautiful global city for creativity and innovation, with vibrant, safe and connected communities; where we celebrate the rich diversity of our cultures, historic villages, Lake Ontario and the Credit River Valley. A place where people choose to be.

Mississauga City Council approved **Our Future Mississauga**; a Strategic Plan to achieve this vision over a 40 year timeframe. The City engaged over 100,000 people to develop this Vision Statement. To achieve this vision the City has identified five Strategic Pillars for Change: **move**, **belong**, **connect**, **prosper** and **green**. Each year the City proposes various initiatives that are aligned with the Strategic Pillars and are intended to bring us closer to fulfilling our vision for the future. The City has over 300 lines of business which are consolidated into 16 Services Areas that are outlined in this Plan. The 2018-2021 Business Plan and 2018 Budget detail how and where the City plans to allocate resources to deliver programs and services.

The City is committed to providing programs and services cost effectively. In this Plan we have outlined measures that will help us assess the quality, efficiency and customer satisfaction that our services achieve. The results help inform decisions on resource allocation, direct program offerings and improve service delivery to ensure our vision is efficiently realized.



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## Executive Summary of Information Technology

**Mission:** We are committed to providing our clients with innovative, reliable, responsive and secure solutions that align business, process and technology.

### Services we provide:

The Information Technology (IT) Service Area has six sections that focus on technology planning, service delivery, support, and operations to enable City services and drive efficiencies.

### Interesting facts about this service:

- The City provides online services and information including 311 online service requests and items for purchase, with over 20 million digital visits and \$20.3 million in online transactions in 2016 (an increase of eight per cent from 2015)
- “Wireless Mississauga” is free public access to high speed Wi-Fi available at 95 City facilities including libraries, community centres, marinas, and arenas. In 2016, the total number of hours of free City Wi-Fi used by the public would translate into 407 years’ worth of service
- The City’s network is a state of the art fibre network. The “Public Sector Network” (PSN) is a fibre network co-owned by Peel, Mississauga, Brampton and Caledon with over 800 kilometres of high speed fibre connecting 291 City sites and critical City infrastructure
- Our mobile workforce has over 3,300 field based workers and smart vehicles (e.g., buses, fire trucks, snow plows)
- IT operates seven days a week, 365 days a year

### Highlights of the Business Plan include:

- Create a Smart City Master Plan that provides a three to five year vision for the City to provide key objectives and initiatives that improve people’s lives and support the submission for funding to the federal Smart Cities Challenge
- Continue to expand the availability of free public Wi-Fi throughout the City, in our small business districts, the downtown and in public spaces and parks
- Expand the City’s use of broadband technology to support the “Internet of Things” (IoT); expand the Public Sector Network (PSN); and develop a proof-of-concept for a secure private cellular network for Public Safety and First Responders
- Improve Customer Service and deliver innovative and efficient services through the use of Artificial Intelligence (AI) and Augmented Reality (AR) known as the emerging channel “voice first”
- Enhance enterprise systems that drive analytics, business intelligence and decision support
- Advance the City’s position on Open Data and community developed apps
- Continue to invest in cyber security measures that protect the City’s critical assets

Net Investment (000's)	2018	2019	2020	2021
Operating	24,215	24,947	25,072	25,091
Capital	14,998	14,517	10,950	10,320
Full Time Equivalents	168.8	168.8	167.8	167.8

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## Core Services

### Vision, Mission, Goals of Service and Service Delivery Model

#### Vision

To support the City's overall strategic pillars of move, connect, prosper, belong and green through the strategies and action items defined in the IT Master Plan to create a connected and engaged City.

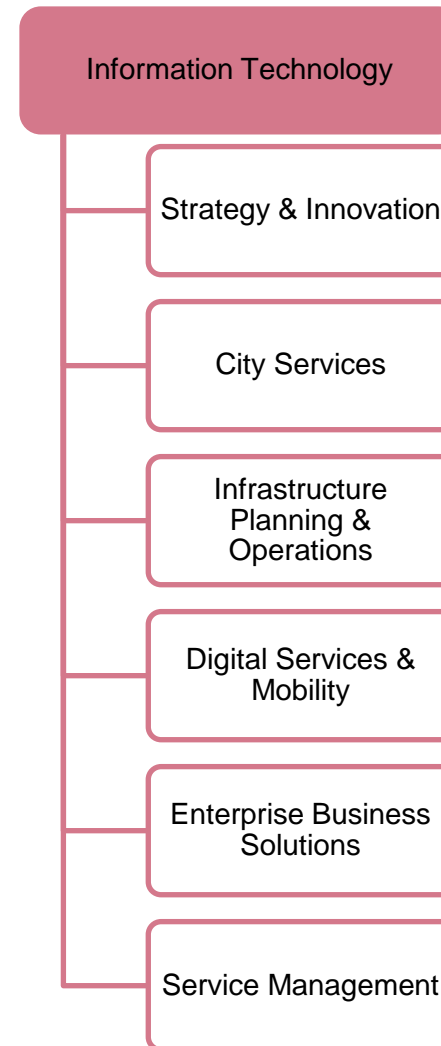
#### Mission

We are committed to providing our clients with innovative, reliable, responsive and secure solutions that align business, process, and technology.

#### Goals of Service

- Foster open and accessible government
- Enable decisions through research and analytics
- Create a connected and engaged workplace
- Improve services through innovation and partnerships
- Enable a connected and engaged City

#### Service Delivery Model



## Current Service Levels and Trends

The Information Technology (IT) Service Area operates within the Corporate Services Department and is responsible for the planning, development, maintenance and overall management of the City of Mississauga's technology infrastructure.

IT provides and supports the systems, applications, computers, networks, data, internet access, security and policies critical to the delivery of City services seven days a week, 365 days a year.

Partnerships have been established to improve service, efficiency and cost effectiveness. The Public Sector Network (PSN), Wireless Mississauga for Sheridan, and Voice Communication, VCOM Radio are examples.

Smart City and Internet of Things initiatives are in demand through public transit initiatives, Wi-Fi expansion and other direct public services through Open Data and sensor technology. There are emerging pressures to deliver service using augmented reality and artificial intelligence in our public spaces where citizens, visitors, and businesses are more likely to access our services and interact with the City.

IT Services are provided 24/7/365 support for the following:

- Mississauga.ca for information and online services
- Business Solutions for public (e.g., Transit, Library, Recreation, Culture and Economic Development)
- Financial, Human Capital & City Asset Systems
- Primary and Secondary Data Centres
- Fibre Network for all Voice and Data Communications
- Business Continuity and Disaster Recovery Services
- Intranet, Staff Productivity Tools and Software
- Secure Connect Anywhere VPN Services

- Public, Staff and Call Centre Voice Communications
- Secure Staff Wireless and Internet Access
- Free Public Wi-Fi "Wireless Mississauga"



*Heat map shows the potential downtown Wi-Fi coverage if public access were fully enabled. Current coverage supports communications for signalized intersections and public Wi-Fi to Celebration Square and Scholar's Green.*



## Performance Measures and Results

The City of Mississauga is committed to delivering services economically and efficiently. The City's Performance Measures are used to help assess how we are achieving our goals and where we need to improve. The results also inform decision making and strengthen accountability. The following section describes the measures that are used. The Balanced Scorecard shows trends since 2014 and expected outcomes up to 2021.

### What we are measuring

Information Technology introduced new measures this year aimed at managing a modern and more efficient service. These new indicators were designed to showcase financial prudence, customer focus, employee effectiveness and business process efficiency.

### Why these measures are important

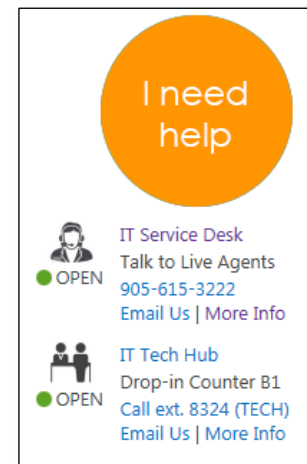
Measures are important to properly manage and report on progress. Information Technology is accountable for its spending and project outcomes, and so needs to accurately track actual spends and outcomes against what was planned to make adjustments and improve outcomes.



### How we are improving results

IT is improving results by:

- Centrally managing the IT project portfolio for all City Services with an objective to deliver on objectives and derive value with time and resources as efficiently as possible, in line with the best practices of the Project Management Support Office
- Using a pre-qualified vendor roster for professional services when necessary to complete projects with the right skill sets and on time
- Partnering with vendors and/or other municipalities sharing code and best practices to find mutual benefits, reduce costs and foster innovation (e.g. Public Sector Network, Active Guide, TXM Tax Manager)
- Offering more support options for staff with a growing demand for mobility, real-time access and remote secure access



*IT Support Options for Staff*

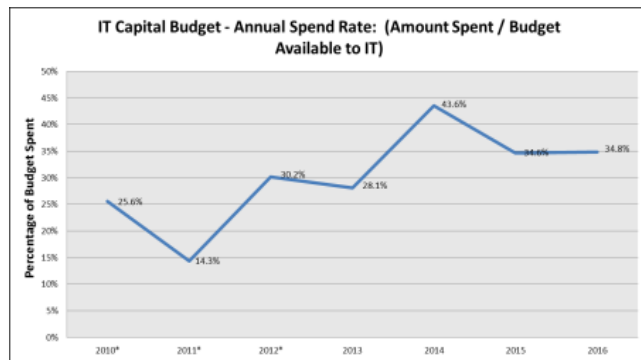
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## Balanced Scorecard

A Balanced Scorecard identifies and measures four key areas of an organization's performance: Financial, Customer, Employee, and Business Process. By paying attention to all four areas, an organization can retain balance in its performance and ensure that it is moving towards the attainment of its goals.

### Financial Measures

*Capital Spend Rate (Spending Efficiency)* shows the rate at which IT is spending its capital funding. IT is attempting to increase this rate (spend money in a more timely way) by utilizing an IT Roster for Professional Services. IT is targeting a two year turn around for capital spending (a target spend rate of approximately 40 per cent).



*Chart depicting the annual IT capital spend rate*

*Optimization of Voice & Data Communications* measures the percentage of employees that are using a software phone versus a traditional phone. The City expects to increase this percentage as more office staff adopt mobile workforce strategies.

### Customer Measures

*Wi-Fi Service Hours per Access Point* demonstrates the public and overall demand for Wi-Fi services. Expectations are for continuous growth as the City adds Smart City initiatives. This means hours per point will increase (unless more points added).

***In 2016, the total number of hours of free City Wi-Fi used by the public would translate into 407 years' worth of service***

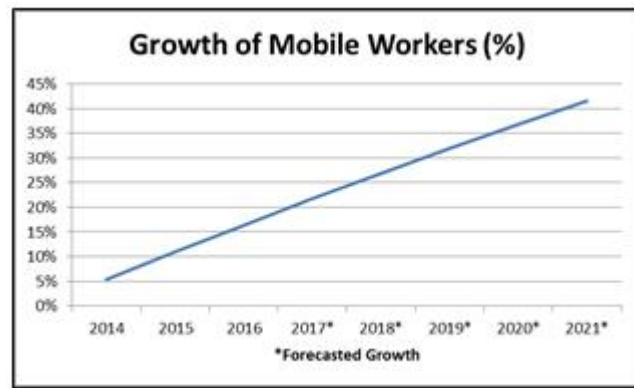
*Number of Open Datasets* provides the number of publicly available datasets that can be used for app development or reports. The City was recognized as most improved in this area this year by The Public Sector Digest. In 2016, a new portal was created and some old datasets were retired.

*Number of Self-Serve Web Applications* counts the number of City web applications. Efficiencies in processes and costs of service are usually made when a service is available online. Approximately one to three new services are added annually.



## Employee Measures

*Percentage of Mobile Workers* shows how the City's modernization strategy is working as it is an indicator of the mobility of the City's workforce. Mobile work is contemporary and cost effective, and potentially enticing to new talent.



*Chart showing trend of increasing number of mobile workers*

*Number of Connected Things* exhibits the growing infrastructure requirements and how progressively Mississauga is becoming more of a Smart City.



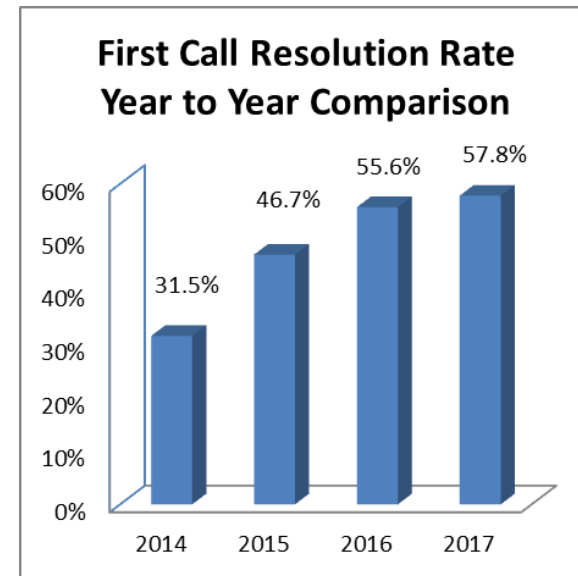
*Number of Real-Time Dashboard Measures demonstrate how IT is using automation increasingly for building reports and for monitoring City services*

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### Business Process Measures

*City Website Unique Visits* measures the volume of use by citizens and businesses on the City's website.

*IT Help Desk First Call Resolution Rate* is the rate that calls are resolved in one phone call. Strategies to improve includes enhancing the IT knowledgebase management process, expanding the IT Service Desk staff training and continuous learning program, and by live transferring calls to "Service Management- Hardware Support Services".



*Chart showcasing a constantly improving first call resolution rate for the IT Service Desk*

## Balanced Scorecard (Cont'd)

Measures for Information Technology	2014 (Actual)	2015 (Actual)	2016 (Actual)	2017 (Plan)	2018 (Plan)	2019 (Plan)	2020 (Plan)	2021 (Plan)
<b>Financial:</b>								
Capital Spend Rate (Spending Efficiency)	43.6 %	34.6 %	34.8 %	35 %	37.5 %	40 %	40 %	40 %
Optimization Of Voice & Data Communications	0 %	0 %	3 %	6 %	32 %	36 %	40 %	45 %
<b>Customer:</b>								
Wi-Fi Service Hours per Access Point	6,480	8,070	8,435	8,900	9,400	9,900	10,300	11,000
# of Open Datasets	59	75	31	105	125	150	175	200
# Self-Serve Web Applications	55	66	68	70	72	74	76	78
<b>Employees:</b>								
Percentage of Mobile Workers	5 %	11 %	16 %	22 %	27 %	32 %	37 %	42 %
# of Connected Things	N/A	N/A	11,315	11,715	12,000	12,500	13,000	13,500
# of Real-Time Dashboard Measures	21	25	41	81	115	150	210	220
<b>Internal Business Process:</b>								
City Website Unique Visits	12.4 M	13.9 M	20.3 M	24 M	27 M	30 M	33 M	37 M
IT Help Desk First Call Resolution Rate	45 %	47 %	56 %	57 %	58 %	59 %	60 %	62 %

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## Awards and Achievements

The City of Mississauga was awarded the 2016 Open Cities Index (OCI) "Most Improved Open Data Program" for moving up 25 spots from 2015 to land in the Top 20.



*Award for 2016's Most Improved "Open Data" Program presented at Council with Public Sector Digest (2016 Open Cities Index)*

**2016 City Manager's Award of Excellence for the 2016 Ontario Summer Games Organizing Committee.** IT provided technology to support the events, including a mobile-friendly website, live streaming of the opening and closing ceremonies, and Wi-Fi at various events.



**2016 Corporate Award for Innovative Business Solutions** was awarded to the ePlans Project Team. This project involved collaboration between the Planning & Building Department and IT Division that has enabled submission of electronic plans, online payments, digital review, addition of comments by staff and other agencies, and approvals.



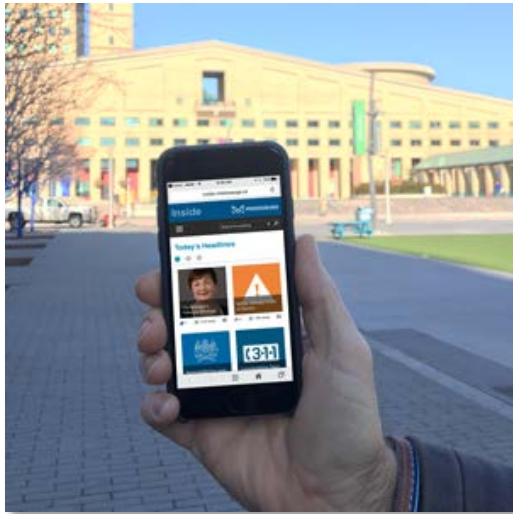
Convenient Online Services and Payment  
Anywhere, Anytime.

**2016 Brenda Sakauye Environment Award** was given to the LED Street Lighting Conversion Project team. IT provided the infrastructure technology to support the street light technology.



*LED Street Lighting Conversion Project team*

**A mobile-friendly version of the City's intranet site** was introduced in February 2017 so that City staff could easily acquire internal news and information via their mobile devices.



*City of Mississauga's Mobile-Friendly Intranet app*

**Business Review Magazine** recognized the **City of Mississauga** as a “connected and engaged workplace”.

Many cities round the world  
aspire to be called ‘smart’:  
very few have adopted  
enabling technology as  
well or as thoroughly  
as Mississauga

**The first live-streamed and recorded vendor information session** was held in 2017 in the Council Chamber using technology and resources already in place for council and committees. This enabled vendors to participate worldwide or watch later at their convenience.



*Live Streaming of IT Roster Vendor Information Session*

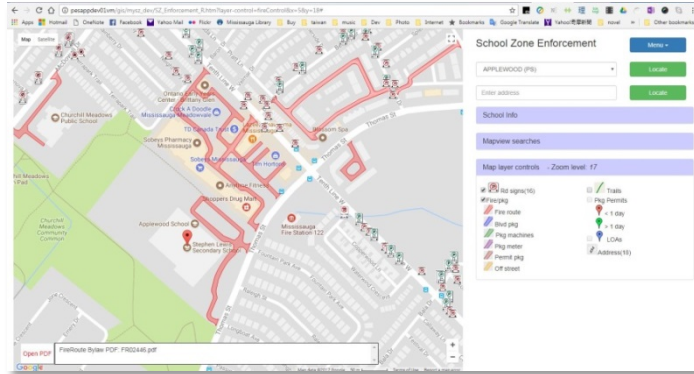
**IT continues to install fibre** to connect more Internet of Things devices, such as new digital signs.



*Installing infrastructure for the digital sign at Meadowvale Community Centre*



IT developed a **School Zone Parking Enforcement map** using Google Maps and responsive web components.



*Screen Capture of the Parking Enforcement map*

**IT supplied the back-end technologies** required for new transit requirements and transit buildings.



*Installing conduits under road to bring the Internet and City IT services to Go Transit/TTC/MiWay's Renforth Gateway Terminal*

**IT is undergoing a Cyber Security Assessment**, which includes a plan to implement the National Institute of Standards and Technology (NIST) IT Security standard by year end. This plan will also include an assessment of current capabilities and strategy for the next three years.

**NIST**  
National Institute  
of Standards  
and Technology

IT provided a service in Feb 2017 so that citizens could help test **Internet Performance around the City.**



*Web Page to check Internet Connection*

"Mississauga ... a Smart City? Yes We Are! How the City is Making the "Internet of Things" (IoT) Happen" was presented by staff to students at the **Canadian Youth Science Technology Engineering Math (STEM) Conference** (April).

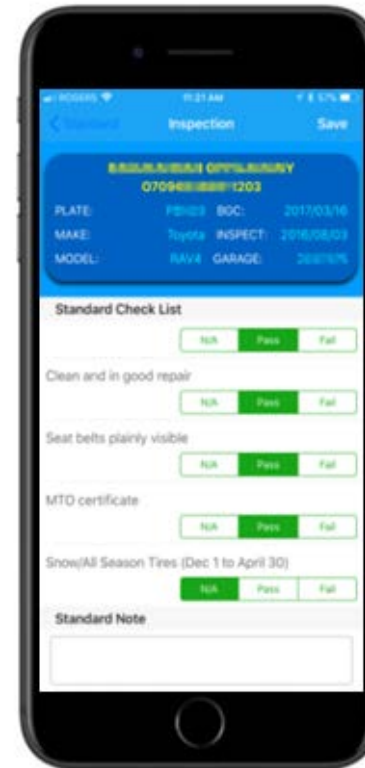


*City Staff discuss Mississauga Smart City at STEM Conference*

**City of Mississauga was the first city in Canada to become a Virtual Campus!** Eduroam (international roaming service) was implemented at the City. This internet portal allows post-secondary students around the world to access university resources at City Hall, Celebration Square, libraries, community centres, transit terminals and parks, making Mississauga the first city in Canada to have a "virtual campus". Over 30,000 students from 170 post-secondary institutions from around the world accessed the service in the first three months it was made available.



**An iOS app for Uber Driver Inspections** was developed internally. This app allows Mobile Enforcement Officers to conduct inspections and collect compliance data for Transportation Network Companies drivers, vehicles, and trips.



*Uber Driver Inspection Mobile App*

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# The 2018-2021 Business Plan Outlook

## Planning for the Future

IT is looking to expand many programs in the future including:

- Developing a Smart City Master Plan that will create a Smart City vision for the next three to five years and support the submission for funding through the federal Smart Cities Challenge program
- Adding more Open Data data sets and continuing to support HackerNest Mississauga, the coding community and deliver another Tech and the City Hackathon
- Improving data and information to provide better situational and operational awareness through analytics, business intelligence and decision support
- Continuing to implement online services, introduce innovative uses of augmented reality and artificial intelligence to provide City services in our public spaces where people need access
- Supporting citizen engagement by providing technology and tools that integrate with City planning processes, communications and public consultation on important issues such as the City Budget
- Engaging youth and post-secondary students to drive innovation, community-developed apps and the startup community
- Ongoing deployment of new technology that supports staff mobility and a mobile strategy for office staff
- Continuing to develop the City's Cyber Security program to provide steadfast protection against an increasing level of cyber threats globally

The future will also mean network expansion (PSN) to support the growth of the outdoor infrastructure such as:

- Advanced Traffic Management System (ATMS) will introduce new capabilities that require real time sensor data and advanced sensor communications
- Continuing to implement District Wi-Fi in the downtown and four business improvement areas
- Private cellular network proof-of-concept in partnership with the Region of Peel, Peel Police and Mississauga, Brampton and Caledon Fire
- Continuing to implement iParks introducing sensor based technology to measure environmental indicators, participation in the parks and also provide Wi-Fi for public access, staff, and parks operations



*Installing fibre for new MiWay building  
(at Transitway/Renforth Station)*



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## Finding Efficiencies

IT is finding efficiencies through three key Lean projects:



### 1. Optimization of IT Helpdesk call handling procedures

- The Official launch was in January 2017 and the first half results were
  - 100 per cent of calls received “Live answer”
  - 1,467 calls were answered (evening/weekends) and 816 were resolved on first contact
  - 56 per cent of calls were resolved that would have normally gone to voicemail or emails waiting for next business day response

### 2. User Provisioning – System and Security Access

- Will decrease the time it takes to provide software
- Included a Lean process review of IT’s security access requests to streamline the process and provide a new user-friendly and trackable form

### 3. IT Hardware Inventory Management & Distribution Control

- To review the computer hardware provisioning process to make it more efficient
- Will reduce the time to deploy a computer

IT also found efficiencies by:

### Implementing a standardized IT Road Map and technology planning process

- Centralizing all departmental requirements has helped IT better understand and support each service area
- IT now has better ability to report on resource capacity and do scheduling

### Live streaming and recording a vendor information session in Council Chambers (a City first!)

- Used technology already in place for Council and Committees
- Enabled worldwide participation from interested vendors
- Avoided creating a lengthy written addendum as recording was shared with vendors

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## Opening its first ever “Tech Hub” storefront

- Enabled City staff to drop-in for IT services in a convenient “one-stop” environment
- New hours of operation to match the needs/pressures of a mobile workforce outside of regular business hours at no additional cost



*The IT Tech Hub located at City Hall*

### Tech Hub Hours

Mon – Fri  
7:30 am – 10 pm

Sat & Sun  
9 am – 5 pm

## Undergoing “Our Future Corporation” project

- Enabled IT staff to work from anywhere/anytime by rationalizing existing office space. Over 90 per cent of the staff are mobile workers with no dedicated seating and work off the secure wireless network as their primary network
- Vacated leased space at 201 City Centre Drive as well as office space at the Central Library
- Modernized the workplace to support a future based on teamwork, collaboration and communication
- Included a Lean process to improve the control and management of all computer and mobile inventory. This Lean review achieved a reduction of storage requirements by 50 per cent and reduced staff touch times by one hour per day for each of the six staff involved

## Submitting the revised 10 year IT Capital Budget requirements via an InfoPath form

- Impacted an IT internal process prior to final submission to Finance
- Process used to include a submission via an Excel form and manual creation of a master summary report
- New process involves carrying over details for annual budgets, form version control, real-time reporting and a simplified prioritization process as form information is available via a SharePoint list

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## Advancing the City's Strategic Plan

### move - developing a transit oriented city

- IT is providing the technology services for the Light Rail Transit and Advanced Traffic Management System (ATMS)
- IT supports transit initiatives including MiWay technology, real-time bus tracking and advanced analytics

### belong - ensuring youth, older adults and new immigrants thrive

- The City's second Hackathon held in partnership with UTM, Sheridan and Soti Inc. (to be hosted by UTM in October 2017)
- Eduroam allows post-secondary students around the world to access university resources at City Hall, Celebration Square, libraries, community centres, transit terminals and parks, making Mississauga the first city in Canada to have a "virtual campus". Over 30,000 students from 170 post-secondary institutions from around the world accessed the service in the first three months it was made available
- Attendance at the Canadian Youth Science, Technology, Engineering, and Math (STEM) 2017 Conference in May (held to encourage and expose students to the educational and career pathways in the STEM fields)

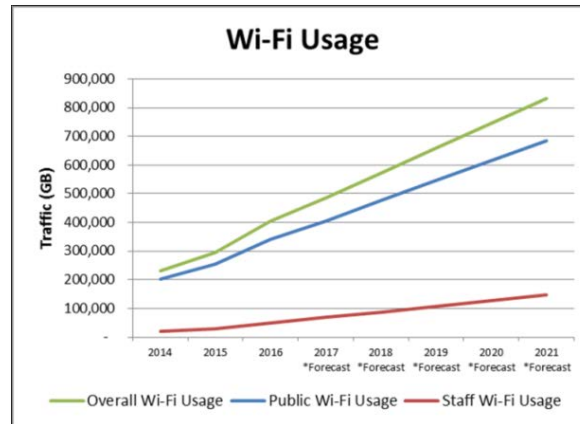


*Canadian Youth STEM 2017 Conference poster*

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## connect - completing our neighbourhoods

- Smart City District Wi-Fi implementation in the City of Mississauga 2017 through to 2019 in the areas defined by the Business Improvement Areas and Downtown Mississauga



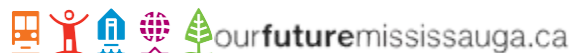
*Chart showing how Wi-Fi usage is increasing*

## prosper - cultivating creative and innovative businesses

- Smart City District Wi-Fi will provide
  - Free access to Wi-Fi and Smart City sensor technology tailored to meet the needs of each local community
  - Opportunity for local business, innovation and learning while ensuring free access to broadband for those that may not have reliable access at home or elsewhere

## green - living green

- IT's data centre has reduced energy consumption and expenses by leveraging modern technology and using Cloud based services to grow our data and computing requirements in a smart way



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## Transforming our Business with Technology

The IT Master Plan dated October 2015, established a three to five year outlook with strategies and actions for investment in technologies that are innovative and continue to improve how city services are provided. The IT Master Plan aligns with corporate priorities and the objectives of the City of Mississauga's Strategic Plan.

Four key strategies were developed as part of the IT Master Plan. These inspire the City to be innovative in how technology is used to enhance and deliver City services and to transform the City of Mississauga into an engaged and connected city:

- Foster Open and Accessible Government
- Enable Decisions through Research and Analytics
- Create a Connected and Engaged Workplace
- Improve Services through Innovation and Partnerships



*Fibre contractor pulling new fibre cable into Fire Station #114 to support information technology at this new building*

There are 21 key actions within the IT Master Plan which provide specific direction on technologies and innovations that will support the overall objectives and transformation of the City through the adoption of technology.

The technology landscape is rapidly changing and the City has developed and grown significantly. Therefore, it is prudent to continually renew the City's IT strategy to ensure alignment with the business and technology trends.

### **The plan reflects these key technology trends:**

- Broadband and free Wi-Fi is expected
- Services driven by consumers (mobile apps and sites)
- Everything and everyone is connected
  - Traffic signals, streetlights, sensors
  - City fleet and mobile workforce
- Fibre, Wi-Fi, cellular
  - Open data, big data, hackathons
- Cloud computing and software as a service
- Social media, online engagement and digital inclusion
- Innovation and partnerships
- Disruptive technologies
- Technology drives the economy and city building
- Business continuity and disaster preparedness
- Cyber security and threat intelligence
- City building/Smart City



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## Maintaining Our Infrastructure

A critical component of the IT capital budget is to ensure that technology is renewed in line with both industry and operational standards. IT Security is also vital, so with growing infrastructure and diverse requirements, the City will require another IT Security Specialist to expand the IT security response capabilities. This also aligns with the new implementation of the NIST IT Security standard and three-year IT Security work plan.

The technology required to provide City services is supported by a primary data centre and backup data centre located off-site. All supporting technology including network devices, servers and databases are updated based on a lifecycle program as follows:

- Servers and storage area network - five years
- Desktop computers and laptops - four years
- Minor software upgrades for all City business systems and software - three years, and major - seven to ten years
- IT standards are reviewed annually and reported to Council for standard software and hardware

Provincial and federal funding programs are also leveraged wherever possible to help fund these programs.

A fundamental aspect of the City's infrastructure is the Public Sector Network (PSN). Key facts about this network:

- A partnership between Mississauga, Peel, Brampton and Caledon (Mississauga owns about 22 per cent)
- 800 kilometres of high speed fibre connect 291 City sites and nodes (distribution points to connect things like intersections or extend Wi-Fi)

As of December 31, 2016 the estimated replacement value of the City's hardware and software assets was \$115 million and annual replacement was \$14.5 million.



*Construction Crew repairs underground fibre conduits at Dixie & Eglinton*

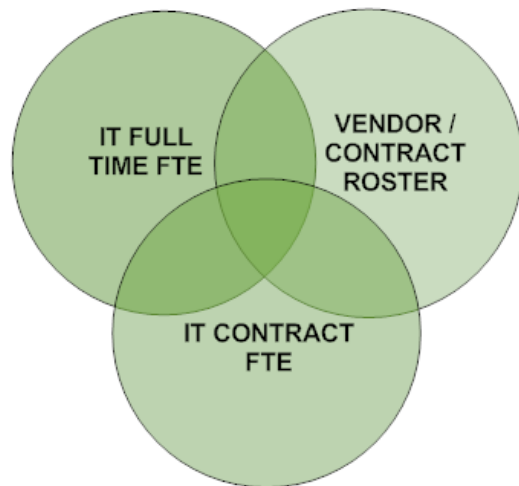
### **2018 - \$1.7 million Operating Budget Pressure:**

- “Software as a Service” products (\$435,000)
- Infrastructure - voice, wireless access switches, core switches, firewalls, routers, ATMS switches, security software & tools, server capacity & backups (\$380,000)
- Microsoft contract renewal and additional maintenance requirements (\$280,000)
- Additional SAP cloud and on premise services (\$265,000)
- Region of Peel Radio/VCOM (\$225,000)
- eCity/Mississauga.ca (\$115,000)
- “Software as a Service” products (\$435,000)

# Managing Our Human Resources

## Our Structure

The IT Service was re-organized in January 2014 to better align resources with providing service to the public, enhancing enterprise business solutions and ensuring that effective IT strategies and innovations enhance City services and operations. Partnerships have been established to improve service, efficiency and cost effectiveness. The Public Sector Network (PSN), VCOM Radio and Wireless Mississauga for Sheridan are examples.



*The IT Resource Model*

This resource model enables IT to meet the technology objectives approved through the Business Planning process by using specific initiative funding to add short-term contract staff as

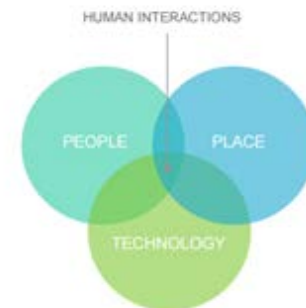
well as Vendor/Contract Roster to bring in external resources where required to provide specific expertise or resources for competing priorities.

To complement this structure, a new modern workplace (“Our Future Corporation”) was implemented this year. This fully mobile workforce concept was designed to:

- Create a more engaging and inspirational work experience that stimulates and motivates people to do their best work
- Create an active learning environment that leverages every opportunity to engage and challenge everyone
- Encourage people to fearlessly approach change and embrace new ways of working
- Motivate leaders and employees to communicate authentically to increase trust and cohesion

## The Value of Space

physical surroundings  
can shape the way  
people interact with  
one another, with  
technology and  
information.



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## Our Talent

The Information Technology Division is comprised of:

- Section and Program Managers
- Business Analysts
- Project Managers
- Information Technology Technicians & Specialists
- Database Administrators
- Application Specialists (e.g., SAP, GIS, SharePoint)
- Helpdesk Specialists
- Application Developers
- Communication Specialists
- Audio Video Specialists
- Security Specialists
- System and Network Architects
- Students, Sheridan Co-Op Program

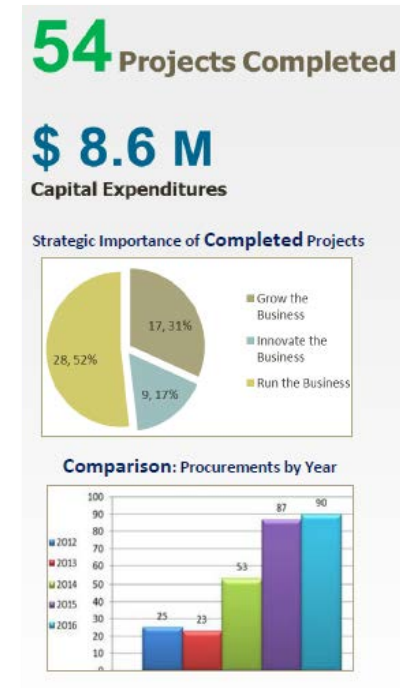
## Critical Roles/Functions to Achieve Business Goals

Current staffing issues are focused around Information Technology's ability to assign the right resources to priority initiatives while maintaining a level of capacity to deliver projects and maintain day to day operations. A combination of permanent, part-time and contract staff is utilized so that resources to deliver on key projects can grow with demand and be directly funded by the initiative.

Lean training has also been encouraged for all IT Staff. At this time 61 per cent have participated. (Ninety-eight employees have White Belts, one employee has a Green Belt, and two employees are in the Green Belt certification process.)

## Talent Needs

To keep up with today's ever changing needs of Information Technology, a pre-qualified IT Roster for Professional Services is being implemented so that unique skill sets can be acquired on an as-needed basis. Immediate talent needs for 2018 are for one IT Security Specialist to expand the City's IT security response capabilities required to close gaps identified in Cyber Resilience Program and NIST Framework. Seventeen employees are also currently enrolled in the leadership succession planning program and seven leaders are eligible for retirement within the next four years, so IT is providing development experiences to those that can move into key roles.



*2016 Accomplishments by IT Staff*



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**Proposed Full Time Equivalent Staffing Distribution by Program**

<b>Program</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>IT Admin, Strategy &amp; Innovation</b>	16.0	16.0	16.0	15.0	15.0
<b>IT City Services</b>	49.0	49.0	49.0	49.0	49.0
<b>IT Digital Services &amp; Mobility</b>	19.0	22.0	22.0	22.0	22.0
<b>IT Enterprise Business Solutions</b>	26.5	24.5	24.5	24.5	24.5
<b>IT Infrastructure Planning &amp; Operations</b>	35.0	36.0	36.0	36.0	36.0
<b>IT Service Management</b>	22.3	21.3	21.3	21.3	21.3
<b>Total Service Distribution</b>	<b>167.8</b>	<b>168.8</b>	<b>168.8</b>	<b>167.8</b>	<b>167.8</b>

Note: Numbers may not balance due to rounding.

Staff changes in 2018: One (1) IT Security Specialist, Grade F, July 1, 2018.

## Proposed Operating Budget

This part of the Business Plan sets out the financial resources required to deliver the proposed 2018-2021 Business Plan. Information is provided by major expenditure and revenue category as well as by program. The costs to maintain existing service levels and operationalize prior decisions are identified separately from proposed changes. The budget for 2017 was \$23.3 million and the proposed budget for 2018 is \$24.2 million.

### Total Changes to Maintain Current Service Levels

Total amount to maintain current service levels is \$1.2 million.

Labour and benefits are projected to increase by \$328,000. Reflected in this are labour adjustments and other fringe benefit changes. Maintenance and Licensing fees are being increased by \$1.17 million, reflecting inflationary/contractual obligations (e.g., e-City portal, accounts payable invoicing, virtual communication (VCOM), and security software).

An increase in IT Support Cost allocations to other departments is due mainly to voice and radio communications (VCOM) to support City Services and First Responders. This will reduce the budget by \$219,000. Additional revenue of \$50,000, as a result of increased revenues from the TXM system, will also reduce cost pressure.

### Efficiencies and Cost Savings

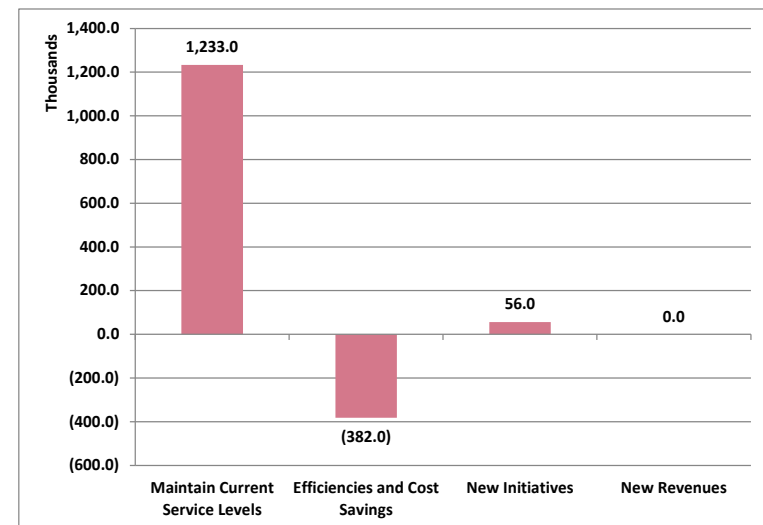
Total cost savings for IT is \$382,000.

A reduction of \$144,000 is due to better pricing negotiated during the copier contract renewal (year three of three). Maintenance and Licensing Fees were reduced by \$238,000 as a result of rationalization.

### New Initiatives

There is one new initiative impacting the 2018 budget – BR 2897 (IT Security Specialist - To Expand City's IT Security Response Capabilities). Expected hiring date is July 1, 2018. Budgeted cost is \$56,000.

### Proposed Changes to 2018 Net Operating Budget by Category (000's)



## Operating Budget Details

The following table identifies the budgeted and forecasted operating expenditures and revenues for 2018-2021, as well as the 2017 Budget and 2016 Actuals by major program within the Service Area.

### Proposed Budget by Program

Description	2016 Actuals (\$000's)	2017 Budget (\$000's)	2018 Proposed Budget (\$000's)	2019 Forecast (\$000's)	2020 Forecast (\$000's)	2021 Forecast (\$000's)
<b>Expenditures to Deliver Current Services</b>						
IT Admin, Strategy & Innovation	927	562	407	163	(81)	(325)
IT City Services	5,497	7,128	7,139	7,378	7,501	7,591
IT Digital Services & Mobility	2,949	3,669	4,146	4,185	4,226	4,267
IT Enterprise Business Solutions	4,714	3,761	3,686	4,093	4,209	4,257
IT Infrastructure Planning & Operations	6,490	6,761	7,458	7,614	7,686	7,753
IT Service Management	2,147	2,032	1,979	2,072	2,101	2,130
<b>Total Expenditures</b>	<b>22,724</b>	<b>23,915</b>	<b>24,815</b>	<b>25,506</b>	<b>25,641</b>	<b>25,673</b>
<b>Revenues</b>	<b>(714)</b>	<b>(607)</b>	<b>(657)</b>	<b>(670)</b>	<b>(683)</b>	<b>(697)</b>
Transfers From Reserves and Reserve Funds	0	0	0	0	0	0
New Initiatives and New Revenues			56	112	113	115
<b>Proposed Net Budget Including New Initiatives &amp; New Revenues</b>	<b>22,010</b>	<b>23,308</b>	<b>24,215</b>	<b>24,947</b>	<b>25,072</b>	<b>25,091</b>
Expenditures Budget - Changes by Year			4%	3%	1%	0%
Proposed Net Budget - Changes by Year			4%	3%	0%	0%

Note: Numbers may not balance due to rounding.

## Summary of Proposed Budget

The following table shows the proposed budget changes by description and category. Costs (labour, operational costs, facility, IT and support) and revenues are shown by category with the approved 2017 budget for comparison. The three columns to the far right of the table show the totals proposed for 2018 and their dollar and percentage changes over 2017.

Description	2017 Approved Budget (\$000's)	Maintain Current Service Levels	Efficiencies and Cost Savings	Annualized Prior Years Budget Decisions	Operating Impact of New Capital Projects	Proposed New Initiatives And Revenues	Special Purpose Levies	2018 Proposed Budget (\$000's)	\$ Change Over 2017	% Change Over 2017
Labour and Benefits	18,751	328	0	0	0	56	0	19,135	384	2%
Operational Costs	6,451	1,174	(382)	0	0	0	0	7,243	792	12%
Facility, IT and Support	(1,287)	(219)	0	0	0	0	0	(1,506)	(219)	17%
<b>Total Gross</b>	<b>23,915</b>	<b>1,283</b>	<b>(382)</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>0</b>	<b>24,872</b>	<b>957</b>	<b>4%</b>
<b>Total Revenues</b>	<b>(607)</b>	<b>(50)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>(657)</b>	<b>(50)</b>	<b>8%</b>
<b>Total Net Expenditure</b>	<b>23,308</b>	<b>1,233</b>	<b>(382)</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>0</b>	<b>24,215</b>	<b>907</b>	<b>4%</b>

Description	2016 Actuals (\$000's)	2017 Approved Budget (\$000's)	2018 Proposed Budget (\$000's)	2019 Forecast (\$000's)	2020 Forecast (\$000's)	2021 Forecast (\$000's)
Labour and Benefits	18,297	18,751	19,135	19,469	19,754	20,043
Operational Costs	5,504	6,451	7,243	7,708	7,563	7,313
Facility, IT and Support	(1,077)	(1,287)	(1,506)	(1,560)	(1,562)	(1,568)
<b>Total Gross</b>	<b>22,724</b>	<b>23,915</b>	<b>24,872</b>	<b>25,617</b>	<b>25,754</b>	<b>25,787</b>
<b>Total Revenues</b>	<b>(714)</b>	<b>(607)</b>	<b>(657)</b>	<b>(670)</b>	<b>(683)</b>	<b>(697)</b>
<b>Total Net Expenditure</b>	<b>22,010</b>	<b>23,308</b>	<b>24,215</b>	<b>24,947</b>	<b>25,072</b>	<b>25,091</b>

Note: Numbers may not balance due to rounding.

## Proposed Cost Increase Required to Maintain Current Service Levels

The following table provides detailed highlights of budget changes by major cost and revenue category. It identifies the net changes to maintain existing service levels, taking into account efficiencies, cost savings, and cost increases arising from prior year decisions.

Description	2017 Budget (\$000's)	2018 Proposed Budget (\$000's)	Change (\$000's)	Details (\$000's)
<b>Labour and Benefits</b>	<b>18,751</b>	<b>19,078</b>	<b>328</b>	Increase/Decrease Reflects Labour Adjustments and Other Fringe Benefit Changes
Administration and Support Costs	(1,287)	(1,506)	(219)	(\$206) Virtual Communications (VCOM) (\$13) Other Minor Increases
Communication Costs	422	422	0	
Contractor & Professional Services	39	39	0	
Equipment Costs & Maintenance Agreements	5,765	6,557	792	\$1,174 Maintenance/Licensing (\$238) Maintenance/Licensing Rationalization (\$144) Copier Contract Reduction (year three of three)
Materials, Supplies & Other Services	66	66	0	
Occupancy & City Costs	70	70	0	
Staff Development	61	61	0	
Transfers To Reserves and Reserve Funds	0	0	0	
Transportation Costs	29	29	0	
<b>Subtotal - Other Operating</b>	<b>5,164</b>	<b>5,737</b>	<b>573</b>	
Total Revenues	(607)	(657)	(50)	Increase in TXM Revenue
<b>Subtotal - Revenues</b>	<b>(607)</b>	<b>(657)</b>	<b>(50)</b>	
<b>Total</b>	<b>23,308</b>	<b>24,159</b>	<b>851</b>	

Note: Numbers may not balance due to rounding.

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**Proposed New Initiatives and New Revenues**

This table presents the costs by Budget Request (BR#) for proposed new initiatives. Detailed descriptions of each Request can be found on the pages following the table.

Description	BR #	2018 FTE Impact	2018 Proposed Budget (\$000's)	2019 Forecast (\$000's)	2020 Forecast (\$000's)	2021 Forecast (\$000's)	2018 to 2021 FTE Impact	2018 to 2021 Capital (\$000's)
<b>New Initiative</b>								
IT Security Specialist - To Expand City's IT Security Response Capabilities	2897	1.0	56	112	113	115	1.0	0
<b>Total New Initiatives</b>		<b>1.0</b>	<b>56</b>	<b>112</b>	<b>113</b>	<b>115</b>	<b>1.0</b>	<b>0</b>
<b>Total New Initiatives and New Revenues</b>		<b>1.0</b>	<b>56</b>	<b>112</b>	<b>113</b>	<b>115</b>	<b>1.0</b>	<b>0</b>

Note: Numbers may not balance due to rounding.

**Proposed Initiative**

IT Security Specialist - To  
Expand City's IT Security  
Response Capabilities

**Department**

Corporate Services Department

**Service Area**

Information Technology

**Required Annual Operating Investment**

Impacts (\$000s)	2018	2019	2020	2021
Gross Expenditures	56.4	111.5	113.1	114.7
Reserves & Reserve Funds	0.0	0.0	0.0	0.0
User Fees & Other Revenues	0.0	0.0	0.0	0.0
Tax Levy Requirements	56.4	111.5	113.1	114.7
* Net Change in \$		55.1	1.6	1.6
FTEs	1.0	1.0	1.0	1.0

*\*In each year, all values are cumulative, not incremental.*

**Required Capital Investment**

Total Capital (\$000s)	2017 & Prior	2018	2019	2020	2021 & Beyond
Expenditures	0.0	0.0	0.0	0.0	0.0

**Why Staff Recommend this Initiative**

A growing number of the City's services are now being provided directly to the public, on a self-serve basis, via the Internet. As more of the City's systems and data become accessible online from anywhere in the world, the risk to the City of hackers gaining unauthorized access to data and systems grows. Government privacy legislation and increased security requirements by credit card companies also mandate that personal information and credit card transaction data be kept secure.

### **Details of Service Change**

The City of Mississauga's technology environment consists of thousands of computers, tablets, phones, databases and systems, connected via hundreds of kilometres of high speed fibre optics, spread out across 125 City sites. These IT systems are used daily by thousands of City staff to provide services to Mississauga residents, businesses and visitors. Keeping this technology infrastructure secure is critical to the City.

Two IT Security Specialists (Grade F) - one approved for July 1, 2016, one requested for July 1, 2018 - are required to increase the size and depth of the City's IT Security team. Duties will include: day to day monitoring of the City's IT systems for internal and external cyber-threats; responding to security incidents and conducting investigations; ensuring that new software systems are secure; implementing security solutions and protocols; and delivering user-education campaigns. There is also an increasing need to respond to IT security incidents which may occur 24/7/365.

### **Service Impact**

Protecting the City's computers, servers, network and hundreds of software systems from unauthorized access and responding to hacking attempts is a major undertaking that requires continuous monitoring and highly specialized IT security skills. Successful, high-profile, cyber-attacks against other municipal, provincial and federal web sites in Canada over the past year serve to illustrate that the risk is real.

By hiring additional IT Security Specialists, the Information Technology Division will add the required resources to deal with the growing security-related workload and be able to expand and improve its security response capabilities.



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## Proposed Capital Budget

This section summarizes the forecast 10 year capital requirements for this service. The following table presents the forecast by major program. The next table summarizes the sources of financing for the capital forecast.

### Proposed 2018-2027 Capital Budget by Program

Program Expenditures	2018 Proposed Budget (\$000's)	2019 Forecast (\$000's)	2020 Forecast (\$000's)	2021 Forecast (\$000's)	2022-2027 Forecast (\$000's)	Total 2018-2027 (\$000's)
Applications	7,098	8,222	6,025	2,630	25,030	49,005
Infrastructure	5,960	4,950	3,570	5,955	29,380	49,815
PC Replacement & Peripherals	1,940	1,345	1,355	1,735	10,530	16,905
<b>Total</b>	<b>14,998</b>	<b>14,517</b>	<b>10,950</b>	<b>10,320</b>	<b>64,940</b>	<b>115,725</b>

Note: Numbers may not balance due to rounding. Numbers are gross.

### Proposed 2018-2027 Capital Forecast Highlights include the following:

- \$13.9 million for PC/Notebook/Tablet lifecycle replacement and staff additions
- \$11.4 million for server storage expansion and replacement
- \$9.9 million for network fiber expansion and replacement
- \$7.6 million for eCity hosting and expansion of online services
- \$7.4 million for routers and switches
- \$6.0 million for VoIP systems and phones
- \$5.7 million for TXM application redesign
- \$5.4 million for IT system security programme
- \$4.4 million for wireless infrastructure
- \$4.2 million for network infrastructure

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**Proposed 2018-2027 Capital Budget by Funding Source**

The following table provides the funding sources proposed to fund the capital portion of the proposed 2018-2021 Business Plan and 2018 Budget and the consolidated forecast for 2022-2027.

<b>Funding</b>	<b>2018 Proposed Budget (\$000's)</b>	<b>2019 Forecast (\$000's)</b>	<b>2020 Forecast (\$000's)</b>	<b>2021 Forecast (\$000's)</b>	<b>2022-2027 Forecast (\$000's)</b>	<b>Total 2018-2027 (\$000's)</b>
Tax/Debt	14,298	14,517	10,950	10,320	64,940	115,025
Recoveries	0	0	0	0	0	0
Other Reserves & Reserve Funds	700	0	0	0	0	700
<b>Total</b>	<b>14,998</b>	<b>14,517</b>	<b>10,950</b>	<b>10,320</b>	<b>64,940</b>	<b>115,725</b>

Note: Numbers may not balance due to rounding. □

## Proposed 2018 Capital Budget Detail

The following tables provide a detailed listing of proposed capital projects for 2018.

Program: Applications

Project Number	Project Name	Gross Cost (\$000's)	Recovery (\$000's)	Net Cost (\$000's)	Funding Source
CPIT006539	TXM Software Improvements	128	0	128	Tax/Debt
CPIT006537	Vacancy Rebates Legislative Changes	65	0	65	Tax/Debt
CPIT005736	GeoSpatial Master Plan and Implementation	500	0	500	Tax/Debt
CPIT005741	MAX - Online Services	75	0	75	Tax/Debt
CPIT005748	IT Security Enhancements	300	0	300	Tax/Debt
CPIT005753	CPS-CMO Application Improvements	80	0	80	Tax/Debt
CPIT005899	EBS SAP Upgrade to ERP on HANA	1,800	0	1,800	Tax/Debt
CPIT005989	Parks Infor Business Enhancement	160	0	160	Tax/Debt
CPIT006378	eCity Web and Mobile	600	0	600	Tax/Debt
CPIT006379	eCity Hosting and Online Services Hosting and Services	825	0	825	Tax/Debt
CPIT006381	IT Security Program	360	0	360	Tax/Debt
CPIT006383	Desktop Software Licenses	350	0	350	Tax/Debt
CPIT006387	Server Applications	605	0	605	Tax/Debt
CPIT006392	Desktop Office Suite Upgrade	450	0	450	Tax/Debt
CPIT006393	Continuous Improvement - Public Facing Systems	120	0	120	Tax/Debt
CPIT006394	Enterprise Engagement Platform	30	0	30	Tax/Debt
CPIT006395	Bentley Connect Upgrade	40	0	40	Tax/Debt
CPIT006396	FASTER major upgrade (Windows to Web version)	280	0	280	Tax/Debt
CPIT006398	Riskmaster Upgrade	70	0	70	Tax/Debt
CPIT006399	AirWatch System Upgrade and Staff Training	65	0	65	Tax/Debt
CPIT006400	Professional Services for Amanda 7	50	0	50	Tax/Debt
CPIT006401	Golf Operations Management Software System (GEN) Lifecycle	40	0	40	Tax/Debt
CPIT006417	Pingstreet App Additional Features	20	0	20	Tax/Debt
CPIT006421	Functional Testing Software	60	0	60	Tax/Debt
CPIT006422	Legal Docketing Software Procurement	15	0	15	Tax/Debt
CPIT006423	Additional Teranet Datasets	10	0	10	Tax/Debt
<b>Total</b>		<b>7,098</b>	<b>0</b>	<b>7,098</b>	

Note: Numbers may not balance due to rounding.

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**Proposed 2018 Capital Budget Detail (Cont'd)**

Program: Infrastructure

Project Number	Project Name	Gross Cost (\$000's)	Recovery (\$000's)	Net Cost (\$000's)	Funding Source
CPIT006380	VCOM Radio Network Replacement	860	0	860	Tax/Debt
CPIT006384	Wireless Infrastructure	650	0	650	Tax/Debt
CPIT006386	VoIP Systems & Phones	685	0	685	Tax/Debt
CPIT006388	Server and Storage Replacement & Expansion	1,100	0	1,100	Tax/Debt
CPIT006389	Switches and Routers	590	0	590	Tax/Debt
CPIT006390	Network Security Infrastructure	300	0	300	Tax/Debt
CPIT006391	Network Fibre	1,300	0	1,300	Tax/Debt
CPIT006397	Special IT Equip - Includes Public	250	0	250	Tax/Debt
CPIT006420	District Wi-Fi	225	0	225	Tax/Debt
<b>Total</b>		<b>5,960</b>	<b>0</b>	<b>5,960</b>	

Note: Numbers may not balance due to rounding.

Program: PC Replacement &amp; Peripherals

Project Number	Project Name	Gross Cost (\$000's)	Recovery (\$000's)	Net Cost (\$000's)	Funding Source
CPIT005733	AV Meeting Room Upgrades	310	0	310	Tax/Debt
CPIT006382	PC/Notebook/Tablet Lifecycle and Staff Adds	1,420	0	1,420	Other Reserves & Reserve Funds, Tax/Debt
CPIT006416	Network Services UPS Business Continuity	210	0	210	Tax/Debt
<b>Total</b>		<b>1,940</b>	<b>0</b>	<b>1,940</b>	

Note: Numbers may not balance due to rounding.

## Proposed 2019-2021 Capital Budget by Sub-Program

The following tables provide a listing of capital forecast by sub-program for 2019 -2021.

Sub-Program	2019 Forecast (\$000's)	2020 Forecast (\$000's)	2021 Forecast (\$000's)
<b>Applications</b>			
IT Applications-New	2,228	1,350	840
IT Applications-Replacement/Enhancements	5,994	4,675	1,790
<b>Subtotal</b>	<b>8,222</b>	<b>6,025</b>	<b>2,630</b>

Sub-Program	2019 Forecast (\$000's)	2020 Forecast (\$000's)	2021 Forecast (\$000's)
<b>Infrastructure</b>			
IT Network Infrastructure	3,525	2,725	4,635
IT Server Expansion	0	0	0
IT Server Replacement/Maintenance	1,200	620	1,120
IT Service Management	225	225	200
<b>Subtotal</b>	<b>4,950</b>	<b>3,570</b>	<b>5,955</b>

Sub-Program	2019 Forecast (\$000's)	2020 Forecast (\$000's)	2021 Forecast (\$000's)
<b>PC Replacement &amp; Peripherals</b>			
IT PC/Notebook-Replacement/Maintenance	1,000	1,060	1,500
IT Peripherals	10	10	160
IT Specialized Equipment	335	285	75
<b>Subtotal</b>	<b>1,345</b>	<b>1,355</b>	<b>1,735</b>
<b>Total Expenditures</b>	<b>14,517</b>	<b>10,950</b>	<b>10,320</b>

Note: Numbers may not balance due to rounding.  
Numbers are net.