



Engineering & Construction Services

What We Do

Provide specialized engineering design and construction services to internal clients (Toronto Water, Transportation Services, Solid Waste Management Services, and other City Programs and Agencies), and external clients (the development industry, utility companies and other public agencies) creating safe and sustainable municipal infrastructure.

Engineering & Construction Services (ECS) delivers the following services:

- Municipal Infrastructure Construction
- Engineering Review & Acceptance
- Engineering Information

Why We Do It

To build safe and sustainable infrastructure that enhances the quality of life of the people of Toronto, through professionalism in project planning, engineering and project management services, and to be an industry leader in delivering municipal infrastructure engineering services with integrity and pride.

Our Experience & Success

- \$578 million in capital projects delivered in 2018, \$67 million more than in 2017, representing a 13% increase
- 2,015 engineering review circulations of development applications completed in 2018
- 677 bridge condition inspections completed in 2018, comprising 348 discrete spans along the elevated portion of the F.G. Gardiner Expressway, 286 bridges and culverts along City roads, and 43 vehicular bridges within City parks
- 6,032 third party application circulations reviewed in 2018, comprising 241 for transit expansion and 5,791 full stream utility applications

Key Challenges

- Managing multi-year construction
- Increasing delivery capacity
- Ensuring regulatory compliance and best practices
- Recruiting and retaining the top calibre talent that is needed in key business areas, due to the highly competitive labour market and which continues to negatively affect the Program's ability to fully staff its complement

Priority Actions

- Continue to enhance planning and coordination of multi-year Capital Program with internal and external stakeholders
- Ensure compliance with the new Construction Act, which imposes strict prompt payment timelines, through staff training and updating of operating procedures
- Continue and increase vigilance and oversight on construction contracts to address recommendations made in Auditor General's reports
- Develop a strategy to address the chronic inability to recruit and retain top calibre talent due to reduced competitiveness in the employment market through a comprehensive review of salary compensation, which may impact future operating budgets

Budget At A Glance

STAFF RECOMMENDED OPERATING BUDGET			
\$Million	2019	2020	2021
Gross Expenditures	\$76.3	\$78.0	\$78.5
Revenues	\$72.2	\$73.0	\$73.5
Net Expenditures	\$4.1	\$5.0	\$5.0
Approved Positions	591.1	591.1	591.1

Our Key Service Levels



Year End Actual Expenditure equal to **80%** of assigned Capital Budget



75% of Development Applications reviewed and accepted within STAR timelines



100% bridge condition inspection compliance within regulatory timelines

Source of Images: www.icons8.com

Key Service Deliverables

Sustain capital delivery at an estimated **80%** of year-end actual expenditure as a percentage of assigned Capital Budget

Sustain at least **75%** compliance with "Streamlining the Application Review" (STAR) timelines for review of development applications

Complete **100%** of all legislated bridge condition inspections

Provide specialized engineering, surveying and construction inspection support to Metrolinx and TTC transit programs

Complete **100%** of all legislated environmental certificate of property use (CPU) requirements including inspections, reports, compliance audits, and Annual Reports of behalf of Parks, Forestry and Recreation

Who We Serve

Municipal Infrastructure Construction

- City Divisions and Agencies
- Business Improvement Areas (BIAs)
- Utility Companies
- Development Industry

Beneficiaries

- Businesses
- Residents
- Visitors

Engineering Review & Acceptance

- City Divisions and Agencies
- Development Industry
- Utility Companies

Beneficiaries

- Businesses
- Residents
- Visitors

Engineering Information

- City Divisions and Agencies
- Residents
- Waterfront Toronto
- Metrolinx

Beneficiaries

- Businesses
- Visitors

How Well We Are Doing

Performance Measures

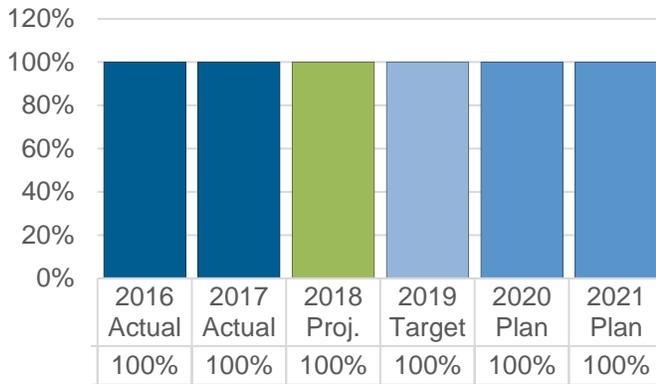
Annual Expenditure on Municipal Infrastructure Design & Construction (\$ Millions)



Behind the Numbers

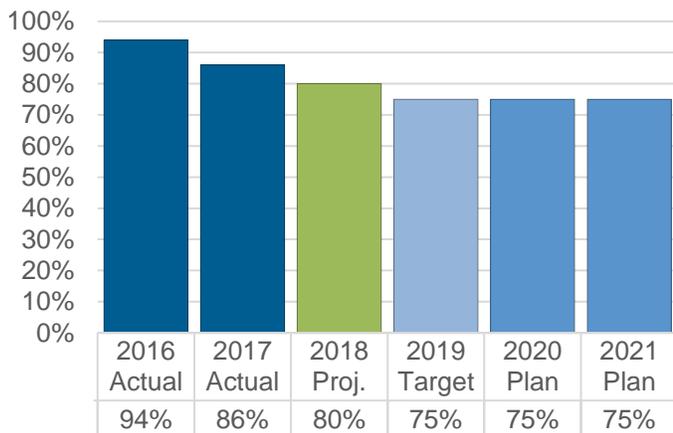
- \$578 million in capital projects are expected to be delivered by ECS in 2018, an increase of \$67 million compared to 2017.
- Engineering & Construction Services continues to experience substantial growth in construction activity for clients' capital programs in future years, driven primarily by increases in both Toronto Water's and Transportation Services' Capital Budgets and Plans.

% of Bridge Condition Inspections Completed Compared to Plan



- In 2018, ECS again completed 100% of planned bridge condition inspections.
- ECS is targeting to maintain a 100% completion rate in 2019 and future years for the legislated biennial bridge condition inspection cycle.

% of Development Applications and Revisions Reviewed within STAR timelines



- This measure indicates how well ECS complies with the 75% Council approved "Streamlining the Application Review" (STAR) timeline for circulations of development applications and revisions.
- In 2018, 80% of development application circulations and revisions by Engineering & Construction Services were completed within STAR timelines, surpassing the 75% Council approved target compliance rate.
- ECS will continue to target compliance with STAR timelines in 2019 and future years.

CONTENTS

Page

5

7

N/A

17

21

22

23

25

26

N/A

27

N/A

N/A

N/A

28

RECOMMENDATIONS

2019 STAFF RECOMMENDED OPERATING BUDGET

2019 - 2028 STAFF RECOMMENDED CAPITAL BUDGET & PLAN

ISSUES FOR DISCUSSION

APPENDICES

1. 2019 Organization Chart
2. 2019 Operating Budget by Service
3. 2019 Service Levels
4. Summary of 2019 Recommended Service Changes
5. Summary of 2019 Recommended New & Enhanced Service Priorities
6. 2019 User Fee Rate Changes
7. 2019 Capital Budget; 2020 - 2028 Capital Plan
8. 2019 Cash Flow & Future Year Commitments
9. 2019 Capital Budget with Financing Detail
10. Reserve and Reserve Fund Review

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RECOMMENDATIONS

RECOMMENDATIONS

The City Manager and Chief Financial Officer & Treasurer recommend that:

1. City Council approve the 2019 Staff Recommended Operating Budget for Engineering & Construction Services of \$76.337 million gross, \$4.103 million net for the following services:

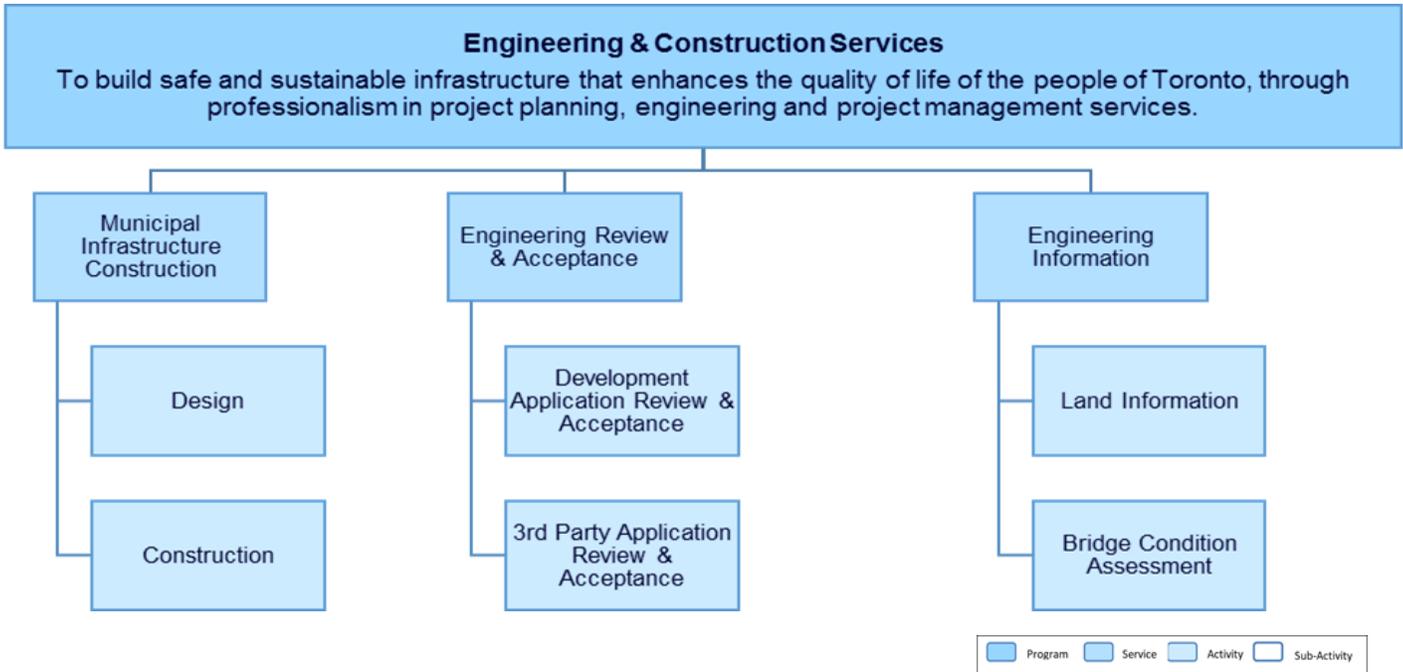
Service:	Gross (\$000s)	Net (\$000s)
Municipal Infrastructure Construction	51,449.0	1,822.7
Engineering Review & Acceptance	14,050.9	1,047.1
Engineering Information	10,837.5	1,232.8
Total Program Budget	76,337.4	4,102.7

2. City Council approve the 2019 service levels for Engineering & Construction Services as outlined in Appendix 3 of this report, and associated staff complement of 591.1 positions, comprised of 469.2 capital positions and 121.9 operating positions.



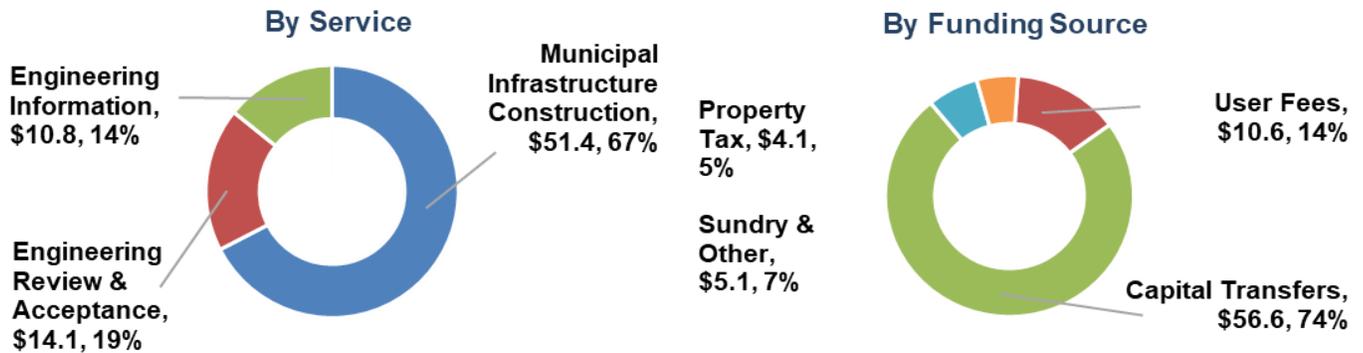
2019 STAFF RECOMMENDED OPERATING BUDGET

PROGRAM MAP



2019 OPERATING BUDGET HIGHLIGHTS

2019 Staff Recommended Operating Budget \$76.3M



- **0%** Budget increase over the 2018 Approved Net Operating Budget to maintain existing service levels and meet additional service demands.
- **\$0.085M** Base revenue increase through user fee inflationary increases (Development Application Review Fees).
- **2020/2021** Increases primarily for known inflationary adjustments for salaries, benefits and contracts.

2019 OPERATING BUDGET OVERVIEW

Table 1: 2019 Staff Recommended Operating Budget and Plan by Service

(In \$000s)	2018		2019			Changes		Incremental Change	
	Budget	Projected Actual*	Base	New / Enhanced	Total Staff Recommended Budget			2020 Plan	2021 Plan
By Service	\$		\$	\$	\$	\$	%	\$	\$
Municipal Infrastructure Construction									
Gross Expenditures	50,938.7	45,786.4	51,449.0		51,449.0	510.3	1.0%	1,116.6	220.1
Revenue	49,661.6	42,672.7	49,626.3		49,626.3	(35.3)	(0.1%)	1,068.1	380.9
Net Expenditures	1,277.2	3,113.7	1,822.7		1,822.7	545.5	42.7%	48.5	(160.8)
Engineering Review & Acceptance									
Gross Expenditures	14,036.5	12,157.5	14,050.9		14,050.9	14.4	0.1%	370.1	224.4
Revenue	12,745.5	16,326.8	13,003.7		13,003.7	258.3	2.0%	160.2	(29.4)
Net Expenditures	1,291.0	(4,169.3)	1,047.1		1,047.1	(243.9)	(18.9%)	209.9	253.7
Engineering Information									
Gross Expenditures	10,910.9	9,046.2	10,837.5		10,837.5	(73.4)	(0.7%)	161.4	72.5
Revenue	9,376.4	7,721.2	9,604.7		9,604.7	228.3	2.4%	(435.2)	104.6
Net Expenditures	1,534.5	1,325.0	1,232.8		1,232.8	(301.7)	(19.7%)	596.6	(32.1)
Total									
Gross Expenditures	75,886.1	66,990.1	76,337.4		76,337.4	451.3	0.6%	1,648.1	517.0
Revenue	71,783.4	66,720.8	72,234.7		72,234.7	451.3	0.6%	793.1	456.1
Total Net Expenditures	4,102.7	269.4	4,102.7		4,102.7	0.0	0.0%	855.1	60.9
Approved Positions	592.1	540.1	591.1	0.0	591.1	(1.0)	(0.2%)	(0.0)	0.0

* Year-End Projection Based on Q3 2018 Variance Report

Base Changes

(\$0M Net)

- Salary & benefit increases and lower recoveries from Metrolinx for survey services as ECS is expecting the demand for survey work for Metrolinx to decrease in 2019.
- However, increased recoveries from the TTC for survey work related to the Scarborough Subway Extension and revenue from inflationary increases for Development Application Review Fees are expected in 2019. These increases will allow the Program to again maintain no net increase in its operating budget for 2019 without adjusting service levels.
- Funding is included for 6 positions to help address the increased demand for delivery of clients' capital programs and major third party work (fully recovered). For example: TTC projects, including the Scarborough Subway Extension; Waterfront Toronto's Port Lands Flood Protection Project; and, engineering expertise to manage complex, multi-year construction projects, including projects for Toronto Water and the Strategic Rehabilitation of the F.G. Gardiner Expressway.

Future Year Plan

- Inflationary increases primarily in salaries and benefits.

EQUITY IMPACTS

No significant equity impacts: There are no significant equity impacts of the changes in Engineering and Construction Services' 2019 Staff Recommended Operating Budget.

2019 Staff Recommended Operating Budget Changes by Service

The 2019 Staff Recommended Operating Budget for Engineering & Construction Services is \$4.103 million net, representing no net (0%) increase to the 2018 Council Approved Operating Budget. Table 2 below summarizes the key cost drivers to maintain current service levels as well as recommended service changes to achieve budget target.

Table 2: 2019 Staff Recommended Operating Budget Changes by Service

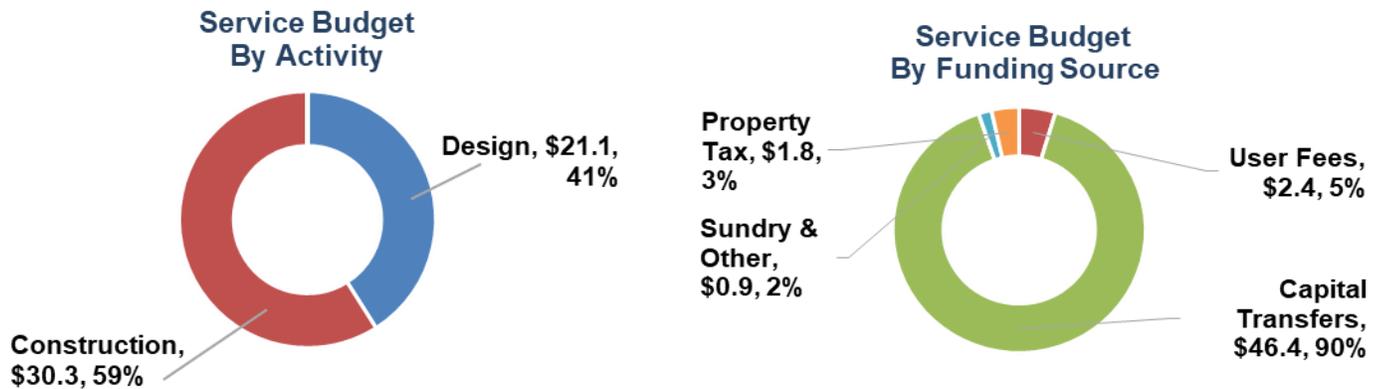
(In \$000s)	Services			Total	
	Municipal Infrastructure Construction	Engineering Review & Acceptance	Engineering Information		
	\$	\$	\$		
2018 Council Approved Operating Budget (Net)	1,277.2	1,291.0	1,534.5	4,102.7	592.1
Base Expenditure Changes					
Prior Year Impacts	70.8	(102.9)	(229.7)	(261.8)	
Delivery of Capital Projects					
Regional Express Rail (RER) and SmartTrack (Metrolinx & City Capital) (\$0.630M Gross)	0.0	0.0	0.0	0.0	
Review / Support for Scarborough Subway Extension (perm) (\$0.107M Gross)		0.0		0.0	1.0
Review / Support for Port Lands Flood Protection Project (perm) (\$0.234M Gross)		0.0	0.0	0.0	2.0
Delivery of the Toronto Water Capital Program (perm) (\$0.147M Gross)	0.0			0.0	1.0
Delivery of the F. G. Gardiner Rehabilitation Project (perm) (\$0.189M Gross)	0.0		0.0	0.0	2.0
Salaries and Benefits					
COLA	440.6	127.9	99.1	667.6	
Progression Pay	496.5	162.3	78.6	737.4	
Salary and Step Adjustments	(382.9)	(68.1)	(79.8)	(530.8)	
Benefits Adjustments	175.9	49.8	(46.9)	178.8	
IDC Changes					
IDC from MCIC (recovery from Capital will be through PPFA)	(878.5)		(22.5)	(901.0)	
Other IDC Adjustments	100.3	(10.0)	(62.3)	28.0	
Other Base Expenditure Changes					
Delete 7 temporary positions (Bell Smart City project approaching completion) (\$0.731M Gross)	(38.8)	(29.5)		(68.3)	(7.0)
Other Base Changes	338.0	(136.0)	(264.1)	(62.1)	
Sub-Total Base Expenditure Changes	321.8	(6.5)	(527.5)	(212.2)	(1.0)
Base Revenue Changes					
Increase Base recoveries from TTC for survey work for Scarborough Subway Extension project			(596.6)	(596.6)	
Capital Recovery Adjustments	223.7	(152.8)	(71.7)	(0.8)	
IDR Changes					
IDR to Legal Services - Surveys for Metrolinx (lower volume)			900.0	900.0	
Other IDR Adjustments			(5.8)	(5.8)	
Sub-Total Base Revenue Changes	223.7	(152.8)	225.9	296.8	
Service Changes					
Base User Fee Changes (Inflation)		(84.6)		(84.6)	
Sub-Total Service Changes¹		(84.6)		(84.6)	
Total Base Changes	545.5	(243.9)	(301.6)	(0.0)	(1.0)
Total 2019 Staff Recommended Operating Budget (Net)	1,822.7	1,047.1	1,232.9	4,102.7	591.1

Note:

- For additional information, refer to [Appendix 4](#) (page 26) for a more detailed listing and descriptions of the 2019 Staff Recommended Service Changes.

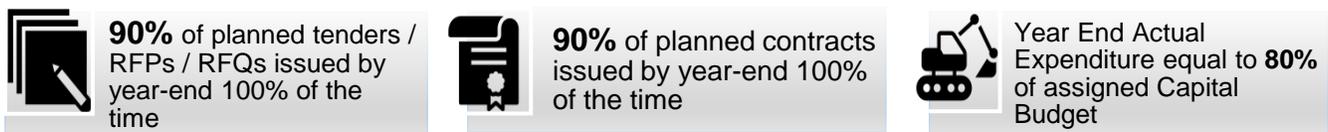
Municipal Infrastructure Construction provide engineering and project management services to internal clients for the construction of new and upgraded infrastructure including bridges, roads, sewers, solid waste facilities, stormwater management facilities, water and wastewater treatment facilities, and water mains.

2019 Staff Recommended Operating Budget \$51.4M



Refer to [Appendix 2](#) (page 23) for the 2019 Staff Recommended Operating Budget by Service.

Key Service Levels

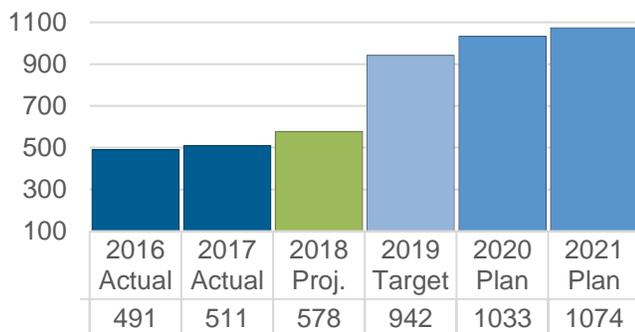


Source of Images: www.icons8.com

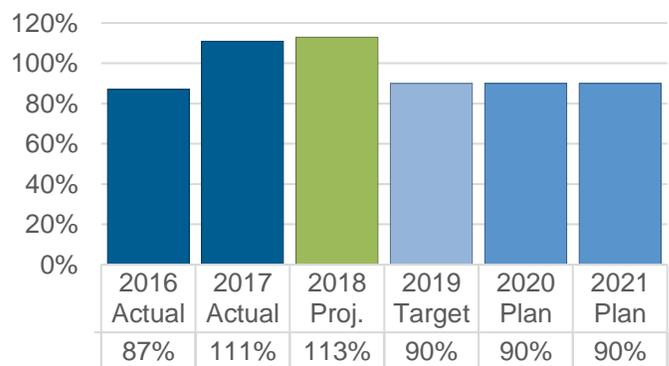
Refer to [Appendix 3](#) (page 25) for a complete list of the 2019 Staff Recommended Service Levels for this Service.

Service Performance Measures

Annual Expenditure on Municipal Infrastructure Design & Construction (\$ Millions)



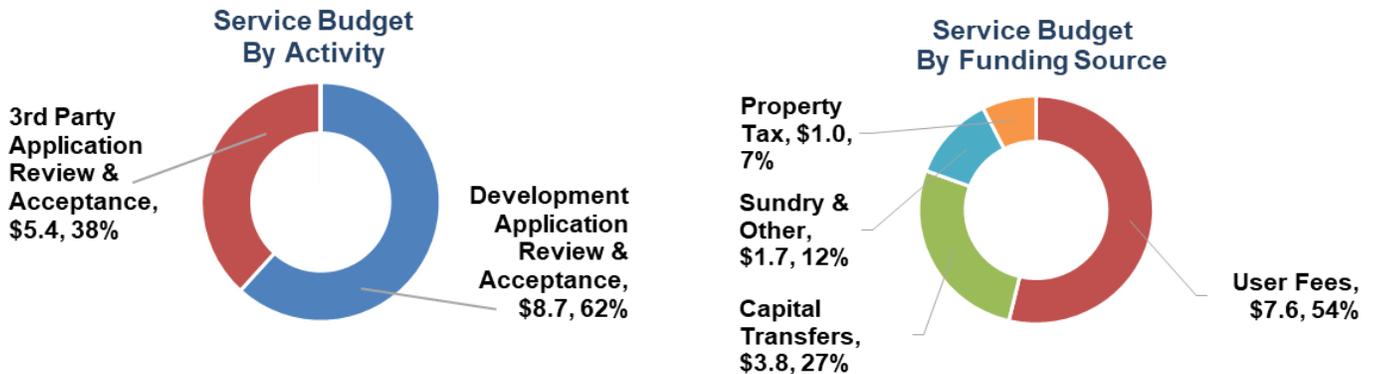
% of Tenders issued compared to plan at year-end



- The projected increase in the Capital Budget and Plan assigned to the Program is primarily driven by both Toronto Water and Transportation Services.
- Engineering & Construction Services continues to experience substantial growth in construction activity for clients' capital programs and tenders are generally increasing in scope and complexity.

Engineering Review & Acceptance provide engineering review and acceptance services to external clients including the development industry, utility companies, and public agencies, so as to ensure that the integrity of City infrastructure is maintained and that development and third party works comply with applicable by-laws, standards and regulatory requirements.

2019 Staff Recommended Operating Budget \$14.1M



Refer to [Appendix 2](#) (page 23) for the 2019 Staff Recommended Operating Budget by Service.

Key Service Levels



Review and acceptance of **75%** of Development Applications within STAR timelines



Review **75%** of engineering drawing sets within established timelines



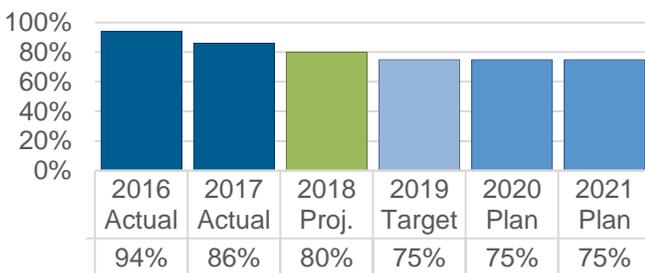
Review and acceptance of **90%** of Third Party and Utility Applications within 20 working days

Source of Images: www.icons8.com

Refer to [Appendix 3](#) (page 25) for a complete list of the 2019 Staff Recommended Service Levels for this Service.

Service Performance Measures

% of Development Applications and Revisions Reviewed within STAR timelines



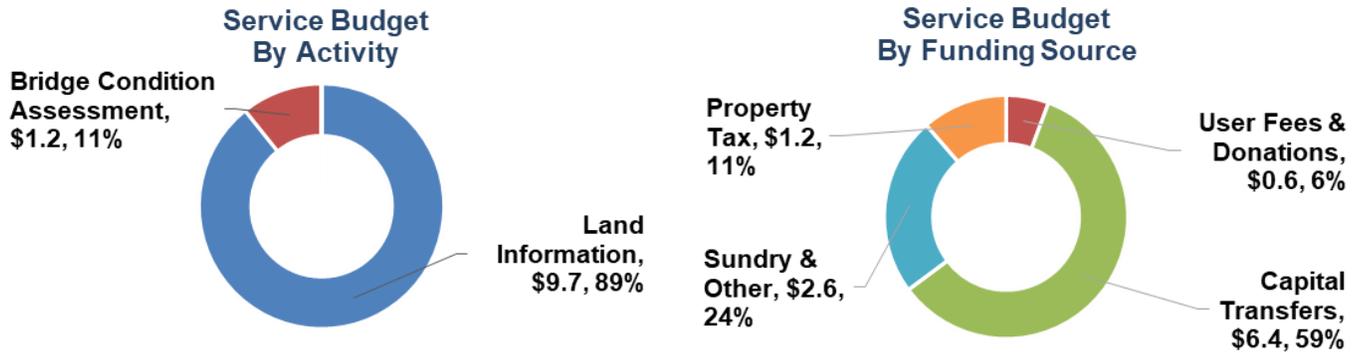
% of Third Party and Utility Applications and Revisions Reviewed Within Set Timelines



- In 2018, 80% of development application circulations and revisions by Engineering & Construction Services were completed within STAR timelines, surpassing the 75% Council approved target compliance rate.
- The number of third party and utility applications reviewed within the set timelines is driven by demand from the industry.

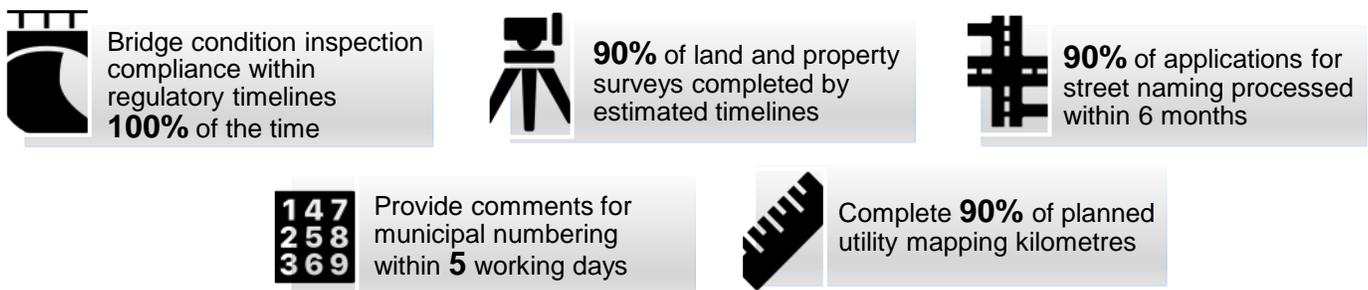
Engineering Information establish and maintain effective technical and data support to the various business units across the Division and other City Divisions involved in managing and building City infrastructure.

2019 Staff Recommended Operating Budget \$10.8M



Refer to [Appendix 2](#) (page 23) for the 2019 Staff Recommended Operating Budget by Service.

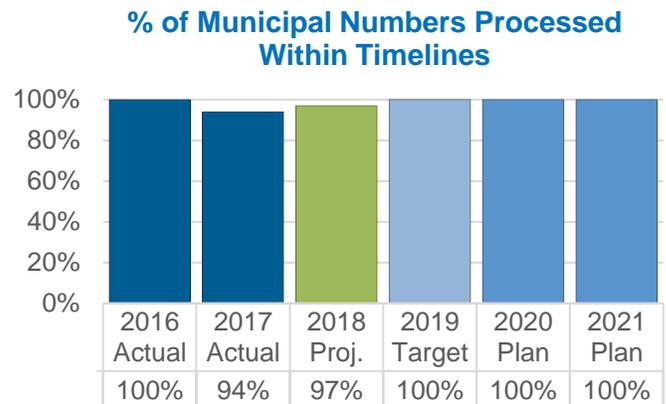
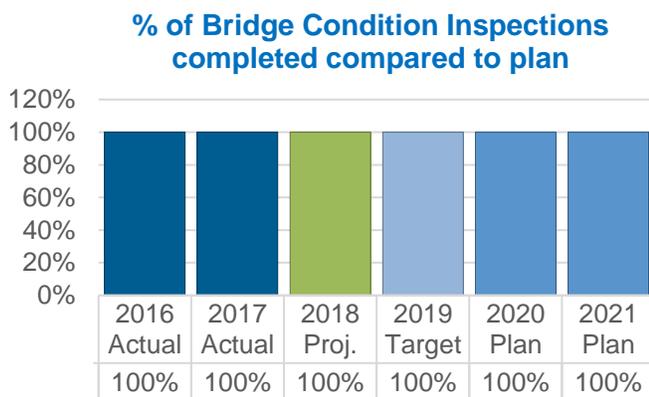
Key Service Levels



Source of Images: www.icons8.com

Refer to [Appendix 3](#) (page 25) for a complete list of the 2019 Staff Recommended Service Levels for this Service.

Service Performance Measures



- ECS is targeting to maintain a 100% completion rate in 2019 and future years for the legislated biennial bridge condition inspection cycle.
- This measure indicates the percentage of municipal numbers processed within five working days.
- In 2018, the Program processed over 300 street numbering applications.

2018 OPERATING PERFORMANCE

2018 Service Performance

Key Service Accomplishments:

In 2018, Engineering & Construction Services accomplished the following:

Municipal Infrastructure Construction

- Delivered \$578 million in capital projects on behalf of Client Divisions and Agencies.
- Processed over 90% of capital construction payments (more than 3,000) within the 30-day compliance period (most payments completed within 20 days).
- Issued multi-year, hundred-million dollar construction contracts, including the:
 - Elevated section of the Gardiner Expressway between Jarvis Street and Cherry Street as part of the Strategic Rehabilitation of the F.G. Gardiner Expressway (contract value \$300 million).
 - Don River and Central Waterfront – Coxwell Bypass Sewer, which will intercept most of the combined sewer overflows to the Don River and will act as a bypass for the existing Coxwell Sanitary Trunk sewer (contract value \$404 million).
 - New Outfall for the Ashbridges Bay Wastewater Treatment Plant (contract value \$270 million).
 - Ultraviolet Irradiation (UV) Effluent Disinfection system for the Ashbridges Bay Wastewater Treatment Plant (contract value \$209 million).

Engineering Review & Acceptance

- Achieved 80% compliance (on 2,015 applications) with mandated timelines for development application circulations (STAR requirement is 75%).
- Achieved 97% compliance for 6,032 third party application circulations reviewed in 2018, comprising 241 for transit expansion (including Eglinton Crosstown and Finch West Light Rail Transit, Regional Express Rail/SmartTrack, and the Scarborough Subway extension), and 5,791 full stream utility applications.

Engineering Information

- Maintained 100% completion rate in 2018 for the Provincially-legislated biennial bridge condition inspection cycle: 677 bridge condition inspections were completed in 2018, comprising 348 discrete spans along the elevated portion of the F.G. Gardiner Expressway, 286 bridges and culverts along City roads, and 43 vehicular bridges within City parks.
- Completed 100% of planned environmental certificate of property use (CPU) inspections and reporting on behalf of Parks, Forestry and Recreation, thereby ensuring full compliance with regulatory requirements.
- Processed over 300 municipal numbering applications, and processed and reported on 70 new street names.

Status Update on 2018 Council Approved New & Enhanced Services

During the 2018 Budget process, City Council approved \$1.677 million gross and \$0 net in new and enhanced services in the 2018 Operating Budget for Engineering & Construction. The status on their implementation and results to-date are highlighted below:

Metrolinx Transit Projects (\$0.885 million gross & \$0 net)

- Partially Implemented: Four (4) of the seven (7) temporary positions approved by Council to support the Regional Express Rail and SmartTrack Stations Program have been filled. Recruitment for the remaining three (3) positions is proceeding in response to resource demands dictated by the RER and SmartTrack timetables.

Legal Advice for Properties Related to the F.G. Gardiner Rehabilitation (\$0.301 million gross & \$0 net)

- Implemented: Dedicated support for the F.G. Gardiner Strategic Rehabilitation Project has been retained within Legal Services and is: undertaking the review of title to affected properties; interpreting and providing advice regarding existing legal rights and obligations; assisting with the acquisition of title or easement interests as required; and, draft, prepare and register related documents.

Digital Communications Expertise (\$0.123 million gross & \$0 net)

- Implemented: A Senior Communications Coordinator was recruited into the Communications Unit of Strategic Communications within the City Manager's Office to support Engineering and Construction Services (ECS) given the ever expanding capital program assigned to the Program, which continues to draw an increased level of public and media attention.

Communication Coordinators for Basement Flooding Protection & Local Roads (\$0.227 million gross & \$0 net)

- Implemented: The Program successfully recruited two (2) Communication Coordinators, one each to support capital delivery related to the Basement Flooding Protection Program and Local Roads, and both of whom started with the Program in August 2018.

Project Management for Lawrence Heights Revitalization (\$0.141 million gross & \$0 net)

- Implemented: The Program successfully recruited the dedicated resource needed to undertake the review of the development application submissions for the Lawrence Heights revitalization project within timeframes that respect current agreements.

2018 Financial Performance

Table 3: Budget vs. Actual by Category of Expenditures and Revenues

Category (In \$000s)	2017	2018	2018	2019	2019 Change from 2018	
	Actual	Budget	Projected Actual *	Total Staff Recommended Budget	Approved Budget	
	\$	\$	\$	\$	\$	%
Salaries and Benefits	56,381.4	66,227.9	59,282.3	67,641.3	1,413.4	2.1%
Materials & Supplies	182.7	405.4	252.7	337.5	(67.9)	(16.7%)
Equipment	404.8	649.6	705.4	868.2	218.6	33.6%
Service and Rent	2,075.6	3,366.3	1,520.2	3,123.3	(243.1)	(7.2%)
Contribution To Reserves/Reserve Funds	768.4	766.0	766.0	769.2	3.3	0.4%
Other Expenditures	(4.8)		7.1			
Inter-Divisional Charges	4,032.2	4,470.9	4,456.4	3,597.9	(873.0)	(19.5%)
Total Gross Expenditures	63,840.4	75,886.1	66,990.1	76,337.4	451.3	0.6%
Inter-Divisional Recoveries	1,053.6	1,682.5	764.7	788.3	(894.2)	(53.1%)
User Fees & Donations	13,637.4	9,117.0	12,077.2	8,836.6	(280.4)	(3.1%)
Licences & Permits Revenue	2,740.7	1,729.8	2,115.5	1,729.8		
Transfers From Capital	47,096.8	55,994.3	49,796.5	56,557.5	563.3	1.0%
Sundry and Other Revenues	2,438.0	3,259.9	1,966.8	4,322.6	1,062.7	32.6%
Total Revenues	66,966.5	71,783.4	66,720.8	72,234.7	451.3	0.6%
Total Net Expenditures	(3,126.1)	4,102.7	269.4	4,102.7	0.0	0.0%
Approved Positions	514.1	592.1	540.1	591.1	(1.0)	(0.2%)

* Year-End Projection Based on Q3 2018 Variance Report

Engineering & Construction Services is projecting to be underspent by \$3.833 million by year-end, primarily resulting from under spending in salaries and benefits due to vacant positions and lower recoveries from client capital projects as a result of the vacant positions. The lower recoveries are partially offset by higher development application review fees and full stream application fees due to higher volume of applications from utility companies.

For additional information regarding the 2018 Q3 operating variances and year-end projections, please refer to the attached link for the report entitled "Operating Variance Report for the Nine-Month Period Ended September 30, 2018" adopted by City Council at its meeting on December 13, 2018.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.CC1.7>

Impact of 2018 Operating Variance on the 2019 Staff Recommended Operating Budget

- ECS has been implementing Program-wide resource optimization, aimed at improving efficiencies and increasing annual capital delivery rates to support the forecasted growth in the City's Capital Program. This also involves the utilization of a program management approach, including multi-year contracts for Engineering & Construction Services, managed by specialized project management teams.
- The Program plans to continue an aggressive recruitment campaign. However, as experienced in the past, filling vacancies has been an on-going challenge for Engineering & Construction Services due to competitiveness in the market place.
- To proactively address staffing, the Program plans to develop a strategy to address the chronic inability to recruit and retain top calibre talent in key business areas stemming from of the Program's reduced competitiveness in the employment market through a comprehensive review of salary compensation, which may impact future operating budgets.



ISSUES FOR DISCUSSION

ISSUES IMPACTING THE 2019 BUDGET

2019 Budget Overview

Operating:

- The 2019 Staff Recommended Operating Budget for Engineering & Construction Services is \$76.337 million gross and \$4.103 million net, reflecting a 0% change from the 2018 Approved Operating Budget.
- While the Program experienced increased recoveries from Metrolinx for survey services in 2018, ECS is expecting the demand for survey work for Metrolinx to decrease in 2019 and therefore recoveries received through Legal Services for this work are being reduced. The estimated recoveries are based on information provided by the proponent and the expected roll-out of projects going forward.
- However, additional recoveries are anticipated in 2019 from the TTC for an increase in survey work related to the Scarborough Subway Extension, and additional revenue will be generated from inflationary increases for Development Application Review Fees. These increases will allow the Program to again maintain its net budget in 2019 without adjusting service levels.
- The Program continues to address the increased demand for delivery of clients' capital programs and major third party work. In 2019, the Staff Recommended Operating Budget includes full funding for resources (6 positions) to provide:
 - Expedited reviews of TTC projects, including the Scarborough Subway Extension;
 - Support to Waterfront Toronto's Port Lands Flood Protection Project; and,
 - Engineering expertise to manage complex, multi-year construction projects, including projects for Toronto Water and the Strategic Rehabilitation of the F.G. Gardiner Expressway.

OTHER ISSUES IMPACTING THE 2019 BUDGET

Modernization, Transformation and Innovation Initiatives

Business Modernization: Construction Act, 2018

- The Construction Act, 2018, newly enacted in mid-2018, will have significant financial and organizational impacts with respect to management and administration of construction contracts. For example, the new Act:
 - Mandates prompt payments within 28 days of receipt of a proper invoice;
 - No longer permits certification of invoices;
 - Requires that notice of non-payment be given to contractor within 14 days of receipt of a proper invoice; and,
 - Imposes adjudication of disputes within 30 days of notice, which results in binding decisions.
- To conform with the Construction Act, new contracts will be required for:
 - Linear construction contracts;
 - Facilities construction contracts; and,
 - Professional Services contracts.
- The Program's well-established Project Management manuals will need to be updated and all staff involved in the management of construction contracts and delivery of construction projects will require training.
- Over the longer term, the changes needed to comply with the new legislation may necessitate additional engineering resources.

Business Modernization: Supply Chain Management and E-Tendering (SAP Ariba)

- City wide modernization of the bidding process from the current paper-based process to a new electronic process is underway. The new electronic process will comprise:
 - Standard and uniform tender documents that will be posted electronically;
 - Portals for bidders to enter information on the electronic forms, which will ensure bids are free of mathematical errors, and gives bidders the ability to make changes right up to the tender close; and,
 - Electronic review of bids, including unbalanced/reverse bid analysis, eliminating manual entry thus saving time and potential errors.
- The Program is working with the Purchasing and Materials Management Division to determine the feasibility of integrating the new electronic process with existing and future project management tools, including the Program's Project Tracking Portal (PTP) software system, in order to further enhance contract administration capabilities.
- Implementation of the new electronic process is expected to result in a number of potential impacts within the Program. Administrative support for tenders and payments may change, including rebalancing of responsibilities within the Program and across the Corporation. The extent of the automation will dictate the nature and extent of changes within the Program.
- The Program is working with the Supply Chain Management Transformation Program to advance the implementation of "Category Management" for linear construction contracts. This procurement approach is expected to derive contract management efficiencies and lower overall construction costs for Client Divisions.

Business Modernization: ECS IT Strategic Plan, Electronic Review of Development Application Drawings, and Adoption of Paperless Processes

- The Program's IT Business Case for a new Document Management and Project Management system identified a single combined, cloud-based document management and construction project management system. The preferred solution is being submitted to the Corporate Information and Technology gating process, and approval will facilitate identification of the exact system(s). The implementation of new Document Management and Project Management systems will improve the Program's service delivery while at the same time ensuring necessary protocols are followed.
- A new system for electronic review of development application drawings is under development, with deployment expected in 2019. The new electronic review process is expected to improve customer service as applications with drawings can be securely circulated and reviewed electronically, improving overall efficiencies.
- The Program has various other projects planned to further improve internal productivity and efficiency, including the deployment of mobile inspector daily reports and development of Apps to replace paper processes (similar to the Toronto Water Wet Tap App).

ISSUES IMPACTING FUTURE YEARS

Increase in Capital Project Delivery

- Engineering & Construction Services (ECS) is projecting the delivery of \$578 million in capital work by 2018 year-end (actual expenditures), an increase of \$67 million, 13% more than in 2017. However, the value of the capital program expected to be delivered by ECS is forecast to continue to grow significantly, to an estimated \$1.1 billion by 2021. The projected increase in capital delivery is primarily driven by increases in both Toronto Water's and Transportation Services' Capital Budgets and Plans.
- The delivery of clients' capital programs and major third party work has increased substantially over the past decade and is characterized by workload peaks. These demands are difficult to accommodate even at a full staff complement and ECS continues to experience difficulties in hiring skilled professional and technical staff due to the highly competitive market conditions in the Greater Toronto Area.

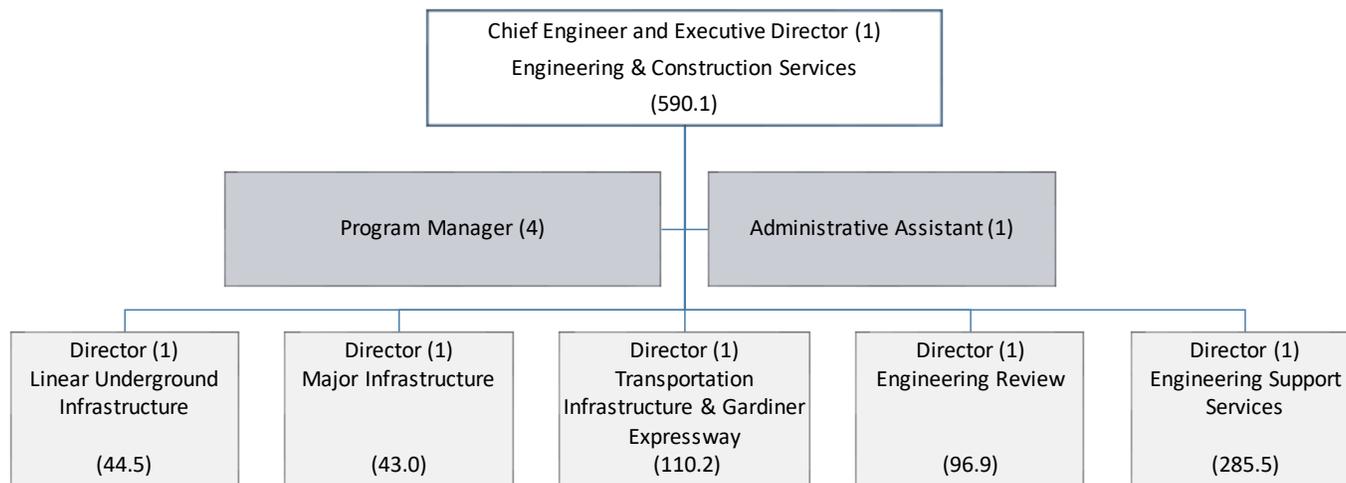
- Given the projected increase in the City's capital programs for municipal infrastructure projects, ECS proposes to engage outside engineering consultants to supplement the robust in-house core capacity of internal engineering, design, inspection and surveying to meet the forecasted demand. ECS has always procured engineering consultant services to augment capacity for the delivery of the Capital Program assigned to ECS.
- Additionally, the Program will continue to enhance planning and coordination of the Multi-year Capital Program with internal and external stakeholders by:
 - Emphasizing the need for asset owning divisions to define and “lock-down” multi-year programs (e.g. 3 years from the planned year of construction).
 - Issuing multi-year construction contracts in areas where multi-year programs are defined.
 - Ensuring multi-year budget approvals are obtained by asset owning divisions, and funds are sufficient so that contracts can be awarded late in the year for delivery at the start of the subsequent construction season, thereby locking-in favourable tender prices and avoiding construction schedule delays.
- The increase in the Capital Budgets assigned for delivery by the Program will require even more proactive management of construction-related disruption, including traffic disruption, at the project planning stage and during construction. This will be supplemented by ongoing improvements to communication and relations with the public and businesses before, during and after construction; and consideration of options such as extended construction work hours to shorten overall construction schedules and impacts.
- A further pressure on the Program will be to ensure compliance with the new *Construction Act*, which imposes strict prompt payment timelines, introduces new lien and holdback processes, and specifies a new adjudication process to resolve payment disputes. These requirements will have significant financial and organizational impacts on the City with respect to the management and administration of construction projects. New contract templates will be required, existing project management manuals will need updating, and staff will require training to ensure compliance with the new Act. Furthermore, implementation of the new Act may necessitate additional engineering resources.
- The Program will continue to exercise a high degree of vigilance and oversight on construction contracts to address recommendations made in past Auditor General's reports.



APPENDICES

Appendix 1

2019 Organization Chart



The 2019 total staff complement includes the Chief Engineer and staff for a total of 591.1 positions, comprising 469.2 capital positions and 121.9 operating positions as summarized in the table below.

2019 Total Complement

	Category	Senior Management	Management with Direct Reports	Management without Direct Reports/Exempt Professional & Clerical	Union	Total
Operating	Permanent	1.5	8.9	52.2	54.2	116.8
	Temporary			2.0	3.1	5.1
	Total Operating	1.5	8.9	54.2	57.3	121.9
Capital	Permanent	4.5	41.1	147.8	266.8	460.2
	Temporary			6.0	3.1	9.1
	Total Capital	4.5	41.1	153.8	269.8	469.2
Grand Total		6.0	50.0	208.0	327.1	591.1

Appendix 2

2019 Operating Budget by Service

Municipal Infrastructure Construction

(In \$000s)	2018	2019			Changes		Incremental Change	
	Approved Budget	Base	New / Enhanced	Total Staff Recommended Budget			2020 Plan	2021 Plan
By Service	\$	\$	\$	\$	\$	%	\$	\$
Design								
Gross Expenditures	21,053.8	21,104.2	0.0	21,104.2	50.4	0.2%	356.8	92.2
Revenue	20,705.8	20,640.6	0.0	20,640.6	(65.2)	(0.3%)	340.8	140.4
Net Expenditures	348.0	463.6	0.0	463.6	115.6	33.2%	15.9	(48.2)
Construction								
Gross Expenditures	29,884.9	30,344.8	0.0	30,344.8	459.9	1.5%	759.8	127.9
Revenue	28,955.8	28,985.7	0.0	28,985.7	29.9	0.1%	727.2	240.4
Net Expenditures	929.2	1,359.2	0.0	1,359.2	430.0	46.3%	32.6	(112.6)
Total								
Gross Expenditures	50,938.7	51,449.0	0.0	51,449.0	510.3	1.0%	1,116.6	220.1
Revenue	49,661.6	49,626.3	0.0	49,626.3	(35.3)	(0.1%)	1,068.1	380.9
Total Net Expenditures	1,277.2	1,822.7	0.0	1,822.7	545.5	42.7%	48.5	(160.8)
Approved Positions	384.0	387.9	0.0	387.9	3.9	1.0%	0.0	0.0

Engineering Review & Acceptance

(In \$000s)	2018	2019			Changes		Incremental Change	
	Approved Budget	Base	New / Enhanced	Total Staff Recommended Budget			2020 Plan	2021 Plan
By Service	\$	\$	\$	\$	\$	%	\$	\$
Development Application Review & Acceptance								
Gross Expenditures	9,041.5	8,673.5	0.0	8,673.5	(368.0)	(4.1%)	239.3	171.9
Revenue	7,878.6	7,970.8	0.0	7,970.8	92.2	1.2%	57.9	(386.3)
Net Expenditures	1,162.8	702.7	0.0	702.7	(460.2)	(39.6%)	181.4	558.2
3rd Party Application Review & Acceptance								
Gross Expenditures	4,995.0	5,377.4	0.0	5,377.4	382.4	7.7%	130.8	52.5
Revenue	4,866.8	5,032.9	0.0	5,032.9	166.1	3.4%	102.3	356.9
Net Expenditures	128.2	344.5	0.0	344.5	216.3	168.8%	28.5	(304.4)
Total								
Gross Expenditures	14,036.5	14,050.9	0.0	14,050.9	14.4	0.1%	370.1	224.4
Revenue	12,745.5	13,003.7	0.0	13,003.7	258.3	2.0%	160.2	(29.4)
Total Net Expenditures	1,291.0	1,047.1	0.0	1,047.1	(243.9)	(18.9%)	209.9	253.7
Approved Positions	111.7	111.2	0.0	111.2	(0.5)	(0.4%)	(0.0)	0.0

Appendix 2 (cont'd)

2019 Operating Budget by Service

Engineering Information

(In \$000s)	2018	2019			Changes		Incremental Change	
	Approved Budget	Base	New / Enhanced	Total Staff Recommended Budget			2020 Plan	2021 Plan
By Service	\$	\$	\$	\$	\$	%	\$	\$
Land Information								
Gross Expenditures	9,725.5	9,673.5	0.0	9,673.5	(52.0)	(0.5%)	124.6	77.7
Revenue	8,214.4	8,419.5	0.0	8,419.5	205.1	2.5%	(469.1)	26.6
Net Expenditures	1,511.1	1,254.0	0.0	1,254.0	(257.1)	(17.0%)	593.6	51.1
Bridge Condition Assessment								
Gross Expenditures	1,185.4	1,164.0	0.0	1,164.0	(21.4)	(1.8%)	36.9	(5.2)
Revenue	1,162.0	1,185.2	0.0	1,185.2	23.2	2.0%	33.9	78.0
Net Expenditures	23.4	(21.2)	0.0	(21.2)	(44.6)	(190.5%)	3.0	(83.2)
Total								
Gross Expenditures	10,910.9	10,837.5	0.0	10,837.5	(73.4)	(0.7%)	161.4	72.5
Revenue	9,376.4	9,604.7	0.0	9,604.7	228.3	2.4%	(435.2)	104.6
Total Net Expenditures	1,534.5	1,232.8	0.0	1,232.8	(301.7)	(19.7%)	596.6	(32.1)
Approved Positions	96.4	92.0	0.0	92.0	(4.4)	(4.6%)	(0.0)	0.0

Appendix 3

2019 Service Levels

Municipal Infrastructure Construction

Activity	Type	Service Level Description	Status	2016	2017	2018	2019
Design	Engineering Design	% of tenders / RFPs / RFQs issued compared to plan	Approved	90%	90%	90%	90%
			Actual	87%	111%	113%	
Construction	Engineering Construction	% of contracts substantially completed compared to plan	Approved	90%	90%	90%	90%
			Actual	53%	48%	45%	
	Engineering Construction	Year End Actual Expenditure as a % of Approved Capital Budget	Approved	80%	80%	80%	80%
			Actual	74%	72%	72%	

Overall, the 2019 Service Levels are consistent with the approved 2018 Service Levels.

Engineering Review & Acceptance

Activity	Type	Service Level Description	Status	2016	2017	2018	2019
Development Applications Review & Acceptance	Development Applications	Review and acceptance of Development Applications within STAR timelines	Approved	75%	75%	75%	75%
			Actual	94%	86%	80%	
	Engineering Drawings	Review of engineering drawing sets within established timelines	Approved	75%	75%	75%	75%
			Actual	93%	90%	91%	
Third Party Application Review & Acceptance	Third Party Applications	Review and acceptance of Third Party and Utility Applications within 20 working days	Approved	90%	90%	90%	90%
			Actual	99%	93%	97%	

Overall, the 2019 Service Levels are consistent with the approved 2018 Service Levels.

Engineering Information

Activity	Type	Service Level Description	Status	2016	2017	2018	2019
Land Information	Land Surveying	Completion of projects by estimated date	Approved	90%	90%	90%	90%
			Actual	90%	86%	89%	
	Street Naming	Provide a recommendation within 6 months	Approved	90%	90%	90%	90%
			Actual	90%	91%	94%	
	Municipal Numbering	Provide comments within 5 working days	Approved	100%	100%	100%	100%
			Actual	100%	94%	97%	
	Utility Mapping	Completion of planned km	Approved	90%	90%	90%	90%
			Actual	90%	87%	90%	
Bridge Condition Assessment	Bridge Inspection & Assessment	Bridge condition inspection compliance within regulatory timelines	Approved	100%	100%	100%	100%
			Actual	100%	100%	100%	

Overall, the 2019 Service Levels are consistent with the approved 2018 Service Levels.

Appendix 4

Summary of 2019 Service Changes

Description (\$000s)	Service Changes						Total Service Changes			Incremental Change			
	Municipal Infrastructure		Engineering Review &		Engineering Information		\$	\$	#	2020 Plan		2021 Plan	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Pos.	Net	Pos.	Net	Pos.
Base Changes:													
Base Revenue Changes													
Base User Fee Changes (Inflation)				(84.6)				(84.6)			(0.8)		(1.3)
Sub-Total				(84.6)				(84.6)			(0.8)		(1.3)
Total 2019 Service Changes				(84.6)				(84.6)			(0.8)		(1.3)

Appendix 6

2019 User Fee Rate Changes

Table 6a

User Fees Adjusted for Inflation and Other

Rate Description	Service	Fee Category	Fee Basis	2018	2019		2020	2021
				Approved Rate	Inflationary Adjusted Rate	Budget Rate	Plan Rate	Plan Rate
Review of development files and environmental database to provide a response to inquiries regarding compliance with development agreements and identification of sites located on closed landfills.	Municipal Infrastructure Design & Construction	Full Cost Recovery	Per review	\$69.15	\$1.38	\$70.53	\$71.94	\$73.38
Request for new municipal number as a result of a severance/consolidation of property	Engineering Information	Full Cost Recovery	Flat fee for assignment / re-assignment of first two numbers; then fee per each additional number assigned	\$158.94 for first two numbers, then \$40.10 for each additional number	\$3.18 for first two numbers, then \$0.80 for each additional number	\$162.12 for first two numbers, then \$40.90 for each additional number	\$165.36 for first two numbers, then \$41.72 for each additional number	\$168.67 for first two numbers, then \$42.55 for each additional number
Changing municipal number	Engineering Information	Full Cost Recovery	Per change	\$406.06	\$8.12	\$414.18	\$422.47	\$430.91
To perform engineering review and site inspection of utility infrastructure work within the City's Right of Way	Municipal Infrastructure Design & Construction	Full Cost Recovery	Per application (for excavation up to 1 km)	\$1,204.47	\$24.09	\$1,228.56	\$1,253.13	\$1,278.19

Appendix 10

Inflows and Outflows to/from Reserves and Reserve Funds

2019 Operating Budget

Corporate Reserve / Reserve Funds

Reserve / Reserve Fund Name (In \$000s)	Reserve / Reserve Fund Number	Projected Balance as of Dec. 31, 2018* \$	Withdrawals (-) / Contributions (+)		
			2019 \$	2020 \$	2021 \$
Projected Beginning Balance			906.1	1,092.7	1,279.3
Vehicle Equipment Reserve	XQ1016				
<i>Proposed Withdrawals (-)</i>					
<i>Contributions (+)</i>			186.6	186.6	186.6
Total Reserve / Reserve Fund Draws / Contributions			1,092.7	1,279.3	1,465.8
Balance at Year-End		906.1	1,092.7	1,279.3	1,465.8

* Based on 9-month 2018 Reserve Fund Variance Report

Reserve / Reserve Fund Name (In \$000s)	Reserve / Reserve Fund Number	Projected Balance as of Dec. 31, 2018* \$	Withdrawals (-) / Contributions (+)		
			2019 \$	2020 \$	2021 \$
Projected Beginning Balance			31,921.8	32,504.5	33,087.2
Insurance Reserve Fund	XR1010				
<i>Proposed Withdrawals (-)</i>					
<i>Contributions (+)</i>			582.7	582.7	582.7
Total Reserve / Reserve Fund Draws / Contributions			32,504.5	33,087.2	33,669.9
Balance at Year-End		31,921.8	32,504.5	33,087.2	33,669.9

* Based on 9-month 2018 Reserve Fund Variance Report