



REPORT FOR ACTION

Toronto Paramedic Services Multi-Year Staffing and Systems Plan

Date: May 14, 2019

To: Economic and Community Development Committee

From: A/Chief, Toronto Paramedic Services

Wards: All

SUMMARY

This report responds to three City Council directions from the 2019 budget process. These include that the Chief and General Manager, Toronto Paramedic Services (TPS):

- "Engage in consultation with authorized representatives of Toronto Civic Employees Union CUPE Local 416 and to report to the Economic and Community Development Committee in the second quarter of 2019 on a multi-year hiring and systems plan for Paramedic Services, to identify any additional system resources that may be required at that time and to include a strategy on how to immediately implement and fully fund paramedics and associated equipment and vehicles costs to fill identified deficiencies."
- "Report back in advance of the 2020 Budget Process on activities taken to date to keep pace with the increasing call demand in Paramedic Services and to provide future strategies that include financial, operational and staffing implications as well as targeted outcomes to help mitigate call volume and demand"; and
- "Report back in 2019, prior to the 2020 budget process, on a multi-year hiring and systems plan to address the approximate four percent growth in emergency call demand."

In accordance with Council's direction, Toronto Paramedic Services, through formal meetings, consulted with and incorporated feedback from authorized representatives of Toronto Civic Employees' Union, CUPE Local 416 in the preparation of this report. TPS also consulted with the City's People, Equity and Human Rights (PEHR) division on the report.

TPS is responsible for all aspects of land ambulance service for the City of Toronto and also operates a Communications Centre (dispatch centre) for the City through a formal Performance Agreement with the Ministry of Health and Long Term Care. Provincial funding of 50% is provided by the Province for land ambulance operations and 100% for the Communications Centre. TPS is governed by the Ontario *Ambulance Act*.

The report outlines TPS' emergency call demand pressures and drivers, efforts to address the increased demand and to support staff, the system impacts of the increased demand on TPS' overall operations, and the ongoing pressures that will continue to impact TPS in the coming years. The report also provides a detailed staffing and associated budget plan (Appendix A) for the next five years to help TPS address the increasing service demand now and into the future.

TPS' emergency call demand has continued to increase by an average of 4% each year. In 2018, TPS experienced a 5.4% increase in emergency call demand over 2017 which is 1.4% higher than expected. The main drivers of this demand include an aging and growing population, increased patient acuity with a greater need to transport patients to specialized facilities, and increases in vulnerable and marginalized populations.

As emergency call demand increases, it also impacts the number of ambulances that are available to respond to other calls, particularly at peak hours of the day. This availability is further exacerbated by "time-on-task", meaning the total length of time required to service an emergency call. Since 2011, time-on-task has increased by 37% for all calls serviced by TPS.

Ambulance availability is also being impacted by the steady increase in lost time due to work-related (WSIB) injury/illness amongst frontline staff. In 2018, this increase was 33% over 2017, with total lost hours 55% higher than in 2017. Most of this increase is related to presumptive legislation enacted in April 2016, which presumes that a diagnosis of post-traumatic stress disorder (PTSD) in first responders (paramedics, dispatchers, management staff) is work-related. Costs associated with WSIB claims are anticipated to continue increasing.

TPS has implemented multiple initiatives to help address the annual increase in emergency call demand and to support employees in the face of the increased demand. These include improved staff scheduling, use of part-time staff, community paramedicine initiatives, a multifunction station model, enhanced dispatch technology, and improved staff engagement. TPS has also implemented a Psychological Health and Wellness Program, designed to provide staff with comprehensive supports and to help those absent from the workplace (e.g., due to stress-related illness) to return to work sooner. Details are found at Appendix B in this report.

The impacts of increasing emergency call demand are also felt by the TPS Communications Centre's Emergency Medical Dispatchers (EMDs). In 2018, TPS responded to 330,358 individual emergency incidents with EMDs handling related incoming telephone calls exceeding 420,000. EMDs must also coordinate the dispatch of all such requests and monitor all responding Paramedic resources appropriately. Currently, the number of Paramedic crews exceed the capacity of an individual EMD to manage and additional EMDs are, therefore, required to ensure safe dispatch decisions. This report includes a recommendation that City Council authorize the TPS Chief to submit a business case to the Ministry of Health and Long-Term Care to add required frontline Emergency Medical Dispatcher staffing and supervision over the next five years to the TPS Communications Centre to respond to the projected 4% average, annual increase in emergency call demand.

Other, additional pressures are expected to continue having an impact on TPS' staffing and system resources as well. These include response time performance, a continued growing and aging population, an increasing number of calls per capita, overtime costs and operational support issues. The report discusses these factors in greater detail.

RECOMMENDATIONS

The Acting Chief of Toronto Paramedic Services recommends that:

1. City Council authorize the Chief, Toronto Paramedic Services (TPS), to submit a business case to the Ministry of Health and Long-Term Care to consider reinstating the requested 2019/20 land ambulance base funding of \$109.442 million for Toronto.
2. City Council authorize, subject to the confirmation of provincial funding noted in Recommendation 1 above, the addition of 28 frontline Paramedic FTEs in 2019 as an in-year adjustment to the Division's 2019 Operating Budget to help mitigate frontline staff workload as a result of increased emergency call demand pressures.
3. City Council request the Chief, TPS to bring forward a business case through the 2020 and future budget processes to add the necessary frontline Paramedic staffing and supervision, Support Staff resources (i.e., fleet, administrative, payroll, scheduling, training, planning and professional standards), and additional uniforms, equipment and vehicles over the next five years, as outlined at Appendix A, to respond to the projected 4% average, annual increase in emergency call demand.
4. City Council authorize the Chief, TPS to submit a business case to the Ministry of Health and Long-Term Care as outlined in Recommendation 3 above, and authorize the Chief, TPS to submit a business case to the Ministry of Health and Long-Term Care to add required frontline Emergency Medical Dispatcher staffing and supervision over the next five years to the Toronto Paramedic Services Communications Centre to respond to the projected 4% average, annual increase in emergency call demand.

FINANCIAL IMPACT

On April 26, 2019, the Ministry of Health and Long-Term Care (MOHLTC) advised the City of its land ambulance grant funding for 2019-20. The City requested \$109,442,000 from the MOHLTC for the 2019/20 Land Ambulance Grant; the MOHLTC indicated that Toronto will receive \$105,593,796, the same funding grant as in 2018-19, with no provision for a Cost of Living Allowance increase. This amounts to a \$3.85 million cost pressure to the City, equivalent to a 3.5% impact. The MOHLTC confirmed the City's Land Ambulance Service Grant funding in writing on May 7, 2019, and the continuation of 100% funding of the TPS Communications Centre on May 6, 2019.

TPS' emergency call demand has continued to increase by an average of 4% each year. In 2018, TPS experienced a 5.4% increase in emergency call demand over 2017 which is 1.4% higher than expected, while the last significant staffing increase for TPS occurred in 2016.

As emergency call demand increases, it also impacts the number of ambulances that are available to respond to other calls, particularly at peak hours of the day. This availability is further exacerbated by the total length of time required to service an emergency call. As the time required to service a call increases, the availability of Paramedic crews to service other calls declines, and can increase the workload on all frontline staff. Since 2011, time-on-task has increased by 37% for all calls serviced by TPS.

Ambulance availability is also being impacted by the steady increase in lost time due to work-related (WSIB) injury/illness amongst frontline staff. In 2018, this increase was 33% over 2017, with total lost hours 55% higher than in 2017. This increase is related to presumptive legislation enacted in April 2016, which presumes that a diagnosis of post-traumatic stress disorder (PTSD) in first responders (paramedics, dispatchers, management staff) is work-related. Costs associated with WSIB claims are anticipated to continue increasing.

As part of the 2019 budget process, City Council requested the Chief, TPS to report back in 2019, prior to the 2020 budget process, on a multi-year hiring and systems plan to address the approximate four percent growth in emergency call demand.

In keeping with this direction, TPS has developed a detailed staffing plan (Appendix A) based on the assumptions noted in Appendix C for the next five years that will help TPS to address the increasing service demand. The multi-year staffing plan calls for the addition 338 front line (323 paramedics, 15 supervisors to maintain an adequate staff to supervisor ratio), 18 support staff and 18 multi-function station staff positions for a total of 374 positions between 2019-2024 at a cost of \$47.5 million gross, \$27.7 million net as noted in Table 1 below:

Table 1

FY	Staffing		2019	2020	2021	2022	2023	2024	TOTAL
2019	28 Front Line	Gross	1,464,400	1,422,400					2,886,800
		Revenue	(1,464,400)	(732,200)	(711,200)				(2,907,800)
		Net	-	690,200	(711,200)	-	-	-	(21,000)
2020	62 Front Line 8 Support	Gross		5,659,223	4,237,517				9,896,740
		Revenue			(2,829,612)	(2,118,758)			(4,948,370)
		Net	-	5,659,223	1,407,905	(2,118,758)	-	-	4,948,370
2021	62 Front Line 4 Support	Gross			5,275,147	4,066,833			9,341,980
		Revenue				(2,637,573)	(2,033,417)		(4,670,990)
		Net	-	-	5,275,147	1,429,260	(2,033,417)	-	4,670,990
2022	62 Front Line 1 Support	Gross				5,069,453	3,985,567		9,055,020
		Revenue					(2,534,727)	(1,992,783)	(4,527,510)
		Net	-	-	-	5,069,453	1,450,840	(1,992,783)	4,527,510
2023	62 Front Line 4 Support	Gross					5,487,560	4,216,200	9,703,760
		Revenue						(2,743,780)	(2,743,780)
		Net	-	-	-	-	5,487,560	1,472,420	6,959,980
2024	62 Front Line 1 Support 18 Impact of Capital	Gross						6,619,217	6,619,217
		Revenue							
		Net	-	-	-	-	-	6,619,217	6,619,217
TOTAL		Gross	1,464,400	7,081,623	9,512,663	9,136,287	9,473,127	10,835,417	47,503,517
		Revenue	(1,464,400)	(732,200)	(3,540,812)	(4,756,332)	(4,568,143)	(4,736,563)	(19,798,450)
		Net	-	6,349,423	5,971,852	4,379,955	4,904,983	6,098,853	27,705,067

These estimates assume and are subject to the continuation of 50% funding by the Ministry of Health and Long-Term Care.

The report recommends that a formal request be made to the Ministry of Health and Long-Term Care to consider reinstating the requested 2019/20 land ambulance base funding of \$109.442 million for Toronto which, once confirmed, will allow TPS to initiate the staffing plan by hiring 28 positions in 2019 which will require a budget adjustment to the 2019 Approved Operating Budget for TPS by \$1.464 million gross, \$0 net. The Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its meeting of March 7, 2019, City Council adopted Toronto Paramedic Services' 2019 Capital and Operating Budgets in which Toronto Paramedic Services was directed to report back in 2019, prior to the 2020 budget process, on a multi-year hiring and systems plan to address the approximate 4 percent growth in emergency call demand. <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.EX2.5>

Nine years ago, to address TPS' 2011 emergency call demand, the City Manager directed a Service and Organizational Study, by an expert, third-party consultant (Pomax, Inc.). In 2013, City Council approved a four-year staffing plan. <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.EX33.11>

COMMENTS

OVERVIEW OF TORONTO PARAMEDIC SERVICES (TPS)

TPS is the largest municipal Paramedic service in North America and operates from 48 ambulance stations located across the city, with a fleet of 220 transport ambulances, and a staff of 1,089 Paramedics and 125 Emergency Medical Dispatchers that provide emergency medical response.

TPS is responsible for all aspects of land ambulance service for the City of Toronto. It operates a Central Ambulance Communications Centre (CACC) for the City through a formal Performance Agreement with the Ministry of Health and Long Term Care. This agreement encompasses performance expectations and guidelines relating to emergency communication and the Communications Centre's service delivery to the community.

The *Ambulance Act* and its associated Regulations and Standards (for patient care and transportation, documentation, vehicles, equipment, inspections, qualifications for employment, investigations, etc.) govern the delivery of ambulance services in Ontario. The *Act* stipulates the responsibilities of municipalities, the authority of the Base Hospital, the certification requirements, powers, duties and obligations of ambulance service providers. The certification requirements include two separate mandatory audits and re-certifications of Toronto's land ambulance operations and its Communications

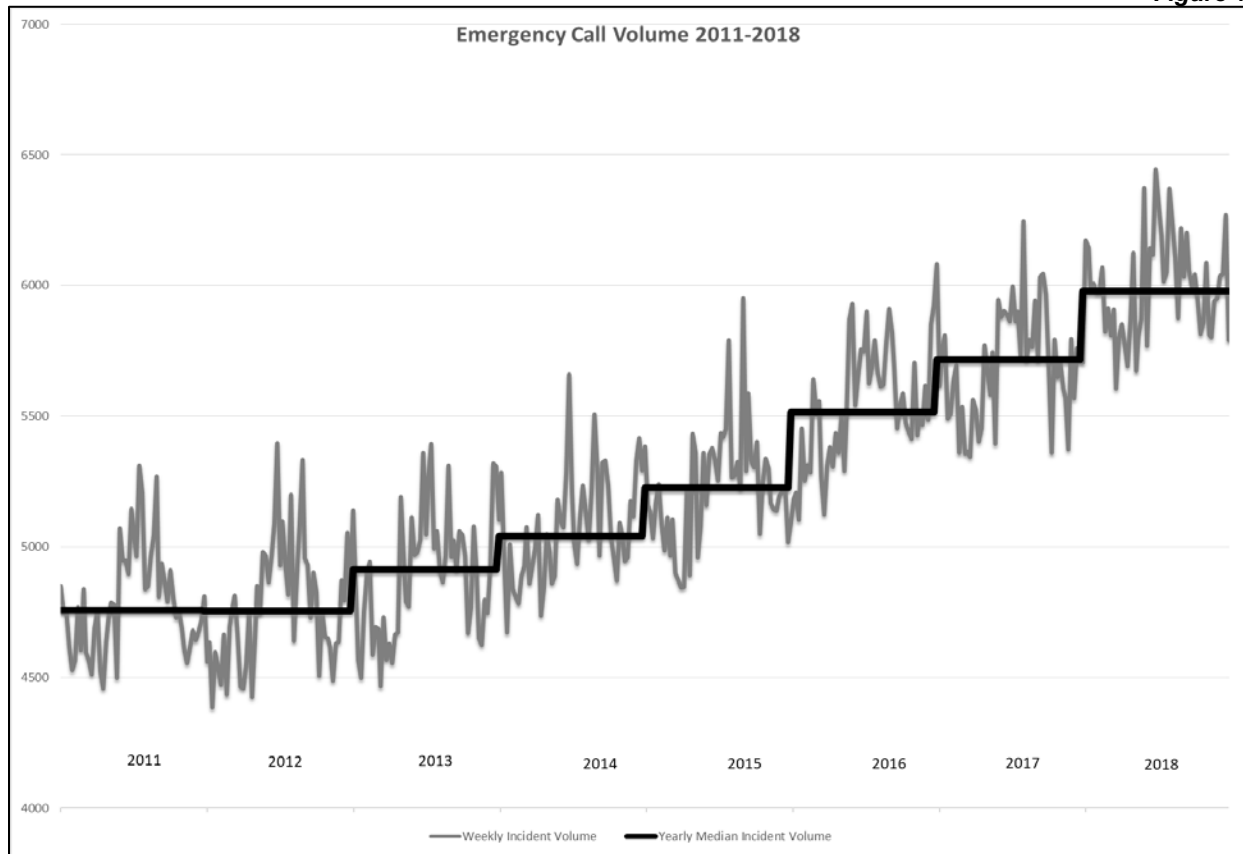
Centre by the Ministry of Health and Long Term Care every three years through a comprehensive evaluation, inspection, and reporting process.

In addition to the *Ambulance Act*, TPS is required to comply with a broad range of impacted legislation, including medical statutes (e.g., *Coroner's Act*, *Narcotics Act*, *Child & Family Services Act*) and privacy laws (e.g., *MFIPPA*, *PHIPA*, *Health Care Consent Act*). TPS also relies on numerous partnerships with other City, provincial and federal public organizations which are direct and indirect customers and beneficiaries of the services provided.

CALL DEMAND/VOLUME

In the last nine years, emergency call demand has continued to increase by an average of 4% each year. In 2018, TPS experienced a 5.4% increase in emergency call demand over 2017 or approximately 18,000 more calls – greater than the 2012 projected 2% to 4% annual increase (see Figure 1 below).

Figure 1



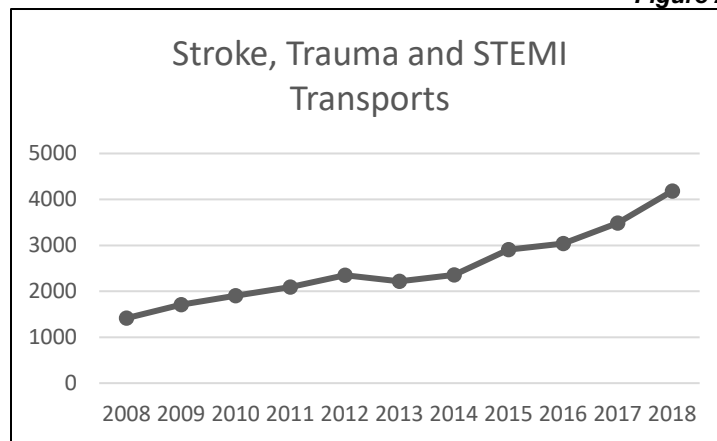
DRIVERS OF EMERGENCY CALL DEMAND

The factors contributing to TPS' emergency call demand include:

- Aging Population
 - After age 55, use of Paramedic services rises exponentially
 - In 2018, 56% of all transports to hospital were for patients 55 years or older (148,573 transports)
 - In 2018, 978 transports were for patients 100 years or older

- Increased patient acuity
 - Greater need for specialized care (in 2018, 17% increase in stroke, trauma, STEMI (heart attack) patient transports). Figure 2 below depicts this rising need.

Figure 2



- Rising Population
 - TPS expects to treat ~11% of city’s population in 2019
- Increase in vulnerable and marginalized populations whose access to primary health care is through Paramedic services

EFFORTS TO ADDRESS CALL DEMAND AND SUPPORT STAFF

TPS has undertaken a number of steps to help address the annual increase in emergency call demand and to support employees in the face of the increased demand. These include:

- **Efforts to Address Call Demand**
 - New dispatch technology
 - Improved scheduling of staff
 - Part-time staff
 - Community Paramedicine
 - In-hospital times
 - Multifunction stations
 - Reduction in non-emergency patient transports
 - Support for *Ambulance Act* regulation changes
- **Efforts to Support Staff**
 - Psychological Health and Wellness Program
 - Implementation of power stretchers
 - Improved staff engagement
 - Upgraded scene safety procedures where violence is likely
 - More visible uniforms
 - Addition of carbon monoxide detectors
 - Expanded scope of Paramedic care

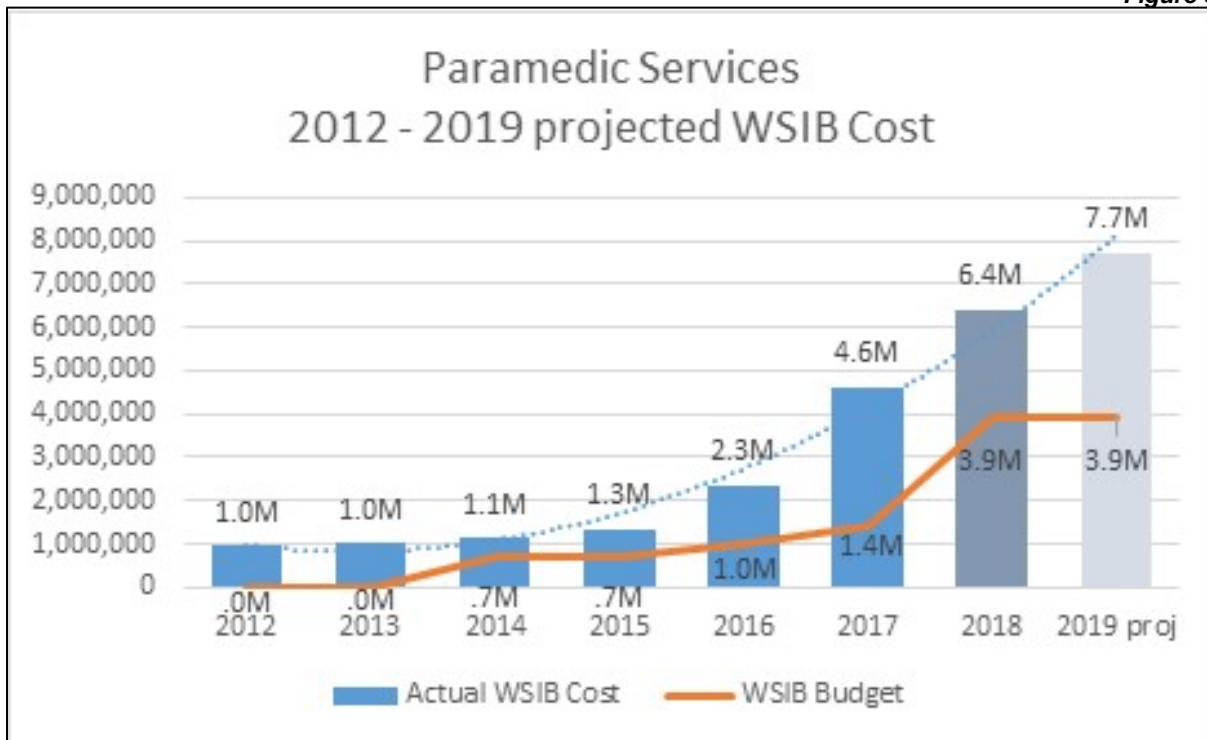
Further details regarding these efforts are provided at Appendix B herein.

WSIB LOST HOURS

Over the last five years, TPS has continued to experience a steady increase in the number of work-related (WSIB), lost-time incidents of employee injury/illness – in 2018, this increase was 33% over 2017, with total lost hours 55% higher than in 2017. At the time of this writing, almost 60 TPS staff were absent from the workplace due to WSIB-related injury/illness.

The increase in WSIB absences is related to presumptive legislation enacted in April 2016, which presumes that a diagnosis of post-traumatic stress disorder (PTSD) in first responders (paramedics, dispatchers, management staff) is work-related. The increase in incidents of employees absent from the workplace lessens the availability of Paramedic crews to service other calls, and can increase the workload on all frontline staff. Costs associated with WSIB claims are also anticipated to continue increasing, and active claims can date back several years and can be adjudicated retroactively. Hence, projections are unpredictable (see Figure 3 below).

Figure 3

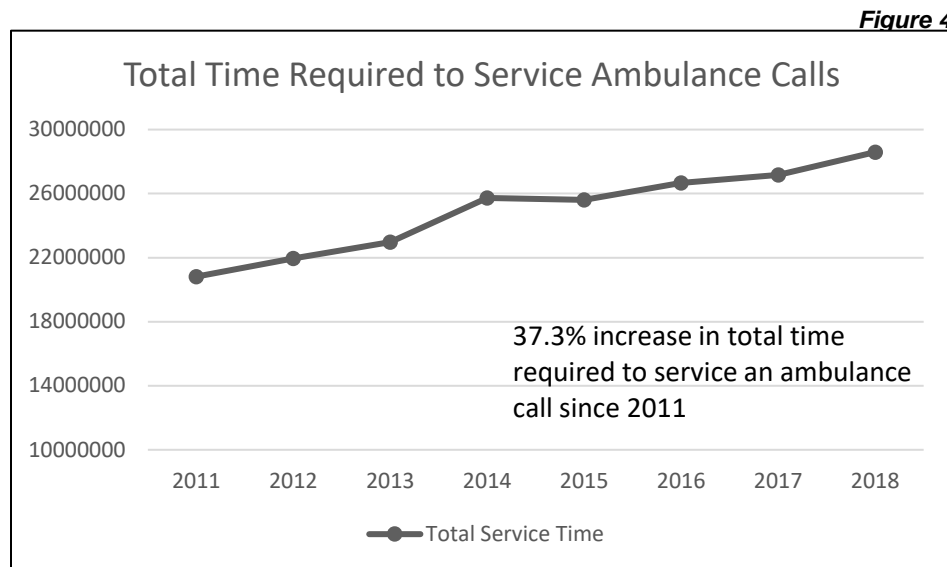


TIME-ON-TASK AND AMBULANCE AVAILABILITY

TPS measures "time-on-task" which is the total length of time (in minutes) required to service an emergency call. This time can be broken down into specific intervals that include travel, on-scene and in-hospital times. As the time required to service a call increases, the availability of Paramedic crews to service other calls declines, and can increase the workload on all frontline staff.

Increasing emergency call demand commits more ambulances and Paramedic resources to calls, thereby impacting the number of ambulances available to respond, particularly at peak hours of the day. This availability is further exacerbated by other factors, including Paramedic on-scene times, offload delay at hospital emergency departments (EDs), as well as travel times which themselves are influenced by specialized patient care transports, traffic congestion, high-rise responses and weather. These factors are discussed further below.

Since 2011, time-on-task has increased by 37% for all calls serviced by TPS (see Figure 4 below). While this report addresses the next five years of service demand growth, time-on-task will need to be recalculated sooner to account for changes in other factors listed herein.



- **Paramedic On-scene Times**

At the scene of an emergency call, Paramedics perform patient assessments and render necessary treatments based on best practices and clinical research. Over the last several years, the scope of Paramedic skills and competencies has increased to ensure that patients continue to receive the best possible care that reflects current clinical practice. As a result, the assessments and treatments completed by Paramedics are taking longer than in previous years. This has added to the overall time-on-task.

- **Ambulance Travel Times**

Ambulance travel times to the scene of an emergency call and from the call to a receiving hospital can be impacted by specialized patient transports, traffic congestion, high-rise responses and the weather.

Specialized patient care transports involve the ambulance transport of patients to specialty hospitals for treatment of stroke, trauma, STEMI (a type of heart attack), pediatric and burn patients. This often means that Paramedics must bypass community hospitals, travelling further to more specialized hospitals, thereby ensuring patients receive the most definitive treatment in the most efficient manner. From 2017 to 2018, there was a 17% increase in transport of such patients, contributing to the overall increase in ambulance travel times.

The growing urban population has contributed to increased **traffic congestion** which directly impacts the travel times of Paramedic crews. The City's *Congestion Management Plan, 2016 – 2020* (published by Transportation Services) states:

Travel demand continues to rise in the City of Toronto as the population increases and our economy grows. Existing road infrastructure is not able to keep pace with this increase in travel demand – in fact it is impractical to build enough roads and infrastructure to comfortably accommodate this demand. The resulting situation – where travel demand exceeds the capacity of the transportation network – is traffic congestion.

Each area of the city has different factors that contribute to traffic congestion. Roads in one area may be affected by issues related to parking and stopping or construction work zones; others by infrastructure bottlenecks that decrease road capacity; and still others by traffic signals that could be better coordinated with existing traffic flow. Traffic in all parts of the city can be affected by poor weather conditions, special events, collisions and other unexpected traffic incidents.

According to the *Congestion Management Plan*, a number of strategies are being undertaken to address congestion and it is hoped that these will alleviate the impacts experienced by Paramedic crews.

Weather extremes also play a major role in Paramedic crews' ability to reach the scene of a call and to transport patients to hospital. As with other motorists, Paramedic crews must also drive according to the conditions in order to ensure the safety of themselves, their patients and the public.

Table 2 below shows the different factors that impact each segment of an ambulance call and the changes from 2011 to 2018 that have contributed to an overall increase in time-on-task of 37%.

Table 2

Factors Impacting Time-on-Task				
	En Route to Call	At Scene of Call	En Route to Hospital	In-hospital
Year-to-Year Changes in Time-on-Task (90th Percentile, in minutes)				
2011	13.40	23.53	17.08	69.63
2012	13.22	23.90	15.88	72.53
2013	13.50	25.00	17.13	71.72
2014	15.63	31.52	22.27	93.92
2015	15.13	31.83	21.80	90.32
2016	14.90	31.83	21.63	89.60
2017	14.77	31.83	22.07	87.27
2018	15.95	31.80	21.98	88.10
2011 - 2018	19% increase	35% increase	28% increase	26% increase

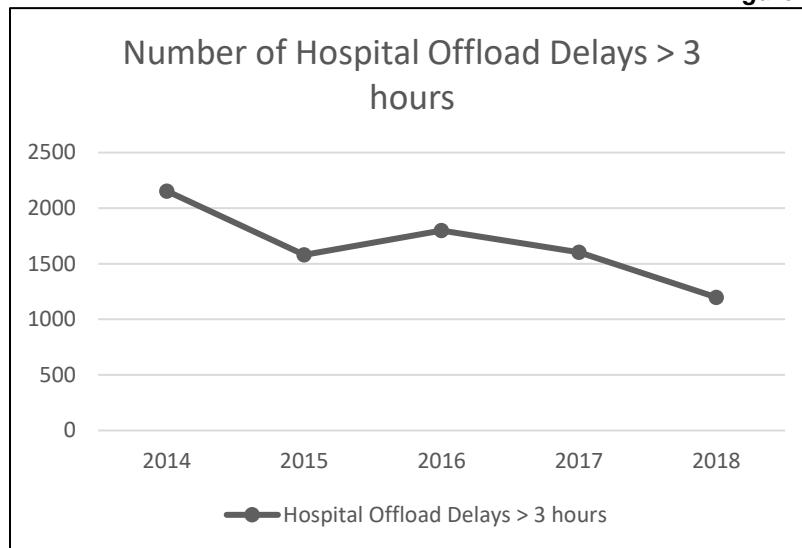
- **Hospital Offload Delays**

Hospital offload time is the time from when an ambulance patient arrives at a hospital emergency department (ED) to the time the patient is physically transferred to an ED bed. At this point, care and accountability for the patient is formally transferred to hospital ED staff.

In general terms, upon arrival at a hospital, Paramedics provide a report on their patient's condition to the ED triage nurse who, in turn, determines if there is an appropriate, available bed for the patient within the ED. If no bed is available at the time, then the Paramedic crew must wait with their patient in the ED until transfer of care to the hospital staff occurs. However, patient offload processes vary across Toronto's hospitals which adds to the complexity of the issue. In 2018, TPS' ambulance offload time was 95 minutes, 90 percent of the time, across the city's 13 general hospitals.

TPS has implemented a number of initiatives to reduce hospital offload delays, such as the Dedicated Offload Nurse (DON) program (annual grant-funded 100% by the Ministry of Health and Long-Term Care); ongoing efforts by TPS to work with hospitals to make process improvements that reduce patient offload delays; deployment of supervisory staff to hospitals to expedite handoff of patients to hospitals; and monthly compliance reports provided by TPS to each hospital to measure further improvements. These efforts have reduced the frequency of offload delays greater than three hours by 44% in the last five years (see Figure 5 below).

Figure 5



The DON program has had the most impact and operates at 13 hospitals across the GTA and has been in place since 2008. It provides for an ED nurse assigned exclusively to care for ambulance patients who have been transferred to designated ED beds, thereby allowing Paramedic crews to be released for emergency response sooner. In a 24-hour period, the program returns the equivalent of approximately six ambulances into the system.

As part of an overall Lean/Six Sigma strategy to improve hospital offload delays of patients, TPS has conducted work flow and time studies in eight hospitals to understand the amount of time Paramedics spend in hospital triage and in offload processes. This is an ongoing exercise with the goal of streamlining work flows in hospitals.

In partnership with GTA hospitals, Toronto Paramedic Services also utilizes a patient distribution system (PDS). This system helps to distribute ambulance patients to emergency departments (EDs) more evenly, thereby mitigating each hospital's patient load while increasing the likelihood that Paramedics can offload patients from their stretchers faster.

CENTRAL AMBULANCE COMMUNICATIONS CENTRE IMPACTS

The TPS Communications Centre is responsible for answering all 911 calls for medical emergencies in the city of Toronto. It is 100% provincially funded and operated on behalf of the province.

TPS' Communications Centre uses an evidence-based and industry best practice triage tool (Medical Priority Dispatch System or MPDS) combined with ambulance decision-support software (Optima) for dispatchers to provide the most efficient and effective service for all incoming 911 medical emergency calls. The TPS Communications Centre is accredited as a Centre of Excellence with the International Academies of Emergency Dispatch, ensuring consistent adherence and application of the MPDS tool.

- System benefits of MPDS and Optima:
 - Provides extensive scene safety questions to ensure Paramedic safety
 - Critical patients are readily identified to receive the highest qualified care
 - Provides pre-arrival life-saving, medical instructions to assist patients
 - Guides judicious use of lights and siren to support public safety
 - Allows predictive modeling for response to critically ill patients
 - Helps Emergency Medical Dispatchers select the closest, most appropriate Paramedic resource
 - Preserves the highest qualified Paramedic resources for critical patients, while appropriately managing less time-sensitive emergency calls

- **Emergency Medical Dispatcher Workload**

In 2018, TPS responded to a total of 330,358 individual emergency incidents with related incoming telephone calls to the Communications Centre exceeding 420,000. In addition to handling all incoming 911 requests for medical service, Emergency Medical Dispatchers (EMDs) must coordinate the dispatch of all such requests and monitor all responding Paramedic resources appropriately.

Since 2011, operational staffing hours have increased by 46% from 677,477 to 990,010 hours through to the end of 2018 in response to the increases in demand for service. This has resulted in a commensurate increase in the complexity and number of Paramedic crews that EMDs are required to safely manage. Currently, the number of Paramedic crews exceeds the capacity of an individual EMD to manage. Additional EMDs are needed to ensure safe dispatch decisions.

The proposed business case to the Ministry of Health and Long-Term Care will request the addition of required frontline Emergency Medical Dispatcher staffing and supervision over the next five years to the Toronto Paramedic Services Communications Centre to respond to the projected 4% average, annual increase in emergency call demand.

- **Communications Centre at Capacity**

TPS' current Communications Centre at 4330 Dufferin Street continues to manage and dispatch Paramedic resources to an increasing number of emergency calls. During the past 10 years, numerous upgrades have been made to the Centre's technology, and staffing resources have been maximized (e.g., addition of part-time call-takers) to respond to this demand.

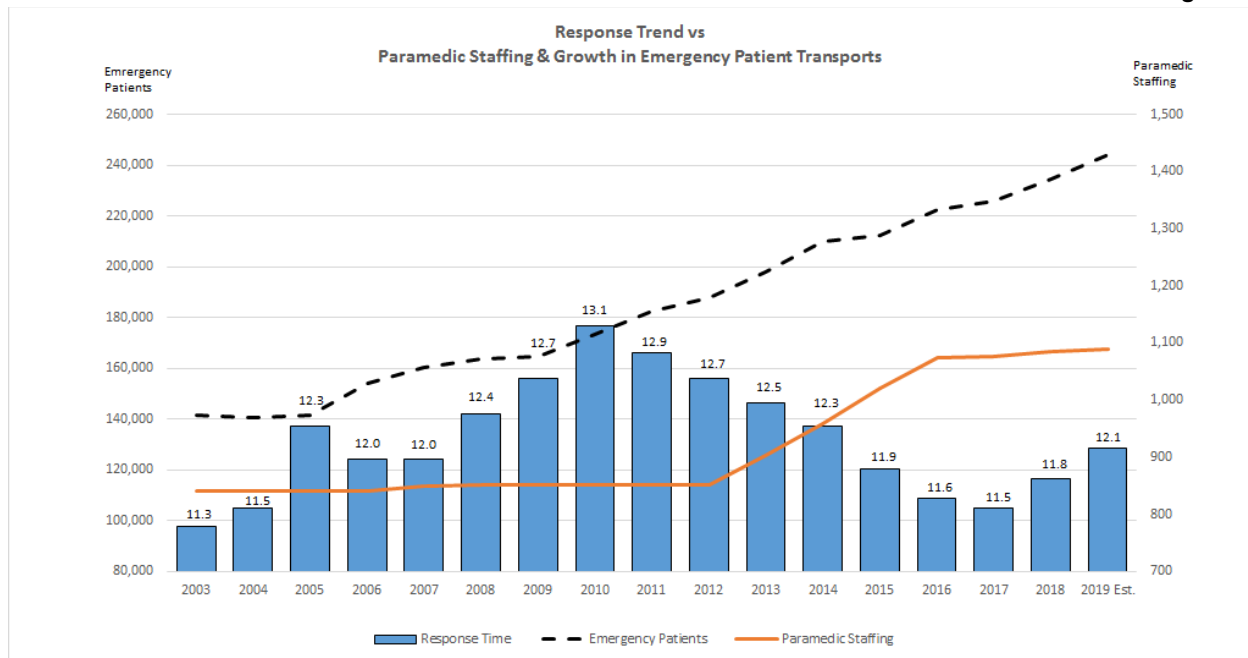
However, the Centre's physical footprint is now at capacity. The increasing demand is taxing the Centre's physical space and support for the infrastructure is no longer sustainable. No further space exists within the current facility for expansion to meet future growth in staffing and technology infrastructure. The 10-year TPS Capital Plan currently includes a \$75 million unfunded project for a new Communications Centre.

CONTINUING PRESSURES

- **Response Time Performance**

As shown in Figure 6 below, with additional Council-approved Paramedic resources hired between 2013 and 2016, response times improved. However, with no additional resources since 2016, response times to critically ill patients have deteriorated slightly and this trend is expected to continue as call demand continues to increase.

Figure 6



- **Growing Population**

Toronto's population will continue to grow over the next 10 years. During the day, the city's population increases from 2.9 million to 3.5 million. TPS currently treats approximately one out of every 10 individuals (10%) every year. Therefore, with the increased population, along with the factors affecting time-on-task and ambulance availability discussed above, it is expected that service demand will continue to increase by at least 4% per year.

- **Comparison of City Population vs. TPS' Emergency Calls Per Capita**

TPS' emergency call volume trend is increasing at a rate greater than the city's population growth. From 2011 to 2018, emergency calls per capita increased from 0.0964 to 0.1118. The growth of calls per capita since 2011 has been 16.4% but population growth in the same time period has been 13.0%. Given the city's population growth over the next 10 years, this trend is expected to continue. (*Population-related sources: City Planning, Statistics Canada*)

- **Aging Population**

At the same time, the rate of population growth among those 55 and older is consistently higher than for those under 55. As discussed above, in 2018, 56% of all transports to hospital were for patients 55 years or older. Therefore, we expect this trend to continue.

- **Overtime Costs**

Part-time Paramedics are used to fill preplanned absences. When no part-time Paramedics are available, TPS uses overtime to maintain staffing levels. In 2018, TPS was overspent on its overtime budget due to the increased service demand.

- **Operational Support**

Systems and processes that support frontline emergency work are also impacted by increased call demand. In order to respond to growth pressures, there is an associated need for additional logistics, mechanical, scheduling and other support staff, medical equipment and vehicles. Additional logistics staff are required in order to ensure that equipment and vehicles are maintained to legislated standards in accordance with the *Ambulance Act*.

TPS continues to move towards a multifunction station model. In the Division's 10-year Council-approved capital plan, three more multifunction stations are scheduled for construction which will require additional support resources.

These large, multi-function facilities are an industry best practice. They provide logistical support for all emergency Paramedic vehicles within a district for operational deployment and serve as a central book-on location for the Paramedics who staff those vehicles.

Benefits of this model include:

- Reduced start-of-shift downtime, end-of-shift overtime and vehicle downtime
- Substitution of Paramedic resources with lower cost, logistical resources for specific tasks
- Expected efficiencies are also in several line items like Paramedic overtime, medical supplies spoilage, better hospital relief and vehicle and equipment maintenance
- The multifunction station has a capital cost of approximately 50% less than the historical approach of building multiple two or three-bay ambulance stations.

OTHER INITIATIVES TO ADDRESS SERVICE DEMAND

- **Primary Care Paramedic Training Program (in partnership with Toronto Employment and Social Services)**

Since 2010, in partnership with Toronto Employment and Social Services, TPS has been delivering a Primary Care Paramedic Training Program to allow low-income individuals from diverse communities to become life-saving professionals by mitigating their costs and helping them become self-reliant. Since the program's inception, 26 of 28 of the program's graduates have been hired by TPS.

In 2018, 10 candidates graduated from the program, and 10 additional students are expected to graduate in 2020 and be hired by TPS.

CONCLUSION

It is reasonable to expect that TPS' emergency call volume will continue to increase by at least 4% per year based on a growing and aging population. Therefore, it is anticipated that required staffing levels for future years will need to be adjusted based on that increase.

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SIGNATURE

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ATTACHMENTS

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APPENDIX A

RECOMMENDED STAFFING LEVELS

Based on a projected, continued 4% growth in emergency call demand, TPS is recommending that additional Paramedic resources be added to the Division's response capacity. The immediate staffing impact is 28 Paramedic FTEs in 2019, followed by 346 additional FTEs over a five-year period.

Since the last Council-approved staffing increase in 2016, TPS' emergency call demand has increased by 13%. This recommended staffing plan will allow TPS to better meet the continued increase in emergency call demand in 2019 and beyond.

In order to respond to the continued 4% annual growth in emergency call demand, the multi-year plan calls for the addition of 338 front line, 18 support staff and 18 multi-function station staff positions for a total of 374 positions between 2019-2024 at a cost of \$47.5 million gross, \$27.7 million net as noted in the table below:

FY	Staffing		2019	2020	2021	2022	2023	2024	TOTAL
2019	28 Front Line	Gross	1,464,400	1,422,400					2,886,800
		Revenue	(1,464,400)	(732,200)	(711,200)				(2,907,800)
		Net	-	690,200	(711,200)	-	-	-	(21,000)
2020	62 Front Line 8 Support	Gross		5,659,223	4,237,517				9,896,740
		Revenue			(2,829,612)	(2,118,758)			(4,948,370)
		Net	-	5,659,223	1,407,905	(2,118,758)	-	-	4,948,370
2021	62 Front Line 4 Support	Gross			5,275,147	4,066,833			9,341,980
		Revenue				(2,637,573)	(2,033,417)		(4,670,990)
		Net	-	-	5,275,147	1,429,260	(2,033,417)	-	4,670,990
2022	62 Front Line 1 Support	Gross				5,069,453	3,985,567		9,055,020
		Revenue					(2,534,727)	(1,992,783)	(4,527,510)
		Net	-	-	-	5,069,453	1,450,840	(1,992,783)	4,527,510
2023	62 Front Line 4 Support	Gross					5,487,560	4,216,200	9,703,760
		Revenue						(2,743,780)	(2,743,780)
		Net	-	-	-	-	5,487,560	1,472,420	6,959,980
2024	62 Front Line 1 Support 18 Impact of Capital	Gross						6,619,217	6,619,217
		Revenue							
		Net	-	-	-	-	-	-	6,619,217
TOTAL		Gross	1,464,400	7,081,623	9,512,663	9,136,287	9,473,127	10,835,417	47,503,517
		Revenue	(1,464,400)	(732,200)	(3,540,812)	(4,756,332)	(4,568,143)	(4,736,563)	(19,798,450)
		Net	-	6,349,423	5,971,852	4,379,955	4,904,983	6,098,853	27,705,067

APPENDIX B

EFFORTS TO ADDRESS CALL DEMAND

- **Improved scheduling of staff**

On January 23, 2013, TPS implemented improved schedules for Paramedics that balance staff workload and that more closely match peak emergency call demand during weekdays and weekends, including adjusting start and end times for shifts.

More recently, in early 2019, a trial Paramedic shift schedule was implemented that was designed jointly by Union and Management as part of the employee engagement process. Due to the success of the trial, the new schedule has been implemented at our busiest station in the downtown core.

- **Part-time Staff**

In 2012, through the collective bargaining process with Toronto Civic Employees' Union (TCEU) Local 416, the City successfully negotiated the ability for TPS to hire part-time Paramedics at a fixed ratio of one (1) part-time Paramedic hired for every five (5) full-time Paramedics. The use of part-time Paramedic staff permits operational flexibility in scheduling to better match emergency call demand and to cover for planned absences of full-time Paramedics. As a result, Paramedic resources are utilized more efficiently and reduce the need to use overtime for full-time staff.

However, since 2014, the number of part-time Paramedics has reached the maximum allowable under the ratio. As a result, through a Paramedic Interest Arbitration Award issued by Arbitrator Stout on July 30, 2018, the City was awarded an increase in the part-time ratio of 1:4. This will allow TPS to continue responding to its growing service demands and to provide greater scheduling flexibility.

- **Community Paramedicine**

TPS' Community Paramedicine Program was launched in 1999. It uses a variety of approaches to help connect vulnerable patients to the most appropriate entry into the health care system. Focussing on health promotion and injury prevention, the Program matches each patient's unique needs, thereby reducing 911 responses and emergency room visits.

The Community Paramedicine Program is a key partner in the Toronto Seniors Strategy which aims to help seniors stay healthy and live at home longer through timely and appropriate care in the community. The Program is also a key component of multiple Council-approved strategies aimed at addressing the needs of the most vulnerable. These include the Poverty Reduction, Seniors, and Downtown East Revitalization Strategies.

In July 2018, five (5) Council-approved Paramedics were added to the Community Paramedicine Program, with an additional five (5) approved by Council in the 2019 Budget. The addition of these staff enables TPS to expand the program, not only increasing the number of individual visits to frequent 911 callers but also expanding clinics 1 day per week in various TCHC buildings where it has been determined that TPS receives frequent calls. From November 2017 to November 2018, TPS experienced a 32% drop in the number of frequent 911 callers for medical emergencies.

- **In-hospital Times**

TPS has hired an individual with certification in Lean/Six Sigma processes to map workflows and thus, better understand the practices involved in TPS patient offload delays at hospitals. By working with the hospital community, TPS identified accountabilities and standards of work, and assisted in developing efficiencies to reduce such delays.

- **Multifunction Stations**

In 2017, Toronto Paramedic Services began operation of the City's first multifunction ambulance station at 1300 Wilson Avenue. The facility provides for 24/7 logistical support to all areas of the city, especially on nights and weekends, with 15 fully operational Paramedic vehicles being prepared for service every shift. Planning and design continues for the Division's second multifunction station at 330 Progress Avenue.

The new stations are used to achieve greater efficiencies in the preparation of equipment and vehicles, and to allow more targeted deployment of Paramedic crews across the city to respond to emergency calls.

- **Reduction in non-emergency patient transports**

Starting in 2001, as a result of increasing emergency call demand, TPS began reducing the number of non-emergency, inter-facility patient transports it performed. This action was designed to allow for more Paramedic resources to be available to respond to emergency calls.

- **Dispatch technology**

The TPS Communications Centre uses advanced and up-to-date dispatch technology to optimize response to all emergency calls. A number of technology updates were completed in the first half of 2018. These included updates to TPS' computer-aided dispatch software as well as an update to the ambulance selection tool, used to aid dispatchers. Refinements were also made in early 2018 to fine-tune patient distribution throughout city hospitals, and to further help improve ambulance availability. These updates and upgrades ensure that the Communications Centre continues to operate as efficiently and effectively as possible.

- **Ambulance Act Regulation Changes**

In consultation with the Ministry of Health and Long-Term Care, TPS is examining models for providing alternative care to 911 callers in an effort to reduce their need for transport to hospital. These include “treat-and-release”, palliative care and alternate destination protocols. These practices are not available to be implemented currently due to legislative parameters, but may be implemented in the future.

EFFORTS TO SUPPORT STAFF WITH INCREASING CALL DEMAND

- **Psychological Health and Wellness Program**

In February 2017, TPS launched a comprehensive Psychological Health and Wellness Plan, to provide a work environment that is psychologically and physically healthy and safe. The Plan is focused on prevention, reduction of stigma, timely intervention, post-incident support and increasing available resources. It was developed in consultation with Union Locals 416 and 79, the City’s Employee Assistance Program staff, City of Toronto Ombudsman, and Human Resources’ Disability Management section.

In 2019, Toronto Paramedic Services implemented a Superintendent function, specifically responsible for safely re-integrating staff in the workplace who have been absent due to physical or psychological injury or illness. This function also aims to help staff re-enter the workplace sooner and, therefore, reduce lost hours due to WSIB. In addition, staff have access to an in-house staff psychologist, coordinated and timely care, and to specialized therapies (e.g., exposure therapy) that are supported by WSIB.

- **Implementation of Power Stretchers**

In 2018, Toronto Paramedic Services completed the roll-out of power stretchers to help reduce musculoskeletal disorder (MSD) injuries amongst Paramedics. As a result, MSD injuries related to stretcher lifts dropped by 76%.

- **Improved Staff Engagement**

In 2015, in consultation with TCEU Local 416 and CUPE Local 79, TPS implemented a multi-year employee engagement strategy, designed to improve working conditions and morale for all staff. Since the start, two rounds of staff surveys have been delivered (2015, 2018), along with focus groups, to gather feedback from staff on recommended improvements. In turn, joint Union/Management working groups were developed to help implement a number of the recommendations. These have included:

- Trial new Paramedic shift schedule at the new multifunction ambulance station developed jointly with Union
- Observation shifts for Paramedics and Dispatchers to better understand each other's roles

- Joint Union/Management working group to help address meal break and end-of-shift overtime issues
- Scheduling changes implemented in fleet and logistics areas to optimize staffing
- Breakfast and lunch sessions made available for all staff to ask questions of and speak directly with senior management

APPENDIX C

METHODOLOGY IN DETERMINING REQUIRED PARAMEDIC FTES

- 330,000 emergency calls in 2018
- 4% average increase in annual call volume based on a 10-year average
- 13,200 more calls x 127 minutes Time-on-Task for 90th percentile of **all** calls
= 1,676,400 additional minutes spent on calls each year
= 27,940 additional hours (1,676,400 ÷ 60) spent on calls each year
- 1 ambulance operating 24/7 for a year = 24 hours x 365 days = 8,760 hours per year produced
- $27,940 \div 8,760 = 3.2$ ambulances staffed 24/7
- 18 Paramedics required to staff one 24/7 ambulance across all shifts
- 3.2 ambulances x 18 Paramedics = 57 Paramedic FTEs