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Attachment 1

City of Toronto

Master Fire Plan 2015-2019

Toronto Fire Services

Executive Summary

The Toronto Fire Services' (TFS) 2015-2019 Master Fire Plan supports the Division's ongoing efforts to increase fire safety and fire prevention through education and prevention mechanisms and to provide high quality, efficient, and effective emergency response such that life safety outcomes are improved for all residents across the city.

This Master Fire Plan provides strategic direction for TFS and outlines the critical initiatives that TFS will implement over the next five years in order to achieve its strategic objectives. The Plan is meant to offer a foundational and adaptable toolkit such that TFS has the means to navigate through ongoing challenges and capitalize on opportunities. It is meant to be a living document that is continuously evolving and improving as new information is gathered and analyzed.

Plan Inputs

Several critical elements have directly informed the development of the Master Fire Plan. These include:

- The City's Strategic Action Plan for 2013-2018
- Toronto Fire Services Strategic Plan 2013-2018
- Toronto Fire Services *A Path to Diversity* Report
- Legislation, regulations, and industry standards
- Carry forward items from the 2007 Master Fire Plan
- Recommendations put forward by the *Core Service Review; Service and Organizational Review of Toronto EMS and Toronto Fire Services*; the *Auditor General's Report on Training and Recruitment*; and the *Fire Underwriters Survey*
- Consultations with public, staff, other City Divisions, and other fire departments
- Findings from public survey
- Findings from environmental scan

Major Issues

There are a number of major issues that are addressed in this plan and that form the basis of the work to be carried out over the five year term of the plan, including:

1. Technological Improvements
   Toronto Fire Services (TFS) is in the process of implementing a number of critical technological changes that have the potential to alter the way in which resources are utilized in the future. Current projects including the implementation of a new radio system in conjunction with Toronto Police Service and Toronto Paramedic Services includes the replacement of the current Fire Station Alerting System, which has the potential to shave seconds off of the time it takes to dispatch vehicles on an

emergency call. In addition, two new software packages are currently being implemented to allow both predictive modelling and dynamic staging.

Predictive modeling will assist in ensuring operational resources are positioned across the city in the most optimal locations. This software will also be of significant importance in determining the best locations to plan for new fire stations, apparatus (trucks), and staff.

Dynamic staging software uses real-time information from Computer Aided Dispatch (CAD) systems and historical emergency response data to determine the most strategic and efficient placement of apparatus, by reducing service coverage gaps that can occur when multiple apparatus are engaged in responding to emergency incidents.

In addition to these specific projects, TFS is continuing to develop its own in-house GIS capacity for real-time mapping, and to enhance potential collaborations with other City Divisions, such as City Planning. TFS is also continuing to utilize and build on existing business intelligence software to better analyze historical data and improve future resource allocations for a more efficient service.

Future projects also include partnering with other City Divisions including Transportation Services, Toronto Transit Commission (TTC), Toronto Paramedic Services, and Toronto Police Service on the development of a traffic pre-emption system to improve emergency vehicle response times.

TFS must implement technological solutions to determine the impact on overall response performance prior to assessing the need for additional stations/vehicles.

2. CFAI Accreditation
   TFS will be implementing a total quality improvement process, as approved by Council in 2013; therefore the Master Fire Plan has been built to provide a stepping stone from previous planning processes to CFAI accreditation. The Commission on Fire Accreditation International (CFAI) administers a program, which enables emergency response providers to set goals, develop strategic action plans and continuously evaluate and improve services provided to the public. The accreditation process involves examining performance across 10 categories, 43 criteria and 252 key performance indicators (KPIs). The accreditation process takes approximately 36 months and includes a detailed self-assessment, a peer review and formal accreditation by an 11-member commission, representing a cross-section of the fire industry. A significant benefit of being accredited is the allowance for comparisons with peer organizations.

3. Interim Service Priorities
   While TFS continues with the development of the two major initiatives outlined above, there are a number of service priorities that must be addressed to ensure

ongoing efficient and effective fire service for the residents of Toronto. These priorities include the following:

- Vertical Growth: The proliferation of high-rise developments increases the need for re-assessing overall placement of stations and firefighting apparatus (trucks) due to the impact of vertical response times. Vertical growth can result in extended response times as firefighters require extra travel time to get to the location of the emergency incident. Vertical response issues can be tempered somewhat through recent changes to the Building Code requiring sprinklers in new multiple unit residential buildings over three storeys (since 2010), although a significant stock of older buildings exist in the city with no retrofit requirements.

- Densification and Congestion: Emergency response travel times have been impacted by the increasing amounts of traffic and congestion in the city and this will only be heightened as the city continues to grow and develop. Some of the planned technology projects may assist with these pressures, while in some cases new models for meeting service needs may be required.

- Diversity: Increasing diversity in the city provides challenges for meeting needs with respect to fire prevention and public education efforts, which must increasingly be offered in many languages and forms to ensure messages are transmitted in a way that resonates with residents. In addition, increasing diversity in the city provides opportunities to improve recruitment practices to attract a workforce that reflects the diversity of the city.

- Fiscal Sustainability and Budget Challenges: It is an ongoing challenge for TFS to ensure that all trucks remain in service at all times because of decreases in staffing levels due to unanticipated retirements, vacancies, and scheduled and unscheduled absences. TFS is working towards solutions that would result in smaller classes hired on a more frequent basis to minimize these gaps. Other opportunities may exist to develop solutions for staffing level challenges to ensure that all trucks remain on the road and in service.

- Importance of Fire Prevention and Public Education: The *Fire Prevention Division* undertakes inspections to enforce the Fire Code and the *Public Education Division* educates the public about potential fire hazards and fire regulations. These activities have been identified by the Office of the Ontario Fire Marshal and Emergency Management as the first two lines of defense, where fire response (suppression) is the last line of defence when education and prevention fail. TFS continues to be proactive in providing residents with fire safety education and prevention programs and campaigns that align with their needs. To reach people in high-risk urban communities, TFS needs to identify and define the causes of fire among high-risk populations and the barriers associated with reducing and/or eliminating these incidents and any associated deaths or injuries. The need for additional staff resources to effectively resource prevention and education efforts was recognized by two previous studies of TFS (conducted by Pomax and the Fire Underwriters Survey) and has been endorsed by City

Council. Additional staff resources were added to the division in 2013 and 2014, with the balance of requirements currently planned for 2015, 2016, and 2017.

- Succession Planning: The workforce at TFS is aging with 35.8% of the total workforce eligible to retire by 2018, which highlights a need for effective succession planning. This is particularly significant when considering officer ranks. The development of a robust mentorship and succession planning program is required in the short-term.

Additional Considerations for Planning

The 2015-2019 Master Fire Plan recognizes and considers the major issues identified above, along with a number of other trends that will have implications for the fire service. These include but are not limited to the following:

- Toronto's population has and will continue to grow steadily, increasing the demand for emergency services.
- Toronto's aging population creates a greater need for TFS to understand potential vulnerabilities and associated risks of various groups.
- The City's identification of neighbourhood improvement areas presents opportunities for customized community-based fire prevention education programs.
- TFS will need to consider the appropriate level of service required to manage the anticipated growth and densification as outlined in the City's *Official Plan*, particularly in the downtown core.
- Recent extreme weather events in Toronto present an increasing need for TFS to continue to be proactive in terms of emergency planning and specialized training.

The Master Fire Plan: Directions & Objectives

The Master Fire Plan outlines the planned initiatives for TFS for the next five years, which support the achievement of TFS' strategic objectives, and Divisional and Corporate objectives. The following four strategic directions and subsequent objectives have been developed throughout the planning process for 2015-2019.

1. Keeping our communities safe
   - The Public Education section within TFS will be a leader in developing and implementing effective fire safety programs and initiatives to make Toronto the most fire safe community in Canada.
   - TFS will develop proactive risk mitigation awareness through enhanced prevention, investigation, and enforcement strategies.
   - TFS will strive to continuously improve service response times to maximize fire protection for people and property.

2. Empowering our people

- TFS will continue to strive to attract and select the most qualified candidates.
- TFS will engage and empower staff through relevant training and ongoing staff development.
- TFS seeks to continue to build an inclusive and diverse workforce that is reflective of the communities it serves.
- TFS will work to improve administrative processes that support staff and their needs.
- TFS will work to create a staffing pipeline that enables the Division to effectively achieve its objectives.

3. Strengthening our partnerships
    - TFS will strengthen relationships with external partners and work to identify new collaboration opportunities.
    - TFS will strengthen relationships with internal partners and work to identify new collaboration opportunities.

4. Improving our performance
    - TFS will ensure its governance structure helps to facilitate the achievement of its objectives.
    - TFS will monitor, benchmark, and evaluate performance metrics to ensure the delivery of services is aligned with the needs of the residents of Toronto.
    - TFS will leverage research and technology to identify opportunities to improve service delivery.

This Master Fire Plan provides strategic direction for TFS and is meant to be continuously evolving and improving as new information is gathered and analyzed to help inform decision-making.

Next Steps

Once approved, the Plan will help to guide divisional priorities and investments over the next five years. The Master Fire Plan is also meant to be a stepping stone for TFS as it embarks on its upcoming application for accreditation through the Commission on Fire Accreditation International (CFAI), as recommended by the *Service and Organizational Review of Toronto Emergency Medical Services and Toronto Fire Services*, and approved by City Council on July 16, 2013. The accreditation process and commitment to continuous improvement will support TFS in achieving its objectives over the next five years and beyond.

Recommendation

It is recommended that City Council approve the 2015-2019 Master Fire Plan. This Plan will help to inform annual budget requests which will be considered separately through the capital and operating budget process.

Contents

1.0 Introduction

Toronto Fire Services

Toronto Fire Services (TFS) provides high quality, efficient and effective emergency response along with fire prevention and education services to those who live in, work in, and visit the city of Toronto.

TFS is committed to protecting life, property and the environment from fire, hazardous materials, natural disasters and other emergencies. Fire Services provides information about emergencies, fire regulations, home inspections, and the Alarmed for Life campaign regarding smoke alarms and carbon monoxide detectors. TFS delivers public education and school fire safety programs in accordance with the Fire Protection and Prevention Act, in addition to delivering fire and emergency training to all employees and appropriate external organizations. Toronto has the largest fire service in Canada and the fifth largest in North America serving the 2.8 million people of the city and its visitors.

The Master Fire Plan 2015-2019

This document outlines the planned initiatives for TFS for the next five years. The plan has taken into account the new context that Toronto is facing today and the significant growth and demographic changes that are anticipated over the next five years and beyond. ***Section 2.0*** offers a snapshot of the fire service, its mission and vision, its structure, and descriptions of all functional areas. ***Section 3.0*** presents the major elements that have directly informed the development of the plan. This includes priorities identified in the 2007 Master Fire Plan and recent studies of TFS by third parties and their respective recommendations for improvement. It also includes findings from the environmental scan and public consultations. This section speaks to the plan's alignment with the City's Strategic Actions and Fire Services' legislative responsibility and how this has helped inform the plan. ***Section 4.0*** provides a detailed landscape of today and future impacts based on extensive research and a thorough environmental scan. Included in this scan are insights and expectations identified through conversations with the public, partners, other City Divisions and members of the fire service at all levels. ***Section 5.0*** is the core of the document. It presents the four strategic directions for planning and subsequent objectives. Initiatives to be implemented over the next five years, including associated measures of success, are presented to ensure TFS meets its objectives.

This Master Fire Plan provides strategic direction for TFS and outlines the critical initiatives that TFS will implement over the next five years in order to achieve its strategic objectives. The plan is meant to offer a foundational and highly adaptable

toolkit such that TFS has the means to navigate through ongoing challenges and capitalize on opportunities. It is meant to be a living document that is continuously evolving and improving as new information is gathered and analyzed.

The Master Fire Plan is also meant to be a stepping stone as TFS embarks on its upcoming application for accreditation through the Commission on Fire Accreditation International (CFAI). The accreditation process and commitment to continuous improvement will support TFS in achieving its objectives over the next five years and beyond.

2.0 Toronto Fire Services

This section outlines the mission, vision and core values of Toronto Fire Services (TFS). It also provides an illustration of how TFS is structured and brief description of the work accomplished by the Division.

Courage *to move forward,* ***Compassion*** *in everything we do,*
Service *without boundaries.*

2.1 Who We Are and What We Do

Mission

- We are dedicated to protect life, property and the environment from the effects of fires, illness, accidents, natural disasters and other hazards.
- We are committed to enhancing fire safety and raising community awareness through education and involvement.
- We will pursue the acquisition and use of the most effective technology, equipment and resources to ensure we continue to perform in a competent and professional manner. We will always seek new opportunities to fulfil our mission. We are dedicated to building a cohesive, equitable and unified workforce.
- We provide value added, high quality and caring services to those who live in, work in and visit our city… safely, efficiently and effectively.

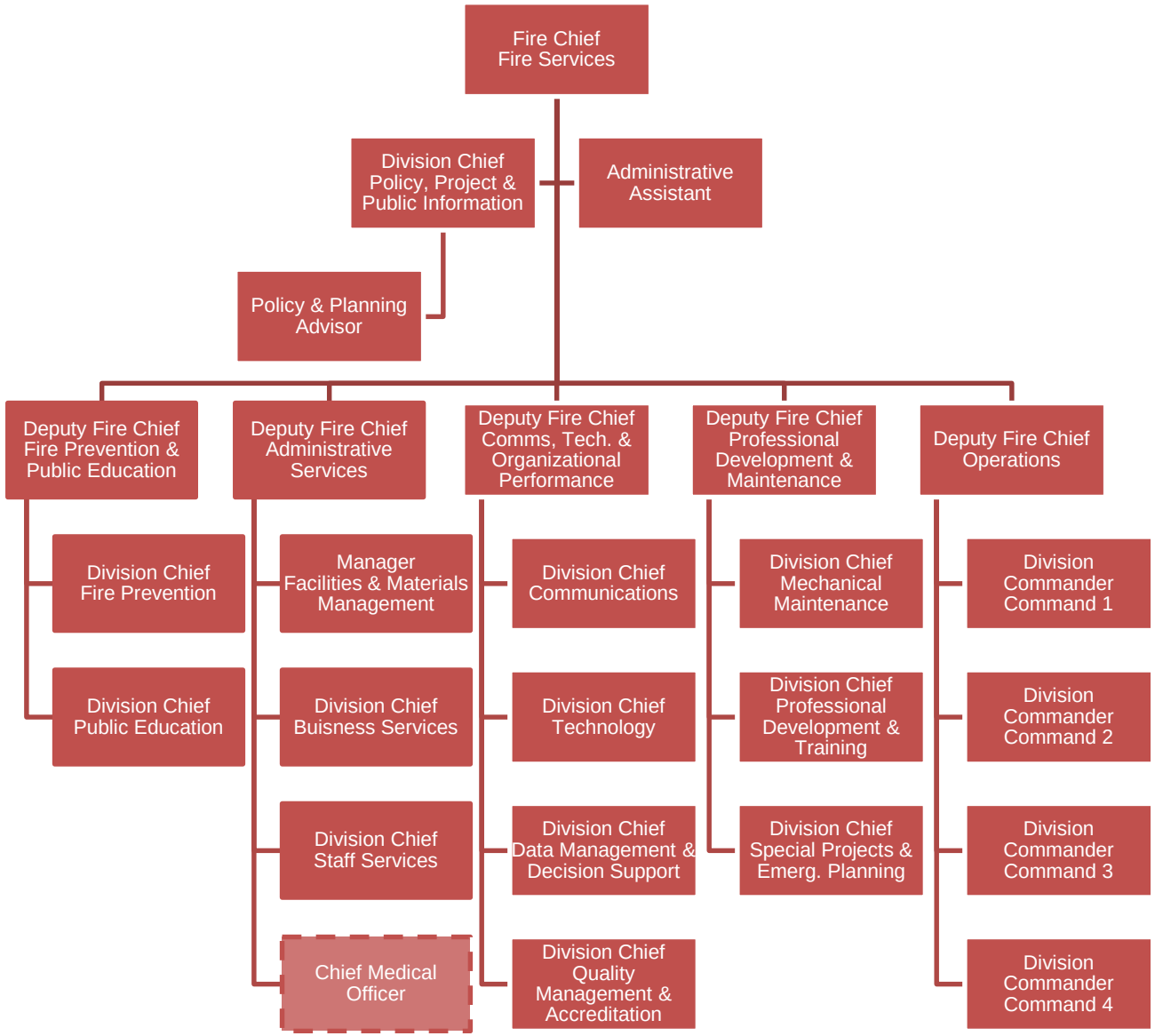
Vision

Toronto Fire Services will be a pro-active, leader in the value added delivery of fire prevention, protection and emergency services to meet the current and evolving diverse needs of our communities.

Values

Integrity	Professional Development	Accountability	Teamwork	Innovation
• Openness, honesty, loyalty and honour; doing unto others as we would to ourselves; leading through example to achieve a common goal by actions; dealing with each other truthfully.	• Commitment to continually expand the abilities of personnel. • Funding and time available for professional, academic and practical courses. • Management training before and after promotion. • Career planning and similar expanded services. • Encouragement and nurturing of employees. • Succession Planning.	• All personnel, management and otherwise, providing a level of accountability to each other and to the community. • Implementation of responsible measuring. • Accountability used for growth as a positive and not a negative.	• Importance to develop and maintain a sense of family, camaraderie and loyalty to one another and to the community; provide a sense of help and encouragement for all and by all. • Partnership approach with personnel, management and community working hand in hand.	• Progressive, pro-active, modern, open and creative. • Open and receptive to all input and feedback. • Adoption of the principles of total quality management accountability, ability to move ideas up and down the chain of command, participation, feedback and follow-through.

Organization Chart



2.2 What Services TFS Provides and Who TFS Serves

What Services Does TFS Provide?

The following table summarizes the services provided by TFS. The services have been organized based on the three lines of defence, which have been established by The Office of the Fire Marshal and Emergency Management (OFMEM):

1. Fire Safety Education
2. Fire Prevention, Inspection & Enforcement
3. Emergency Response (Suppression)

1st Line of Defence	2nd Line of Defence	3rd Line of Defence	
Fire Safety Education	**Fire Prevention, Inspection & Enforcement**	**Fire Rescue & Emergency Response**	**Disaster Response & Event Support**

• Educate the public on fire / life safety
• Enhance the public's ability to prevent and survive fires and other hazards
• Host public education forums and training sessions to promote fire safety
• Develop education materials
• Run school and campaign-based programs
	• Inspect commercial and residential building for Fire Code compliance
	• Enforce the Fire Code and related fire safety-related standards
		• Respond to and mitigate emergencies including:
		  • Fire, illness, accident, natural disasters, and all other hazards
		• Respond from:
		  • **83** Fire Stations across Toronto
		  • **124** fire vehicles and a marine unit
		  • Highly trained personnel and modern equipment	

Source: Toronto Fire Services, 2014

Who Does TFS Serve?

The following table summarizes the residents, stakeholders, and organizations that TFS provides services to.

1st Line of Defence	2nd Line of Defence	3rd Line of Defence	
Fire Safety Education	**Fire Prevention, Inspection & Enforcement**	**Fire Rescue & Emergency Response**	**Disaster Response & Event Support**
• Toronto Elementary School Teachers • Community Groups • Businesses • Elementary School Children • Parents / Guardians • General Public	• Property owners • Property User / Occupant • Adjacent Property Owners / Neighbours	• Incident Victim(s) • Property owner • Property occupant • Adjacent Property owners • Insurance Companies	• Incident Victim(s) • Corporations • City Divisions – Office of Emergency Management, Shelter Support & Housing Administration, Emergency Medical Services, Toronto Police Services • Large Event Attendees • Insurance Companies • Businesses • Residents

Source: Toronto Fire Services, 2014

Toronto Fire Services (TFS) is the City's only "all hazards" emergency response organization and provides City of Toronto residents, visitors and businesses with protection against loss of life, property and the environment from the effects of fire, illness, accidents, and all other hazards through preparedness, prevention, public education, and emergency response with an emphasis on quality services, efficiency, effectiveness, and safety.

The following presents a description of each of TFS' functional areas and the services TFS provides (See Appendix A for each Division's organizational chart):

Fire Prevention and Public Education

The *Fire Prevention and Public Education Division* educates the public about potential fire hazards and fire regulations. The Division also undertakes inspections to enforce the Fire Code. The delivery of Fire Prevention and Public Education are mandated for every municipality under the Fire Protection and Prevention Act (FPPA), 1997.

Fire Prevention, Inspection, and Enforcement

Fire Prevention, Inspection and Enforcement is mandated to provide building inspection, building plan examination services and ensure compliance with Fire Code regulations through zero-tolerance enforcement strategies to enforce the Fire Code for the safety of occupants and the protection of property. Inspections are conducted based on the risk associated with particular types of occupancies. Effective January 1, 2014, vulnerable occupancy inspections are legislated as a top priority across Ontario with mandatory inspection compliance requirements. Other inspections include marijuana grow-ops, nightclub inspections in the entertainment district and inspections in support of the fireworks bylaw. Ongoing fire prevention services include Fire Prevention Week and the Alarmed for Life program.

Public Education

The Public Education section is mandated by the FPPA to educate the public, particularly vulnerable groups such as children and seniors, to recognize hazardous situations that could lead to fire, and take action to avoid or prevent incidents of injury due to fire. This Division oversees implementation of the Risk Watch program in all city schools as well as ongoing public education programs and events. This unit is also responsible for recruitment and outreach for all of Fire Services.

Fire Investigation

In 2013 funding was added for four investigation officers, however, because of the inability to negotiate the terms and conditions with Local 3888, implementation of these positions and associated services is ongoing. It is anticipated that these positions will be in place by the end of 2015. The purpose of the fire investigators is to augment the investigative services provided by the Office of the Fire Marshal and Emergency Management (OFMEM) and examine the large proportion of fires where the cause has been listed as “undetermined” by the operations Captain. It is expected that the results of these investigations will be used to inform the public education program in the city in an effort to reduce the overall incidence of fire in the future.

Administrative Services

The *Administrative Services Division* is responsible for all aspects of business and staff services within TFS. This includes *Business Services* which incorporates all aspects of finance and administration including budget management; *Staff Services* including all aspects of labour relations working in collaboration with the City's Labour Relations and Legal Services teams; personal protective equipment (PPE) and uniform management; the operation of the TFS Quartermaster warehouse and stores processes in collaboration with the City's Purchasing and Materials Management Division; the operation of the TFS Medical Office; and facilities management operations for the TFS building stock in collaboration with the City's Chief Corporate Officer.

Communications, Technology & Organizational Performance

The *Communications Division* is responsible for call-taking and dispatching, Incident Management System (IMS) support, Department Operations Centre (DOC) support, regulatory compliance, and 911/tiered response. The *Technology Division* is responsible for radio infrastructure administration, truck devices (MWS, two-way radio, AVL, etc.), mission critical systems (CAD, FSA, NICE, telephony, wireless), business systems (RMS, BI, Quatro), and inter-operability/interfaces. The *Quality Management and Accreditation Division* is responsible for frameworks and procedures, quality assurance, continuous improvement, project documentation, and fostering organizational change. The *Data Management and Decision Support Division* is responsible for supporting decision-makers with comprehensive analytical tools and robust business intelligence, applying analytics to measure and improve TFS performance, and developing and implementing analytical tools and systems (including predictive and geo-spatial modelling, dynamic staging) to improve TFS efficiencies and effectiveness.

Professional Development and Mechanical Maintenance

Professional Development & Training

The *Professional Development and Training Division* is responsible for training new recruits and delivering ongoing training for all operations staff including special operations, emergency medical services, officer development, and training on all new apparatus (trucks) and equipment. This unit is also responsible for employee development opportunities and succession planning initiatives.

Mechanical Maintenance

The *Mechanical, Apparatus and Equipment Division* procures, maintains, and repairs fire apparatus (trucks) and support vehicles including all fleet vehicles, Marine Unit vehicles, as well as firefighting equipment such as self-contained breathing apparatus (SCBAs) (including face fit testing) and thermal imaging cameras (TICs). The Division performs repairs as well as ongoing preventative maintenance.

Emergency Planning, Research and Development

The *Emergency Planning, Research and Development (EPRD) Section* assists Senior Officers in managing growth and change through city studies, committees and meetings. Thorough collaborative relations with other agencies at the Provincial and Federal level, EPRD provides support and guidance to ranking officers in the delivery of strategic oversight of life safety issues in a preventive and proactive based approach. EPRD staff liaise with Toronto-based agencies, boards, commissions, developers and other stakeholders on a day-to-day basis, researching critical information required for long-term decision-making in terms of policies, procedures and guidelines.

The ultimate goal of EPRD is to reduce possible consequences of emergencies by preventing fatalities and injuries, reducing damage to buildings, equipment and the environment, and accelerating the return of normal operations of the city. EPRD also coordinates specialized responses to events within the city and staffs the City's Emergency Operations Centre (EOC) during major emergencies along with senior TFS officers. Projects include training recruits, working with Chemical Awareness Emergency Response (CAER) Groups in the city, approving and overseeing pyrotechnics for film and media, rerouting large amounts of traffic and persons with the TTC for special events and in the height of emergencies, and participating in ongoing training exercises with partner agencies.

Operations

Fire Rescue and Emergency Response

Fire Rescue and Emergency Response provides critical fire suppression services as

well as first response to medical emergencies, hazardous materials response, road accident response as well as response to other disasters and emergencies.

Special Operations/Disaster Response and Event Support

Disaster Response and Event Support provides standby fire support for a variety of large-scale events. This service, in conjunction with the Professional Development and Training Section, provides specialized support and response to emergencies involving Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) hazards and those with mass victims or where Heavy Urban Search and Rescue (HUSAR) is needed, both within the city and as requested by the provincial and/or federal governments. Additional examples of special operations provided by TFS are highlighted below.

Technical Rope Rescue

Technical rope rescue is provided by five stations which consist of one pumper truck and one squad truck. A total of 220 firefighters are trained to NFPA 1006 (Standard for Technical Rescuer Professional Qualifications). These staff respond to all calls that require rappelling or ropes and pulleys to assist with assessing or extricating people in distress. In addition rope rescue staff and equipment are also used for emergency calls involving Confined Space and Surface Water Rescues because it utilizes many of the same skills and equipment. TFS has been skilled in Technical Rope Rescue for more than 30 years.

Water Rescue

TFS provides emergency response to those in distress in or around the water within the City of Toronto. There are approximately 600 firefighters trained to NFPA 1005 (Standard for Professional Qualifications for Marine Firefighting for Land-Based Firefighters) across the city to assist with shore-based rescues that do not require the rescuer to enter the water. In addition TFS has approximately 220 staff specially trained for more complex situations requiring firefighters to enter the water (ice and open water) and to conduct swift water rescue. Some examples of water rescue would be ice water, open water, or swift water in flood conditions. The water ways protected include Lake Ontario and both the Humber and Don rivers. TFS has been skilled in Water Rescue for more than 30 years and Swift Water Rescue was added approximately four years ago.

Auto Extrication

TFS responds to motor vehicle incidents with expertise and equipment to stabilize the accident scene to make it safe for the bystanders and all the emergency responders; to

stabilize the patient(s) trapped inside or involved in the incident; and to stabilize the vehicle(s) involved ensuring they remain immobile. Approximately 2,700 firefighters have basic auto extrication training and respond to support the other specialized crews who are deployed on the 28 rescue trucks and five squad trucks across the city. Transportation incidents range in complexity from a single vehicle accident on a city street to multiple vehicle incidents on highways and bridges involving all types of passenger vehicles, large transport vehicles, or rail line vehicles.

The Auto Extrication Section is continually upgrading and maintaining their expertise and modifying equipment as new innovations in vehicle technology are being built and occupying the city's roadways.

Confined Space Rescue

More than 220 firefighters are trained in Confined Space Rescue response and they respond from five stations which consist of one pumper (support truck) and one squad truck. The impetus for such specialized training and response is a result of industrial rescue incidents and the provisions under the Health and Safety legislation as it relates specifically to Confined Spaces. TFS has been providing this response service for more than 30 years.

Trench Rescue

Trench rescue is a specialized form of rescue and a subset of Confined Space Rescue. Trench rescue involves shoring up the sides of a trench and digging a trapped person out of a collapsed area, which makes it one of the most dangerous rescue operations. TFS delivers a two-day training course on trench rescue that covers Occupational Safety & Health Administration (OSHA) regulations involving trenches and excavations; pre-planning; assessing soil composition; cave-in evaluation; stabilization; and shoring using wood, hydraulic, and air shores. The course has been designed in accordance with NFPA Standards. Crews from five stations, which consist of one pumper truck and one squad truck, as well as two hazard materials trucks are trained in air monitoring inside a trench.

Hazmat and CBRNE

There are three distinct levels of trained and certified fire operations staff that provide hazardous material (hazmat) and Chemical, Biological, Radiological Nuclear and Explosive (CBRNE) services within TFS. Approximately 2,700 firefighters are certified at the basic awareness level and 244 are certified at the Operations Level of NFPA 472

(Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents). They work from five stations deployed on 14 separate apparatus across the city. There are 80 staff certified at the NFPA 472 Technician Level who are located at three distinct stations responding from four separate apparatus (trucks).

TFS is also part of a Joint CBRNE Team with Toronto Police Service and Toronto Paramedic Services. The Team is specially trained and equipped to respond to incidents involving CBRNE materials. Heavy hazmat apparatus and equipment are housed at Stations 145 and 332 and additional hazmat support and resources are drawn from Stations 113, 234, 324 and 433.

TFS personnel have also received intermediate and advanced level CBRNE training administered by the RCMP under Public Safety Canada. Since this is a Provincially mandated program the Team's mandate also includes provincial response under a memorandum of understanding (MOU) with the Office of the Fire Marshal and Emergency Management (OFMEM).

Heavy Urban Search and Rescue (HUSAR)

The HUSAR program, which has been in effect since early 2000, is designed to have trained personnel ready for response to any disaster in the province of Ontario such as structural collapses, tornados, and any other declared disasters where a city or town requires assistance. The HUSAR team is made up of Toronto Fire, Police, and Paramedic Services, doctors from Sunnybrook Hospital, and a K9 Unit of five dogs. This team of highly trained members can respond to any situation in the Province to conduct rescue and recovery operations, lost or missing persons searches, and shoring of collapsed buildings. The program is delivered to comply with NFPA 1006 (Standard for Technical Rescuer Professional Qualifications), 1983 (Standard on Life Safety Rope and Equipment for Emergency Services), 472 (Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents), and 1670 (Standard on Operations and Training for Technical Search and Rescue Incidents) in Structural Collapse. Courses are provided to all team members in areas such as shoring wall, breaching through concrete, camp set-up, and use of specialized tools for search and rescue operations. The team members have to complete a minimum of 10 mandatory training courses each year to maintain their qualifications.

Marine Unit Response

TFS Marine Unit and fireboats provide fire protection for all structures and vessels within the harbour and vicinity (including passenger and commercial traffic with over 65

vessels carrying up to 20,000 persons per day during the peak summer season) as well as year round support for the Toronto islands and Billy Bishop Airport. TFS' primary fireboat is the WM Lyon Mackenzie, which has an indefinite supply of water and a range of relay pumping to support land-based fires and other emergencies. In fact, it has the capability of pumping up to 40,000 litres of water per minute which is equivalent to connecting 10 regular fire pumper trucks to fire hydrants. It also carries on-board 4,500 litres of firefighting foam, which is three times more than the two Airport Crash Rescue Trucks currently working at Billy Bishop Airport.

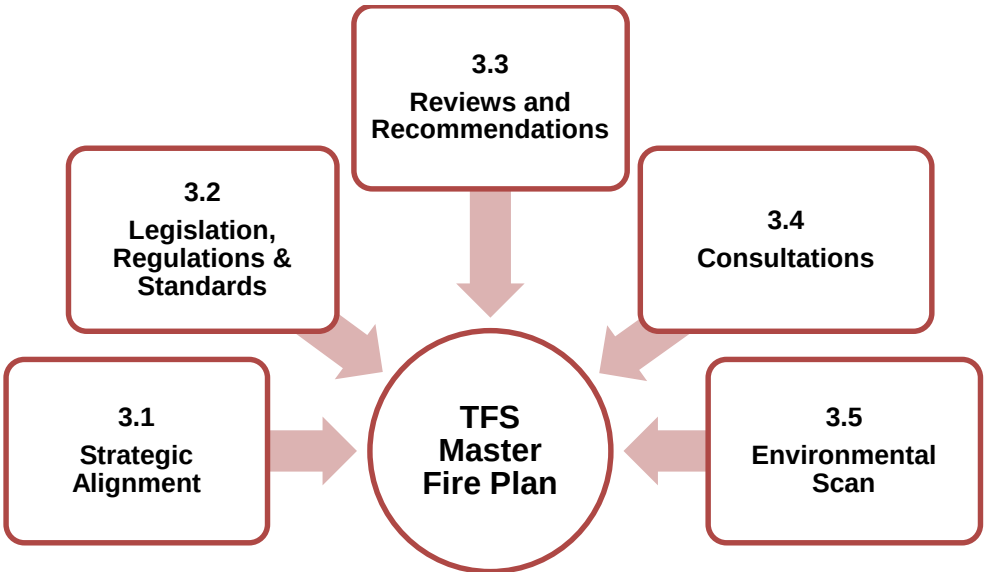
The fireboat plays an important role during Toronto's ice-breaking season which lasted 16 weeks over late 2013 and early 2014. The Mackenzie is capable of breaking ice up to two feet thick and is often the only reliable means of transporting patients across Lake Ontario during the winter months. It also houses a built-in Medical Emergency Triage Cabin to provide safe and protective environment for multiple patients in the event of large casualties. It also has the ability to generate 105KW of electrical power, enough to service a small hospital. TFS has 60 personnel who are certified by Transport Canada to the Marine Emergency Duties (MED) A1 standard.

As a result of these capabilities, TFS fireboats are relied upon by many including the Toronto Port Authority, Department of National Defence (and visiting Navies – U.S., Britain, etc.), Public Safety Canada and Homeland Security (U.S.), Police agencies (Toronto, Peel, RCMP, etc.), Coast Guard (Canada and U.S.), Toronto Ferries, Parks, Forestry and Recreation, Toronto Water, Toronto Paramedic Services, all special events, Heritage Toronto, Ornge Air Ambulance, and the Ministry of Environment.

Although the Mackenzie is 50 years old, it has been refitted with modern machinery and receives regular maintenance. It is estimated that the vessel will be able to operate proficiently for an additional 10 years. In 2014 TFS purchased a smaller 35 year old aluminum hull vessel and associated upgrades, which will allow operation for years to come. This boat is a former Coast Guard mid-shore patrol boat. It is 72 feet long with a draft of 4.5 feet and it has a service speed of about 17 nautical miles per hour (knots). Its role, capabilities, and name are to be determined. This boat will replace the existing older vessel, the SORA.

3.0 The Planning Process

The Master Fire Plan has been informed by several critical elements as demonstrated in the diagram below.



3.1 Strategic Alignment

The Master Fire Plan has been created to directly align with the City's Strategic Action Plan for 2013-2018, the TFS Strategic Plan 2013-2018, and the TFS Path to Diversity strategy.

City's Strategic Action Plan for 2013-2018

The City's Strategic Actions were established to help further advance the City's vision and to move the City's planned initiatives and programs forward over a 5-year period. Toronto Fire Services (TFS), like other City Divisions, will play a pivotal role in helping to move the City forward and to achieve its objectives[1].

Specifically, Strategic Action #12, contained in the *City's Strategic Actions 2013-2018* document, mandates an improvement in the City's capacity to prevent and respond to emergencies by the end of 2015 to ensure that Toronto residents and communities are safe, with a focus on Toronto's vulnerable communities by: "Developing and implementing ten-year resource plans for Toronto Fire Services and Toronto Paramedic Services (TPS) to meet emergency response targets and address Toronto's growth, changing demographics and building stock."

This Action as well as the others have been considered and incorporated in to the Master Fire Plan's strategic directions and associated objectives and initiatives, which are presented in *Section 5.0*.

TFS Strategic Plan 2013-2018

The TFS strategic planning principles are based on an external focus on customer service excellence, supported by an internal alignment of TFS divisional work plans, deployment of resources and daily staff activities. The following objectives were identified as part of the strategic planning process in 2013:

1. Deliver customer service excellence, without exception
2. Create and maintain a positive work environment and culture that focuses on health & safety, performance excellence, staff engagement and community outreach
3. Leverage research and technology to identify opportunities to improve service delivery
4. Monitor, benchmark and evaluate performance metrics to ensure the delivery of our services is aligned with the needs of Toronto
5. Optimize the use of our human, financial and physical resources to deliver value added services to our community safely, effectively and efficiently
6. Develop a pro-active risk mitigation awareness through enhanced internal training and public education initiatives
7. Focus on collaborative relationships with our emergency service partners
8. Strengthen internal relationships and build external partnerships

Each of these objectives were used to help guide the development of the 2015-2019 Master Fire Plan.

A Path to Diversity (Report)

The Path to Diversity report, which aligns directly with Strategic Action #17: "Enhance the City's Capacity to Serve Toronto's Diversity", was developed to establish goals and benchmarks for increasing diversity within the TFS workforce. Success measures set out in the diversity plan include increasing outreach contacts of women and visible minorities by 10% and multi-year targets of increasing the percentage of women and visible minorities by 5% in both the applicant pool and future recruit classes. The initiatives set out in the Path to Diversity have been considered during the planning phase for 2015-2019 and are reflected in *Section 5.0* of the Master Fire Plan.

3.2 Legislation, Regulations & Standards

Toronto Fire Services' (TFS) legislative responsibility is driven by the Fire Protection and Prevention Act (FPPA). The FPPA establishes that the municipalities of Ontario are responsible for funding and delivering fire protection services and that the Province is responsible for providing advice, guidance, and support along with monitoring the delivery of these services. The Act also establishes that TFS is required to conduct

community risk assessments and provide public education and prevention programs, is responsible for enforcing the Ontario Fire Code in compliance with Provincial Enforcement Guidelines, as well as required suppression efforts based on local needs and circumstances.

The FPPA stipulates that the Fire Chief is accountable directly to Council for the delivery of Fire Protection Services. It further stipulates that Council is responsible for the determination and establishment of levels of fire protection service. In addition to the FPPA, TFS operates within legislation established by more than 20 other Acts.

Establishing and Regulating Bylaw – City of Toronto Bylaw 132-1998

Bylaw 132-1998 governs the establishment and operation of TFS, in accordance with the provisions of the FPPA. Further, it establishes that the Fire Chief is required to report to a Committee of Council, the Community Development and Recreation Committee, the Budget Committee and to Council and is responsible for exercising control over the budget approved by Council for the Fire Service.

Bylaw 132-1998 mandates that TFS provide the following *Fire Protection Services*:

- Fire Suppression
- Fire Prevention
- Fire Safety Education
- Communication
- Training of persons involved in the provision of *Fire Protection Services*
- Rescue
- Emergency Services

National Fire Protection Association (NFPA) Standards

Bylaw 132-1998 does not stipulate defined performance targets relating to these mandated levels of service. Accordingly, industry best practice is used to determine and measure TFS performance. The National Fire Protection Association (NFPA) *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations by Career Fire Departments* (NFPA 1710; 2010 edition) is the accepted performance standard.

NFPA 1710-2010 stipulates the following performance targets when responding to fires:

Segment	Elapsed Time Target	Performance Standard	Acceptable Risk Factor (variance)
Emergency Call Processing Time	60 seconds	90% of the time	10%
Turnout Time	80 seconds	90% of the time	10%

Travel Time – First Responding Apparatus	240 seconds	90% of the time	10%
Total Response Time - First Responding Apparatus	6 minutes 20 seconds	90% of the time	10%
Total Response Time – Effective Firefighting Force	10 minutes 20 seconds	90% of the time	10%

Source: National Fire Protection Association (NFPA), 2015

Response Times Defined

NFPA 1710 Section 3.3.42 describes fire service time as an elapsed time interval consisting of the following components:

- *Alarm Time*: The point of receipt of the emergency alarm at the public safety answering point to the point where sufficient information is known to the dispatcher to deploy applicable units to the emergency.
- *Call Processing Time*: See *Dispatch Time* below.
- *Dispatch Time:* The point of receipt of the emergency alarm at the public safety answering point to the point where sufficient information is known to the dispatcher and applicable units are notified of the emergency.
- *Turnout Time:* The time beginning when units acknowledge notification of the emergency to the beginning point of response time.
- *Response Time:* The time that begins when units are en route to the emergency incident and ends when units arrive at the scene.

Toronto's Performance

The 2007 Master Fire Plan, adopted by Council, recommended that NFPA Standard 1710 be adopted as a guideline to provide direction for response time and staffing targets in Toronto in the future. While Emergency Call Processing targets are being met, the remaining targets are not. This represents an opportunity for Toronto to improve operations.

The following charts match Toronto's response to the NFPA targets, and illustrate the differences from the time of the previous Master Fire Plan (2007) to the present day (2014).

Performance Measure	2007		2014	
	Compliance	Time	Compliance	Time
Emergency Call Processing Time	71%	01:42	92%	00:56

Progress has been made towards achieving NFPA targets, as demonstrated by the Communications Division not only meeting, but exceeding the NFPA guideline for Call Processing Time for the first time in TFS history in 2014. Call processing time has been

reduced by 46 seconds since the time of the 2007 Master Fire Plan. It is unlikely that this trend will continue as performance in this area has been maximized.

Performance Measure	2007		2014	
	Compliance	Time	Compliance	Time
Turnout Time	26%	02:45	43%	02:10

Improvements made in Turnout Time have resulted in a 35 second reduction since the 2007 Master Fire Plan. TFS will continue to provide training to staff in an effort to further reduce these times, although developments in response protocols requiring staff to be fully dressed in turnout gear and to fasten seatbelts have added to the overall time it takes to leave the station. It is also expected that technological improvements to the Fire Station Alerting system will also help to reduce the Turnout Time

Performance Measure	2007		2014	
	Compliance	Time	Compliance	Time
Travel Time – First Responding Apparatus	83%	04:39	75%	05:05

Road Response Time (Travel Time) has increased by 26 seconds since the 2007 Master Fire Plan, due to continuing development of the city and issues around traffic congestion caused by development and construction. It is expected that this trend towards longer Road Response/Travel Times will continue given the development plans across the city outlined in previous sections of this report. The NFPA 1710 standard for first arriving truck travel time to a single family detached residential fire is 4 minutes or less to 90% of incidents, and for full first alarm response 8 minutes or less to 90% of incidents. These benchmarks are only met by a small number of career fire departments in North America.

Improvements made in Call Processing Time and Turnout Time since the 2007 Master Fire Plan have mitigated longer Road Response/Travel times, however, it is unlikely that this trend will continue as additional time savings are not expected to be significant, particularly related to Call Processing Times which already exceed the standard.

Performance Measure	2007		2014	
	Compliance	Time	Compliance	Time
Total Response Time - First Responding Apparatus	74%	07:48	80%	07:17

TFS does not currently meet either of First Responding Apparatus (above) or the Full First Alarm (below) performance targets as prescribed under NFPA 1710-2010. As indicated previously, overall response time improvements are a result of time savings

achieved in Call Processing and Turnout Times. Increasing staffing levels on existing frontline apparatus (trucks) will help reduce the amount of time it takes to assemble an Effective Firefighting Force (Full First Alarm) on scene, as fewer vehicles would be required.

Performance Measure	2007		2014	
	Compliance	Time	Compliance	Time
Total Response Time – Effective Firefighting Force	85%	11:12	87%	10:53

Note: Total Response Time – Effective Firefighting Force includes fires and fire alarms only. The other measures presented include all event types.

Source: Toronto Fire Services, Computer Aided Dispatch (CAD) – Intergraph Business Solution, 2015

Customer Service Standards

TFS provides high quality, safe, efficient, effective and caring emergency response along with fire prevention and education services to those who live in, work in, and visit Toronto[2]. TFS will be reviewing and revamping its current Service Standards to ensure it is consistent with City standards and with the changes needs of the communities served.

3.3 Reviews & Recommendations

The Master Fire Plan also aligns with recommendations from the 2007 Master Fire Plan and more recent studies of Toronto Fire Services (TFS).

Master Fire Plan 2007 (Report)

In the 2007 Master Fire Plan, a series of priorities (and 81 recommendations) were established. These have since been updated to reflect Council's Strategic Actions as well as the recent and anticipated changes in TFS' internal and external environment over the next five years. Assessing the status of the 2007 Master Fire was a critical step in informing the priorities of the 2015-2019 Master Fire Plan. TFS priorities and strategic directions for 2015-2019 are also introduced below but will be described in more detail in *Section 5.0.*

TFS Priorities 2007	TFS Priorities Revised for 2015-2019	Council's Strategic Actions 2013-2018
Identify life risk and property risk and ensure that fire station and apparatus locations are appropriately located Expand resources for hazardous materials and waterfront/marine response Expand incident management capabilities	Keeping our communities safe	**Social Development** • Improve emergency response and prevention • Strengthen neighbourhoods • Advance Toronto's motto "Diversity our Strength" • Improve customer service **Good Governance** • Open government by design • Engage the public • Enhance the City's capacity to serve Toronto's diversity
Develop management and leadership skills of staff Develop a succession plan	Empowering our workforce	**Economic Vitality** • Increase employment opportunities **Good Governance** • Develop and implement a workforce plan
Prepare for in-fill and redevelopment in the city Pursue research opportunities	Strengthening our partnerships	**City Building** • Implement smart urban growth strategies • Develop a long-tem transportation plan **Environmental Sustainability** • Support environmental sustainability
Improve emergency response capabilities Use technology to increase efficiency	Improving our performance	**Good Governance** • Improve customer service • Enhance performance measurement • Improve organizational excellence **Fiscal Sustainability** • Improve service and financial planning • Ensure state of good repair for infrastructure **Economic Vitality** • Accelerate economic growth

All outstanding and ongoing items from the 2007 Master Fire Plan have been carried forward and considered based on the City's new context and the challenges and opportunities facing TFS today and into the next five years. The status of recommendations made in the 2007 MFP is presented in the following chart:

2007 MFP Recommendations: Achievements & Carry Forward Items

Section	Category	Recommendations	Carried Forward	Completed	Not Applicable
2.16	Emergency Response Capability	10	3	6	1
3.2	Special Operations	3	3		
4.5	Waterfront/Marine Response Operations	4	2	2	
5.3	Intelligent Transportation Systems-Emergency Vehicle Pre-emption	2	2		
6.6	Incident Management and Emergency Response Operations	5		5	
7.11	Fire Prevention & Public Education	15		15	
8.7	Communications & Information and Communications Systems	5		5	
9.8	Professional Development	9	8	1	
10.3	Mechanical	7	1	5	1
11.6	Staff Services	11	2	6	3
12.1	Succession Planning	5	5		
13.7	Residential Sprinklers	2	1	1	
14.4	The Science of Public Safety and Firefighting Safety	3	3		
	Totals	**81**	**30**	**46**	**5**

A number of things have changed since the 2007 Master Plan recommendations, including:

- 40 new staff hired in Fire Prevention and Public Education, with 75 additional planned (25 in each of 2015, 2016 and 2017)
- 5 new mechanics hired in 2014
- Station 424 closed and 3 additional trucks removed from service in the 2014 operating budget
- Reduction of 88 operations staff (4 positions in 2012 and 84 in 2013)
- Completion of Station 221 and relocation of P224 to P221

Recent Studies of TFS

This Master Fire Plan considers and aligns with recommendations from more recent studies of TFS including a City-wide Core Service Review, a Service and Organizational Review of Toronto Emergency Medical Services (EMS) and Toronto Fire Services (TFS), the Auditor General's Report on Training and Recruitment, and the Fire Underwriter's Survey. Each of these is summarized below.

1. **Core Service Review** (Report)

   In April 2011, City Council considered a report from the City Manager and Deputy City Manager/Chief Financial Officer regarding the initiation of a Service Review Program, including a Core Service Review that examined what services the City delivers and at what level.

   KPMG LLP conducted the Core Service Review which included: reviewing and analyzing all City services, activities and service levels provided by divisions and agencies and applied a core service filter to services; identifying which services are provided at higher than standard service level; conducting a jurisdictional review of comparable municipalities and jurisdictions; and identifying options and opportunities to change services and service levels.

   KPMG put forward options and opportunities for the City's consideration to change services and service levels, provided preliminary information on the risks and implications of making these changes and potential timelines for implementation, and provided a high-level order of magnitude of potential savings for each opportunity.

   The opportunities identified through the Core Service Review related to Toronto Fire Services (TFS) and Toronto Paramedic Services (TPS) included the integration of the two services organizationally including the development of new models to ensure resources were allocated appropriately across both services. A study on the integration of TFS and TPS was subsequently conducted by an outside consulting company, Pomax.

2. **Service and Organizational Review of Toronto EMS/TFS** (Report)

   Following the Core Service Review, the City Manager initiated an organizational and service review of TFS and Toronto Paramedic Services. The purpose of the review was to identify and recommend opportunities that would maintain the quality of these core municipal services while achieving potential efficiencies. The review included an assessment of operational improvements, a demand and resource analysis, and an evaluation of service delivery model options including amalgamation of the two services. The findings and recommendations put

forward by the consultants (Pomax) related to organizational structure, resources and apparatus, prevention and education, fire inspection and enforcement, and the communications centres. The results of the review were endorsed by City Council in July 2013 and included direction to the Fire Chief to move forward with a fire services accreditation process.

When considering the final report from the Service and Organizational Review, City Council directed the City Manager to further evaluate a consolidated communications centre, rather than full amalgamation of the services. In 2014, City Council approved the report, *A Consolidated Toronto Emergency Medical Service and Toronto Fire Service Communications Centre*, which authorized a series of actions to set the course for consolidation of TFS and Toronto Paramedic Services (TPS) communications centres. These actions included the confirmation of future provincial funding, amendments to provincial legislation and the updates and revisions to current collective agreements.

Council also requested that the City Manager bring forward an implementation plan in 2015 for consideration of a consolidated TFS and TPS communications centre and technology and training investments based on a detailed analysis and cost estimates related to facilities. Given the anticipated action on the consolidated communications centre in 2015, as well as the timelines for the delivery of an implementation plan, additional consolidation strategies should be considered which, in the long-term, could allow for the most effective allocation of emergency resources based on the rapidly changing needs of the city, its residents, businesses and communities, including consolidating the reporting relationship of TFS, TPS and the Office of Emergency Management (OEM). A well planned and systematic strategy for consolidation will ultimately lead to higher performance in the provision of efficient emergency response.

3. **Auditor General's Report on Training and Recruitment** (Report)
   In November 2013, City Council adopted the Auditor General's report entitled "Improving the Administration and Effectiveness of Firefighter Training and Recruitment". The Auditor General’s 2012 Audit Work Plan included an operational review of TFS. Specifically, the review focused on the administration and effectiveness of Toronto Fire Services’ firefighter training and recruitment programs. The objective of the audit was to review training activities at TFS and identify opportunities for improvement.

4. **Fire Underwriters Survey** (Report)

City Council requested that TFS report on opportunities and associated costs to improve the City of Toronto's Public Fire Protection Classification (PFPC). A study was undertaken by the Fire Underwriters Survey (FUS) and in the fall of 2013, FUS published a report that set out options TFS could undertake to achieve the Council directive. FUS is a national organization that assesses, evaluates and grades the quality of public fire defences maintained in Canadian municipalities and communities. The PFPC reflects the City's ability to handle large scale fires, such as those in apartment buildings, industrial complexes and densely built-up areas where multiple buildings may be involved in a fire. In the 2012 survey, the City of Toronto's PFPC was downgraded to a Class 4 (from Class 3 in 2002). The change in the PFPC class from a 3 to a 4 will adversely affect insurance rates of approximately 8-15% in the larger building sector. As projected by FUS, premium rates may increase to approximately $15.237 million per year. To maintain the PFPC Class 3, the City of Toronto requested a grace period of twelve months (to February 2014) to implement measures of improved fire protection capacity, fire prevention measures and risk reduction measures that would yield a favourable impact on the PFPC. Based on the FUS report, TFS recommended strategies to improve the PFPC over the period of 2014 to 2017. These strategies were approved by City Council in December 2013.

The recommendations and strategies presented in these reviews (specifically those adopted by Council) have been considered throughout the development of this Plan and are reflected in *Section 5.0* of this report. These reviews can therefore be seen as historical documents and the 2015-2019 Master Fire Plan will guide TFS' initiatives going forward.

3.4 Consultations

A significant component of the research phase for the Master Fire Plan was to consult with the public, staff, various partner organizations, and other City Divisions.

Public Consultations

Understanding public satisfaction levels with Toronto Fire Services (TFS) will help to improve services delivered. Public perceptions of the fire service have historically been positive but TFS would like to glean a better understanding of the effectiveness of the services provided by conducting surveys immediately after every interaction with a resident; responding to an incident, conducting an investigation, and/or providing education.

To inform the MFP, four public consultations were conducted across the city: North York, Scarborough, Downtown, and Etobicoke. The sessions were held November 20,

24, 25, and 26 from 6pm-9pm. In total 60 attendees participated, of which were a mix of residents, firefighters, executive members of the Toronto Firefighters Association, residential association members, and Councillors/Councillors-Elect. The sessions were promoted through the following means:

- TFS website and social media channels
- Civic Engagement website and social media channels
- 200 posters put up in community centres and public libraries
- A Fire Chief's Communiqué sent to all staff asking them to help promote each event
- Letters to all Councillors and Councillors-Elect asking them to help promote each event
- Letters to Association Executives asking them to help promote each event
- A listing in the City's Monday Morning News asking staff to help promote each event
- Emails to 33 community organizations (including residential associations) asking them to share information with members
- Emails to Business Improvement Area (BIA) Executives asking them to share information with members

Despite these promotional efforts, it is a common challenge among City Divisions to recruit members of the public at consultations.

In addition to a 15-minute educational presentation, several questions were posed to meeting participants to generate productive discussions. The questions are included in Appendix B. Critical themes identified through the consultations include the following:

Community Safety Risks & Barriers

- Traffic and congestion.
- Rooming houses.
- Truck removals.
- Population growth.
- Increasing development especially high-rise buildings.
- Cultural and language barriers.

Focus Areas to Improve Community Safety

- Increasing education for seniors.
- Identification of vulnerable populations.
- Continue to increase the amount of prevention and education efforts.
- Improving prevention, education, and communication efforts in communities where English is not the primary language spoken.

- Consider partnering with community-based groups to increase outreach, conduct targeted-outreach, and to overcome language barriers.
- More education is needed for residents in high-rise buildings.
- Increasing Fire Code enforcement and holding building owners and business accountable.
- Ensuring maximum preparedness for rail and pipeline safety.

Additional Themes/Ideas/Feedback

- Need for improved partnerships and improved communication between the City Planning Division and TFS.
- Increase public access to fire data and information.
- Enhance online communications and social media efforts.
- Provide more comprehensive education about TFS and all the services it provides beyond responding to fire incidents.
- Increase TFS staff to reflect population growth.
- Consider neighbourhood consultations with the public to get community-specific feedback.
- Maximize media exposure as an opportunity to provide the public with prevention and safety education.

Ongoing Consultations

TFS created an email address to allow for ongoing consultation with the public. The email address is TFSTalk@Toronto.ca and will be used for all future TFS planning initiatives. To-date several engagements have occurred through this email address and all ideas and feedback have been considered as part of the 2015-2019 planning process.

TFS has also been accepting feedback and input through traditional mail. A few paper surveys, which were distributed at the public meetings for additional feedback, were received and considered as part of the 2015-2019 planning process.

Ipsos-Reid Survey

From December 1st to 9th, 2014, an online public survey focused on fire prevention and fire safety education was also conducted by Ipsos-Reid with 1,100 respondents (Appendix C includes a demographic profile of survey respondents). Results from the survey indicate the following:

TFS Fire Safety and Prevention Events have a positive influence on attendees

- Torontonians who have attended a TFS event are more likely to say they feel knowledgeable about fire safety and prevention and are more likely to have a fire escape plan at home.
- 8/10 residents who attended a TFS event agree that the information and advice provided was useful and easy to understand.
- 6/10 made changes at home because of what they learned at an event and nearly 5/10 said they learned something new.
- Those who attend an event are more likely to visit the TFS website as a resource for information.

A strong need and interest exists for fire safety and prevention education within Toronto's ESL communities

- Torontonians born in Canada are more knowledgeable of fire safety and prevention as compared to those born outside of Canada.
- Those born outside of Canada are significantly less likely to have a fire escape plan at home.
- Those born outside of Canada and those whose first language is something other than English are more likely to feel like fire safety and prevention information is hard to access. They are also more likely to want TFS staff to visit their community to provide fire safety education, programs, and advice.

Consultations with Platoon Chiefs and District Chiefs

Between September 25 and October 16, 2014 eight consultations were held with Platoon Chiefs (PCs) and District Chiefs (DCs). The purpose of these sessions was to solicit input around challenges and opportunities facing TFS today and those anticipated over the next five years as well as into the future.

There were a few limitations in regard to these sessions. In light of time constraints, only some officers were consulted. Also, due to emergency response calls, the interviews were frequently interrupted. To better accommodate these limitations, staff were invited to share ideas and input over email in addition to in-person meetings. Staff were eager to share their ideas and all of those interviewed also submitted written input to be considered during the development phase of the Master Fire Plan.

Some common themes emerged from these conversations that are consistent with challenges and opportunities identified through the environmental scan (*Section 4.0*). These are as follows:

Need to Keep Trucks in Service

- Consider satellite maintenance facilities to increase the timeliness of truck repairs.

Need for Improved Training

- Need better hands-on training and more staff to coordinate and deliver effective training.
- Ensure training is completed by placing more accountability on supervisors (Captains and District Chiefs).
- Consider mentoring opportunities as a valuable initiative that should occur hand-in-hand with training.
- Continue to consult suppression staff to inform training requirements to ensure that training content is relevant to their needs.

Need to Increase Non-Suppression Efforts

- Need suppression staff to be more involved in prevention, inspections, and education where possible. Improved prevention knowledge would allow suppression staff to speak directly to members of the public.

The Importance of Partnerships

- Important to partner with community groups to glean a better understanding of their needs and expectations.
- Important to partner with other divisions to combat congestion issues.
- Consider partnerships with private companies to provide enhanced training, including demolition companies to have access to abandoned buildings for hands-on training efforts should be considered.

Positive Perspectives on CFAI Accreditation

- Staff are receptive to the accreditation process.

Need for Increased Presence in the Media

- Public expects TFS to interact over social media.
- Need a greater presence in traditional forms of media as well.

Recognition of an Aging Population

- Need to prepare for an increase in calls, particularly medical calls.

Managing Densification

- Consider smaller vehicles in the core.
- Consider increasing staffing levels on current in-service fire trucks.
- Identify prime locations for additional, smaller stations.

Need Solutions for the Vertical Challenge

- The vertical challenge is significant.
- Need support for vertical challenge solutions especially as congestion intensifies.

Need for Better Technology

- A technology gap exists at TFS.
- Need to implement traffic pre-emption and dynamic staging technologies.
- Many processes need automation to alleviate current administrative burden.

Attendance Management

- Need improved attendance management.

Consultations with Other Jurisdictions

TFS also consults other jurisdictions to inform its work and planning process. For example, Barrie, Calgary, Ottawa, and Boston were consulted regarding their experience with storefront fire stations to help inform this plan. TFS participates on a regular basis in the Ontario Municipal Benchmarking Initiative (OMBI), which facilitates sharing and comparing of performance data and operational practices with other municipalities in Ontario and across Canada. TFS is currently conducting its own survey with 25 North American fire departments to share measures and compare response time statistics for planning and improvements. The Fire House National Run Survey is another example of a venue for comparative statistics from 218 North American-based fire departments. Additionally, through the CFAI accreditation process, TFS will be assessed and evaluated by industry peers from across North America.

Consultations with Other City Divisions

The complex challenges facing Toronto over the next five years cannot be overcome without a systems approach. TFS values its partners and has been working closely with them to inform the Master Fire Plan.

Consultations have taken place with the following Divisions:

- City Planning
- Transportation Services
- Economic Development
- Office of Emergency Management
- Waterfront Secretariat
- Toronto Water
- Toronto Building
- Public Consultation Office

The discussions and research and publications shared by Divisions to inform this plan have been included in the environmental scan. TFS plans to continue to work closely with its partners to help inform its work on an ongoing basis.

3.5 Environmental Scan & Internal Analysis

An environmental scan was conducted to take stock of the communities served; current and anticipated risks; and the expectations of stakeholders. TFS is keeping a pulse on how changes in our environment impact the services provided to ensure the communities served are always safe. The detailed scan is included in the next section.

4.0 Environmental Scan & Internal Analysis

Toronto Fire Services (TFS) is faced with several opportunities and challenges created by external trends as well as internal organizational changes. This Master Fire Plan outlines strategies and initiatives to be implemented over the next five years, each aiming to capitalize on current and future opportunities.

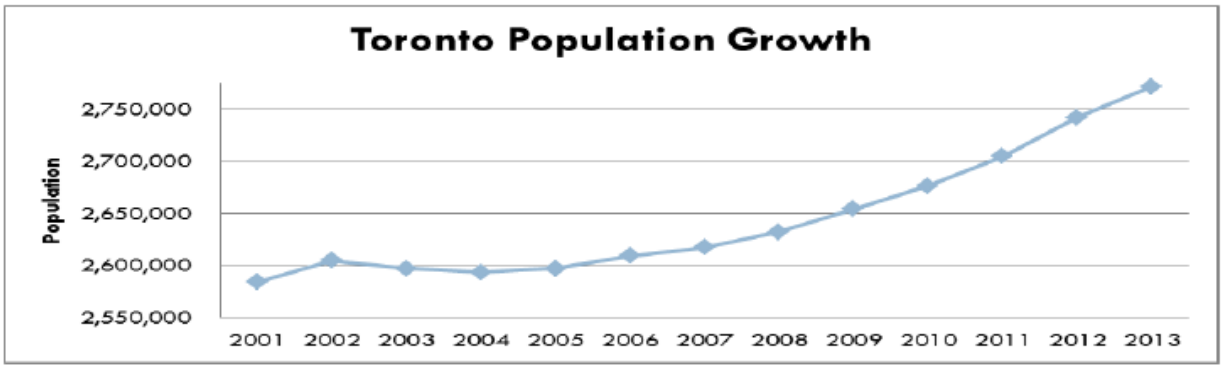
It is critical for TFS to have an understanding of its surrounding environment and the communities served. This will allow TFS to develop an appropriate risk profile and to prepare for effective emergency response. Understanding risk will allow TFS to determine where to effectively locate resources and how to both mitigate and prevent these risks. This section of the report presents considerations for TFS based on the changing context it operates within.

Extensive research and an environmental scan have been conducted to support and inform the planning process. Included in this scan are insights and expectations identified through conversations with the public, partners, other City Divisions and members of the fire service at all levels.

4.1 Population & Demographics

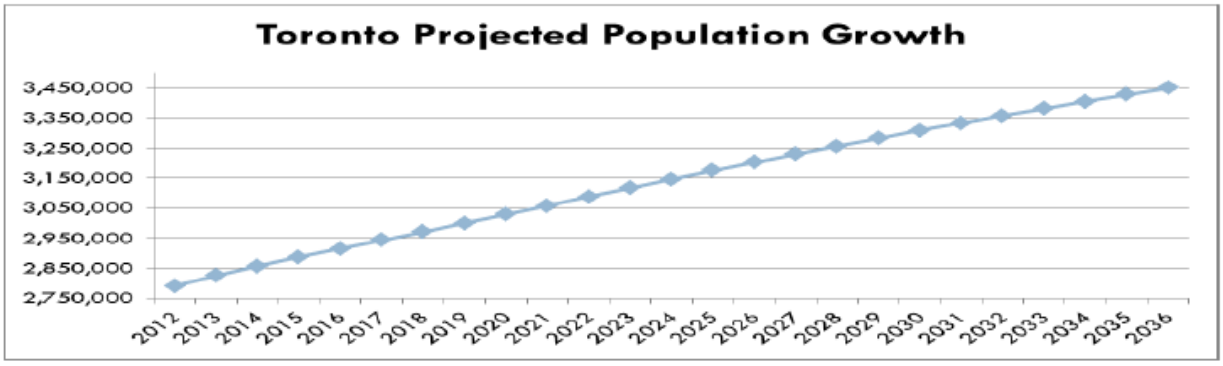
Toronto's population is 2,771,770 people and growing[3]. Demand for emergency services in Toronto is directly affected by city growth and, as shown in Figures 1 and 2, Toronto will only continue to grow. It is imperative that TFS' service-level capacity and performance keep pace with the city's growth trends.

Figure 1: Population Growth



Source: Statistics Canada estimates, 2012, and Ontario Ministry of Finance projections

Figure 2: Projected Population Growth



Source: Statistics Canada estimates, 2012, and Ontario Ministry of Finance projections

TFS must identify the risks and the impacts of all hazard emergencies on a growing population. With close to 200,000 (or ~7%)[4] of Toronto's residents living in the downtown core (bounded by Dupont, Bathurst, Rosedale Valley, the Don River, and Lake Ontario) and a downtown population density of 7,320 people per square kilometre[5], the potential impact to these residents, and resource requirements to mitigate this impact, is a critical consideration. The downtown core plays a significant role in the city's long-term economic prosperity and job growth therefore the potential impacts of an emergency extend beyond the local residents.

In addition to the high population density downtown, TFS must also consider the hundreds of thousands of commuters, visitors, and tourists passing through the city at any given time.

Commuter Population

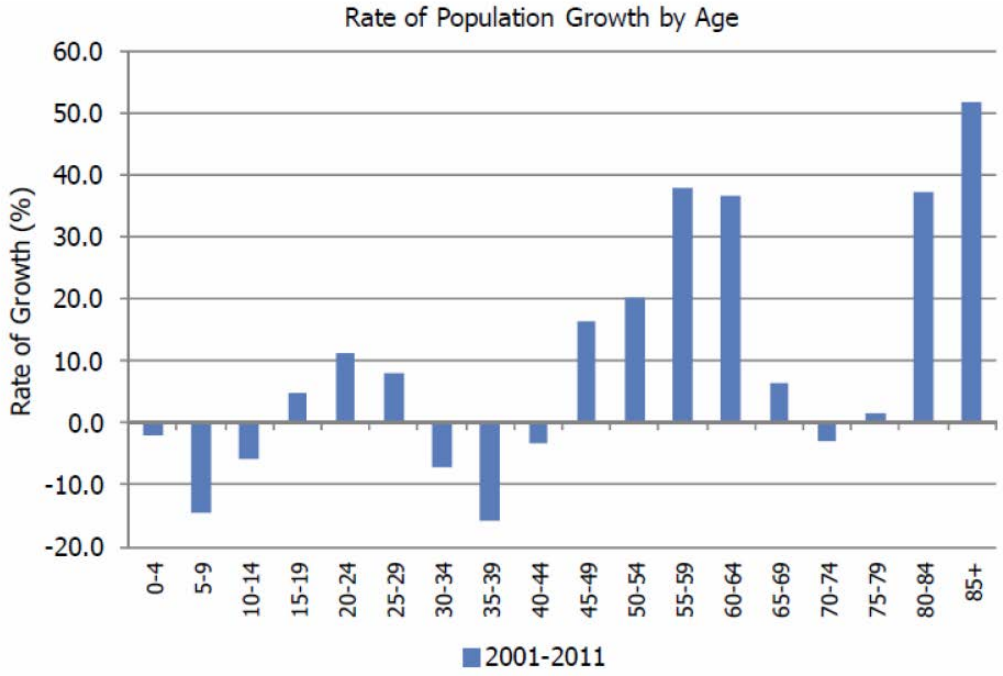
Toronto's City Planning, Policy & Research Unit (2014) identify that approximately 29,500 Toronto residents commute out of the downtown core daily while 131,700 people commute into the core from the GTA. In addition, approximately 21,900 people

commute to the core from Etobicoke, 27,500 from north of the 401, 127,900 from south of the 401, and 38,000 people from Scarborough[6].

An Aging Population

Toronto's forecasted population for 2031 is 3,333,220 people[7]. While the population is growing it is also aging. Figure 3 indicates that a significant amount of population growth has occurred amongst individuals 50+ years of age including more than 50% growth in the 85+ category. This is an important consideration for TFS in understanding potential vulnerabilities and associated risks of various population groups.

Figure 3: Population Growth Rate by Age



Source: Statistics Canada, Census 2001 and 2011

An Increasing Newcomer Population

Toronto was home to 8% of Canada's total population in 2006 and 30% of all recent immigrants[8]. Between 2001 and 2006, Toronto welcomed 25% (267,855) of all immigrants to Canada, which represents approximately 55,000 per year[9]. Toronto is home to 25% of Canada's visible minority population and home to 200 ethnic origins[10]. Just over 30% of residents speak a language other than English or French at home[11].

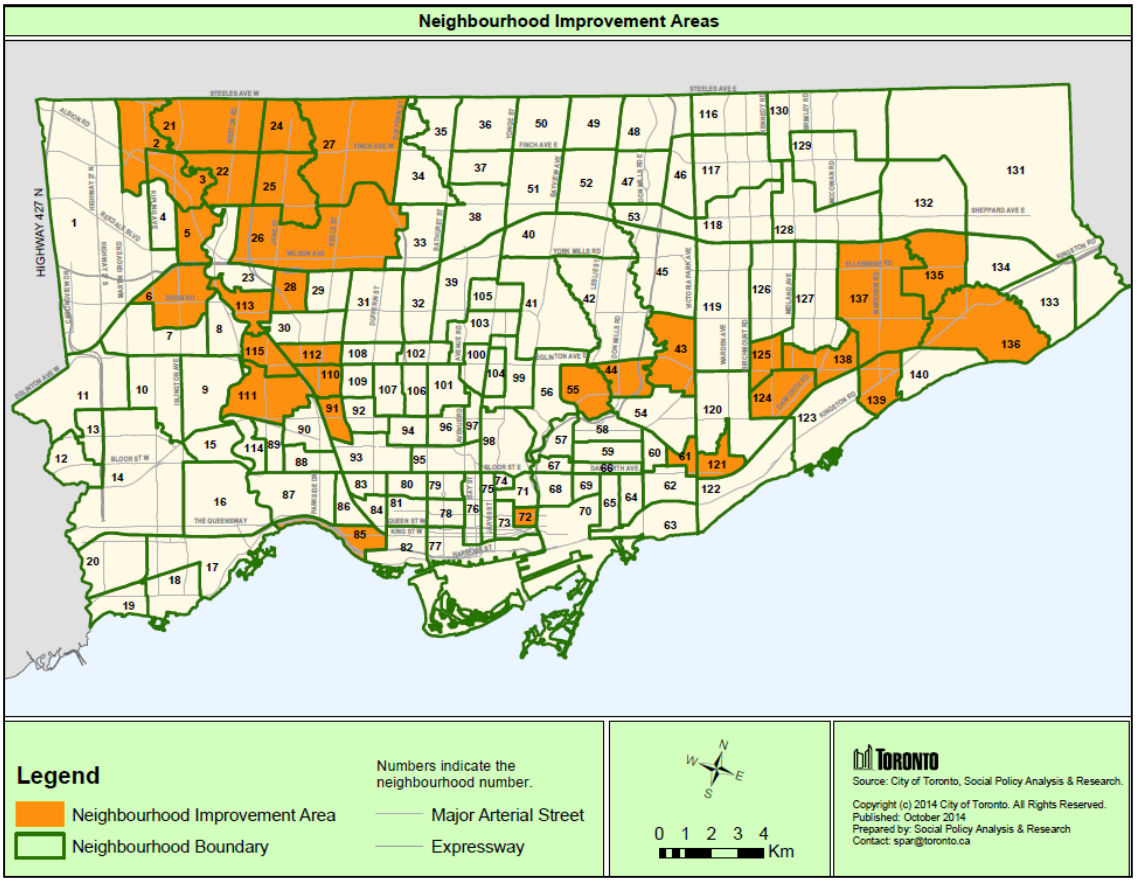
There will continue to be strong immigration to Toronto and there is an increasing number of households for newcomers located in high-rise buildings[12]. These are important considerations for TFS because serving a city with diverse needs impacts risk assessments and service delivery.

Populations Living in Identified Improvement Areas

Approximately 22% of the population or 595,017 residents are living in low income households[13]. In March 2014, the Social Policy Analysis and Research Unit at the City of Toronto identified 31 Neighbourhood Improvement Areas (NIAs)[14]. These areas have been identified because they are falling behind neighbourhood equity scores in terms of infrastructure and social service investment. The 31 NIAs and their locations are presented in Figure 4.

This segmentation information represents an opportunity for TFS to partner with the Neighbourhood Action Teams for each of these areas and provide customized, community-based fire safety education and prevention programs. The desired result is the provision of uniquely designed services and programs that are reflective of the issues affecting the people within each community and neighborhood and their specific needs.

Figure 4: Neighbourhood Improvement Areas (NIAs)



Source: City of Toronto, Social Policy Analysis & Research, 2014

An Opportunity for Community-Based Programs

TFS continues to be proactive in providing residents with fire safety education and prevention programs and campaigns that align with their needs. To reach people in high-risk urban communities, TFS needs to identify and define the causes of fire among high-risk populations and the barriers associated with reducing and/or eliminating these incidents and any associated deaths or injuries. The NIAs shown in Figure 4 can be used as a starting point to help prioritize this research. The insights gleaned will then be used to develop strategies for addressing any identified challenges and barriers.

Existing fire safety education and prevention initiatives and enforcement mechanisms should also be used including current education tools such as the Alarmed For Life Program. The success of this outreach, however, would increase through partnering with Toronto Paramedic Services, Public Health, Social Services, Toronto Community Housing Corporation (TCHC), and Toronto Police Service. Collaboration between these agencies, and leveraging each others' strengths, would allow for better service and outcomes for the residents of Toronto.

The goals and objectives of a successful community-based program will:

- Reduce the number of residential fires, injuries, and deaths in the identified areas;
- Increase the number of residential units that have working smoke and carbon monoxide (CO) alarms;
- Raise the public’s awareness of fire safety considerations in their immediate surroundings;
- Identify fire hazards to be eliminated for a safer environment;
- Ensure that prevention education and fire safety programs match the unique needs of residents in high-risk areas;
- Educate and train residents on how to recognize and escape from a residential fire in a timely manner;
- Ensure program sustainability through long-term partnerships; and
- Promote safe, healthy and vibrant neighbourhoods across Toronto.

A coordinated community-based and well-managed fire safety education and fire prevention program provides a safe environment for all those who live in, work in, or visit the community.

4.2 Topography

Toronto Fire Services (TFS) provides service throughout 641 square kilometres of land and the Marine Unit covers 600 square kilometres of water and 43 kilometres of shoreline or 138 kilometres with bays and islands[15]. The City of Toronto stretches 43

kilometres east to west and 21 kilometres north to south[16]. The perimeter of the city is approximately 180 kilometres[17]. The city is divided by several major highways (401, 427, Don Valley Parkway, Gardiner Expressway), which impacts accessibility and must be considered in emergency response planning.

Toronto also has several river valleys running through it and its elevation increases steadily from the lake to the north end of the city. Toronto's vast waterfront, along with the increasing development of this area, and the island, bring with it unique considerations from a fire services perspective.

Off-Shore Marine Response

The lakeshore presents a number of unique challenges particularly in regard to the amount of time it can take to respond to an off-shore incident. For example, responding to an incident on a boat can take longer than it might on land because of the time it takes for the fireboat to leave its berth. TFS also uses a ferry as a platform from which to draught water with a pumper.

There are also a number of areas which neither the fireboat nor land-based apparatus can access, such as just inside the breakwaters along the west lakeshore. Some additional areas are difficult for the fireboat to access due to the depth of the water.

Toronto Islands Response

Toronto's 10 islands present a variety of unique scenarios for TFS. There are two pumper trucks (a mini-pumper and a small-sized aerial) at the fire station located on the island. The fireboat is responsible for transporting additional firefighting personnel and equipment as needed. Aside from the water treatment plant, most of the structures on the island are small, therefore the two local pumper trucks, along with the appropriate number of personnel, is sufficient for effective response. A challenge however, is that many of the connecting bridges are very narrow and can only be crossed by the mini-pumper (and sometimes with great difficulty), including the bridge that leads to the Royal Canadian Yacht Club (RCYC). The yacht club is isolated and cannot be reached by land-based trucks.

Island Airport Response

Responding to incidents occurring at the island airport requires a co-ordinated effort between the island fire crews and the land-based fire crews. While any aircraft fire is managed by the island airport crews, TFS is responsible for all structure fires as well as rescue efforts.

Valley and Ravine Response

There are major valleys in the city that present accessibility challenges for response crews. Examples include the Don Valley, Rouge River Valley, and the Humber River Valley. There are few roads that cross the city's valleys including where isolated homes and buildings are located therefore it can be difficult to access an incident located in these areas. As such, fire crews need to be familiar with all aspects of the valleys not only for reaching the incident but also for removing any casualties and/or transporting additional equipment.

The Rouge River presents unique challenges because of its vast size. Most of the area in and around the Rouge River does not have hydrant access and it is not practical to draught water from the river. TFS has a tanker truck to extinguish fires in this case but only staff with adequate training can operate the tanker truck.

Water Rescue

The city has 307 kilometres of rivers and creeks running through it[18]. Three major examples include the Humber, Don, and Rouge Rivers. These are deep and wide and, during heavy rains or spring run-off, working near the shoreline and/or attempting swift water rescues can be extremely treacherous for rescue crews.

Wildland Response

Although wildland fires are uncommon in Toronto, the potential exists in the city's green spaces, the zoo, and other parkland areas. The ability for fire to spread in dense dry vegetation increases with the slope of the land which possessing accessibility and exposure issues for firefighters and residents.

High-Angle Rescue

Areas such as the Scarborough Bluffs also pose potential risks. TFS is prepared for the high-angle rescue required for incidents occurring at the bluffs.

4.3 Infrastructure

Toronto has unique infrastructure-related risks which present critical considerations from a fire services perspective. City Planning's Policy Research & Information Unit identified a total of 41 unique structures in Toronto. Examples include the underground walkway known as the PATH system, the TTC subway system, island and island airport, and the CN Tower. An additional consideration for Toronto Fire Services (TFS) is that 30 of the 41 structures identified are located within the compact area bounded by Spadina, Dundas, Jarvis, and Lake Ontario.[19]

The PATH

The PATH is a 30-kilometre network of underground pedestrian walkways and the largest underground shopping venue in the world[20]. With over four million square feet of retail space, approximately 1,200 retailers, and close to 5,000 employees, the PATH is home to some of the most valuable shopping space in the country[21].

Growth below the streets is just as critical a consideration for TFS as growth at street-level. Already over 50 commercial buildings, 20 parking garages, six subway stations, hotels, department stores, and a railway terminal are all connected by the PATH[22]. Today the system accommodates over 100,000 daily commuters, and thousands of tourists and residents[23]. This translates into Fire Code Inspection and Enforcement, emergency response, and disaster mitigation for all those residents and visitors who use the PATH. The PATH is critical infrastructure requiring TFS resources and must be accounted for in any risk assessment of the city. Responding to emergencies in the PATH require additional resources as well as unique planning, response, training, and equipment.

Roads & Traffic Congestion

Toronto's highways, arterial roads, and local roads amount to a road network of 5,389 kilometres. While many roads provide options for response routes, travel times have been significantly impacted by increased traffic volume and congestion due to the significant amount of population growth and densification occurring in the city. Also, the increasing proliferation of above-ground rail transit is affecting TFS mobility along major corridors. Unlike other cities, there are no curb lanes or shoulders in Toronto for traffic to move into to allow responding emergency vehicles to pass.

Additional impacts to emergency response and travel times include road closures from ongoing construction and/or special events. This information is currently filtered and distributed to the appropriate stations and crews that are impacted so that they can plan and update response routes accordingly.

These challenges are only intensified by Toronto's weather conditions. For example, in the winter months, snow and ice conditions, as well as narrow lanes created by snow banks pose additional impediments to emergency response and travel times.

New Roadway Design Standards

When responding to emergency incidents, TFS already contends with ever increasing levels of traffic congestion as a result of planned capital works projects, unplanned delay in emergency road repairs and a host of major and localized special events. Increased congestion not only impacts travel times, it also increases the risk of incidents and demand for emergency response.

Recently, Toronto Transportation Services and City Planning have advanced a number of Transportation Strategies and Guidelines that seek to achieve a safer pedestrian and cycling environment and create a more holistic and inclusive design approach for all users of the public right-of-way through a Complete Streets Strategy. These goals will be achieved through the implementation of various traffic calming initiatives; that advocate for reductions in the number of travel lanes and/or effective widths of roadways to enhance the safety of cyclists and pedestrians, through the implementation of various right-of-way amenities such as protected bike lanes and reduced turning radii's at intersections.

While TFS understands the benefits of the Complete Streets Strategy, it is imperative that City Divisions work together to ensure that potential impacts on emergency response routes and times are considered on a project-by-project and/or location-by-location basis.

Looking ahead into the next five years and into the future, population growth and the associated congestion will be the primary impact on the roads. This is an impediment to service provision and a primary consideration as TFS plans for future service delivery.

Public Transit

Considering both the TTC and GO Transit, Toronto has 386 kilometres of high capacity public transportation and 7,655 kilometres of light capacity transit. Originating in the city, more than 557 million public transport trips were taken in 2013[24]. In addition to the congestion challenge discussed above, another consideration from an emergency response perspective are elevated streetcar routes. As routes are added, TFS crews need to be aware of how it impacts their response routes and travel times.

Metrolinx LRT Projects

Three major light-rail-transit (LRT) projects are either underway or set to begin construction in the near future. The Eglinton Crosstown, Sheppard East and the Finch West LRTs represent a total of 43 kilometres of LRT projects that are located on three of the city’s major arterial roadways. The traffic congestion and delays that will result when all three LRTs are being constructed concurrently will have a marked impact on emergency response travel times. Roughly 50% of all TFS station run areas are located along or within these LRT corridors. Major arterial and minor arterial roadways represent approximately 22%[25] of the city’s total road network and emergency service providers utilize these roads on virtually 100% of calls.

Rail

Toronto has a significant heavy and LRT network that services the movement of goods and passengers. The network operates along the north, south, east, west and central parts of the city on tracks located above grade, below grade, and at grade. Trains can operate using diesel powered locomotives, electrified track, or overhead catenary systems. A number of major rail expansion projects, as mentioned above, are currently underway including the Union-Pearson Express and the Eglinton Crosstown, Finch West, and Sheppard East LRTs.

The TTC, GO Transit, VIA Rail, Canadian National (CN), and Canadian Pacific (CP) all operate within the city limit. Union Station is Canada's busiest transportation hub, welcoming 65 million GO Transit, Via Rail and TTC passengers annually.

Responding to emergency incidents within railroad rights-of-way presents a number of unique challenges for TFS. The right-of-way is the private property of the railroad or transit operator, which is not intended for public access. Roads and highways are also built across rights-of-way, with the railroad’s consent, to permit public passage.

Firefighters must undergo a wide range of training to become qualified to respond to rail incidents. Emergency response poses a wide range of potential hazards that can range from dangerous goods spills, fires, and airborne toxins to search and rescue within tunnels or from elevated structures.

TFS has developed a good working relationship with both of the major railroad operators in the country and participates in training offered by Canadian National (CN) and Canadian Pacific (CP).

Building Stock

Approximately 73.6% of all buildings in Toronto were constructed prior to the Ontario Building Code (1975) and the Ontario Fire Code (1981)[26]. Considerations around the implications of changes to residential homes, contents, and construction are included below.

Changes to Residential Homes

Homes today are much larger than those built before 1980. Larger homes contain more air and fuel, which causes fire to grow more quickly. Larger homes also represent the potential for larger fires and hence, a greater potential risk to resident and firefighter safety. Many new homes and/or renovations of older homes create higher ceilings and open concept floor plans making a house fire more difficult to contain[27].

Home Contents

Contents and furnishings, which have changed significantly over the years, contribute to the rapid spreading of fire in residential homes. Examples include the use of more synthetic materials such as plastics and textiles, which are highly flammable[28].

Wood Frame Buildings
In 2014, amendments were made to the 2012 Building Code to permit wood frame construction of residential and office buildings up to six storeys high. Previous to January 1, 2015 wood frame construction was only permitted for buildings up to four storeys high. Now additional safety provisions are required including enhanced sprinkler systems, additional construction requirements, and additional fire access route requirements. The Ministry of Municipal Affairs and Housing is working with the Ministry of Labour and the Ministry of Community Safety and Correctional Services (responsible for the Office of the Fire Marshal and Emergency Management) to develop guidelines for site fire safety during the construction of five and six storey wood frame buildings.

Despite these changes, TFS does not require additional staff as this would fall within the regular duties of plans examination staff. As per current practice, fire prevention staff would continue to perform pre-planning along with operational staff for all new wood construction buildings. City Planning has yet to estimate how many of these new structures will be built in 2015 and beyond.

TFS is continually assessing building risks, particularly with the proliferation of high-rise developments in Toronto (see *Section 4.5*), and working to identify opportunities to increase fire safety in all residential and non-residential structures.

Pre-Incident Planning
TFS has developed a Pre-Planning and Familiarization Program (PPFP); a joint program between the Fire Prevention and Operation Divisions through a partnership with building owners and/or management. Pre-planning provides an opportunity to gather information prior to an emergency considering that timely, accurate information can be difficult to obtain during an emergency incident. Pre-planning also provides an opportunity to get familiar with the layout of the buildings and property, including the type of life safety systems, location of shutoffs, controls, response point, and hazardous materials.

A critical opportunity exists to leverage technology to improve this program and to provide access to pre-planning information through the mobile data terminals located on the trucks.

Value and Benefits of Mitigation

At present, no known successful model exists to accurately quantify total dollars saved by a fire service through fire prevention education, code enforcement, and emergency response. What is most often used are the insurable claims for damage to or loss of property. This, however, is not an accurate reflection of the actual fiscal consequences of fires. Other costs, which are difficult to quantify include health, wages, taxable revenue, neighbourhood functionality and aesthetics, and environmental costs[29].

In Toronto the average single residential property has an assessed value of $572,000 and the average non-residential property has an assessed value of $686,000[30]. The Fire Underwriters Survey (FUS) uses 75% of the assessed property value to determine replacement costs for buildings (excluding building contents) and the following formula to determine Mitigated Loss = Total Replacement Costs – Actual Dollar Loss. The maximum mitigated loss is a zero dollar loss[31].

Based on TFS data, Toronto averages 10,737 fires a year. The average number of structure fires is 6,554 per year; of which 60% are residential (3,947) and 40% are non-residential (2,597), and the average number of non-structure fires, such as vehicles, is 3,829 per year.

According to FUS, the total estimation of mitigated dollar loss for structure fires in Toronto is $1.34 billion[32]. This is considered a conservative estimate as it does not consider fire spread beyond the building of origin. It is important to note that this estimate does not include the consequences to businesses in the area or lost employment for example.

The downtown core is a complex urban environment and has the city's highest land cost. As such, TFS needs to consider its infrastructure renewal needs and station locations; these stations were located to serve a much different Toronto than exists today.

TFS Facilities Maintenance: Operational & Capital

Since amalgamation TFS has faced the challenge of managing 96+ facilities with a total of 836,038 square feet, a replacement value of $418 million, and extensive maintenance needs. The recent City of Toronto building conditions audit identified that TFS infrastructure has a $146 million dollar state of good repair deficit. This is mainly the result of the age of its fire stations; the average TFS fire station is 53 years old.

The recent building assessments and audits of fire facilities have led to the development of a comprehensive Capital Asset Management (CAM) Plan and a state of good repair ten year capital budget recommending mandatory maintenance requirements. If

essential repairs are not corrected, this could lead to further physical damage and deterioration of property.

The logistics and practical delivery of the CAM Plan, however, are quite complex, with a number of variables affecting the maintenance needs of TFS facilities, most prominently, a lack of funding. TFS was one of the first City agencies to sign a service level agreement (SLA) with the Facilities Management and Real Estate Divisions for maintenance of TFS facilities. The SLA outlines that TFS will have:

- Priority for building repairs;
- Compliance with facility maintenance standards;
- Timely repairs to facilities and buildings;
- Effective monitoring and control of building maintenance;
- Coordinated planning for building maintenance;
- Clear accountabilities; and
- Decreased risk and liability for the City.

This agreement with appropriate funding, attempts to ensure that daily operations of TFS facilities, general infrastructure activity, and maintenance of the facilities are occurring at an acceptable level. The budget for 2014 and 2015 is $5.05 million per year.

Creative Infrastructure Funding Opportunities

There is an opportunity to address the state of good repair deficit and improve station location effectiveness at the same time. Smaller, two-bay fire stations (storefront stations) could be constructed through partnerships with new developments in the downtown core and across the city in high growth areas. Listed below are four creative funding examples used in other jurisdictions.

Ottawa Paramedic Service[33]

The City of Ottawa partnered with a local non-profit Affordable Housing Corporation to convert a paramedic station and incorporate accommodations to free up land and leverage municipal tax dollars. This resulted in a direct cost savings to the municipality rather than investing in more land.

This is not a new concept as it is common to find paramedic services across North America with response stations located in strip mall storefronts with response bays located at the rear, and/or the use of other commercial properties to operate their emergency response vehicles. These types of arrangements require long-term leases

and, in some of these cases, 99-year leases are required but can translate into lower operating costs for the service.

Boston Fire Department[34]

In 1989, the City of Boston entered into a long-term partnership with the owners and developers of a 30-storey high-rise office building. The Boston Fire Department (BFD) arranged to include a self-contained fire station within the high-rise building. In this case, the fire station appears to be a part of the high-rise structure but it is in fact a separate, two-storey structure, which has replaced a fire station built in the 1950s. This new facility, with four doors for fire apparatus (trucks) and two bays for additional support vehicles, has now become the Division's Headquarters Station and a focal point for the BFD at no additional cost to taxpayers.

Barrie Fire and Emergency Services[35]

In 2004, Barrie Fire and Emergency Services (BFES) required an additional fire station in a growth area of the city. While land negotiations and construction were being conducted the City of Barrie leased storefront accommodations for a new active fire station until the new station transaction and development was completed. BFES was able to find a building that allowed for a 2,500 square foot bay and a living area of 3,500 square foot area. While this was a short-term lease arrangement (up to five years) it could have been extended as required. The benefits to the City of Barrie were improved response coverage and response times servicing a newly developed area.

Calgary Fire Department[36]

In February 2007 Calgary's Fire Department (CFD) opened a temporary single-bay fire station in a newly developed residential neighbourhood in a rapidly growing area near the outskirts of the city. It was designed to include numerous safety features that are intrinsic to its structure, such as residential sprinklers. This house-like station will be sold at market value and a larger permanent station will be built in a new location when the area is further developed. This property has appreciated in value and is a tangible capital asset for the Department.

A more recent example out of Calgary is Louise Station. This two-storey downtown station is the result of a partnership between CFD and Emergency Medical Services (EMS) combined with independent affordable housing and market housing located in twin high-rise towers in the same complex[37]. This is an example of a public-private partnership which resulted in a comprehensive redevelopment and co-habitation of services. This partnership provides a unique cost-effective opportunity addressing the need for more affordable housing and the need for additional fire and EMS services, as a result of increasing demand from increasing population densities[38].

Additional Considerations for Toronto Fire Services

Options exist to consider partnerships with developers to incorporate storefront fire stations into their high-rise and mid-rise in-filling projects. In addition, many of TFS' urban one and two-storey fire stations are sitting on prime real-estate which would be desirable by developers. Another option to consider is partnerships with other municipal agencies or divisions.

Additional benefits of storefront stations are that they are potentially cost neutral for municipalities to construct and do not require the long-term accumulation of capital resources to purchase land and construct the facility. Maintenance costs are also minimized through long-term lease agreements with property owners.

As an example, TFS could consider the sale of a fire station in a prime location and instead operate from two strategically located storefront stations, which could:

- Forgo the need to invest millions into station renewal;
- Forgo the need to pay for temporary facilities while repairs are being made;
- Divert capital renewal funds to other stations;
- Help offset capital deficit with proceeds of the sale;
- Improve response times for the first apparatus (truck) arrival to downtown calls; and
- Improve response times for assembling an Effective Firefighting Force.

When considering building new stations, TFS could benefit from a Repeatable Design Concept (RDC) that replicates well designed facilities incorporating Leadership in Energy and Environmental Design (LEED) efficiencies and ecological characteristics. These greener, more energy efficient stations could double operating cost savings due to the 24-hour use of these facilities. While these structures must be built to commercial grade at a slightly higher cost, the payback is realized much sooner. Partnering with other agencies means the City will have fewer facilities to maintain and repair and this will help to improve financial sustainability.

Standardizing station layouts also translates into quicker deployment and healthier workplaces. Locating dormitories close to turnout rooms and bays and building smaller more compact stations could help to improve Turnout Times (from the time an emergency alarm is received to the time the truck leaves the station).

TFS has numerous, costly fire station repair and modernization requirements therefore new stations in better suited locations are needed but this is a challenge due to the lack of land, real-estate costs, and limited capital reserves. At the same time, this represents an opportunity for new solutions to be considered.

The cumulative impact of existing traffic congestion, development related densification and the simultaneous construction of three LRT projects on major arterial corridors is not well understood at this time. However; it is clear that proactive measures must be assessed and put in place to ensure our services continue to be effectively and efficiently delivered across the City of Toronto. To this end, TFS has initiated a number of projects; both in-house and in collaboration with other Divisions and public/private sector proponents. These projects include storefront fire stations (which is explained above), business intelligence analytics, predictive modelling and dynamic staging software, and emergency vehicle traffic signal pre-emption (which are described in further detail in *Section 4.10 Technological Advancements*).

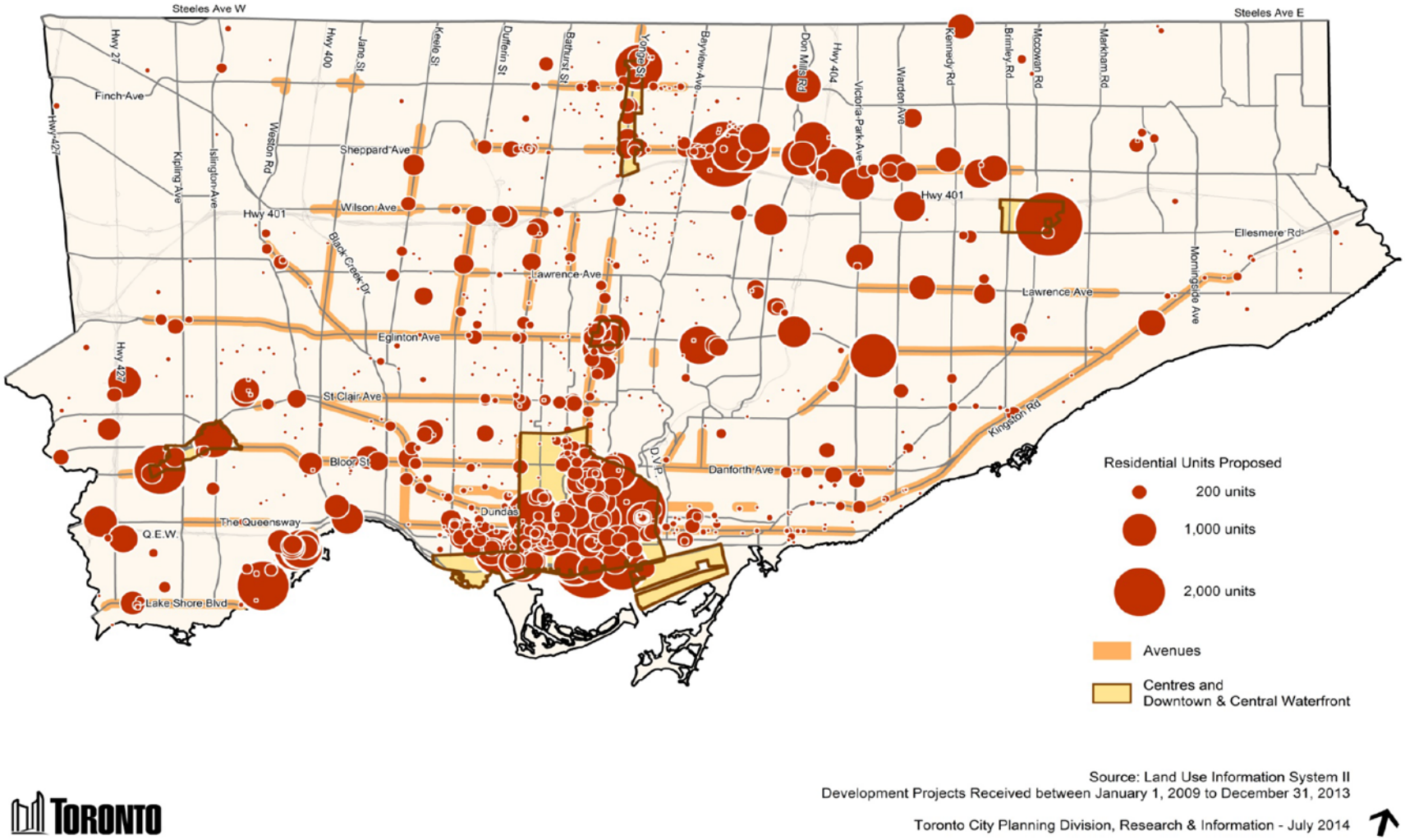
4.4 Development & Densification

In recent years, Toronto has experienced unprecedented growth and densification. This growth will continue over the next five years and into the future as the city continues to welcome new residents, commuters, students, and tourists (refer to *Section 4.1* for a more detailed population assessment).

As such, Toronto is an attractive location for residential development, particularly high-rise, high-density developments. In fact, between 2009 and 2013, over 163,000 residential units were proposed and 70,400 were constructed in Toronto; 79% of those built were condominiums. During the same time frame, 132,100 units proposed were under review or have been approved for construction[39]. Maps 1 and 2 illustrate Toronto's respective proposed residential and non-residential growth.

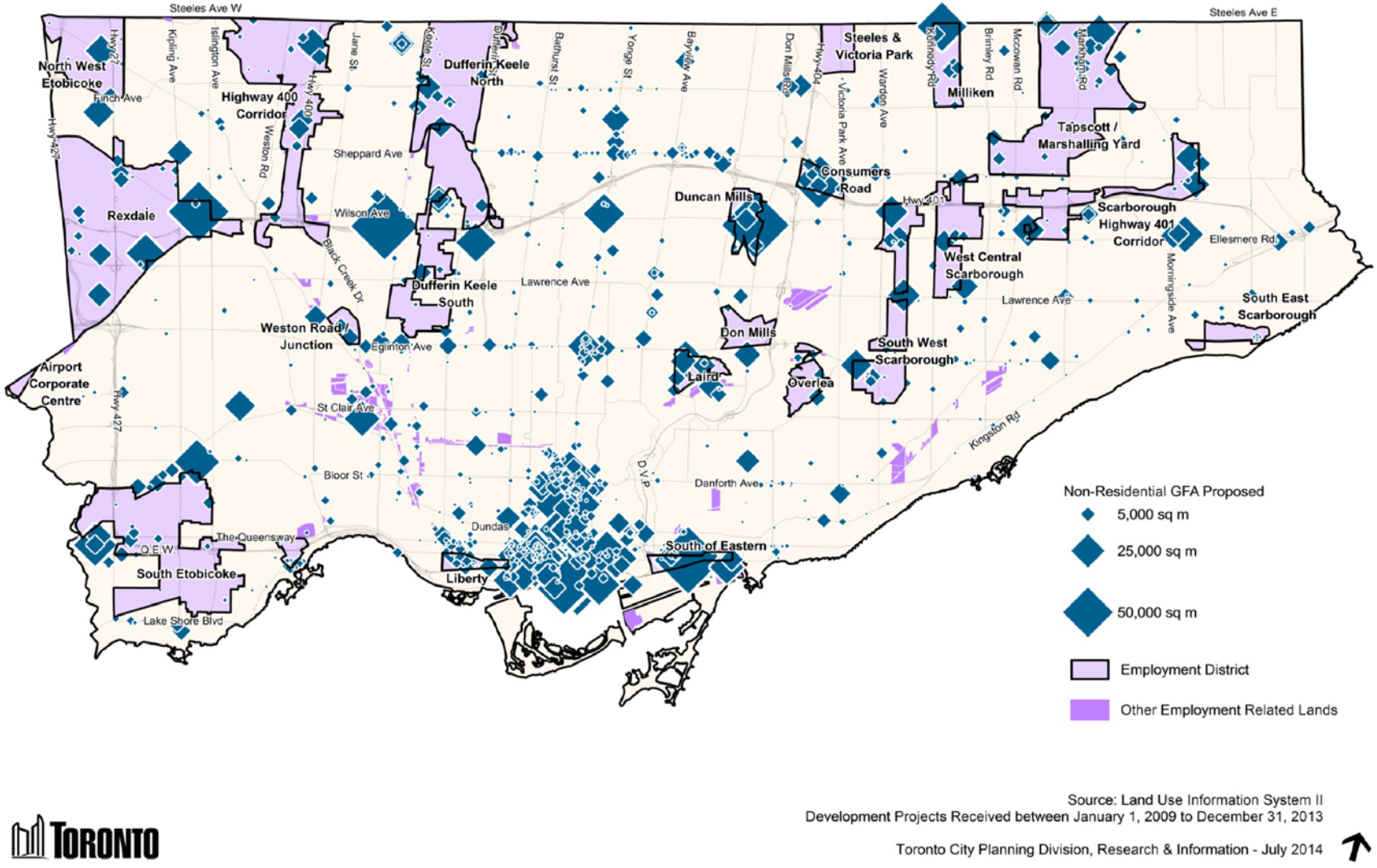
TFS will need to consider the appropriate level of service required to manage the anticipated growth and densification as outlined in the City's *Official Plan*, the City's development roadmap which seeks to balance development along with the protection of residential neighbourhoods and green space. The *Official Plan* (2006) considers the following locations as appropriate catalysts for growth: avenues, centres, the downtown core, and employment districts. These growth locations in turn, are of particular concern to all emergency response services because they can increase demand for emergency services and negatively impact response times.

Map 1: Proposed Residential Growth Distribution



Source: Land Use Information System II, Toronto City Planning Division, Research & Information, July 2014

Map 2: Proposed Non-Residential Growth Distribution



Source: Land Use Information System II, Toronto City Planning Division, Research & Information, July 2014

Growth in the Downtown Core

While the land mass that represents the downtown core only makes up 3% of the total land mass of the entire City of Toronto, it also represents 51% of the gross domestic product (GDP); is responsible for 33% of the jobs; and funds 25% of the municipal tax base[40].

Since 2011, 200,000 new people having been calling the downtown core “home". This number has doubled since 1976 and is expected to continue to grow. The downtown population is projected to grow 12% by 2021[41]. Between the years 2006 and 2011, the core has experienced an 18% increase in population while the King and Spadina area alone has seen an 86% increase[42]. The Waterfront West neighbourhood has seen a 105% increase and Central Waterfront has seen a 68% increase[43].

The Downtown and Central Waterfront area is the main location for development, with 40% of the city’s residential units and 38% of the non-residential proposed development[44]. In total, both residential and commercial development plans are in the following stages: 40% application submitted; 34% approved; 15% under construction; and 11% ready for occupancy/completed[45].

Development in the Port Lands

As a result of revitalization planning, many of Toronto's waterfront precincts, including the West Don Lands, the Lower Don Lands, the East Bayfront, Lower Yonge, and the Keating Channel Precinct, have experienced and will continue to experience significant growth and development.

In fact, close to 1,500 dwelling units in these precincts will be occupied by the end of 2015, many of them constructed in just the last few years[46]. It is estimated that TFS could be expected to protect up to 1,500 additional storeys including 22,000 dwellings within this 10-year time frame, depending on future development approvals, market absorption, and timing of construction. Waterfront development will include vulnerable populations. As an example, it is estimated that approximately 40% of the new development in the West Don Lands will house vulnerable populations (community housing and seniors)[47]. TFS will take part in ongoing collaborations with City Planning regarding the waterfront to accurately identify any potential risks and to plan for the appropriate allocation of resources needed to serve this developing area.

The trend in large urban centres across North America, since the 1980s, has been that people are moving out of downtown districts into the suburbs. This however, is not the case in Toronto where more and more people want to live near where they work. Developers have identified that approximately 10% of their condo units need three

bedrooms to accommodate families and development plans have incorporated pedestrian-friendly environments including facilities and spaces for child play areas[48].

Young adults between the ages of 20-29 are the primary demographic living downtown Toronto. The top three neighbourhoods for this group include King and Spadina (representing 72% of residents), Waterfront West (70%), and the Bay Street Corridor (57%). The Baby Boomers are the second biggest population living downtown and their top three neighbourhoods include Cabbage Town (representing 32% of residents), Moss Park (28%), and Yorkville (28%)[49].

It is therefore no surprise that high-rise commercial, corporate and residential developments are filling former parking lots and empty spaces downtown creating urbanized neighbourhoods. TFS needs to understand how these levels of sustained growth will impact the level of community risk and TFS must assess its resource allocation strategies for downtown.

Current Impacts on TFS

Whereas TFS has experienced an increase in fire-related incidents (and a total call volume increase), there has been a decrease in medical calls, largely due to changes made in tiered response protocols with Toronto Paramedic Services in July 2012, which removed fire from the response to many medical call types. While medical calls have gone down, the total number of TFS emergency responses has gone up. Call statistics and yearly comparisons are presented in Appendix D. The chart below indicates that medical responses only represent 19% of total occurrences in 2014 versus 32% in 2011[50]. This is an indication that the growth and development that has been taking place in the city is already impacting TFS.

	2011	2014
Medical Unit Responses	32%	19%
Fire Unit Responses	68%	80%

Source: Toronto Fire Services, Computer Aided Dispatch (CAD) – Intergraph Business Solution, 2015

New Station Construction

Analyses conducted through the 1999 KPMG study and again in the 2007 Master Fire Plan resulted in the identification for the development of new fire stations in the city. Three of these stations remain outstanding, in the areas of Downsview, Woodbine, and Sunnybrook. A review of response time data for these areas conducted for this plan validates the continuing need for these station developments. All three stations are currently identified within the 10-year capital plan for TFS, with land already purchased

for Station 144 (Downsview), and with the purchase of land closing in early 2015 for Station 414 (Woodbine). Both of these stations are expected to be operational by 2016/2017. Station 124 (Sunnybrook) is further out in the 10-year plan (2021-2023).

The 2007 Master Fire Plan also pointed to emerging needs in new neighbourhoods in the city including East Bayfront/West Donlands/Regent Park, and in areas of densification in the downtown area, including Liberty Village. These needs continue to exist and will require additional study. These will be reviewed as part of the detailed risk assessment and Standards of Cover exercise for the upcoming fire services accreditation process (see *Section 4.9*). In addition, it is expected that this review will identify options for improved distribution of existing resources in light of the current and anticipated growth taking place in the city, particularly around the growth catalyst areas identified by City Planning in the *Official Plan*: avenues, centres, the downtown core, and employment districts.

4.5 Vertical City

The majority of proposed development, as highlighted in the City's *Official Plan*, is in the form of mid-rise and high-rise apartment buildings which has a direct impact on Toronto Fire Services' (TFS') demand and level of response.

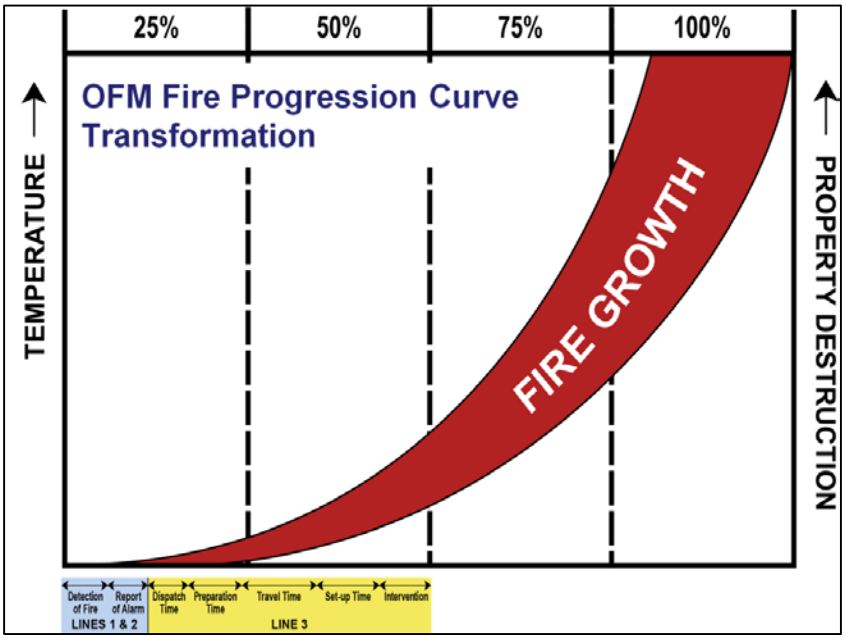
For example, the disparity between the Provincial fatal fire experience (on average, 65% of all fatal fires happen at night) and that of the City of Toronto (78% of fatal fires happen at night in Toronto) is a result of the unique heavy urban residential makeup of Toronto[51]. Toronto's heavy urban core is unique to any other city in Ontario, whereby a significant amount of people both live and work in the downtown area. Between 2011 and 2013 the majority of fatal fires occurred at night, representing a greater risk level in Toronto where people are no longer leaving urban parts of the city to travel home after a work day. Rather people are filling Toronto's residential units in both residential and mixed-use buildings in the evening hours.

The issue of vertical response (the incremental amount of time required to ascend to the seat of the fire or source of the emergency incident after arriving curbside at a municipal address) is an issue that affects fire safety in Toronto more significantly than it affects any other city in Ontario because of the proliferation of high-rise buildings. Vertical response data, which TFS started tracking in 2013, shows that the range of time that is required for the first crew of firefighters to ascend to the area affected by fire in Toronto's high-rise buildings is between 5 minutes and 24 seconds and 5 minutes and 54 seconds (90th percentile).

Although Toronto is among the first fire departments in North America to track vertical response times, there is a need for a more robust vertical response plan. With 40%[52] of

the fatal fires in Toronto occurring in high-rise buildings (between 2011 and 2014) and the increasing development of high-rises in Toronto, the issue of vertical response is one that will continue to pose significant challenges for TFS and this represents an immediate need for enhanced emergency response provisions.

Figure 5: Fire Progression Curve



Source: Office of the Ontario Fire Marshal and Emergency Management (OFMEM), 2013.

As indicated in the figure above, an uncontrolled fire will be significantly more advanced 5-6 minutes later as opposed to being able to reach it 5-6 minutes sooner. The result is that TFS will require significantly more resources at these fires simply because they have more time to develop and spread.

Additional Vertical City Implications for TFS

The Importance of Partnerships

Toronto continues to grow and the growth is being accommodated by more high-rise buildings. This densification challenge requires cross-divisional collaboration for example, working with Transportation Services and City Planning on congestion-related issues. The fact that Toronto is also a popular tourist destination only contributes to the congestion issues. Therefore it will be critical for TFS to partner with other divisions to be prepared for large-scale tourist events such as the 2015 Pan Am and Parapan Am Games.

Prevention and Education Opportunities

Mixed-use buildings also impact TFS education efforts. Now there is a need for more education, more frequent Fire Code enforcement, and quicker emergency response. There exists an opportunity to consider establishing a new fire prevention model with more office locations downtown. There is also an opportunity to work more proactively with Toronto Building and building developers to ensure fire suppression systems in new buildings adequately allow water to reach the highest floors of new, taller buildings.

Recent Legislation

In addition to the prevention and education opportunities mentioned above, legislative changes have also helped with the vertical challenge. As of April 1, 2010, the Building Code stipulates that sprinklers are mandatory in Ontario for multi-residential buildings with higher than three storeys. It has also been mandated that all vulnerable occupancies must be retrofitted with sprinklers by January 2025.

Resource Allocation Opportunities

TFS needs to evaluate fire station location effectiveness and apparatus staffing complement relative to the population density in high-rise areas and planned growth areas of the city (see *Section 4.3*). This includes evaluating resource deployment strategies based on diverse areas of the city, which will be completed through the accreditation process (see *Section 4.9*). This could result in different profiles for metro, urban, and suburban areas across the city and customized response strategies for each area.

A Need for New Performance Standards

While TFS is tracking vertical response time (from the curbside to the precise location of the incident), current industry standards (NFPA 1710) only measure traditional response time to the street-level of the municipal address, and resource requirements are based upon responding to a detached residential structure that contains no basement. Because industry standards don't accurately reflect the time it takes to get to the site of the fire in a high-rise, there is a strong case for developing a new standard that reflects vertical response requirements and/or the urban versus suburban areas of the city. This issue has been tabled in recent discussions with other urban fire departments who are members of the Ontario Association of Fire Chiefs (OAFC) and TFS is involved in these discussions.

High Pressure Pumpers

With the number of existing high-rise buildings and additional projects in the city's development pipeline, providing service to residents of Toronto is increasingly complex. For example, more time is needed to get to the actual site of the incident and/or

person(s) in need of help. Another significant consideration is the ability to have enough water and also to have adequate pressure to effectively support firefighting operations. At present TFS pumpers can provide adequate pressures up to the 25th floor of a high-rise. If however, for example, the in-building fire pump systems within a 60-storey high-rise were to fail, TFS does not have a pumper truck available that could achieve the pressures needed to provide 100 pounds per square inch (psi) or 700 kilopascals (kpa), to the 60th floor. Fire pump manufacturers have two and three stage pumpers that are capable of achieving these pressures and TFS is working towards the acquisition of these high pressure pumpers. In addition to sourcing these specialized pumpers, specialized equipment and training will also be required in order to pump water at these extreme pressures.

As vertical densification of the city continues, it is essential to understand how vertical response times may impact current emergency response operating procedures and guidelines. In 2013, TFS began collecting vertical response data. The findings continue to be analyzed and used to determine whether current operating guidelines are adequate and/or what options might help to mitigate negative impacts, including the use of technology to help increase the accuracy of tracking vertical response times. It is critical to have the required number of firefighters on scene in a timely and effective manner therefore TFS is assessing the use of larger crews sizes (staff per truck), which would reduce the number of overall trucks required to attend an incident. This assessment is ongoing and will help to determine the Effective Firefighting Force needed for incidents occurring in Toronto's heavy urban areas.

Performance Measure	2013	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	Jun 2014	Jul 2014	Aug 2014	Sep 2014	Oct 2014	Nov 2014	Dec 2014
Vertical Response Time (mins) (90th percentile data)	5:24 - 5:54	5:53	5:31	5:15	5:27	5:35	5:15	5:11	5:22	5:22	5:41	5:29	5:27

Source: Toronto Fire Services, 2014

Note: Vertical response time is a measurement of the amount of time that is required to transition from the curbside of the affected property to the location of the actual emergency in high-rise buildings. No specific performance target exists in this area as of yet. This data collection and analysis is in its infancy. TFS has brought this issue to the attention of the NFPA. Further consideration by NFPA would need to be conducted in the standard 5-year review cycle.

Risks Associated with High-Rise

High-rise fires, as compared to house fires, are considered high-hazard situations posing greater operational challenges to emergency responders and increased risk exposure to inhabitants and firefighters. The increased risk from high-rise incidents is a result of the potential for extremely large fires and the potentially large number of

occupants exposed[53]. This emphasizes the need for matching resources deployed directly to specific risk levels.

A recent NIST (2013) study entitled *Report on High-Rise Fireground Field Experiments*[54] (NIST is a U.S. agency mandated to perform and support research on all aspects of fire with the goal of providing scientific and technical knowledge applicable to the prevention and control of fires[55]) concluded that the number of firefighters on each crew responding to a fire had a direct effect on the crew's ability to protect lives and property. More specifically, when responding to fires in high-rise buildings, firefighting crews of five or six are more efficient in extinguishing fires and completing search and rescue operations than crews of three or four firefighters[56]. The NIST study found that, along with access to elevators and the size of the alarm, responding crew size directly impacts the ability to suppress the fire and mitigate risk.

A limitation for Toronto, which highlights a gap in industry research, is that the study excluded a residential high-rise perspective (focusing on non-residential high-rise incidents). The residential high-rise perspective is currently and will continue to be a significant portion of Toronto's residential building stock. While no specific performance target currently exists in this area and while TFS data collection efforts are in their infancy, TFS will continue to collect and analyze data to gain a better understanding of the complexity of vertical response and to continue to improve vertical response times and effectiveness.

4.6 Extreme Weather, Emergency Planning, & Other Special Risks

Extreme events present an increasing need for Toronto Fire Services (TFS) to continue to be proactive in terms of emergency planning and training. Most critically, improving preparedness includes strengthening partnerships with other divisions and agencies.

Mutual aid depends on whether neighbouring municipalities are available to provide additional support. As was experienced during the ice storm in December 2013, mutual aid was not an option because neighbouring municipalities were experiencing the same emergency. The challenge during extreme weather events, which often involve increased demand for services, is that responding in ice and snow conditions often has a negative impact on response times.

In addition to traditional firefighting activities, TFS responds to a significant number of hazardous emergencies. These include but are not limited to high and low angle rescues, structural and trench collapses, water and ice water rescues, marine emergencies, personal entrapment, auto-extrication, elevator rescue, hazardous

material containment, and Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) responses.

Education

TFS understands that educating communities better prepares them to deal with emergency situations. Recent extreme weather conditions, for example, have highlighted a need for increased safety education. TFS should consider partnering opportunities to achieve greater reach for education.

Training and Risk Assessment

Hands-on training is critical to ensure staff are prepared to operate effectively during extreme weather and special risk events. In light of the extreme weather events that took place in 2013 (flood of July 8-9, 2013 and ice storm of December 21-31, 2013), the lessons learned are being used to inform training. This will increase preparedness and ability to effectively manage response for future incidents.

A critical theme that has been reiterated in this plan is the necessity of a detailed risk assessment. Having knowledge around the level of risk in specific areas of the city can help to prioritized deployment efforts in times of extreme weather and/or other special risk events.

Hazard Identification & Risk Assessment Report (HIRA)

The Toronto Office of Emergency Management has conducted a 2014 HIRA Assessment to identify the various hazards and risks to public safety that could give rise to emergency situations in the city. This assessment also identifies facilities and infrastructure that are at risk of being affected. Risks and hazards can include technological and infrastructure disruptions (e.g. hazardous materials, utility and power failures, transportation accidents), human-caused events and accidental hazards (e.g. security incidents, civil disorder), and natural events (e.g. flooding). Of the top 15 risks identified in the Toronto HIRA Assessment, 90% fall within TFS' realm of expertise and responsibility. The Province of Ontario also conducts an annual HIRA Assessment and fire risk was at the top of the list.

There is an opportunity for TFS to work with the Toronto Office of Emergency Management to develop an updated business continuity plan based on the HIRA list. Toronto is most vulnerable to low probability events with high impact and a continuity plan is critical in these cases.

4.7 Fiscal Sustainability

From 2006 to 2011, the population of the City of Toronto grew by approximately 9.7%[57]. TFS resources were reduced by 0.4% overall during that same period of time[58].

It is imperative to understand how fire department resource deployment in the community affects the following outcomes:

1. The protection and life safety of civilians
2. The health and safety of firefighters
3. The protection of property
4. The protection of critical infrastructure
5. The protection of the environment

It is critical that TFS resource deployment is sufficient to match the level of risk within its community. Fire departments must establish a standard of response coverage through standard operating policies and guidelines that prescribe how fixed and mobile resources are assembled and distributed to mitigate the impact of an emergency to which they are responding.

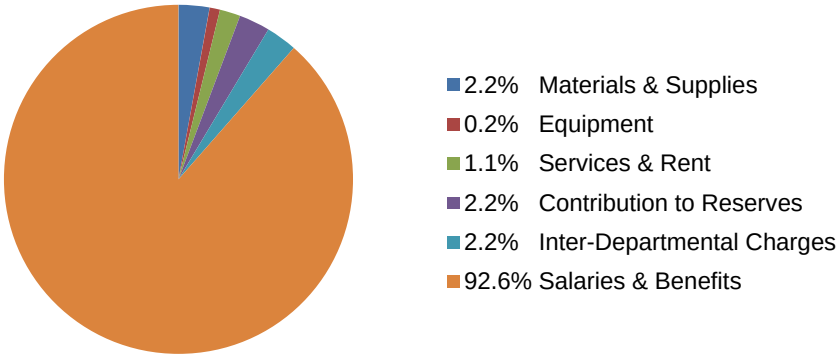
Budgetary Challenges

While TFS' goal is to improve community outcomes, it is not without budgetary challenges. Actual Gross Operating Budget spending in 2013 was $414,616.94 million. Salaries and benefits comprised over 92% of the total gross operating budget. With less than 8% of the budget available for discretionary spending, TFS faces ongoing challenges to ensure financial resources are allocated as efficiently as possible. The Operations Division represented the largest proportion of overall spending by service at 81% of total expenditures[59].

Ongoing budget pressure resulted in the elimination of 18 union and 3 non-union positions as part of the 2013 budget process, most of which were taken from the TFS Professional Development and Training Division. However, service efficiencies resulting from the reorganization of the Operations and Support units permitted the hiring of 15 additional Fire Prevention staff, who were utilized as part of an initiative to develop and implement a pro-active, risk-based inspection program in 2014.

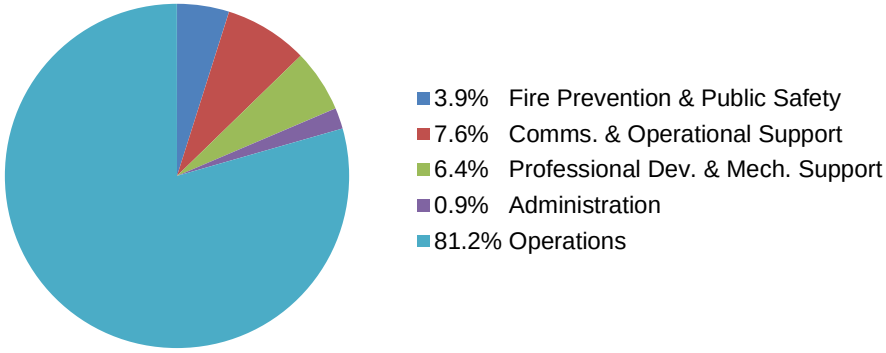
Breakdowns for gross and net operating budget allocations are illustrated below.

**Fire Services 2013 Gross Operating Budget
Actuals by Expenditure Type**



Source: Toronto Fire Services, Administrative Services, 2014

**Fire Services 2013 Net Operating Budget
Actuals by Service**



Source: Toronto Fire Services, Administrative Services, 2014

In 2014, further budget challenges resulted in the elimination of four frontline operational crews from service. One of these involved the closing of a fire station (Station 424 on Runnymede Road), which had been recommended for closure for more than 25 years. The service impact resulting from the removal of these crews continues to be evaluated. It should be noted, however, that although budget requirements resulted in the reduction of operational crews, the city made an investment in Fire Prevention and Public Education, adding 25 new positions to this division, and made a commitment to add 25 more in each of 2015, 2016 and 2017. In addition, six positions were added to the administrative structure of TFS to ensure adequate oversight on various areas including labour relations and data management.

TFS currently operates with 124 frontline vehicles. With these vehicles, TFS continues to operate at 87% compliance to the National Fire Protection Association (NFPA) 1710

(2010 edition) standard on a city-wide basis. However, there are many areas of the city that have longer response times than others.

Response times in general are impacted by many factors, including construction, traffic calming measures, and overall increased development and traffic in the city. TFS training needs also require that a number of trucks are unavailable to respond to calls on a daily basis to provide ongoing training and certification for first responders. Other factors that can affect response times include mechanical issues, and the need for trucks to travel around the city to pick up supplies, and attend facilities for hose and ladder testing, etc., which all take trucks out of service for some period of time. In addition, a major contributor to the response time issue is gapping, which requires that vacancies exist prior to hiring, leaving positions unfilled and consequently, insufficient staff to operate every fire apparatus (truck) every day. In 2014, an average of three trucks was removed from service every day because of staffing shortages. During periods of high vacation (i.e., summer months), this average climbs to four trucks daily. All of these factors have the potential to impact overall response times.

TFS has a number of ongoing initiatives to assist in reducing overall response times, including the implementation of a new station alerting system, and predictive modelling and dynamic-staging software which will help determine gaps in coverage areas and how best to fill them. These initiatives, along with others currently under investigation (traffic signal pre-emption, GPS dispatching of closest vehicle regardless of station, and automatic time stamping of en route and arrival times) will provide the data required to determine the future needs and best locations for both stations and vehicles. It is expected that this work, which will be undertaken in conjunction with the development and ongoing updating of the Standards of Cover portion of CFAI accreditation, will identify the need for several new station locations across the city.

Sustained & Incremental Funding

TFS is committed to optimizing available financial resources to deliver services in the safest, most effective and efficient manner possible. However, given the magnitude of the traffic congestion problem, it is clear that new funding strategies are required to offset the capital and operational resource requirements necessary to combat traffic congestion. TFS is committed to exploring new funding options and strategies with City Divisions and other public/private partners.

4.8 Internal Analysis

While much of the environmental scan focuses on external trends that impact the work of Toronto Fire Services (TFS), it is equally important to assess the internal challenges

and opportunities faced by TFS. This section takes a look inside the organization with a focus on retirement eligibility of staff.

Changing Workforce

Just as the City of Toronto's population is aging, so is its workforce. An obvious opportunity is developing a robust mentorship and succession planning program. The transfer of knowledge and succession planning is a priority issue that will need to be addressed in the short-term.

There is an opportunity for senior staff to play a greater role in the development and training of staff to help offset knowledge loss through attrition.

An additional staff complement will be required in order for TFS to implement and operate a productive and robust succession planning program as there is no present capacity to move personnel into developmental roles without creating a significant service level impact.

Workforce Retirement Status

Between 2014 and 2018, 1,120 employees were/are eligible to retire, which represents 35.8% of the TFS workforce[60]. The average age of the TFS workforce is 46.7 years old[61]. The following sub-sections take a closer look at retirement eligibility across the fire service.

Operations Division

Non-union senior officers are on the cusp of unprecedented turnover; current data suggests that every Division Commander and Platoon Chief was eligible to retire in 2014. These 20 positions hold the lion's share of senior field experience within TFS embodying over 600 years of accumulated experience and knowledge. The precise magnitude of the history and experience poised to leave the organization is very difficult to comprehend.

The Fire Protection and Prevention Act (FPPA) and the Collective Agreement restrict the number of non-union positions within TFS. As such, in comparison to other City Divisions, the ratio of non-union personnel to unionized personnel is extremely low. At present, there are approximately 127 unionized personnel for every non-union manager in operations.

Unionized senior officers and supervisors holding the ranks of District Chief and Captain are in a similar position in terms of eligibility for retirement. All 60 District Chiefs and 503 out of 509 Captains are eligible to retire within the next five years[62]. The Captain

vacancies are front-loaded with 2014 being the year with the greatest eligibility. The potential vacancies for both positions (District Chief and Captain) represent over 15,000 years of collective experience and knowledge.

Typically through a graduated promotional system, the eligible officers in the rank below the level retiring would be eligible to move up to the next level. This progression allows the person being promoted to continue to build on their existing experience and progress upward. However, the current statistical review shows that of the 591 officer positions within TFS operations (from supervisory to management), 585 or 90% of these leadership positions have the potential to become vacant within the next four-to-five years due to retirement[63]. While it is unlikely that all of those eligible will actually retire, it is important to have a plan in place to mitigate the loss of knowledge and any associated challenges.

Adding to this is that 392 senior firefighting staff, representing over 11,700 years experience, are also eligible to leave during the same five-year timeframe[64]. This means that TFS needs a comprehensive succession planning strategy coupled with a proactive officer development program. TFS needs to exploit the mentoring opportunities by utilizing senior staff while they are still active.

The loss of experience and tenure can also be viewed as a safety issue that is a concern for organized labour. They too, inherit the downside to such massive turnover and this puts the spotlight on the promotional process demonstrating a potential need for process modification. Regardless of the position taken, it cannot be disputed that TFS needs to take action in the short-term and will need to work closely with Local 3888 on any safety concerns.

Communications & Technology Division
One quarter of the Communications & Technology Division is eligible for retirement. At the Captains level, 61% or eight out of 13 positions are eligible for retirement while 100% of District Chiefs are eligible to leave during this same five-year period (2014-2018)[65].

Fire Prevention & Public Education Division
This section of the organization has a high ratio of Captain positions (75%) eligible for retirement, spread across the five-year period. The loss of 18 of the 24 Captain positions is a priority consideration for management. Management is working with the Association on an agreement to extend eligibility to ensure an adequate number of Captains and Acting Captains in the future. In addition, 60% of District Chiefs are

eligible and the total eligibility for retirement within the Fire Prevention & Education Division is 30%[66].

Professional Development and Training & Mechanical Maintenance Division
Professional Development and Training & Mechanical Maintenance is eligible to lose 100% of its Division Chiefs, 57% of its District Chiefs, and 63% of its Captains due to retirement[67].

Professional Development and Training will play a lead role in facilitating officer development and succession planning initiatives in all sections of the organization, keeping in mind that this Division itself is facing a 50% retirement-eligibility challenge.

Administrative Services Division
The Administrative Services Division is eligible to lose 37% positions within the next four years including 100% of its District Chiefs and 83% of its Captains[68].

Management needs to consider the resources they have available to implement the TFS Work Plan and to move the organization forward aligning with TFS' strategic directions and those of the Corporation. Current vacancies and anticipated vacancies need to be examined to ensure that replacement staff have the required skills to ensure TFS is successful in achieving its objectives.

Succession Planning
With the amount of potential turnover, TFS needs to develop and implement a robust succession planning initiative, to ensure skilled and competent staff are in place for the future. The departure of a large number of employees will create an employee retention challenge for the organization: How can TFS combat or manage a large-scale exit of staff that depletes a wealth of knowledge, skills and leadership experience from all parts of the organization?

Various attempts at succession planning have occurred over the years within TFS; the most successful of which have been in the management ranks. In the Operations Division, every Platoon Chief (management rank) is assigned a permanent actor, who fulfills the duties of the position anytime the full-time Platoon Chief is away. In support divisions, there have been examples where management positions have been left vacant for a period of time and staff were selected to rotate through the position and act for a period of a few months prior to posting the position permanently. This has been successful, but given the small size of the management team it does not offer sufficient opportunity to determine the potential of, and provide opportunities for, the large number of staff throughout all ranks of the service.

TFS must work with Local 3888 to develop a succession planning program that allows staff to work outside of their normal day-to-day duties, either through assignment to temporary positions, or through project work, including a mechanism for staff to identify their desire to participate, and apply for these types of opportunities. This will allow management to develop individual training plans and on-the-job coaching, and at the same time will allow staff to develop skills for the future, including completing on the job and self-directed training, along with work area supervision and assigned project work.

Succession planning issues are not unique to TFS therefore TFS can also consider best practices of other fire departments.

Hiring

Hiring and knowledge transfer to new staff is a critical consideration. City hiring practices are subject to annual gapping target restrictions which prohibit proactive hiring practices. TFS has a 2.04% gapping target, which translates into the equivalent of 69 firefighters. TFS must initiate the suppression hiring process when there are 40 vacancies as per the Collective Agreement. There are approximately two recruit graduation classes each year, but there is an opportunity to be more proactive especially given the known retirement eligibility data.

Of equal concern is Fire Prevention, where a commitment by City Council to grow the division could see the addition of 25 new staff in each of 2015, 2016, and 2017, resulting in an overall level of staffing of approximately 250 full-time employees (FTEs). The first class of 25 was approved in 2014, and when coupled with existing vacancies, resulted in a recruit class of 39 by the time hiring had taken place. Given the 16-week training and mentoring program in place, this causes a significant gap in service level to the residents of Toronto before new recruits are able to undertake inspections on their own. More flexibility to hire smaller classes more often would lessen this service gap, and provide more reasonable class sizes for mentoring through the process. This would require the elimination of gapping, or the ability to hire for vacancies prior to them occurring to provide more seamless service across the city.

A Path to Diversity

An opportunity exists for TFS to build an inclusive and diverse workforce that is more reflective of the communities it serves. All recruitment, hiring, and associated service standards will align with TFS' diversity goals set out in the *Path to Diversity* plan - a plan to improve diversity in the fire service adopted by Council in July 2013.

4.9 Accreditation & Continuous Improvement

Accreditation processes enable organizations to monitor and improve operational performance and to compare themselves against industry best practices. The steps involved in accreditation lead to improved service delivery and they instil a culture of continuous improvement in an organization.

Commission on Fire Accreditation International (CFAI)

The accreditation program available through the Centre for Public Safety Excellence and administered by the Commission on Fire Accreditation International (CFAI), enables emergency response providers to use the accreditation process to set goals, develop strategic action plans and continuously evaluate and improve services provided to the public. The comprehensive process involves examining performance across 10 categories, 44 criteria and 252 key performance indicators (KPIs). It takes approximately 36+ months and includes a detailed self-assessment, a peer review and formal accreditation by an 11-member commission, representing a cross-representation of the fire industry. Despite the lengthy process, the benefits of accreditation are gleaned much sooner. After being accredited, Toronto Fire Services (TFS) would need to be re-accredited every five years to demonstrate that continuous improvement is a permanent part of the culture at TFS.

One of the key deliverables of the CFAI process is a city-wide risk assessment, called Standards of Cover. This risk assessment will form the basis for goals associated with response times and on-scene resource allocations and will drive objectives related to fire station location, staffing levels, and other critical deployment needs.

As TFS is moving forward with accreditation through the Centre for Public Safety Excellence based on Council approval, the Master Fire Plan will be a transition document designed to provide strategic direction for TFS over the next five years incorporating key principles and components of the CFAI process and will assist TFS in creating a culture of continuous improvement.

Excellence Canada

The City of Toronto is pursuing accreditation through Excellence Canada. As TFS works towards CFAI accreditation, the Division will be in a suitable position to also gain accreditation through Excellence Canada's standards. Appendix E summarizes the alignment between Excellence Canada and CFAI.

4.10 Technological Advancements

In today's digital age, technology is continuously evolving. It is important to keep pace with technological advancements in the fire industry because the benefits, efficiencies and safety that the right technology can bring to the fire service are too great to ignore.

Business Intelligence Analytics

Toronto Fire Services (TFS) will continue to utilize the business intelligence software that was purchased in 2011 to conduct ongoing emergency response analysis using historical data, which will improve the efficiency and allocation of our resources.

Geospatial Information System (GIS) Capacity

TFS is working to develop its own in-house GIS capacity. With improved real-time mapping and associated data the accuracy and effectiveness of TFS resource allocation will also be improved. TFS' GIS capabilities will facilitate increased and improved collaborations with City Planning and Social Development, Finance and Administration. This will allow TFS to access and share resources and data in a common format.

Predictive Modelling & Dynamic Staging

Two examples of technology that can bring significant benefits to the fire service are predictive modelling and dynamic staging.

Predictive modelling will assist in ensuring operational resources are positioned across the city in the most optimal locations. The information supporting predictive modelling is derived from both actual (past performance) data and forward looking data, including the incorporation of municipal planning information such as projected growth, types of future development, and predictable densification. An important element of predictive modelling is the incorporation of city wide, all-hazards risk assessment information, both current and projected, to inform the potential future volumes, locations, and types of emergency calls.

Predictive modelling is a best practices process which helps maximize the efficiency and effectiveness of resource deployment. The deployment of virtually any type of resource utilized by TFS can be positively impacted, including the recommended staffing of apparatus, the location and number of specific types of apparatus, the location, capacity, and resource profile of fire stations, and the ability to efficiently maximize the achievement of a timely and appropriate number of firefighters to emergencies.

Predictive modelling can engender significant cost savings. For example, the best possible station locations can be ascertained years in advance, allowing strategic land acquisitions and more effective medium and long-term infrastructure and facility planning. It also supports the most effective fleet design and composition, ensuring that the highest value apparatus types are prioritized. The deployment of firefighters can

also be successfully enhanced, ensuring that each part of the city is served by an appropriate complement of staff dependent upon risk profile and call volume.

Dynamic staging software uses current information from Computer Aided Dispatch (CAD) systems supported by historical emergency response data to determine the most strategic and efficient placement of apparatus in real-time. This reduces service coverage gaps that can occur when multiple apparatus are engaged in responding to emergency incidents. It supports the best practice concept of system status management, which drives efficient unit hour utilization of apparatus and fire crews while always selecting the closest appropriate resource for every emergency. Outcomes, including measured fire loss, fire injury and death, and enhanced patient outcomes during medical emergencies, would all be expected to improve through the use of dynamic staging.

TFS is currently in the process of evaluating both software applications with a view to implementation during 2015. The implementation of these systems will undoubtedly enhance the efficiency of TFS and will enable TFS to provide more efficient and effective emergency services as demands for service are better understood and are better able to be forecasted and predicted. However, the implementation of these tools on their own will not negate the need for TFS growth to keep pace with city development and growth, which ultimately drive the demand for emergency services.

Traffic Pre-Emption

Traffic signal pre-emption, or prioritization, allows the normal operation of traffic lights to be pre-empted to improve emergency vehicle road response times and enhance traffic safety at intersections. TFS has initiated formal discussions with Transportation Services and City Planning, other Emergency Service Providers, Public Transit Operators and Metrolinx, to determine what signal pre-emption technologies are available and best suited for emergency response conditions in Toronto. This initiative will require major capital investments in every signalized intersection before pre-emption becomes possible. Additionally, in order for advanced traffic signal pre-emption systems to be possible, each signalized intersection in the city must be connected to a private IT network that does not exist today.

Real-Time Prevention Data Collection

The existing tracking tools used for inspections are not meeting TFS' business requirements; however, this presents an opportunity to use mobile technologies to support prevention strategies. In 2014, iPads were rolled out to all in-field prevention inspection staff to allow for more efficient use of their time in completion of reports and issuing notices of violation, which can now be done on-site via email. Data is collected

and is uploaded to the system in real-time, eliminating previous delays caused by manual uploading of data. Future improvements are required to link data in the fire prevention database to the CAD/RMS system to make it immediately available to operational staff in the field when responding to incidents. In addition, TFS fire prevention staff will be working with staff from the Office of the Ontario Fire Marshal and Emergency Management (OFMEM) on implementing the Integrated Risk Management (IRM) tool within TFS. The IRM tool was developed to assist fire departments in understanding fire risks within their respective communities, enabling them to develop a risk-prioritized fire inspection program.

4.11 Summary of Considerations

The following list is a summary of key trends and considerations for the planning process that have been identified through the environmental scan:

- Toronto's population has and will continue to grow steadily, increasing the demand for emergency services.
- Toronto's aging population creates a greater need for TFS to understand potential vulnerabilities and associated risks of various groups.
- The City's identification of neighbourhood improvement areas presents opportunities for customized community-based fire prevention education programs.
- TFS will need to consider the appropriate level of service required to manage the anticipated growth and densification as outlined in the City's *Official Plan*, particularly in the downtown core.
- Emergency response Travel Times have been impacted by the increasing amounts of traffic and congestion in the city and this will only be heightened as the city continues to grow and develop.
- The proliferation of high-rise developments increases the need for re-assessing overall placement of stations and firefighting apparatus (trucks) due to the impact of vertical response times.
- Recent extreme weather events in Toronto present an increasing need for TFS to continue to be proactive in terms of emergency planning and specialized training.
- It is an ongoing challenge for TFS to ensure that all trucks remain in service at all times because of decreases in staffing levels due to unanticipated retirements, vacancies, and scheduled and unscheduled absences.
- An opportunity exists to develop solutions for staffing level challenges to ensure that all trucks remain on the road and in service.
- The workforce at TFS is aging with 35.8% of the total workforce eligible to retire by 2018, which highlights a need for effective succession planning.
- There is an opportunity for TFS to build an inclusive and diverse workforce that is more reflective of the communities it serves.

- TFS must implement previously approved technological solutions (software for predictive modelling and dynamic-staging, new station alerting system, GPS-dispatching, etc.) to determine their impact on overall response performance of TFS prior to assessing the need for additional stations/vehicles.

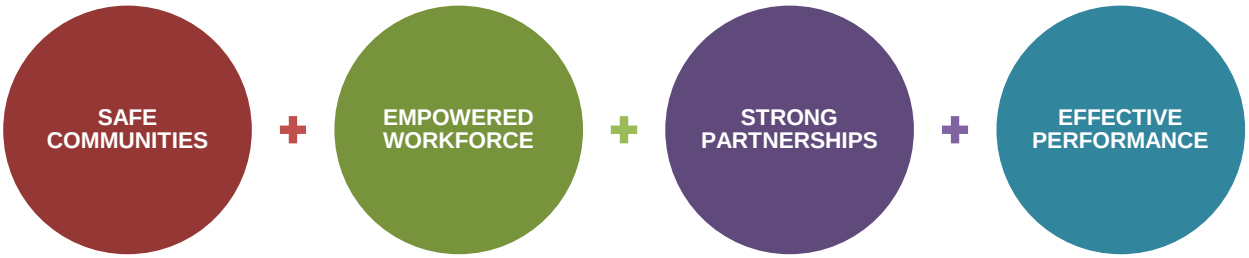
The environmental scan will evolve into Standards of Cover (SOC) documentation which is the first step of achieving CFAI accreditation. The SOC is an exercise of matching resources to associated risks. If the appropriate resources are deployed within a community that match the risk levels inherent to the hazards within the community then positive outcomes for civilian life safety, firefighter life safety, property, and the environment are likely.

5.0 The Master Fire Plan

Toronto Fire Services (TFS) initiatives from 2015-2019 are guided by four strategic directions:

1. Keeping our communities safe
2. Empowering our people
3. Strengthening our partnerships
4. Improving our performance

This section outlines TFS' objectives and initiatives for 2015-2019. The objectives and initiatives are organized by each of the four strategic directions. Over the next five years, each objective will be measured against pre-determined key performance indicators (KPIs), which are included at the end of each section.



Summary of Objectives

Safe Communities	Empowered Workforce	Strong Partnerships	Effective Performance
• The Public Education section within TFS will be a leader in developing and implementing effective fire safety programs and initiatives to make Toronto the most fire safe community in Canada. • TFS will develop proactive risk mitigation awareness through enhanced prevention, investigation, and enforcement strategies. • TFS will strive to continuously improve service response times to maximize fire protection for people and property.	• TFS will continue to strive to attract and select the most qualified candidates. • TFS will engage and empower staff through relevant training and ongoing staff development. • TFS seeks to continue to build an inclusive and diverse workforce that is reflective of the communities it serves. • TFS will work to improve administrative processes that support staff and their needs. • TFS will work to create a staffing pipeline that enables the Division to effectively achieve its objectives.	• TFS will strengthen relationships with external partners and work to identify new collaboration opportunities. • TFS will strengthen relationships with internal partners and work to identify new collaboration opportunities.	• TFS will ensure its governance structure helps to facilitate the achievement of its objectives. • TFS will monitor, benchmark, and evaluate performance metrics to ensure the delivery of services is aligned with the needs of the residents of Toronto. • TFS will leverage research and technology to identify opportunities to improve service delivery.

5.1 SAFE COMMUNITIES

Toronto Fire Services (TFS) strives to keep the communities of Toronto safe 24 hours a day, 7 days a week. TFS has established the following objectives and initiatives to ensure that Toronto's communities are as safe as possible.

Objective	Key Initiatives	Timeline	KPIs and Results
5.1.1 The Public Education section within TFS will be a leader in developing and implementing effective fire safety programs and initiatives to make Toronto the most fire safe community in Canada.	Work with other divisions, and third party applications/databases to identify priority neighbourhoods and newcomer populations and develop targeted education programs.	2015-2019	• Targeted education programs • Improved fire safety outcomes in neighbourhood improvement areas • Improved segmentation data
	Create educational toolkits to empower community leader to continue and lead fire safety education efforts.	2015-2019	• Increased outreach • Increased public engagement • Improved fire safety outcomes in neighbourhood improvement areas
	Continue to find opportunities to deliver fire safety education to vulnerable populations such as seniors, children, and university students in temporary accommodations to reduce fire risks.	2015-2019	• Increased outreach • Reduced fire safety risks in priority areas • Improved fire safety outcomes in neighbourhood improvement areas
	Increase focus on high-rise residential buildings for public education programs and events to account for the significant growth in this area.	2015-2019	• Increased outreach • Reduced fire safety risks in priority areas

Objective	Key Initiatives	Timeline	KPIs and Results
	Review current core programs and identify opportunities for improvement.	2015	• Improved prevention program • Improved education program • Improved program measures
	Create a new communication program that provides targeted messaging through the right channels including social media.	2016-2017	• Increased outreach • Increased public engagement • Increased effectiveness of communications
5.1.2 TFS will develop proactive risk mitigation awareness through enhanced prevention, investigation, and enforcement strategies.	Develop and implement an aggressive strategy for pre-incident planning, inspection, and Fire Code enforcement focused on violations that impact the immediate life safety of building occupants.	2015-2016	• Improved Fire Code compliance • Reduced number of violations • Improved life safety • Increased PFPC rating • Decreased insurance rates
	Develop an inspection schedule where the frequency of inspections is appropriately suited to the risk profile of each occupancy.	2017-2019	• Improved Fire Code compliance • Improved risk-to-resource allocation • Increased number of annual inspections • Increased PFPC rating • Decreased insurance rates
	Develop a staffing model for prevention staff to appropriately reflect needs across districts.	2016	• Improved risk-to-resource allocation

Objective	Key Initiatives	Timeline	KPIs and Results
	Test mobile technology options to improve Fire Code inspection and enforcement efficiency.	2016-2017	• Improved access to data • Improved accuracy of data • Increased efficiency of inspections (reduced costs and time)
	Ensure appropriate data is collected through investigations such that it directly supports and informs future fire protection and public education initiatives.	2017-2018	• Improved access to data • Improved accuracy of data • Increased relevancy and currency of fire protection initiatives • Increased relevancy and currency of public education initiatives
	Increase the level of Fire Code training to suppression staff so they can support the increasing need for prevention and inspection activities.	2016-2018	• Increased staff knowledge and skill set • Increased Fire Code compliance
5.1.3 TFS will strive to continuously improve service response times to maximize fire protection for people and property.	Conduct an annual review of the strategic placement of fire stations, fire apparatus, and staff levels to reflect the city's anticipated growth and development. This review will inform new station locations, the purchase of new apparatus and equipment, and necessary changes to staffing levels.	2015-2019	• Improved response time • Improved risk-to-resource allocation • Increased PFPC rating • Decreased insurance rates

Objective	Key Initiatives	Timeline	KPIs and Results
	Conduct an annual review of the existing service deployment model to identify opportunities to adjust staff levels.	2015-2019	• Improved response time • Improved risk-to-resource allocation
	Conduct a comprehensive qualitative and quantitative risk assessment for the City of Toronto.	2015-2019	• Improved response time • Improved risk-to-resource allocation
	Publish a Standards of Cover (SOC) document based upon the results of the risk assessment and service deployment review in support of CFAI accreditation.	2016	• Improved risk-to-resource allocation
	Continually monitor the effectiveness of modifications as a result of the removal of District 12 and revise as needed.	2015-2019	• Improved response time • Improved risk-to-resource allocation
	Maintain existing HUSAR and CBRNE funding and request an increase in funding from the Federal and Provincial governments to support Toronto's role in nation-wide HUSAR and CBRNE incidents.	2015	• Increased partnership opportunities • Increased alignment between TFS, provincial, and federal goals • Improved IMS compliance
	Strengthen HUSAR and CBRNE team with external stakeholders (including the OFMEM and OPP).	2015-2016	• Increased partnership opportunities • Improved IMS compliance

Objective	Key Initiatives	Timeline	KPIs and Results
	Continue to assess the use of RESCU and COMPASS cameras in instances where they might assist TFS with effective response. Facilitate appropriate training and develop a plan for implementation.	2015-2017	• Increased effectiveness of response • Increased staff knowledge and skill level
	Leverage the City-wide risk assessment to identify opportunities that could help to maximize the efficiency of resource deployment.	2015	• Improved response time • Improved risk-to-resource allocation • Reduced costs • Increased alignment between TFS and City goals
	Continue to implement dynamic staging and predictive modeling software to maximize effective emergency response coverage and determine the most cost effective placement of fire resources and apparatus.	2015-2016	• Improved response time • Improved risk-to-resource allocation • Reduced costs
	Develop new first alarm and Effective Firefighting Force running assignments to account for high-rise buildings.	2015	• Improved response time • Improved vertical times • Increased life safety
	Evaluate the design of smaller fire apparatus with a short wheel base and turning radius and more seating to accommodate six firefighters and SCBAs.	2015	• Improved response time • Improved vertical times • Increased life safety

Objective	Key Initiatives	Timeline	KPIs and Results
	Continue to work with the major railroad operators in the country and participate in training specialized for rail operations.	2015-2019	• Increased staff knowledge and skill level • Improved emergency training • Improved response in emergency situations • Increased life safety
	Continue to work with the petrochemical transportation and pipeline industry to stay abreast of issues related to pipeline safety and to ensure effective emergency preparedness planning and training.	2015-2019	• Increased staff knowledge and skill level • Improved emergency training • Improved response in emergency situations • Increased life safety
	Ensure maximum preparedness planning and coverage for PanAm Games and document learning to inform large-scale events hosted in the city.	2015-2016	• Increased staff knowledge and skill level • Improved emergency training • Improved response in emergency situations • Increased life safety
	Ensure timely completion of construction and staffing of the new Downsview Station 144.	2015-2016	• Improved response time • Improved risk-to-resource allocation
	Ensure timely completion of construction and staffing of the new Woodbine Station 414.	2016-2017	• Improved response time • Improved risk-to-resource allocation

Objective	Key Initiatives	Timeline	KPIs and Results
	Evaluate the feasibility of satellite maintenance facilities for trucks and equipment repairs.	2016-2017	• Increased timeliness of repairs • Reduced costs
	Renovate former Fire Station 424 to provide space for Emergency Planning, Fire Prevention, and Public Education resources so that the station (closed per 2014 budget) continues to provide a strong community presence and allows for the growth of other sections.	2015	• Improved resident satisfaction • Improved risk-to-resource allocation
	Repair the special operations water simulator at the Special Operations training facility at Bermondsey Avenue.	2015	• Improved response effectiveness • Increased level of staff knowledge and skill level
	Replace the wall flame protection in the both the East and West Burn Houses.	2015	• Improved training facility • Reduced costs • Increased employee satisfaction
	Replace existing Emergency Dispatch Consoles.	2015-2016	• Improved call processing time • Reduced costs • Increased employee satisfaction

Objective	Key Initiatives	Timeline	KPIs and Results
	Conduct a facility review audit and develop a facility renewal strategy (capital funding).	2015	• Improved risk-to-resource allocation • Reduced costs • Improved facilities
	Develop a replacement strategy for the WM Lyon Mackenzie.	2019	• Reduced costs • Enhance marine response
	Funding of capital projects to be maintained at the level recommended by Corporate Business Conditional Assessments.	2015-2019	• Maintained capital funding • Achieved state of good repair in all stations
	Continue the ongoing investigation of the feasibility of “storefront” fire stations downtown by working with partners to identify co-location and cost saving opportunities and by working with developers to identify options for leasing new space.	2015-2019	• Improved risk-to-resource allocation • Reduced costs • Increased partnership opportunities

5.2 EMPOWERED WORKFORCE

Toronto Fire Services (TFS) strives to maintain a positive work environment and culture by engaging and empowering its people.

Implementing training, engagement, and employee recognition programs that are customized to meet staff needs will increase morale and motivation. This aligns with the City's Talent Blueprint 2014-2018, the Auditor General's 2013 recommendations, and TFS' core value of *Professional Development*.

Training is critical to ensure that firefighters are prepared to mitigate emergency situations and reduce risks to residents and increase firefighter safety. It is also important that training time is effectively used as there is an opportunity cost associated with the time spent away from performing work duties. Streamlining training processes, reports, and records will allow TFS to align with The National Fire Protection Association's standards and the Ministry of Labour Section 21-Health and Safety guidelines.

The following objectives and initiatives aim to support an empowered workforce at TFS.

Objective	Key Initiatives	Timeline	KPIs and Results
5.2.1 TFS will continue to strive to attract and select the most qualified candidates.	Conduct review of Centennial College partnership agreement on annual basis to ensure the program is current, relevant, and continuing to achieve recruitment objectives.	2015-2019	• Increased effectiveness, relevancy and currency of program • Increased number of Centennial candidates • Increased number of Centennial recruits

Objective	Key Initiatives	Timeline	KPIs and Results
	Identify additional partnership opportunities with other educational institutions that will help to support and inform TFS' recruitment process.	2015-2019	• Increased partnership opportunities • Increased number of qualified candidates • Increased number of qualified recruits
	Conduct a scan of recruitment evaluation methods being used corporately and in other jurisdictions to identify any opportunities for improvements to TFS' recruitment process.	2015	• Improved recruitment processes • Increased number of qualified candidates • Increased number of qualified recruits
	Seek funding from provincial and federal governments to increase outreach and recruitment efforts.	2015	• Increased funding • Increased number of qualified candidates • Increased number of qualified recruits
5.2.2 TFS seeks to continue to build an inclusive and diverse workforce that is reflective of the communities it serves.	Conduct an annual assessment of current diversity efforts (TFS Path to Diversity Report) and ensure alignment with Corporate diversity goals. This includes publishing diversity initiatives and identifying progress towards diversity objectives in the annual report.	2015-2019	• Increased alignment between TFS and City goals • Improved performance measures

Objective	Key Initiatives	Timeline	KPIs and Results
	Consult with the Office of Equity, Diversity & Human Rights to identify additional opportunities to effectively incorporate a diversity lens into staff recruitment and training programs as well as other processes throughout Fire Services.	2015	• Increased diversity outreach initiatives • Reduced applicant barriers • Increased level of diversity in candidate pool • Increased level of diversity in workforce • Increased inclusivity of policies • Increased employee morale • Increased employee engagement
	Develop post-recruitment support programs and processes to ensure the needs of TFS' diverse workforce are being met on the job.	2016	• Increased inclusivity of policies • Increased employee morale • Increased employee engagement
	Continue to work with partners and participate in career fairs and community events to increase outreach efforts with diverse groups.	2015-2019	• Increased diversity outreach initiatives • Increased level of diversity in candidate pool • Increased level of diversity in workforce
	Continue to host quarterly meetings for the Fire Chief's Council on Access, Equity, and Diversity.	2015-2019	• Reduced applicant barriers • Increased inclusivity of policies

Objective	Key Initiatives	Timeline	KPIs and Results
	Create a Senior Staff Committee on Access, Equity, and Diversity to continue to identify relevant diversity initiatives for TFS to pursue.	2015	• Increased diversity outreach initiatives • Increased level of diversity in candidate pool • Increased level of diversity in workforce
	Review the impact of the OFAI Candidate Testing Service on TFS and suggest any changes required.	2015	• Increased alignment between TFS and OFAI goals
	Conduct an Employment Systems Review to identify barriers for four designated groups (women, visible minorities, Aboriginal persons, and persons with disabilities) and support the elimination of these barriers by offering alternative employment policies.	2015	• Reduced applicant barriers • Increased inclusivity of policies • Increased level of diversity in candidate pool • Increased level of diversity in workforce
5.2.3 TFS will engage and empower staff through relevant training and ongoing staff development.	Develop and provide practical fireboat training that is consistent with Waterfront Incident Management plans. This includes the purchase of necessary equipment for training.	2016-2018	• Increased staff knowledge and skill level • Improved quality of training equipment • Improved fireboat training
	Complete the transition to new simulation software and the use of three-dimensional models for staff training to help Chiefs and Company Officers make better decisions in emergency situations.	2016	• Increased staff knowledge and skill level • Improved emergency response outcomes • Improved quality of training equipment

Objective	Key Initiatives	Timeline	KPIs and Results
	Continue to pursue funding for additional facility and simulator development.	2015-2019	• Increased funding • Improved quality of training • Improved employee satisfaction
	Conduct an annual review of the recruit-training program to ensure recruits are participating in training programs that are current, relevant, and reflective of their qualifications.	2015-2019	• Decreased staff orientation time • Increased employee morale • Increased employee engagement • Increase relevancy and currency of training content
	Continue to create mechanisms, through the Professional Development & Training Working Group, that will help ensure all mandatory training and associated requirements are completed.	2015-2019	• Increased training completion rates
	Develop and implement a quality assurance process to verify the completeness, accuracy, and consistency of training records and ensure internal guidelines are followed.	2016-2017	• Increased completeness of training records • Increased accuracy of training records • Increased compliance of training SOGs
	Work with the Corporate eLearning Team to improve training management and the accessibility of progress reports through the ELI online learning system and to ensure alignment with City policies.	2015-2019	• Increased access to training records • Reduced training costs • Increased alignment between TFS and City policies

Objective	Key Initiatives	Timeline	KPIs and Results
	Review agendas and lesson plans annually to ensure requirements and expectations are relevant.	2015-2019	• Increased staff knowledge and skill level • Increased relevancy and currency of training requirements
	Conduct an annual assessment of staff needs to ensure training content and materials are current and relevant.	2015-2019	• Increased relevancy and currency of training content • Increased staff knowledge and skill level
	Leverage results from the City-wide corporate engagement survey to inform customized engagement and recognition programs.	2015-2019	• Increased employee engagement • Increased employee morale
	Continue to encourage staff feedback on all course and training modules and incorporate feedback into future training where appropriate.	2015-2019	• Increased employee engagement • Increased employee morale • Increased awareness of staff needs • Improved relevancy of training content
	Provide necessary support for fire prevention staff to participate in the new Office of the Fire Marshal and Emergency Management (OFMEM) professional certification process.	2015-2017	• Increased employee engagement • Increased staff knowledge and skill level

Objective	Key Initiatives	Timeline	KPIs and Results
	Assess the feasibility of a Field Training Instructor concept to remedy the current lack of instructor availability.	2015-2016	• Increased instructor availability • Increased number of staff training hours
	Develop process and communication mechanisms to ensure cancelled in-service training is re-scheduled and completed.	2015-2016	• Increased number of completed training modules • Increased number of staff training hours
	Identify training requirements and ensure that all shift training instructors are qualified to meet these requirements and qualified for the delivery of programs in accordance with internal standard operating guidelines and the Collective Agreement.	2015-2016	• Increased alignment between instructor qualifications and training requirements
	Implement changes to existing practices based on analysis of the National Fire Protection Association's (NFPA) standard on Recommended Practices for Fire Service Training Reports and Records and ensure alignment with standard operating guidelines.	2015-2016	• Increased alignment between TFS and NFPA training report standards • Improved training records management • Improved access to training data
	Enhance training delivery models and increase number of training hours for firefighters.	2015-2017	• Improved staff satisfaction with training delivery • Increased number of staff training hours

Objective	Key Initiatives	Timeline	KPIs and Results
	Consider opportunities for staff to assist with the delivery of training for recruit classes.	2015-2019	• Increased candidate pool for promotions • Improved level of knowledge and skill level • Improved employee engagement • Increased instructor availability
	Create enhanced development opportunities in the form of funding for external executive education programs in skill areas beyond those related to firefighting and emergency response. This will include executive exchange programs, specialized training, certification programs, and graduate level studies, in an effort to enhance overall effectiveness and directly support succession planning.	2015-2019	• Increased employee morale • Increased employee engagement • Increased staff knowledge and skill level • Increased candidate pool for promotions
	Continue development of a Command and Leadership Academy as a learner-centred environment. Provide access to core and supplementary modules in all areas of command and leaderships.	2015-2016	• Increased employee engagement • Increased access to information • Increased learning opportunities for staff • Increased staff knowledge and skill level

Objective	Key Initiatives	Timeline	KPIs and Results
	Enhance training and professional development delivery processes, including a competency tracking system, for communications, technology, analytics, and accreditation staff. Overall training hours should be increased and training delivery modes selected to enhance competence and staff confidence in TFS provided training and education.	2015-2017	• Improved staff satisfaction with TFS provided training and education • Documented evidence of staff success in meeting training and education objectives
5.2.4 TFS will work to improve administrative processes that support staff and their needs.	Implement a proactive management approach with respect to the Return to Work (RTW) and the Attendance Management (ATM) programs to enhance inter-divisional coordination and communication and to enhance the quality and consistency of documentation.	2015-2018	• Improved attendance • Decreased number of trucks out of service • Increased employee morale • Improved quality of documentation
	Evaluate the benefits, limitations, risks and impacts of alternatives to the current 24-hour shift model (consider alignment between Operations schedule and those of support Divisions).	2015	• Improved performance measure • Increased awareness of impacts of the 24-hour shift

Objective	Key Initiatives	Timeline	KPIs and Results
	Identify opportunities to increase administration efficiencies through collective bargaining or other means i.e. promotional process, lieu day payout, grievance process enhancements, etc.	2015-2016	• Increased efficiency of administrative processes (Reduced costs and time) • Decreased number of grievances • Reduced number of lieu days being taken as time off each year • Increased merit-based promotions
5.2.5 TFS will work to create a staffing pipeline that enables the Division to effectively achieve its objectives.	Develop and implement a succession and development plan for all levels within the Division. This will include a modular promotion program and staff development activities that align with the City's Talent Assessment Program.	2015-2016	• Increased candidate pool for promotions • Improved level of knowledge and skill level • Improved employee engagement • Increased alignment between TFS and City goals
	Increase opportunities for staff to share learning across the organization and establish strong candidates for future openings.	2015-2019	• Increased candidate pool for promotions • Improved level of knowledge and skill level • Improved employee engagement

5.3 STRONG PARTNERSHIPS

Complex challenges, such as those identified in the environmental scan (*Section 4.0*) require strategic partnerships. Both internal and external partners will enable TFS to expand its reach and increase its capacity to respond to and mitigate risks for the residents of Toronto.

Partnering with the residents of Toronto is equally important. Engaging the public will provide a better understanding of public needs and, thus, TFS will be able to better serve them.

The following objectives and initiatives aim to support the strategic direction of strengthening partnerships.

Objective	Key Initiatives	Timeline	KPIs and Results
5.3.1 TFS will strengthen relationships with external partners and work to identify new collaboration opportunities.	Develop multi-disciplinary Incident Management Teams, with specialized training of personnel in each of the Incident Management System functions.	2016-2017	• Increased participation in partnerships • Increased quality of service • Increased specialized skill levels
	Continue the development and adoption of Unified Command practices and protocols, along with our emergency service partners, in any response involving joint operations.	2015-2019	• Increased participation in partnerships • Increased quality of service (increased firefighter and resident satisfaction)
	Enhance collaboration with Toronto Police Service and Toronto Paramedic Services to better delineate roles at incidents including medical-related incidents. Venues to enhance collaboration include the 9-1-1 Committee and the Tiered Response Committee.	2015	• Improved all-hazard plan • Increased partnership opportunities • Improved IMS compliance

Objective	Key Initiatives	Timeline	KPIs and Results
	Explore partnership opportunities with academic institutions or other organizations where TFS can contribute to relevant and current research projects.	2015-2019	• Increased participation in partnerships • Improved research and knowledge • Increased societal contributions
	Re-instate the quarterly meeting of the Chief's Advisory Board that invites public collaboration from associations and residents ensuring appropriate representation from across the city.	2015	• Increased awareness of community expectations • Increased quality of service (increased resident satisfaction)
	Consult with communities, Councillors, and community groups on an ongoing basis to involve them in project planning and to understand their needs and changing service expectations.	2015-2019	• Increased awareness of community expectations • Increased quality of service (increased resident satisfaction)
	Work with Transportation Services to explore the expansion of traffic pre-emption technologies to improve fire response.	2015	• Reduced response times • Increased life safety
	Work with the Office of Emergency Management to ensure TFS' Business Continuity Plan aligns with and supports the Corporate Business Continuity Plan.	2015-2019	• Improved emergency training • Improved response in emergency situations • Increased alignment between TFS and City goals

Objective	Key Initiatives	Timeline	KPIs and Results
	Work with the Toronto Office of Partnerships to identify new potential funding sources.	2015-2019	• Increased funding • Increased community involvement • Increased community outreach and education
	Review the Memorandum of Understanding (MOU) with Toronto Building to identify opportunities to be more involved in the plans examining review process including any consultation and review of drawings (Part 3 as defined by the Ontario Building Code).	2015	• Improved Fire Code compliance • Increased life safety
	Work with the Specialized Interdivisional Effectiveness Response to Vulnerability program (SPIDER) (and other City collaboratives) dealing with vulnerable residents in their neighbourhoods and communities.	2015-2019	• Increased awareness of neighbourhood-specific risks • Improved outcomes for vulnerable populations
	Leverage data from Toronto Building's database to identify data for both existing building stock and building stock under construction. Assess the possibility of linking Building's database with TFS's prevention database.	2015-2019	• Increased access to data • Increased accuracy of data • Increased Fire Code compliance

Objective	Key Initiatives	Timeline	KPIs and Results
	Leverage data from Toronto Water's database to help identify water system capacity and major updates to eliminate or decrease water access impedances and risk level.	2015-2019	• Increased access to data • Increased accuracy of data
	TFS management will continue to work with Corporate Facilities to identify and request adequate annual operating and capital state of good repair funding.	2015-2019	• Increased funding • Reduced costs
	Develop a needs assessment and gap analysis for the mental health and wellness of TFS staff (working jointly with TFS Management, TFS Association, and CAMH).	2015-2016	• Improved employee satisfaction • Improved employee mental health and wellness
	Continue to work on and finalize a memorandum of understanding (MOU) with Billy Bishop Airport.	2015	• Increased participation in partnerships • Improved island airport response
	Work with Solid Waste on mitigating negative environmental impacts to align with the City's long-term solid waste management strategy and to support environmental sustainability.	2016-2018	• Reduced environmental footprint • Increased alignment between TFS and City goals

Objective	Key Initiatives	Timeline	KPIs and Results
5.3.2 TFS will strengthen relationships with internal partners and work to identify new collaboration opportunities.	Identify the goals and objectives of the Emergency Planning Research and Development Section in conjunction with Fire Prevention and Public Education, to eliminate any overlap, achieved economies of scale, and enhance the overall level of service to firefighters and the residents of Toronto.	2016	• Increased alignment between TFS and Emergency Planning goals • Reduced costs • Increased quality of service (increased firefighter and resident satisfaction)
	Continue to seek opportunities for participating in inter-divisional teams and partnerships to create synergies, reduce costs, and improve operations.	2015-2019	• Increased participation in partnerships • Reduced costs • Improved processes (time and cost reduced)
	Establish an internal committee with Fire Prevention and Operations staff to address existing and anticipated issues related to high-rise buildings.	2016	• Mitigated high-rise issue • Improved vertical response times • Decreased calls in high-rise buildings • Increased resident awareness and knowledge of high-rise risks prevention mechanisms

Objective	Key Initiatives	Timeline	KPIs and Results
	Continue to improve upon an internal emergency medical response taskforce with union and non-union representation to improve medical response outcomes and collaboration with partner agencies.	2015-2019	• Improved IMS compliance • Improved response outcomes • Improved patient outcomes • Improved life safety • Improved responder and public safety

5.4 EFFECTIVE PERFORMANCE

Any improvements made in TFS processes and services equate to an increase in the ability to protect life, property, and the environment from the negative effects of fires and other hazards. It is especially important in a growing city like Toronto if these improvements help to cope with congestion issues, such as the expansion of traffic pre-emptive technologies mentioned in the environmental scan. The City as a whole also recognizes the importance of emergency response and has included it as a priority in its Strategic Action Plan for 2013-2018.

Recent extreme weather events and corresponding increased demand for time-sensitive services has made it all the more critical to achieve greater efficiencies. Reducing complexity and duplication in existing processes will also help to improve the city's Public Fire Protection Classification (PFPC) class and will ensure that insurance costs do not increase.

The Master Fire Plan is meant to be a stepping stone as TFS embarks on its upcoming application for accreditation through the Commission on Fire Accreditation International (CFAI). The accreditation process and commitment to continuous improvement will support TFS in achieving its objectives over the next five years and beyond.

The following objectives and initiatives aim to support the strategic direction of effective performance.

Objective	Key Initiatives	Timeline	KPIs and Results
5.4.1 TFS will ensure its governance structure helps to facilitate the achievement of its objectives.	Facilitate a collaborative process to revisit and update the TFS mission, vision, and values and develop a rollout plan that engages all levels of staff.	2016	• Increased internal collaboration • Increased staff engagement • Strengthened mission, vision, and values • Increase staff awareness of TFS mission, vision, and values • Improved achievement of TFS goals

Objective	Key Initiatives	Timeline	KPIs and Results
	Present Council with a case to support the adoption of new standards (beyond NFPA) that more accurately reflect Toronto's diverse building stock in metro, urban, and suburban areas. This data will be developed through the CFAI processes.	2015	• Improved performance measures • Improved industry standards • Increased accuracy of data
	Propose bylaw amendments for Council consideration that enhance the firefighting response in marinas. This could consist of training and equipment required of marina operators, as well as minimum standards to ensure easy access to all marina areas by land-based fire crews.	2017	• Improved marina response times • Increased staff training and skills for marinas • Increased life safety
	Continue to advocate for updates to the Ontario Building Code to incorporate requirements for automatic sprinklers in low-rise residential buildings and vulnerable occupancies.	2015-2019	• Stricter Building Code requirements • Increased sprinklers in buildings • Decreased fire spreading • Increased life safety
	Update policies and operating guidelines and put a process in place for communicating these updates to staff. Develop timelines for re-assessment of policies and guidelines to ensure they remain current.	2015-2019	• Increased staff awareness of SOPs and SOGs (and changes to SOPs/SOGs) • Increased accuracy and currency of SOPs and SOGs

Objective	Key Initiatives	Timeline	KPIs and Results
	Establish a policy requiring building owners to cover the cost of inspections for non-compliance of orders issued under the Ontario Fire Code and assess the feasibility of implementing a re-inspection fee.	2016	• Decreased inspection costs • Decreased non-compliance orders • Increased cost-recovery
	Develop and implement a plan for information management that aligns with City policies. This includes identifying and defining information and reporting needs specific to each business unit, working with Corporate IT to assess options for systems or integrated devices to support information and reporting needs, and implementing controls that provide for timely, complete, and accurate data entry and data verification.	2015	• Improved information management • Increased transparency of information • Increased integration of information systems • Increased information controls • Increased accuracy of data • Increased accuracy of data entry and verification • Increased alignment with Corporation
5.4.2 TFS will monitor, benchmark, and evaluate performance metrics to ensure the delivery of services is aligned with the needs of the residents of Toronto.	Review and revamp Customer Service Standards to align with City Standards and TFS Customer Service Plan.	2015-2019	• Improved resident satisfaction • Increased alignment with Corporation
	Develop an effective approach that allows for accuracy in assessing property value.	2016	• Increased accuracy of property value data • Improved performance measures

Objective	Key Initiatives	Timeline	KPIs and Results
	Improve Toronto's Public Fire Protection Classification (PFPC) by implementing recommendations from the Fire Underwriters Survey (FUS) such as reducing the number of vehicles taken out of service, achieving performance benchmarks, and integrating with other divisions to increase impact.	2015	• Improved PFPC rating • Decreased insurance rates • Increased integration across Divisions • Increased achievement of performance goals and industry benchmarks
	Continue to implement Business Intelligence reporting software to support the measurement of key performance indicators.	2015-2019	• Improved performance measures • Improved access to information for decision-making
	Build awareness within TFS about CFAI and begin the Standards of Cover and self-assessment process for accreditation.	2015	• Increased staff awareness of CFAI accreditation and continuous improvement • Initiated CFAI process • Increased understanding of potential risks
	Develop mechanisms and internal champions of CFAI to strive to meet accreditation benchmarks on an ongoing basis.	2016	• Increased staff awareness of CFAI accreditation and continuous improvement • Improved processes that support continuous improvement

Objective	Key Initiatives	Timeline	KPIs and Results
	Publish the TFS annual report in a clear concise format.	2015-2019	• Increased data transparency • Increased readership of annual report
	Develop and use relevant and consistent key performance indicators (informed by CFAI) that are aligned with the strategic goals of the Master Fire Plan.	2015-2019	• Improved performance measures • Alignment between KPIs and objectives
	Determine the reporting requirements of goals and activities, such as content, frequency, and recipients.	2015-2019	• Increased accuracy of data and reports • Alignment between reporting and objectives • Increased relevancy of report content
	Develop tracking tools and ensure necessary information is available for measuring, monitoring, and reporting on all activities.	2016	• Improved data collection • Increased accuracy of data • Improved performance measures
	Implement an end-user driven process for the replacement of Mobile Data Terminals (MDT's), including selection of the most effective and functional hardware and software. The process will include the selection and implementation of mapping, electronic communications, resource tracking, command, and other appropriate MDT-based tools for use in the field.	2015-2016	• Improved operational communications • Improved firefighter safety • Improved response effectiveness • Improved response times • Increased accuracy of data

Objective	Key Initiatives	Timeline	KPIs and Results
	Implement an end-user driven process for the implementation of tablet and smart-phone based command and communications tools, including the utilization of mobile-CAD technology, electronic command boards, and electronic resource tracking and firefighter accountability tools.	2015-2016	• Improved operational communications • Improved incident management • Improved firefighter accountability • Improved firefighter safety • Improved response effectiveness • Increased accuracy of data
	Complete the activation of Fire Station Alerting (FSA) to all TFS operational stations.	2015	• Improved operational communications • Improved response times • Increased accuracy of data • Increased PFPC rating
5.4.3 TFS will leverage research and technology to identify opportunities to improve service delivery.	Upgrade the existing computer-aided dispatch (CAD) system to allow for enhanced functionality, including mobile use, and decreased maintenance costs.	2015	• Reduced maintenance costs • Increased accuracy of data • Improved response times
	Acquire thermal imaging cameras (TICs) for all apparatus (currently only 7 of 124 trucks have cameras) to improve firefighter safety, public safety, reduction of property loss, and general efficiency of fireground emergency operations.	2015	• Improved firefighter safety and public safety • Reduced property loss • Improved response times • Improved effectiveness of response • Reduced response redundancy

Objective	Key Initiatives	Timeline	KPIs and Results
	Consider purchasing additional equipment, such as gas monitoring devices and CO detectors, which will help to eliminate the need for other trucks to respond to deliver equipment to the scene.	2016	• Reduced response redundancy • Increased staff knowledge and skill level • Improved effectiveness of response
	Conduct a review and replacement of the current telephone system used in the Communications Centre.	2015	• Improved call processing time • Reduced costs

6.0 Conclusions & Next Steps

The Toronto Fire Services' (TFS) 2015-2019 Master Fire Plan supports the Division's ongoing efforts to increase fire safety and fire prevention through education and prevention mechanisms and to provide high quality, efficient, and effective emergency response such that life safety outcomes are improved for all residents across the city.

The Plan builds on the Strategic Action of *Improving Emergency Response and Prevention*, carry forward items from the 2007 Master Fire Plan, and recommendations from recent studies of TFS including the *Service and Organizational Review of Toronto EMS and Toronto Fire Services*; the *Auditor General's Report on Training and Recruitment*; and the *Fire Underwriters Survey*.

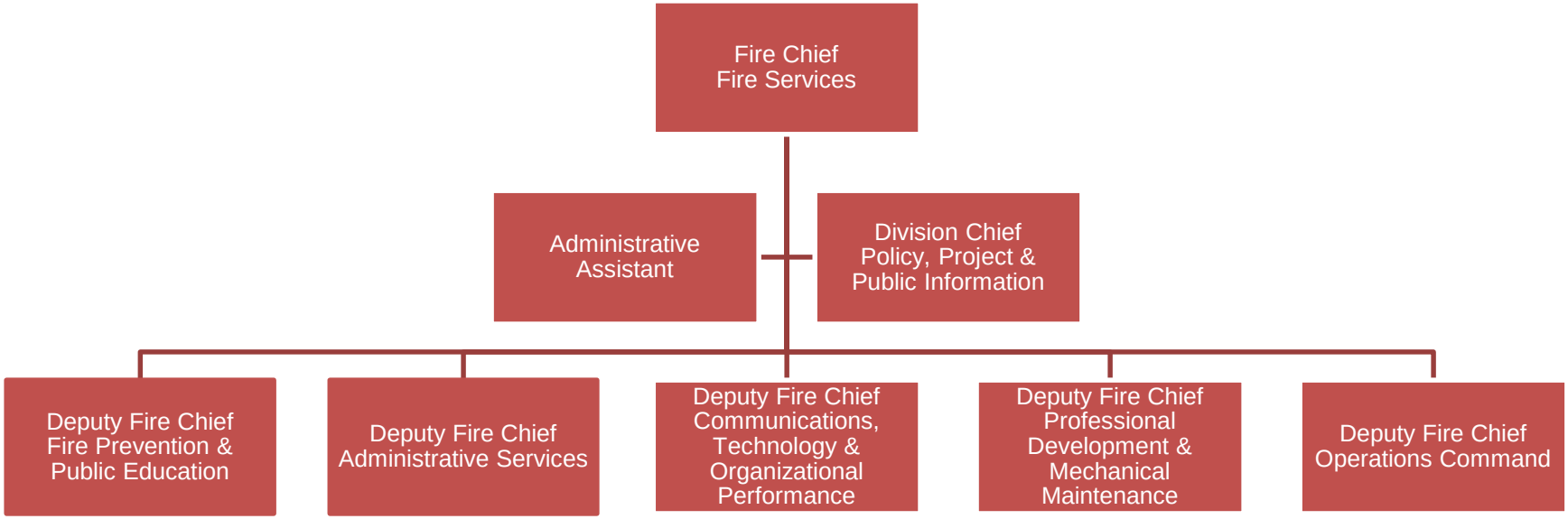
In addition, the Plan is informed by input from key stakeholders including members of the public, staff, other City Divisions, and other fire departments. Social, demographic, environmental, and city development and growth trends were also assessed to help inform the planning process.

This Master Fire Plan provides strategic direction for TFS and outlines the critical initiatives that TFS will implement over the next five years in order to achieve Divisional and Corporate objectives. The Plan supports the direction for TFS to implement activities and programs that:

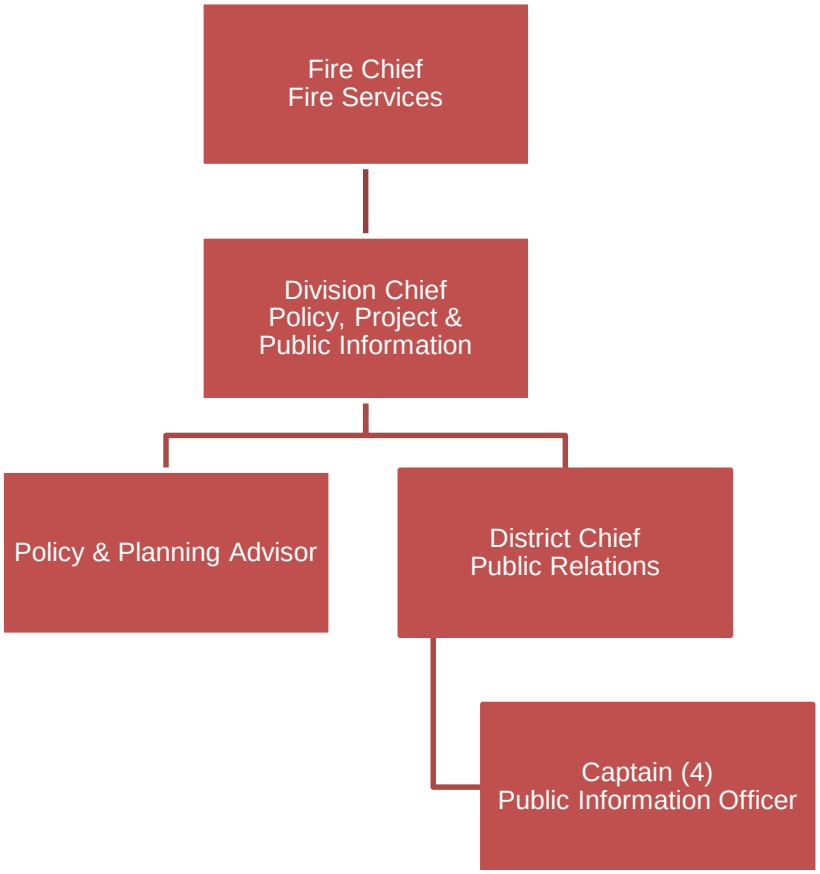
1. Keep its communities safe;
2. Empower its people;
3. Strengthen its partnerships; and
4. Improve its performance.

Once approved, the Plan will help to guide divisional priorities and investments over the next five years. The Master Fire Plan is also meant to be a stepping stone as TFS embarks on its upcoming application for accreditation through the Commission on Fire Accreditation International (CFAI), which will support TFS in achieving its objectives over the next five years and beyond.

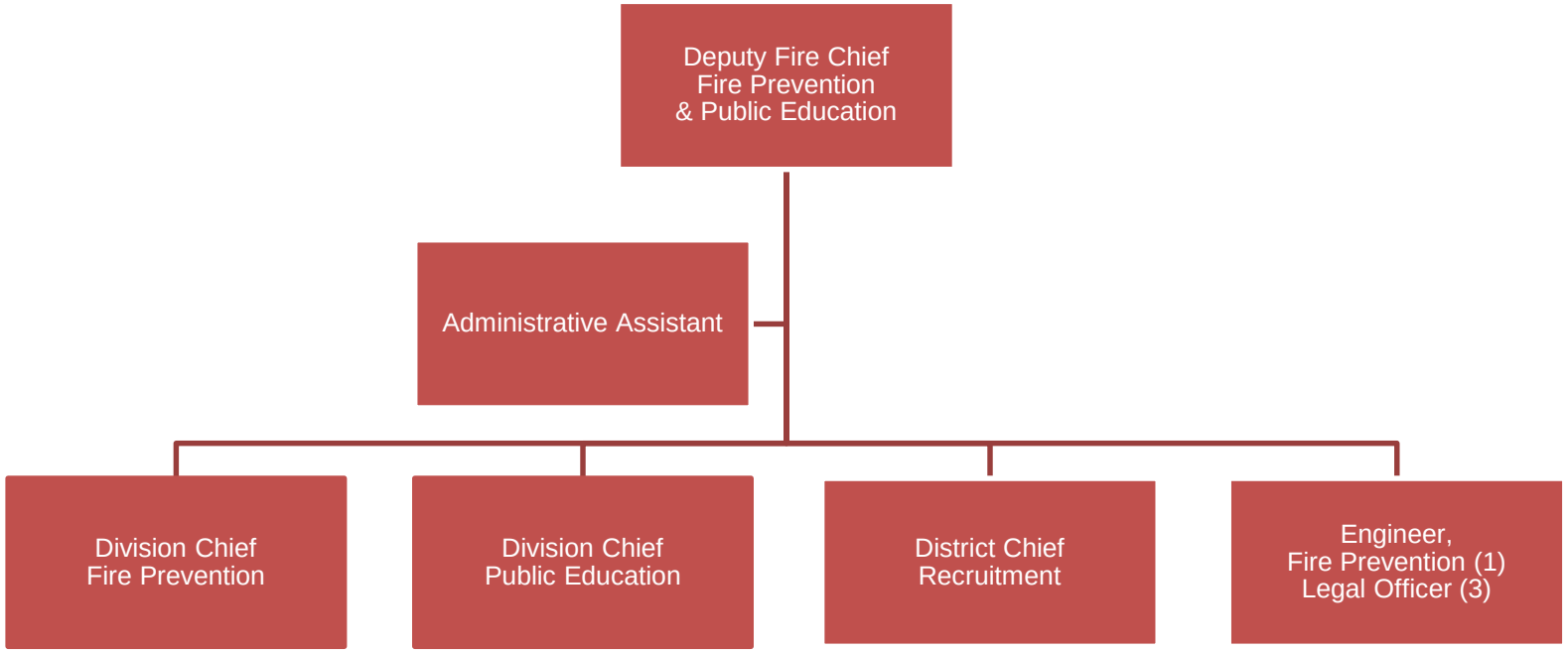
Appendix A: Organizational Charts
Fire Services Division



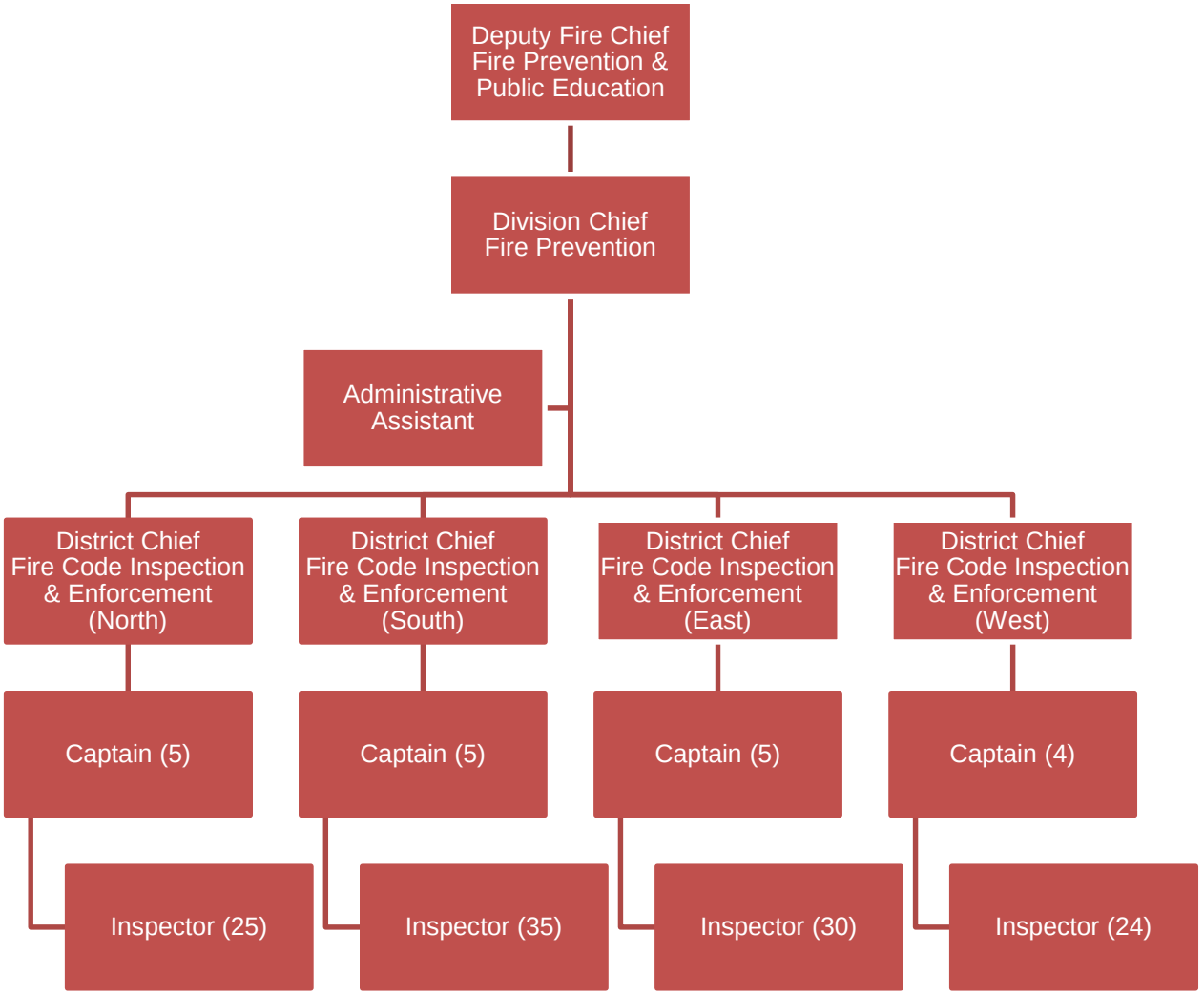
Policy, Project & Public Information



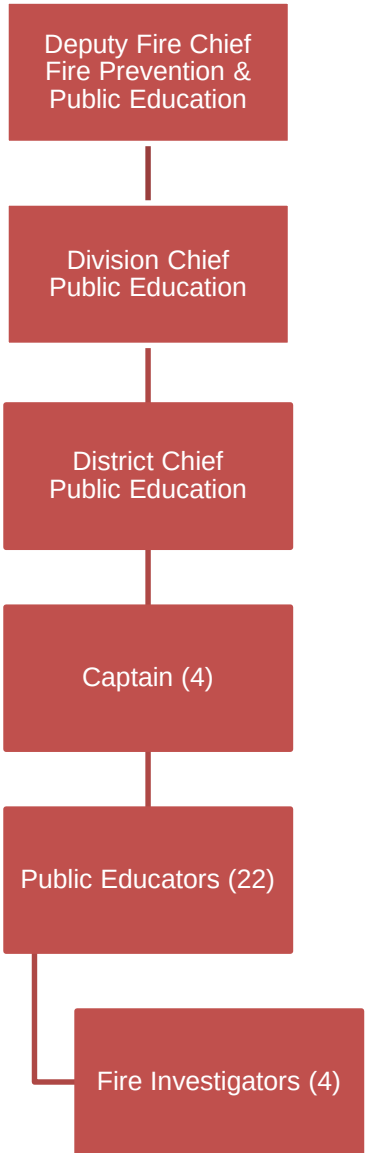
Fire Prevention & Public Education



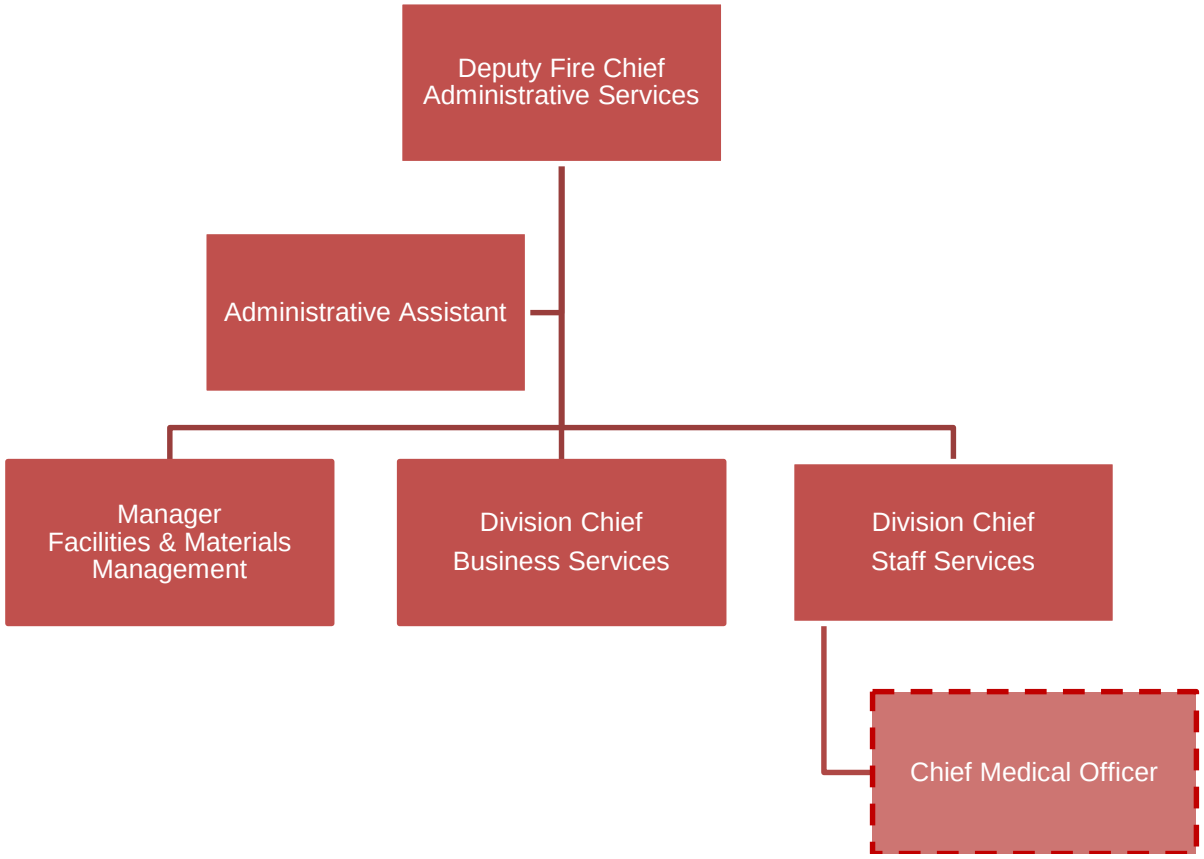
Fire Prevention



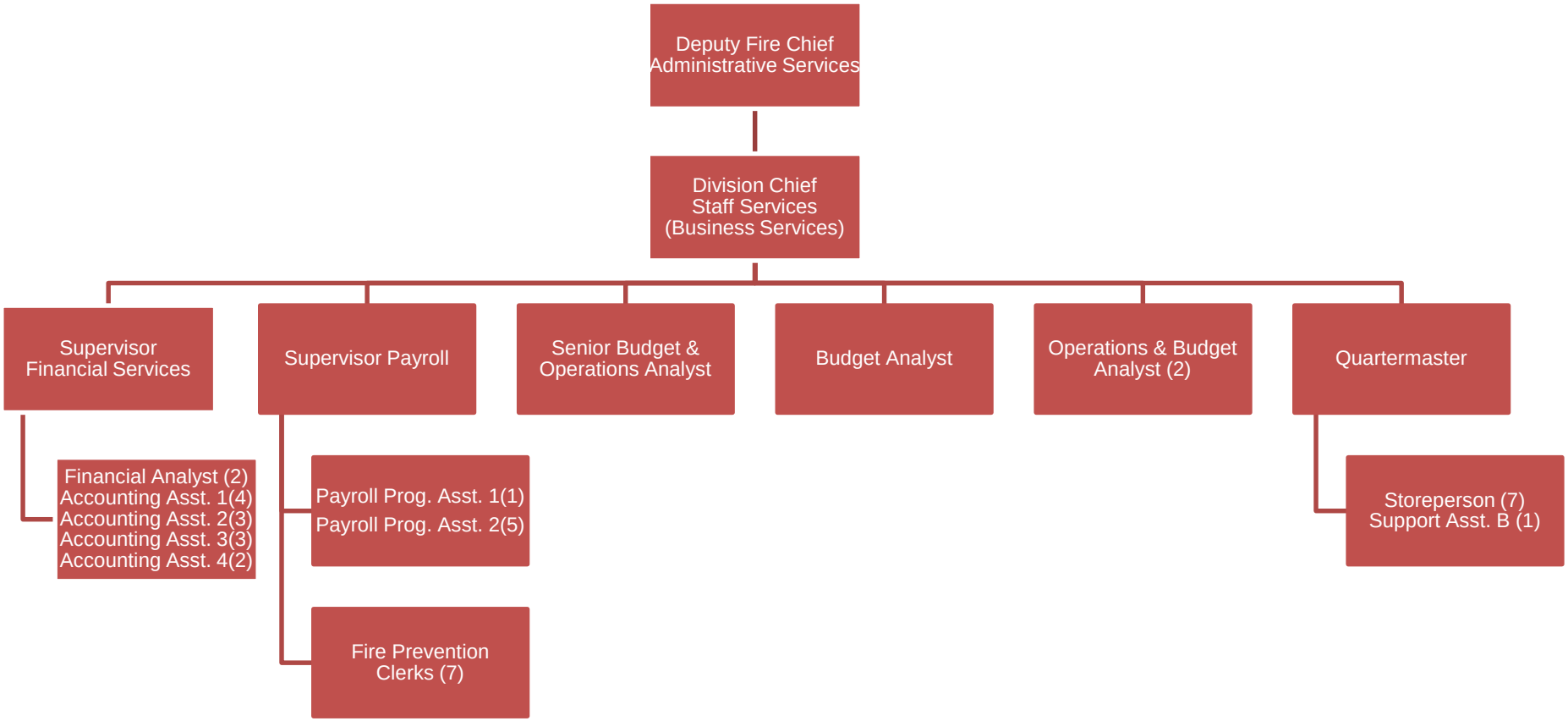
Public Education



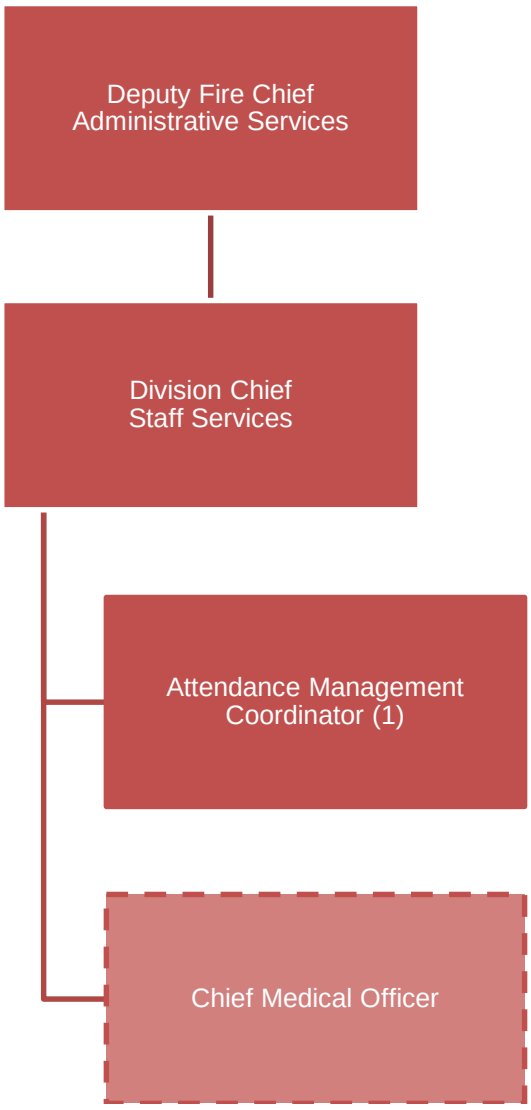
Administrative Services



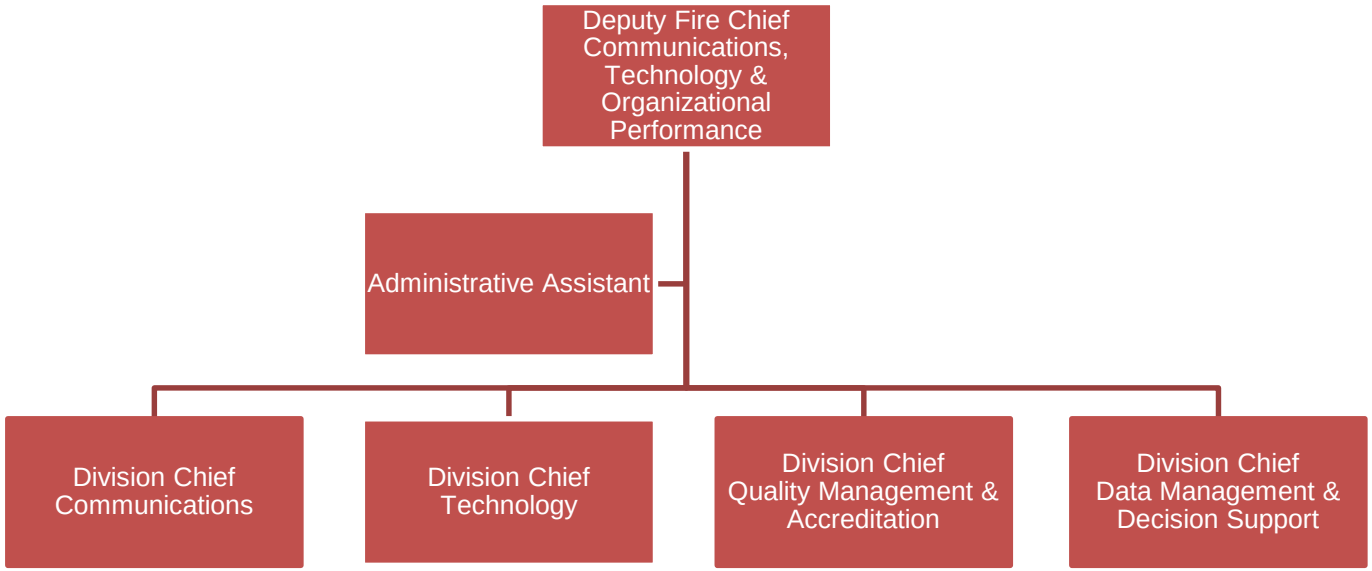
Staff Services – Business Services



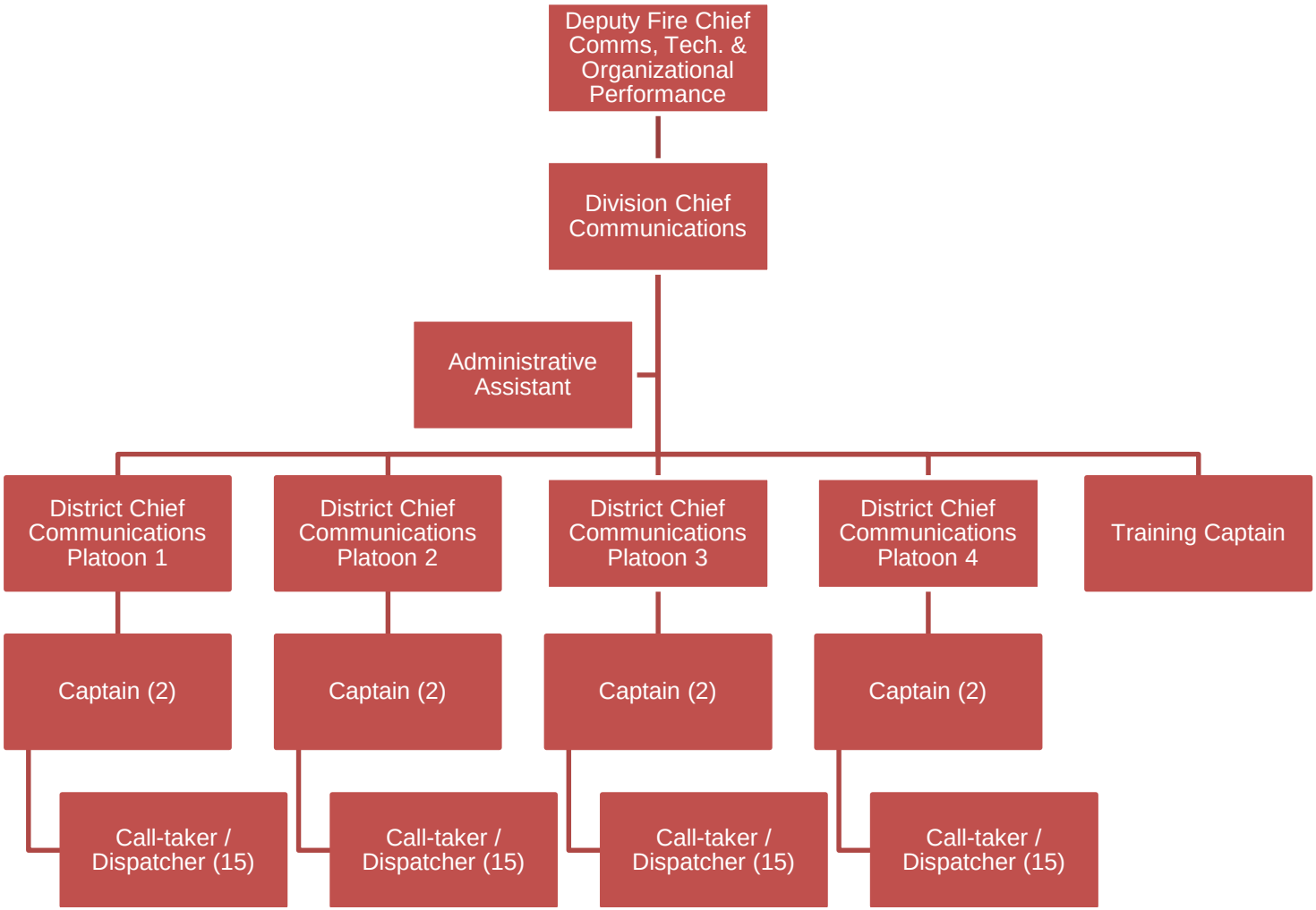
Staff Services & Medical Office



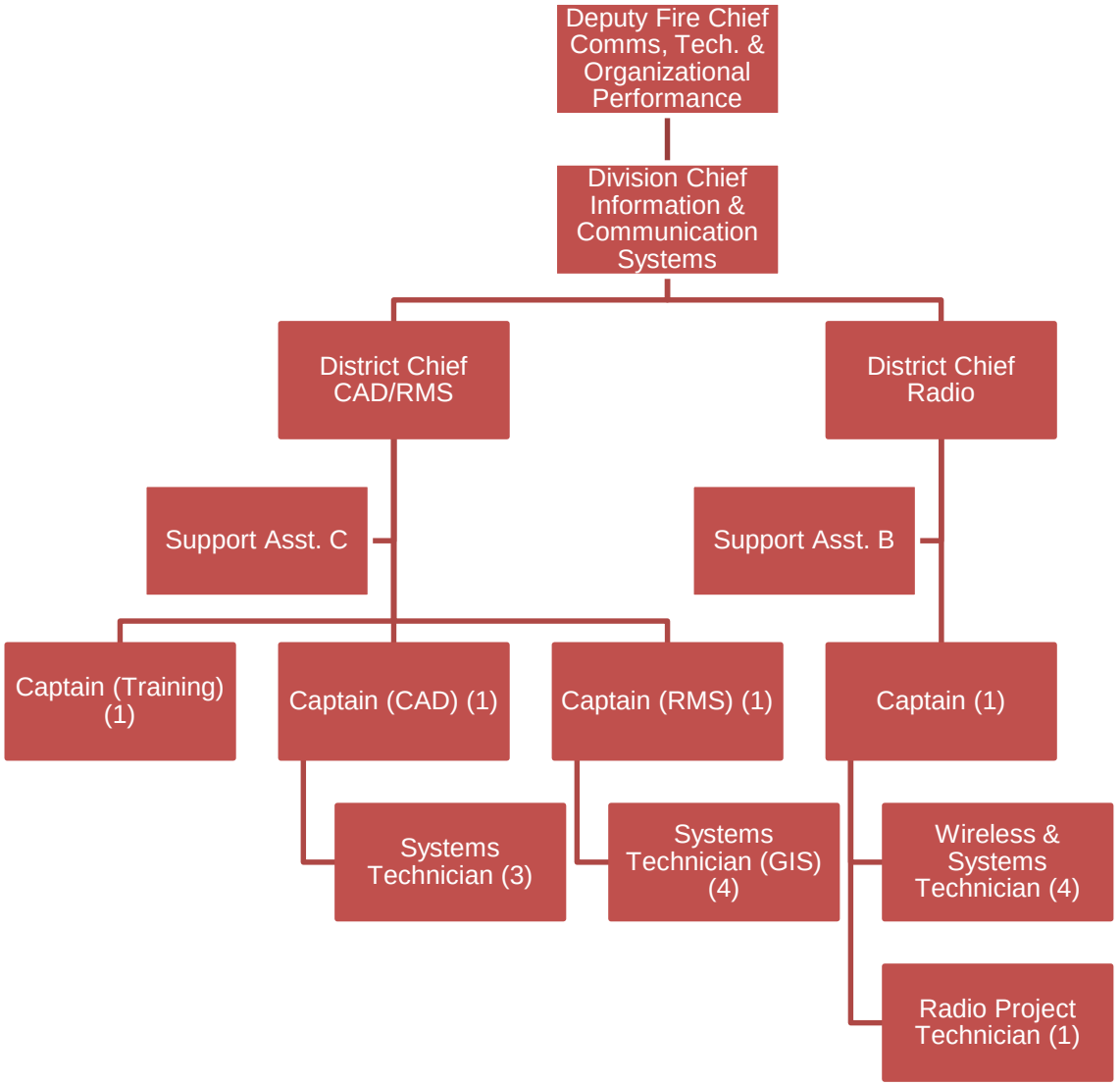
Communications & Technology



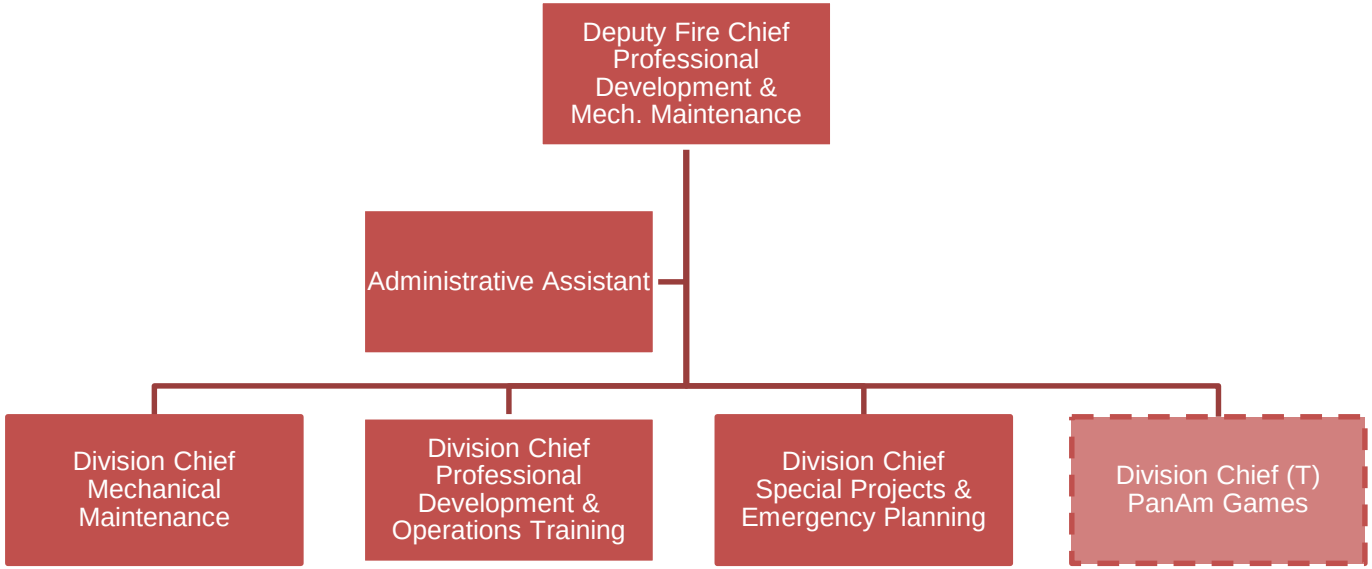
Communications



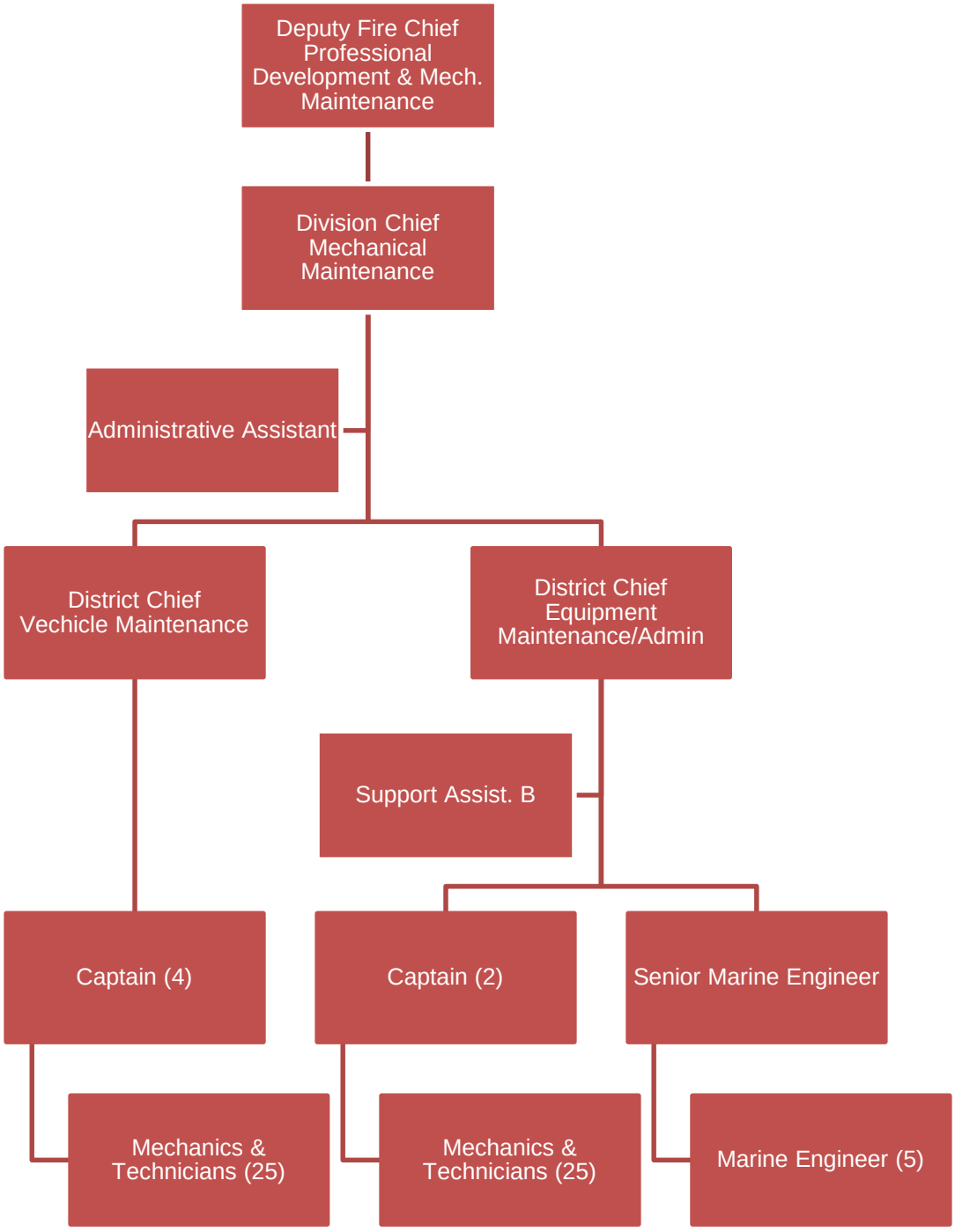
Information & Communication Systems



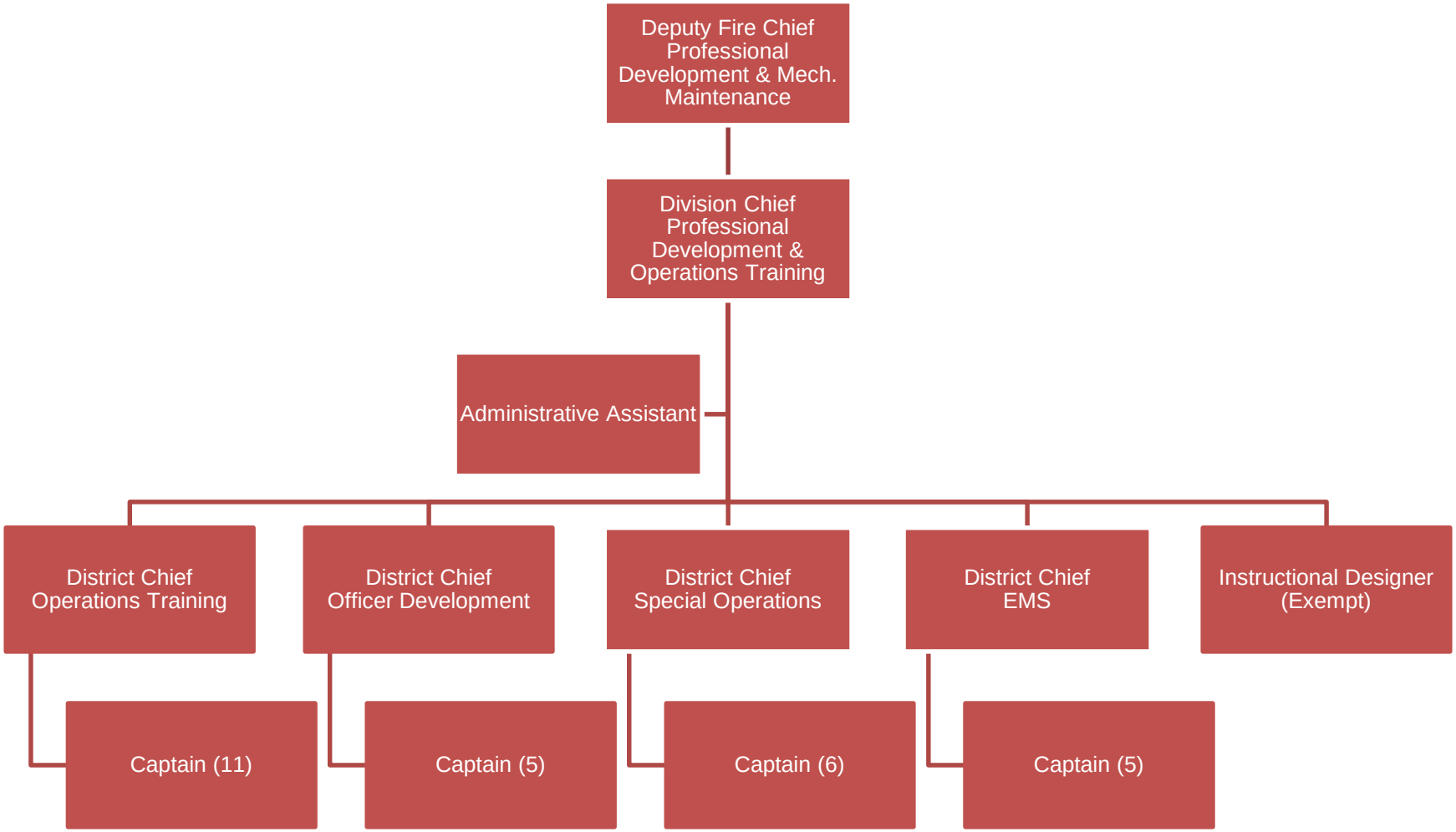
Professional Development & Mechanical Maintenance



Mechanical Maintenance

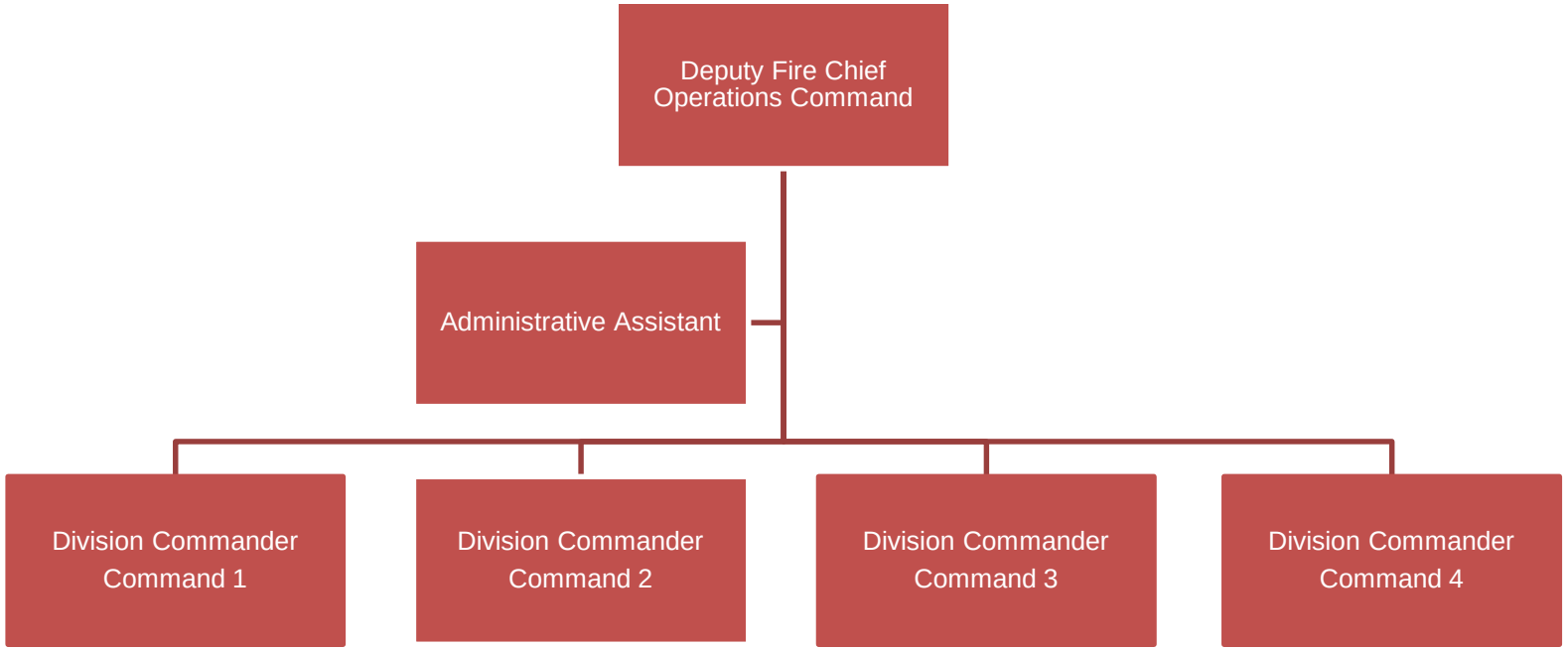


Professional Development & Operations Training

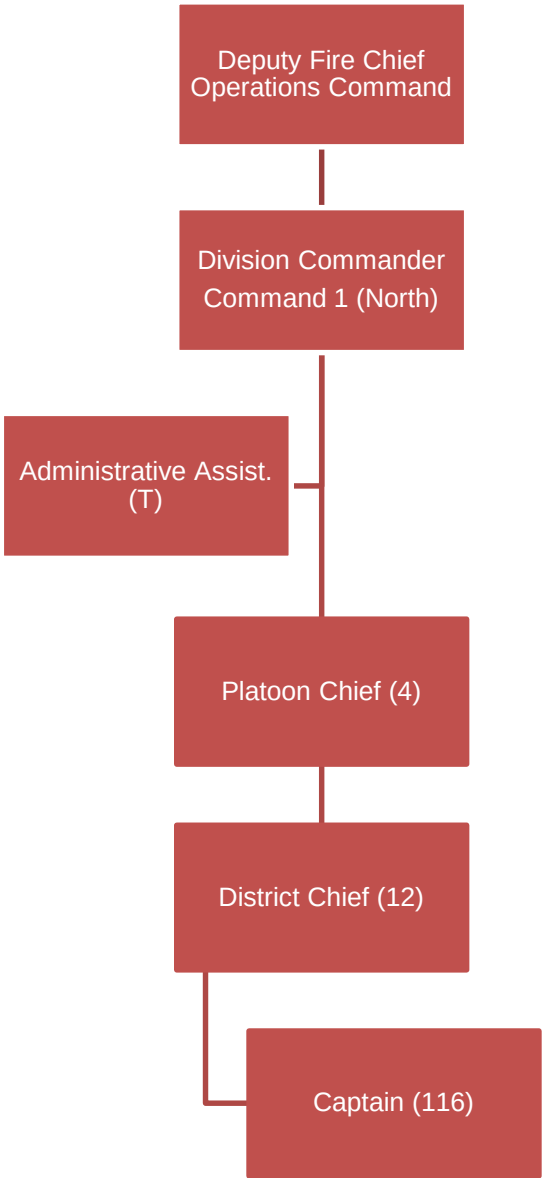


Special Operations & Emergency Planning

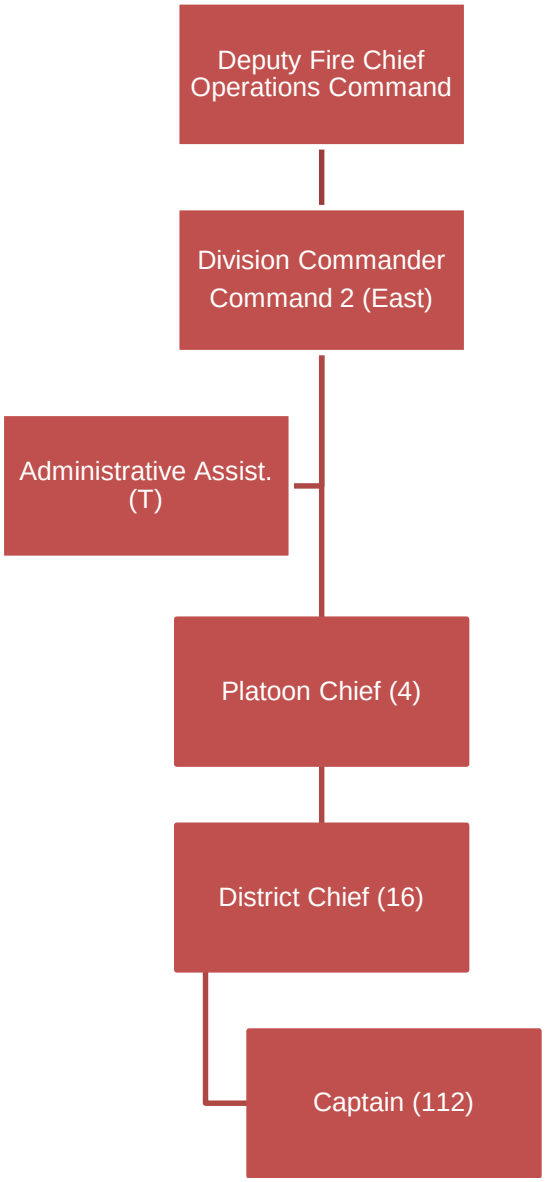
Operations Command



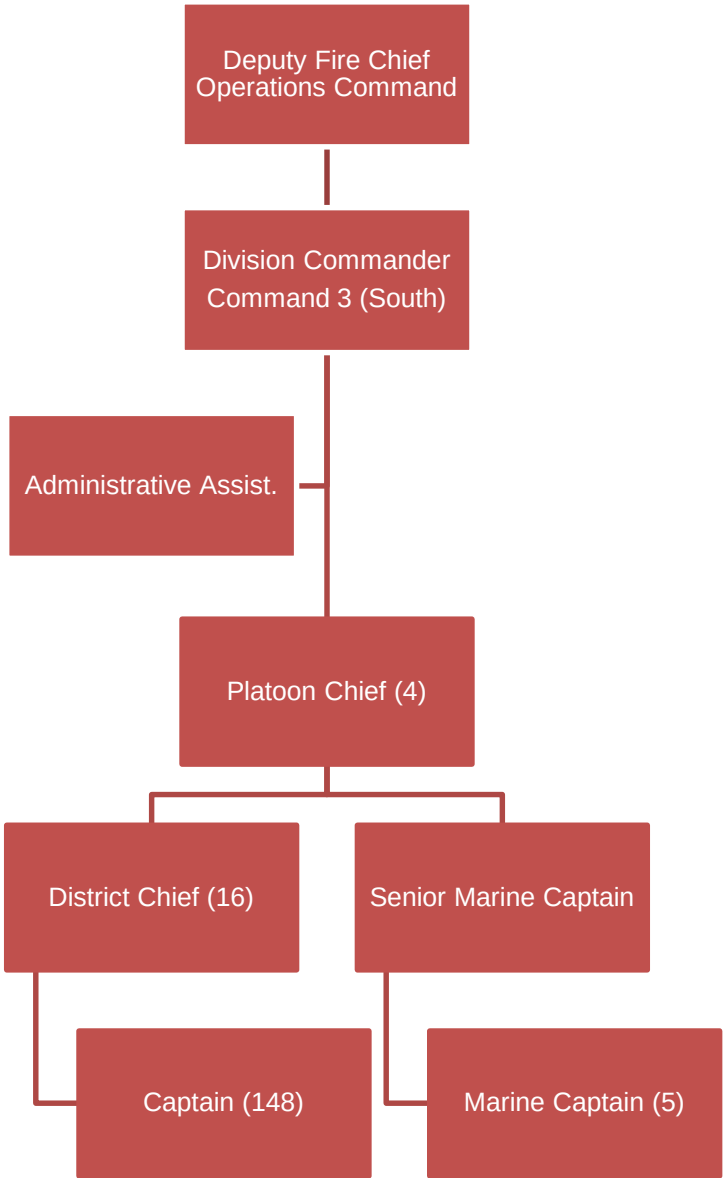
Command 1 – North



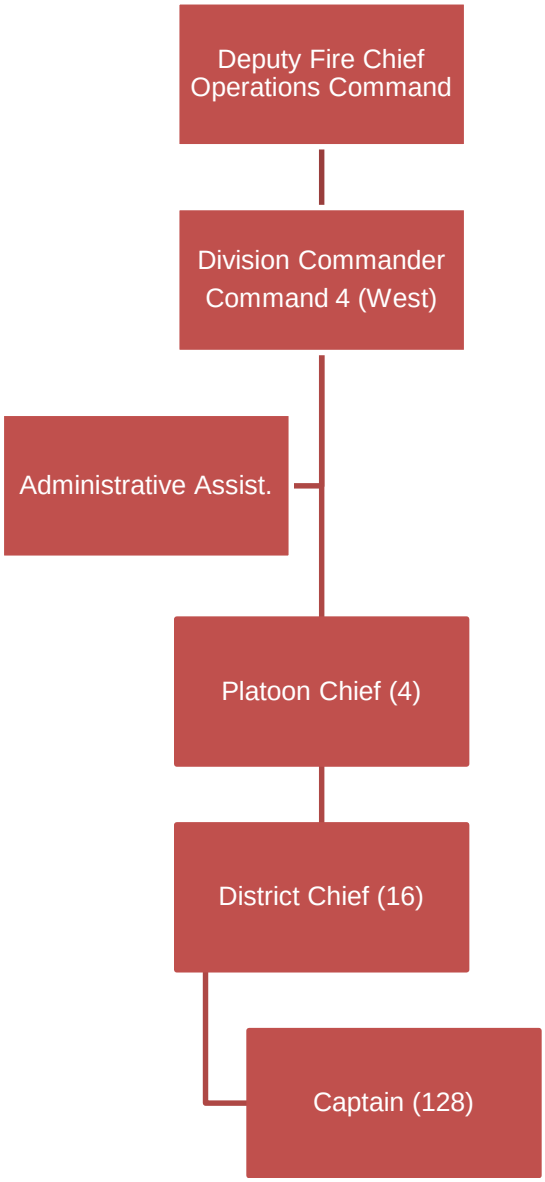
Command 2 – East



Command 3 – South



Command 4 – West



Appendix B: Public Consultation Questions

The following questions were posed at the four public meeting hosted across the city:

1. What do you believe are the biggest safety risks in your community? Examples: Type of building stock, lack of education about fire prevention, congestion and traffic, changing weather patterns, etc

2. Over the next 5 years, what should TFS focus on to improve the safety of communities? Examples: Increasing fire prevention education efforts, increasing inspections regarding Fire Code compliance, and improving response times etc

3. What barriers exist in your community that would prohibit improved emergency response service? How might we overcome these barriers?

4. In your opinion, what are the top 2 priorities that TFS should focus on over the next 5 years to support the diverse needs of your community?

5. Considering Toronto's population and development growth, how do you see fire services changing over the next 5 years?

6. How can residents, community groups and businesses help to keep the city fire safe and mitigate fire risks?

7. What is the best way to communicate with you about fire safety and prevention education and information?

8. Additional considerations/questions

Appendix C: Ipsos-Reid Survey – Demographic Profile of Respondents

Number of residents at current address	
1	29%
2	33%
3	32%
4	13%
5 +	6%

Age	
18-34	31%
35-54	37%
55+	32%

Gender	
Male	47%
Female	53%

Have lived in Toronto…	
Less than 1 year	1%
1 to just under 5 years	10%
5 to just under 10 years	9%
10 to just under 20 years	15%
20 years or more	66%

Country of Birth	
Canada	67%
Elsewhere	34%

Home status	
Own	62%
Rent	38%

Household Income	
Less than $40,000	20%
$40,000 to less than $80,000	31%
$80,000 to less than $125,000	19%
$125,000 to less than $200,000	10%
$200,000 or more	2%

Education	
HS or less	13%
Some college/university	18%
Completed college	18%
Completed university	37%
Graduate degree	14%

Language spoken at home	
English	87%
French	2%
Chinese	7%
All else	14%

Region	
North York	24%
Scarborough	23%
Etobicoke & York	19%
Toronto & East York	34%

Appendix D: Event and Dispatch Summaries

Event Summary

	2010	2011	2012	2013	2014	% Of Total	% Change From 2013-2014
Call Check	6,369	6,083	3,223	3,868	2,880	2.6%	-25.54%
Carbon Monoxide	4,122	3,976	3,609	3,722	3,720	3.3%	-0.05%
Fire	8,925	8,583	9,291	9,259	9,208	8.2%	-0.55%
Fire Alarm Ringing	23,900	22,476	21,935	23,389	23,892	21.4%	2.15%
Gas Leak	538	849	1,621	1,735	1,746	1.6%	0.63%
Haz Mat	1,730	1,584	1,168	1,177	1,248	1.1%	6.03%
Island	107	95	85	91	97	0.1%	6.59%
Lake	7	8	20	14	8	0.0%	-42.86%
Medical	83,105	86,380	66,049	47,918	51,902	46.4%	8.31%
Mutual Aid	1	0	1	0	1	0.0%	N/A
Non Emergency	0	0	3	894	882	0.8%	-1.34%
Police Assist	24	16	232	217	162	0.1%	-25.35%
Rescue	2,458	2,579	2,764	3,349	3,345	3.0%	-0.12%
Suspicious Substance	71	79	58	58	55	0.0%	-5.17%
Vehicle Fire	1,688	1,665	1,568	1,595	1,535	1.4%	-3.76%
Vehicle Incident	9,591	9,249	7,202	7,510	9,009	8.1%	19.96%
Water Problem	619	720	657	1,049	1,175	1.1%	12.01%
Wires Down	887	992	1,026	3,618	893	0.8%	-75.32%
Total	**144142**	**145334**	**120512**	**109463**	**111758**		
% Change		**0.83%**	**-17.08%**	**-9.17%**	**2.10%**		

Source: Toronto Fire Services, Computer Aided Dispatch (CAD) – Intergraph Business Solution, 2015

Dispatch Summary

	2010	2011	2012	2013	2014	% Of Total	% Change From 2013-2014
Call Check	6,630	6,159	3,677	4,408	3,373	1.21%	-23%
Carbon Monoxide	4,537	4,427	4,184	4,332	4,465	1.61%	3%
Fire	36,563	35,003	38,230	41,146	41,303	14.87%	0%
Fire Alarm Ringing	109,267	104,954	110,775	127,050	130,826	47.09%	3%
Gas Leak	2,246	3,592	6,716	7,271	7,389	2.66%	2%
Haz Mat	2,464	2,297	2,201	2,051	2,343	0.84%	14%
Island	483	388	340	296	419	0.15%	42%
Lake	28	28	57	39	19	0.01%	-51%
Medical	86,025	89,762	68,824	49,985	54,210	19.51%	8%
Mutual Aid	0	0	10	1	0	0%	-100%
Non Emergency	0	0	1	889	793	0.29%	-11%
Police Assist	151	95	354	342	275	0.10%	-20%
Rescue	5,769	6,214	6,846	8,230	8,294	2.99%	1%
Suspicious Substance	267	312	266	250	233	0.08%	-7%
Vehicle Fire	3,010	3,117	3,056	3,023	2,892	1.04%	-4%
Vehicle Incident	16,927	17,300	14,879	16,195	17,534	6.31%	8%
Water Problem	1,295	1,535	1,304	2,096	2,446	0.88%	17%
Wires Down	941	1,079	1,120	3,870	993	0.36%	-74%
Total:	**276,603**	**276,262**	**262,840**	**271,474**	**277,807**		
% Change		**-0.12%**	**-4.86%**	**3.28%**	**2.33%**		

Source: Toronto Fire Services, Computer Aided Dispatch (CAD) – Intergraph Business Solution, 2015

Appendix E: Alignment between CFAI and Excellence Canada

CFAI Process Overview

The Accreditation Program, administered by the Commission on Fire Accreditation International (CFAI), enables emergency response providers to set goals, develop strategic action plans and continuously evaluate and improve services provided to the public. The accreditation process involves examining performance across 10 categories, 43 criteria and 252 key performance indicators (KPIs)[69]. The accreditation process takes approximately 36 months and includes a detailed self-assessment, a peer review and formal accreditation by an 11-member commission, representing a cross-section of the fire industry. A significant benefit of being accredited is for comparisons with peer organizations. After being accredited, Toronto Fire Services would need to be re-accredited every five years.

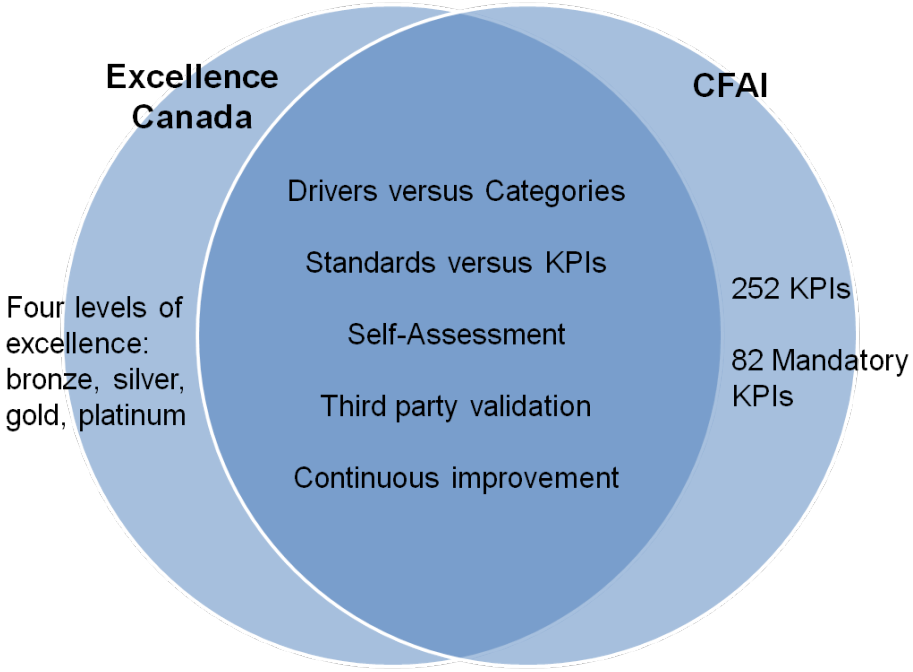
Content Alignment between Excellence Canada and CFAI

The following chart demonstrates which CFAI categories align directly with the major elements of the Excellence Canada Framework. CFAI is more comprehensive from a technical perspective than Excellence Canada.

Excellence Canada 6 Drivers	**CFAI** 10 Categories
Leadership & Governance	Governance and Administration
Strategy, Planning & Financial Management	Assessment and Planning Goals and Objectives Financial Resources
Customer Experience	Programs (all services provided to community)
Employee Engagement	Human Resources Training and Competency
Process & Project Management	Physical Resources Essential Resources
Partners & Suppliers	External Systems Relationships

Process Alignment between Excellence Canada and CFAI

The following diagram demonstrates the process-related similarities and differences between Excellence Canada and CFAI. The assessment benchmarks for Excellence Canada are divided into four levels: bronze, silver, gold, and platinum. Those for CFAI are 252 key performance indicators, 82 of which are core competencies (or mandatory) for achieving accreditation.



Source: Toronto Fire Services, 2014

Corporate Alignment

- Embarking on the CFAI continuous improvement journey is consistent with the City's Strategic Action #21 to Improve Organizational Excellence.

A Lens for Equity, Diversity & Human Rights

- The CFAI process includes the following four KPIs, with in the Human Resources, category that address diversity:
    - Processes and screening/qualifying devices used for recruitment and selection of initial, lateral, and promotional candidates are job related and comply with all local provincial and federal requirements including equal opportunity and discriminations statutes.
    - The agency's composition is reflective of the service area demographic or the agency has a recruitment plan to achieve the desired workforce composition.
    - The working conditions and environment are such that the agency attracts diverse and qualified applicants and retains a tenured workforce.

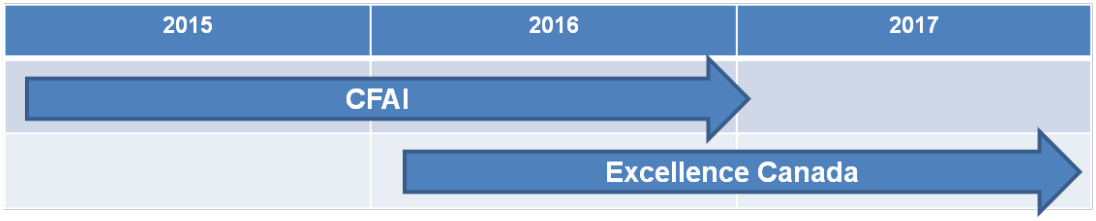
  - A specific policy defines and prohibits sexual, racial, disability or other forms of harassment, bias, and unlawful discrimination of employees/members and describes the related reporting procedures. The policy and organizational expectations specific to the employee's behaviour are communicated formally to all members /employees and are enforced.
- In addition to these KPIs, Toronto Fire Services will follow the City's lead and embed a lens for Equity, Diversity & Human Rights into each CFAI category to ensure TFS diversity goals are being achieved.

Toronto Fire Services and Excellence Canada

- The CFAI process is more comprehensive than Excellence Canada therefore the CFAI assessment will directly inform the Excellence Canada process
- Upon completing a CFAI self-assessment, TFS will be in a good position to apply for Excellence Canada Certification but will need to close the gaps on the elements that were not as comprehensively covered in CFAI (e.g. Equity, Diversity and Human Rights).

Timeline

- TFS will start the CFAI journey in 2015 and it is recommended that the evidence prepared for CFAI accreditation will be re-formatted and condensed where necessary to complete an assessment for Excellence Canada in 2016/2017.



7.0 End Notes

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