



Report to: General Committee

Meeting Date: May 22, 2018

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**SUBJECT:** Master Fire Plan, Second Crew at Station 99 (Cornell)  
**PREPARED BY:** Dave Decker, ext. 5975

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**RECOMMENDATION:**

- 1) THAT the report entitled “Master Fire Plan, Second Crew at Station 99 (Cornell)” be received;
- 2) THAT Council approve the Fire Chief’s recommendation to proceed immediately with the establishment of a second crew at Station 99 (Cornell) to improve fire response times for that area; and
- 3) THAT Staff be authorized and directed to do all things necessary to give effect to this resolution.

**PURPOSE:**

The purpose of this report is to obtain approval from Council to move forward with the recruitment process to staff the second crew at Fire Station 99 (Cornell) in order to address identified gaps in fire response and to provide requested information.

**BACKGROUND:**

Markham Fire and Emergency Services Master Fire Plan (MFP) was completed and adopted in principle by Council in March 2012. In June of 2012, the Master Fire Plan - Implementation Plan was approved subject to annual business planning, operating, and capital budget processes. Staff provided an update to Council on the MFP in December 2014.

Consistent with other municipal fire services, staff used two reliable sources of benchmarked data to guide decision-making related to the Council-approved service levels for the City of Markham’s fire protection services. They include:

1. Fire Underwriters Survey (FUS) provides data on public fire protection for fire insurance statistical work and underwriting. Staff engaged FUS in 2013, resulting in three key areas of improvement, namely Pre-Fire Planning, Total Fire Force Available, and Ladder (Aerial) Truck Service. Staff are making progress on these improvements, which are consistent with the MFP in supporting a consistent level of service across the municipality.
2. The National Fire Protection Association (NFPA) standards for fire response criteria are used in the MFP to address minimum staffing, travel time to a reported fire and to safely and effectively perform the tasks necessary to conduct initial fire attack, and activities to support search and rescue.

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In 2017, the Fire Chief undertook a geospatial review of fire response across the City and measured the results against Council-approved levels of service established in the Master Fire Plan and its Implementation Plan.

The Fire Chief delivered a presentation at the April 9, 2018 General Committee meeting reporting on the MFP and activities to address service response deficiencies. A staff report was requested to support the presentation.

#### **DISCUSSION:**

The 2017 review conducted extensive mapping of response times from existing fire stations to every neighborhood for both the first truck on scene and the initial 1<sup>st</sup> alarm assignment using the NFPA standard of 16 firefighters, which translates into a 4 fire apparatus response. The mapping accounted for developed and anticipated new development areas, road network, and urban densities. The mapped data was then used to compare against the Council-approved levels of service to determine gaps.

A main finding was the levels of service for fire response time across the City are not equal and that there are several areas within existing and new neighborhoods that are not being provided with the standard approved by Council. Key factors on response time are the characteristics of the road network and the travel time necessary for four fire apparatus to arrive on scene. The presentation (see Attachment) made at the April 9, 2018 General Committee meeting illustrated some of the considerations and complexities. It showed that significant improvement in response time can be achieved with the activation of a second crew at Station 99 (Cornell).

#### Roles & Responsibilities of the Fire Chief

The Fire Protection and Prevention Act 1997 (FPPA) defines the role of the Fire Chief as *“the person who is ultimately responsible to Council of a municipality that appointed him or her for the delivery of fire protection services.”* It is with this responsibility that the Fire Chief has prepared this report to Council about the service deficiencies and recommendations to address them based on the most cost-effective solution. Protecting the lives and properties of a community is a shared responsibility. While the City Council is responsible for establishing the levels of service, the Fire Chief is responsible for managing the levels of service in this case as outlined in the approved MFP.

#### Establishing & Regulating Bylaw and Upcoming Review in 2019

With reference to the types of fire incidents responded to by MFES, the Establishing & Regulating Bylaw must clearly identify the levels of service to be provided. The FPPA provides the Fire Chief with the authority to maintain the established level of service and report back to Council to either change a level of service or a request for additional resources in order to meet current levels of service. In addition to this report, staff is committed to providing a full report in the 2<sup>nd</sup> quarter of 2019 to outline proposed changes to the Establishing & Regulating By-law in order to maintain compliance with the FPPA and address gaps in service levels.

### Fire Response & Resource Deployment

The City of Markham uses a “*minimum established response*” approach to tackle fires in residential, commercial, and high-rise buildings, as well as other emergency incidents. Setting the minimum established response and target response time reflect the analyses of risks, professional judgment, experience, and the City of Markham’s tolerance of acceptable risks to life safety and property protection.

It is a general industry practice that the initial 1<sup>st</sup> alarm response to a reported fire includes 4 fire trucks staffed with 16 firefighters in total. The tasks and positions assigned at a fire scene are prescribed by health and safety legislation and were explained in the Attachment and at the April 9, 2018 General Committee meeting. The target is for the full 1<sup>st</sup> alarm response to arrive in 8 minutes of travel time 90% of the time in an urbanized area. As noted in the 2017 Review of Current Response Time table, MFES is not meeting the established standard in 7 of the 8 wards, primarily a result of increased growth.

### **2017 Review of Current Response Time**

Ward	Target: 1st Truck with 4 Firefighters on Scene 90% of Time in the Urbanized Area		Target: 4 Trucks with 16 Firefighters on Scene 90% of the Time in the Urbanized Area			
	4-Minute or Less	Target Met	8-Minute or Less	Target Met	Change resulting from Second Crew (Cornell)	Target Met
1	62%	No	25%	No	--	No
2	64%	No	46%	No	--	No
3	58%	No	94%	Yes	--	Yes
4	96%	Yes	63%	No	95%	Yes
5	57%	No	5%	No	53%	No
6	74%	No	85%	No	--	No
7	39%	No	6%	No	58%	No
8	69%	No	62%	No	--	No

Redeployment of existing resources was the first potential solution examined to address the above-noted gaps but there was no additional capacity available since fire deployment has already been maximized.

The use of a second crew has been used twice in the City of Markham, with their placement in Station 91 (Thornhill) and Station 95 (Unionville). Placing a 3rd second crew in the City at Station 99 (Cornell) will create a network of second crews across Markham, improving response time in areas that experience the greatest deficiencies, notably Wards 5 and 7, and improving response time in other areas such as Ward 4. Station 99 in Cornell was built to accommodate a second crew, a ladder truck and related equipment are already in place, and staff ramp-up funding commenced in 2014. Implementing a second crew at Cornell is the first step in the journey to address identified service level deficiencies, as a result of growth. Additional work and analysis will be undertaken by staff in 2019 as part of the E&R Bylaw update.

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Arising from the feedback received at the April 9, 2018 General Committee, staff were requested to provide additional information on the following:

Is There a Different Way of Operating the Fire Service?

Municipal fire services are a well-regulated industry and have implemented many best practices collectively over time. As a result the operating model used by MFES to provide safe, effective and efficient fire suppression services is an industry best practice. In addition, MFES has continuously improved its processes, procedures, and equipment to meet the needs of the community in a cost-effective way. An example is the implementation of a “*technological*” improvement in deploying firefighting foam on every fire apparatus to greatly improve Markham’s fire suppression capability. Fact-based decision-making has been used to undertake risk assessments and apply sound research to support the meeting of Council-approved levels of service.

The cost per capita for fire services in Markham is one of the lowest. The City of Markham operating model is one of continuous improvement and cost-effective services, which has been adhered to by the Markham Fire & Emergency Services Department. The aforementioned 2019 review will take into consideration any changes to fire suppression practices and other factors to improve fire service operations.

Dynamic Crews (Staging)

MFES has used the dynamic staging of crews for many years. When firefighters and equipment are deployed at active incidents, the balance of remaining on-duty staff and apparatus are redeployed to provide best possible coverage or response time across the city. Dynamic staging is a process for redistributing remaining resources (on-duty staff and apparatus) to provide the most effective response with the remaining resources available. Dynamic staging is used 24/7 and may include escalation to include other fire services entering into the City of Markham within the scope of the Provincial Mutual Aid system.

Dynamic staging does not create more resources and it is not a substitute for the provision of adequate resources necessary to provide the initial 1<sup>st</sup> alarm assignment for fire response within the specified targets.

Public Safety Answering Point (PSAP)

Staff is working with York Region Police to better understand Public Safety Answering Point (PSAP) time, which is the period of time from which a 911 is answered until it is transferred to MFES. Currently the data is not readily available to MFES. PSAP times have no impact or factor into the analyses for fire stations, firefighters or apparatus deployment.

Effective January 1, 2020, the Fire Prevention and Protection Act prescribes that a municipality must report on fire department response times. This change was passed in the Ontario Legislature on May 7, 2018. MFES will be revising its procedures to be in compliance with these regulatory changes.

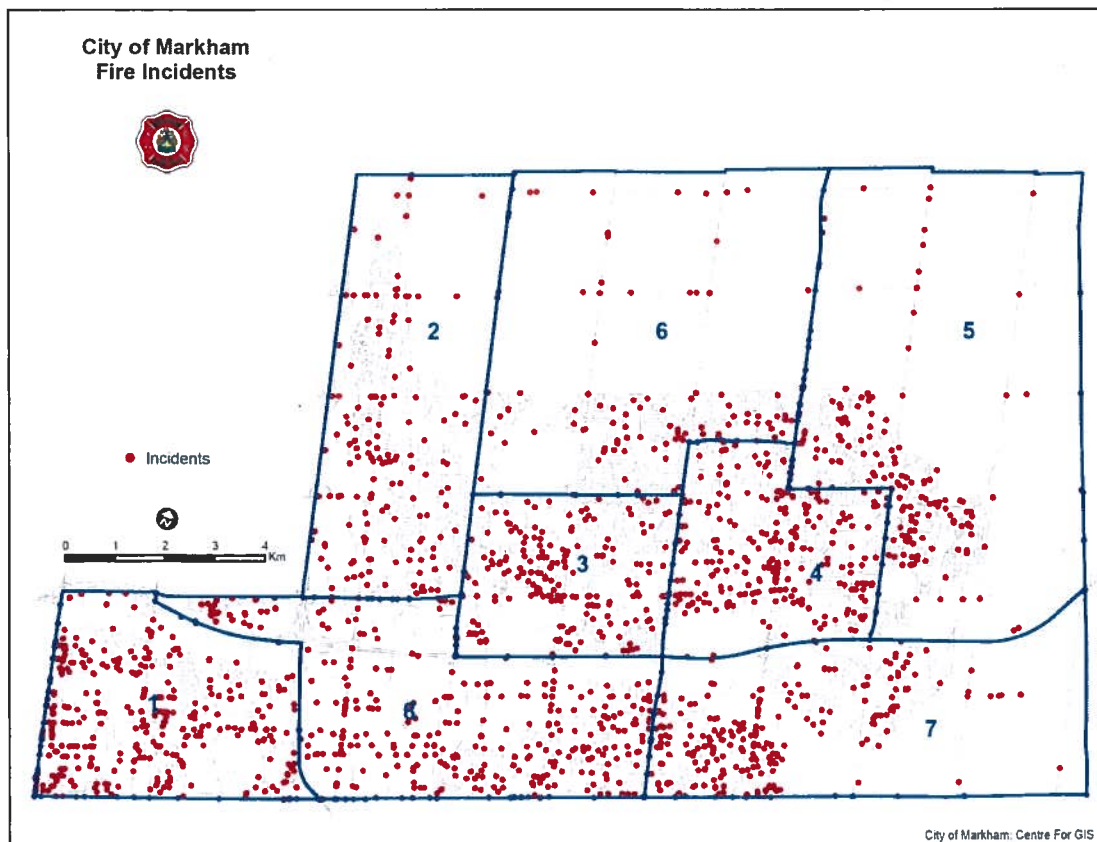
### Three- vs. Four-Member Crew

The current best practice in the industry is the use of a four-member crew. Reducing the crew size will translate into an increase in the number of responding crews and apparatus in order to meet the 16 firefighters within 8-minute travel time. The existing gaps in response time may be exacerbated, there are other operational deployment impacts to be considered, and it does not eliminate the need to provide a second crew at Cornell. Additionally, changing the number of firefighters at a fire scene could put residents, firefighters and properties at risk.

Further discussion on crew size will be addressed in the aforementioned 2019 staff report.

### GIS Fire Mapping 2012 - 2017

General Committee requested a map to visually display the number of fires that have occurred in the City of Markham. The accompanying map depicts fires that have occurred from 2012 to 2017, along with the current Ward boundaries. Since 2012, there were 2,389 reported fires or an annual average of 398 reported fires. Over the mapping period, reported fires are somewhat evenly distributed across the City, supporting the need for a consistent distribution of fire resources across the municipality.



### **Recommended Action**

In reference to the legislated roles and responsibilities of the Fire Chief, this city's Fire Chief seeks Council approval to establish a second crew at Station 99 (Cornell) in order to improve fire response times of 8-minutes or less in areas that are experiencing the

greatest deficiencies, notably Wards 5 and 7. Establishing a second crew will significantly improve fire responses in Ward 5 from 5% to 53% and Ward 7 from 6% to 58% and has the additional benefit of improving the response time for Ward 4 so that it meets the established target. All Wards require further on-going analysis to identify the resource requirements to meet the 90% target.

Establishing a second crew at a Station 99, is further supported in that the additional fire apparatus for Station 99 has been purchased and the station was renovated to house a second crew.

Furthermore, staff will provide a report to Council in the 2<sup>nd</sup> quarter of 2019 to address all remaining gaps in fire response and provide recommendations with the objective to provide a consistent level of service across the City.

#### **FINANCIAL CONSIDERATIONS**

Currently in the 5<sup>th</sup> year of a 9-year ramp-up for staffing costs, with funds allocated each year.

#### **HUMAN RESOURCES CONSIDERATIONS**

Human Resources staff will be involved with the recruitment process (business as usual).

#### **ALIGNMENT WITH STRATEGIC PRIORITIES:**

Growth Management: The recommendation supports existing and future growth to achieve a consistent and equitable level of fire response across the City by addressing areas experiencing service gaps.

Municipal Services: Moving forward with the 2<sup>nd</sup> crew at Cornell is consistent with the Council Approved Master Fire Plan and Implementation Plan approved in 2012.

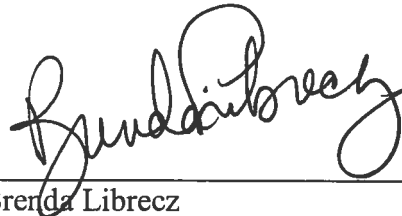
#### **BUSINESS UNITS CONSULTED AND AFFECTED:**

Not applicable.

#### **RECOMMENDED BY:**



Dave Decker  
Fire Chief



Brenda Librecz  
Commissioner, Community & Fire  
Services

#### **ATTACHMENTS:**

Master Fire Plan Cornell 2<sup>nd</sup> Crew Presentation on April 9, 2018