



**February 2017**

**Township of King  
Fire & Emergency Services**



**Fire Master Plan**

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Management &  
Training Inc.**

# Introduction

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## Background

Within the Region of York, the six most northerly local area municipalities (known as “The N6”) have a long history of working collectively and cooperatively together. Through this arrangement, many successes have been achieved in the way of shared services and cost efficiencies. The N6 continue to explore alternative and/or ground breaking service delivery options to the mutual benefit of their municipalities.

The Fire Chiefs, representing the five Fire Departments of The N6, over the past several years have combined efforts to explore opportunities and determine innovative and cost effective methods for delivering Fire Protection Services.

Last year, a high-level assessment was performed to examine potential areas of improvement between the N6 Fire Departments. Through this assessment, a number of strategic and operational areas of improvement have been identified. In some cases, opportunities exist that would pertain to all the fire departments whereas, in other cases, opportunities would only apply to two or more of the fire departments. From the results of the assessment, it was determined that updating the Fire Masterplans (FMP), as a coordinated effort, would be the first priority.

At that point in time, Central York Fire Services had already entered into an agreement for the development of a FMP. As such, and in light of comparable business practices, the remaining fire departments agreed to proceed in a collective fashion representing:

- The Town of Georgina
- The Township of King
- The Town of East Gwillimbury
- The Town of Whitchurch-Stouffville

It was agreed that these four municipal fire departments would combine efforts for the purposes of:

- a) Preparing individual FMP for each of the four municipalities, and in conjunction;
- b) Analyzing the results of each of the Fire Masterplans to identify opportunities for new operational strategies, innovative and unique approaches to service delivery, shared services, common Key Performance Indicators, alternative work methodologies, etc.

In turn, a “Collaboration Initiative” project was established, overseen by a Project Steering Committee comprised of the four Fire Chiefs and the Town of Georgina CAO.

## Objectives of this Collaboration Initiative Project

The Objectives of the Collaboration Initiative project are summarized below:

- Assess the impacts of existing conditions and future growth patterns and project the anticipated community needs in all areas of fire and emergency services in relation to the Ontario Fire Marshals three lines of defence: Education, Enforcement and Response.
- Thoroughly review existing research, information and strategies as well as conduct a detailed trend analysis including issues and best practices regarding fire and emergency services.
- Development of a Comprehensive Community Risk Assessment as the basis for determining the appropriate level of emergency response deployment to meet the municipalities legislative responsibilities, as well as appropriate level of fire prevention to meet the needs of the building stock and risk in the municipality as well as response.
- An analysis of current Office of the Fire Marshal, Ontario Public Fire Safety Guidelines and National Fire Protection Association Standards to determine options for the optimal level of emergency response deployment to meet the needs and circumstances of the community.
- Work with representatives of Fire Underwriters Survey for the purposes of determining opportunities for insurance premium savings within municipalities.
- A comprehensive consultation program to seek input from Fire Services Staff and other stakeholders.

## Additional Unique Aspects of the Collaboration Initiative Project

The benefits of this Collaboration Initiative project are many, including expanded opportunities for fire services expertise – given that four Fire Chiefs are supporting each other’s efforts and providing input on practices that are common to all departments.

This project also incorporates two unique perspectives:

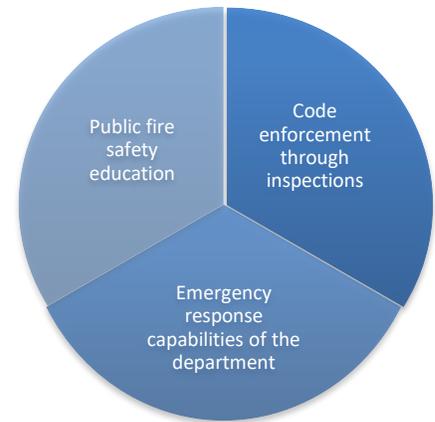
### a) The OFM “Three Lines of Defence”

Contrary to a single focus on fire suppression activities, a foundational element of this study is that it is based on the Office of the Fire Marshal and Emergency Management (OFMEM), three lines of defence in relation to servicing the community, which include:

1. **Education** – fire safety education is the key to mitigating the fire and life hazards before they start. With the growth of the community, how will King Fire & Emergency Services continue to meet the fire safety educational needs of the community?

2. **Inspections and Enforcement** – if the public education program does not prove effective, then the next step is for the fire department to enforce fire safety requirements through inspections and possible charges. Having a full-time Fire Prevention Division goes a long way to addressing these education and enforcement requirements.

3. **Emergency Response** – if the first two lines of defence fail for whatever reason, the community, through its fire department, should be prepared to respond in an efficient and effective manner to put the fire out and/or mitigate the emergency itself. By evaluating the effectiveness of the fire stations, its staff and equipment, this report will be able to make recommendations for related efficiencies.



#### b) Fire Underwriters Survey

Fire Underwriters Survey (FUS) is a national organization providing data on public fire protection for fire insurance statistical work and underwriting purposes of subscribing insurance companies. Subscribers of Fire Underwriters Survey represent approximately 85 percent of the private sector property and casualty insurers in Canada.

FUS Certified Fire Protection Specialists conduct detailed field surveys of the fire risks and fire defences maintained in built-up communities and the results of these surveys are used to establish a Public Fire Protection Classification (PFPC) for each community. The information provided through the Fire Insurance Grading Index is a key factor used in the development of Commercial Lines property insurance rates. The PFPC is also used by underwriters to determine the capacity of risk they are willing to assume in a given community or section of a community.

FUS also uses PFPC information to develop the Dwelling Protection Grade (DPG), which is utilized by Personal Lines insurers in determining property insurance rates for detached dwellings. The Dwelling Protection Grade is a measure of the ability of the protective facilities of a community to prevent and control the structure fires in detached dwellings by evaluating the adequacy, reliability, strength and efficiency of the protective facilities and comparing the level of protection against the level of fire risk associated.

The work of FUS was undertaken in parallel with the analysis required for the preparation of the King Fire Masterplan, the results of which have been incorporated into the key recommendations outlined within this document.

### **Collaboration Initiatives to Follow**

Much reference has been made to the Collaboration Initiative project. This report brings forward the second intended deliverable of the project – the King FMP. For the final chapter to be written, (i.e. the actual outline of potential new operational strategies/innovative practices) all four individual FMPs must be completed, and an overarching assessment undertaken. It is anticipated that this work will be finalized by late Spring of 2017.

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## Executive Summary

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The Township of King is located 40 kilometers north of downtown Toronto, covering an area of 333 square kilometers. It encompasses the villages and hamlets of Ansnorveldt, Kettleby, King City, Laskay, Lloydtown, Nobleton, Pottageville, Schomberg, and Snowball. Over 99% of King Township is within a designated Greenbelt area of which 65% of King's area is contained within the Oak Ridges Moraine. The Oak Ridges Moraine Conservation Act, 2001, controls development in an effort to protect this environmentally sensitive area. King Township is one of the nine municipalities that make up the Regional Municipality of York.

Currently, the Township is serviced by a volunteer fire department that consists of three fire stations. These stations are in King City - Station 34, in Schomberg - Station 36, and in Nobleton - Station 38.

The King Fire & Emergency Services (KFES) responds to just over 1,000 calls for service per year. These incidents include, but are not limited to, fire related incidents, medical assist, and motor vehicle collisions.

To ensure that they are meeting the needs of the community and its staff, the Fire Department recognizes that it is necessary to update and maintain a Fire Masterplan (FMP) for the purposes of providing high-quality fire services to the residents and businesses of the community along with its visitors. This FMP for the KFES reviews and identifies current and anticipated community fire risks and needs over the next 10-20 years. This will greatly assist the Fire Department with future planning relating to staffing and response, fire and life safety programming and for asset management.

This review has examined and researched all aspects of the Fire Department operations including, planning, fire prevention, training and education, communications, apparatus and equipment, maintenance, human resources, station suitability (accommodations) and locations, budgets, and large-scale emergency preparedness.

This FMP document is a culmination of three individual reports:

- The previous FMP document, which contains 16 recommendations, of which 14 have been completed, one is outstanding, and one is no longer applicable
- The Fire Underwriters Survey, which contains 15 recommendations and
- The current FMP document, which contains a total of 21 recommendations

Between the three, there are synergies in the recommendations to keep moving the fire service forward over the next 10 years.

As part of the creation of a new FMP, the Township’s Fire Department is also embarking on a very proactive, collaborative effort with the Town of Georgina, the Town of East Gwillimbury and the Town of Whitchurch-Stouffville, which will include:

- The creation of individual FMPs that will evaluate all aspects of each fire department’s services including the operational costs and capital budgets required to maintain or enhance these services;
- Along with a focus on how each fire department can work in a collaborative manner to find efficiencies and possible cost savings.

Some of these collaborative efforts have been noted in this document in relation to training initiatives and community partnerships, but more opportunities will be identified with each fire department review. These collective opportunities will be discussed and summarized in a final report that is scheduled to be presented in late Spring of 2017.

The following recommendation chart has been included within this Executive Summary. The recommendations in this chart have been listed in order of suggested timeline priority. A more detailed chart that includes estimated costs can be found in Section 13 of this document.

<b>FMP Recommendations for King Fire &amp; Emergency Services (Sorted by Time Priority – From Immediate to Long-term)</b>		
<b>Rec #</b>	<b>Recommendation</b>	<b>Suggested Timeline</b>
15	It is recommended that the Fire Chief present a Standard of Cover for the approval of Council, which may reference the NFPA 1720 – 15 staff in 9-minute rule or a similar mid-line expectation of 10 staff in 10-minutes, and that performance measures are continuously examined.	Immediate (0-1 year)
16	The present dispatching agreement with the current dispatch provider should be updated to include NFPA related standards for KFES to incorporate the necessary performance measures as per the NFPA 1221 standard and those identified by the fire service for internal performance measurements.	Immediate (0-1 year)
19	Install a backup power generator for the Alternate EOC.	Immediate (0-1 year)
21	Continue with the follow-up on the single outstanding recommendation noted in the 2006 Fire Masterplan – add a full-time Administrative Support position.	Immediate (0-1 year)

1	<p>It is recommended that a full review of the 2010 Establishing and Regulating By-law document be completed to include the following items:</p> <ul style="list-style-type: none"> <li>• Incorporate, where appropriate, any references to NFPA standards that the Fire Department deems necessary and is supported by Council, such as: <ul style="list-style-type: none"> <li>○ Measurable service levels that can be reported to Council on an annual basis</li> <li>○ Composition of the Department to represent the level of service to be provided as outline throughout the FMP, and</li> </ul> </li> </ul> <p>A final review to be conducted by the Township’s Solicitor</p>	Short-term (1-3 years)
2	<p>It is recommended that the Fire Prevention Division develop a fire safety awareness program for landlords and tenants in relation to student and non-student rental housing safety.</p>	Short-term (1-3 years)
3	<p>It is recommended that the Fire Prevention Division review its inspection program to identify levels of desired frequency as noted in the <u>FUS Suggested Frequency Chart</u> and that they should track, on an annual basis, the number of hours spent on the inspections.</p>	Short-term (1-3 years)
4	<p>It is recommended that the Simplified Risk Assessment/Community Risk Assessment (SRA/CRA) be updated in accordance with NFPA 1730, being every five years or as necessary with changes. To aid Council in their decision-making process, there is merit in providing an updated assessment at the beginning of every term of Council so that the sitting Council understands the platform on which the services conducted by the Fire Department are built.</p>	Short-term (1-3 years)
5	<p>It is recommended that the Fire Department meet with all local community groups to form a partnership in relation to organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community.</p> <ul style="list-style-type: none"> <li>• An example of community groups would be a local group that wishes to promote fire safety in the community or any local Lions Clubs (or other clubs) that want to support fire safety initiatives. The key is to reach out and take advantage of these groups to assist the Fire Department with its efforts towards ensuring safer communities.</li> </ul>	Short-term (1-3 years)

6	It is recommended that the KFES work with developers and the public to make the Home Sprinkler Systems initiative a part of their fire prevention and public education program.	Short-term (1-3 years)
7	The future need for more administrative staff should be monitored through hours spent on administrative duties to identify when another part or full-time Administrative Assistant should be hired.	Short-term (1-3 years)
8	<p>To verify the training programs are meeting related NFPA (and other) training program recommendations, the Deputy Fire Chief should identify;</p> <ul style="list-style-type: none"> <li>• What training programs are required in relation to the services that KFES is providing</li> <li>• The number of hours that are required to meet each of those training needs</li> <li>• Resources required to accomplish this training</li> <li>• Joint partnerships with bordering fire departments and private organizations that can be entered into to achieve the training requirements identified by the Training Officer, and</li> </ul> <p>To present an annual program outline at the start of each year to the Fire Chief, with noted goals and expectation, which are measured and reported on in relation to completion success rate at the end of each year.</p>	Short-term (1-3 years)
9	It is recommended that a full-time Training Officer position be created. This will allow for greater focus on training initiatives, and free up some of the Deputy Chief's time to work on other programs.	Short-term (1-3 years)
10	KFES should continue to search out opportunities to conduct joint training programs with other fire departments by securing/scheduling neighboring training facilities whenever possible.	Short-term (1-3 years)
12	<p>It is recommended that greater utilization of the in-house Fire Officer resources be incorporated into an annual fire prevention program on a more formal basis. To accomplish this, all officers should be trained and certified to at least:</p> <ul style="list-style-type: none"> <li>• NFPA 1031 – Fire Inspector I, and</li> <li>• NFPA 1035 – Fire and Life Safety Educator I</li> </ul> <p>By having all Officers trained to the noted levels, KFES will have a greater number of resources to draw upon in its public fire safety education and inspection programs.</p>	Short-term (1-3 years)
13	The Fire Chief should investigate opportunities to promote retention of the volunteer firefighters as noted in the OFMEM document. The Fire	Short-term (1-3 years)

	Chief should continually recruit for volunteer firefighters in areas that are presently understaffed or have issues with response numbers to calls.	
14	The Department should complete certification for staff for each position (that requires or recommends certification) and ensure that certifications are maintained.	Short-term (1-3 years)
17	Even though the training set up found at the Schomberg fire station does meet some of the general day-to-day needs of the Department, it is recommended that consideration be given to the construction or rental of a larger facility for training on such topics as live fire, search and rescue, and other technical rescue programs.  Opportunities for joint training with other local departments may also be used as a cost-effective measure	Short-term (1-3 years)
20	It is recommended that a full review of fire protection agreements be completed to identify any required revisions.	Short-term (1-3 years)
11	It is recommended that KFES explore the partnership opportunity to build a training facility within the capture area, which would be a cost-effective measure for all of the fire departments.	Mid-term (4-6 years)
18	The Township should endeavour to maintain a schedule that complies with the Fire Underwriters Survey (FUS) recommendations on the replacement of vehicles from a first-line to a second-line unit. <ul style="list-style-type: none"> <li>The industry standard for the design and replacement of vehicles is the National Fire Protection Associations Standard 1901. It is recommended that this and other related NFPA standards relating to vehicle design, replacement, and refurbishing, be utilized.</li> </ul>	Long-term (7-10 years)

## Overview

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### Project Initiation

Early this year, King Township participated in overseeing the issuance of an RFP on behalf of the municipalities involved for the preparation of the four Fire Masterplans and the collaboration analysis. The other three municipalities are Georgina, East Gwillimbury and Whitchurch/Stouffville.

Of note, in describing the comprehensive collaborative nature of the RFP process, it was made clear that there was no intention to investigate any aspect of fire amalgamation.

As the successful bidder, Emergency Management and Training Inc. (EMT) has worked collaboratively with the Township of King and the King Fire & Emergency Services (KFES) in the gathering of data and development of this FMP. EMT would like to thank all staff and the community for their input into this plan.

### Review Process and Scope

Emergency Management and Training Inc. (EMT) has based its review process on the Township's initial Request for Proposal (RFP) and the response document submitted by EMT.

The specified areas noted in the project's RFP were reviewed by utilizing best practices, current industry standards, and applicable legislation as the foundation for all work undertaken. EMT also used both quantitative and qualitative research methodologies to develop a strong understanding of current and future needs and circumstances of the community, and customer service demands of the public.

The review included, but was not limited to, the following key areas:

- a. Staffing needs – review capabilities of existing staffing and identify future needs for each of the following divisions: Suppression, Training, Prevention and Administration.
- b. Facilities – review capacity and condition of existing facilities and plan for future needs. Specific attention is required to the facility needs for the Training Division, Prevention Division and Administration.
- c. Station location – review of existing locations relative to the current and future demands and consideration of potential needs for relocation or additional stations.
- d. Apparatus – review existing vehicles and replacement plans relative to the existing and expected demands as well as the review of how apparatus maintenance is conducted and best practices thereof.
- e. Service Level Standards – review established benchmarks to ensure they meet the

communities' needs and reflect best practices and establish comparable joint Key Performance Indicators that can/will be used to identify performance of the various fire services.

- f. The report is a review of the existing Fire Master Plan and an expansion of that document.
- g. Plan outcomes must establish strategic priorities complete with action plans. These shall be expressed in terms of goals, objectives, action steps, resources (human and financial) and the timelines required to successfully complete the priorities.

The study is to also include an updating of the Fire Underwriters Survey (FUS) rating to identify potential opportunities for insurance premium savings for property owners in the municipality.

The review process included a survey of the Council members, the Chief Administrative Officer (CAO), the community, fire administration, and firefighters to seek input regarding the project components.

Based on the previously noted seven criteria (a – g), through meetings with the Fire Chief and other stakeholders, the consulting team was able to complete a thorough review of elements working well and those requiring improvement within the KFES. During the program review, the consulting team conducted an assessment of staffing, fire facilities, vehicles and related operations. Data provided by the Fire Department was also reviewed in relation to all of the previously noted items contained in the Township's RFP.

Based on the review of the Fire Department's facilities, equipment, staffing, programs and related data, EMT is submitting a total of 21 recommendations for consideration and implementation.

The Fire Underwriters group also conducted their own review of the KFES and has submitted a total of 15 additional recommendations. The recommendation summary found in the FUS report has been included in Section 12 of this document.

## Performance Measures and Standards

This FMP update has been based upon (but not limited to) key performance indicators that have been identified in national standards and safety regulations such as:

- The Ontario Fire Marshal's Office and Emergency Management (OFMEM) Public Safety Guidelines
- *The Fire Protection and Prevention Act*
- The National Fire Protection Association (NFPA) standards
  - NFPA 1221 addresses recommended standards in relation to communications/dispatching services
  - NFPA 1720 addresses recommended standards for volunteer fire departments
  - NFPA 1730 addresses recommended standards for fire prevention and education activities
- The Commission on Fire Accreditation International, which is a program that evaluates a Fire Department based on related NFPA standards, local legislation and industry best practices (the parent organization for CFAI is the Centre for Public Safety Excellence (CPSE))
- Office of the Fire Marshal and Emergency Management's (OFMEM) Integrated Risk Management program
- The Ontario Health and Safety Act., National Institute for Occupational Safety and Health (NIOSH)
- Ontario Fire Service – Section 21 Guidelines
  - The Section 21 Committee is based on Section 21 of the Ontario Occupational Health and Safety Act. This committee is charged with reviewing industry safety concerns and developing recommended guidelines to reduce injuries for the worker.

## **Project Consultants**

Although several staff at Emergency Management and Training Inc. were involved in the collaboration and completion of this Plan, the overall review was conducted by:

- Darryl Culley, President Emergency Management and Training Inc.
- Lyle Quan, Fire & Emergency Services Consultant
- Richard Hayes, Fire & Emergency Services Consultant, and

Together, the team has amassed a considerable amount of experience in all areas of fire and emergency services program development, review and training. The EMT team have worked on projects that range from fire service reviews, creation of strategic and fire master plans and development of emergency response programs for clients.

# SECTION 1 – Department & Community Overview

1.1 Fire Department Composition

1.2 Community Overview

## Section 1: Department and Community Overview

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### 1.1 Fire Department Composition

The King Fire & Emergency Services covers an area of approximately 333 square kilometres and serves a population of approximately 24,000 people with an anticipated growth to 35,000 people by 2031.

Presently, KFES responds to approximately 1,100 emergency calls per year.

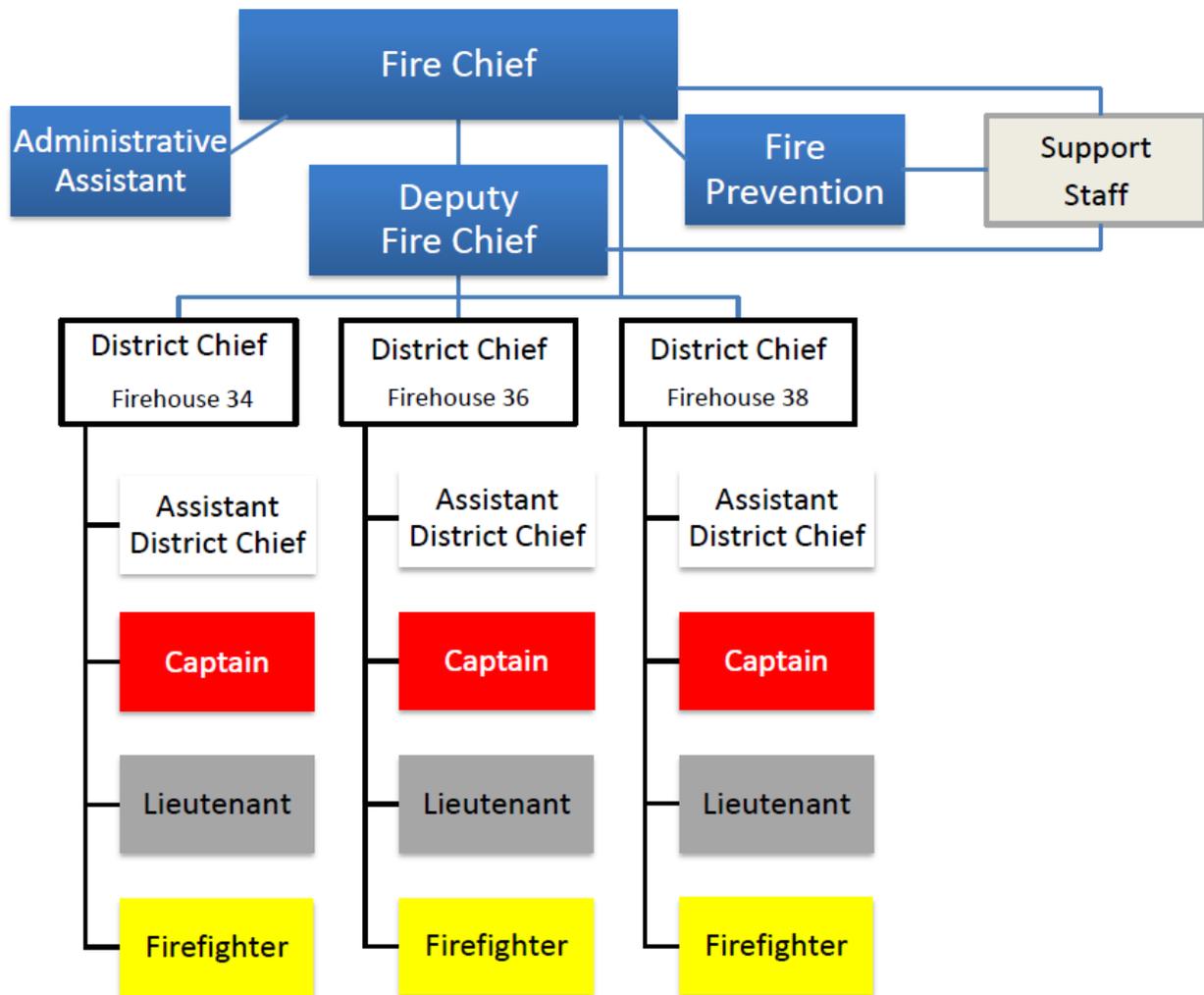
Full-time staff includes:

- Fire Chief
- Deputy Fire Chief (who also oversees training programs for the department)
- One Administrative Assistant
- Fire Prevention Division consisting of two Fire Prevention/Public Education Officers

Other than the previously noted full-time staff, the Department is served by volunteer firefighters who respond out of all three fire stations - King (3-4), Schomberg (3-6) and Nobleton (3-8). The total firefighting force for the Fire Suppression/Operations Division consists of 126 volunteer firefighters, which equates to 42 per station.

The organizational chart noted in FIGURE #1 reflects the general reporting structure within the Fire Department and also that of the Fire Chief to the CAO and Town Council.

**FIGURE 1: Fire Department Organizational Chart**



This current reporting arrangement allows for a sufficient level of involvement by the Fire Chief within the senior management structure of the Township and also allows for a high-level of administrative oversight of the day-to-day operations of the Fire Department.



Although there is no actual standard that dictates how many firefighters are required within a given population or whether the Fire Department needs to be entirely full-time, composite (blend of full-time and volunteer firefighters) or volunteer in nature, there is no doubt that the call volume for the KFES will increase, simply based on the influx of people, traffic, industry and housing over the next 10 years. As such, a careful monitoring of call volumes and response times is critical when it comes to determining if the Fire Department is keeping up with its response expectations or is falling behind in this area. This review of response data is exactly why EMT had requested a full three years of data; this three years of data creates a reliable baseline for identifying how well the Fire Department is meeting any related industry response standards such as those noted in the National Fire Protection Association (NFPA) standards.

Some municipalities have referred to other similar sized municipalities as a guide for staffing numbers and types (i.e. career or volunteer). However, it must be kept in mind that every community is unique in its geographical composition, population demographics and size of residential, commercial and industrial sectors. Therefore, community comparisons should be utilized with all the aforementioned information in mind.

## SECTION 2 – Planning

- 2.1 Three Lines of Defence
- 2.2 Strengths, Weaknesses, Opportunities, and Threats (SWOT)
- 2.3 National Fire Protection Association Standards (NFPA)
- 2.4 Commission on Fire Accreditation International (CFAI)
- 2.5 Stakeholder Surveys

## **Section 2: Planning and Stakeholder Surveys**

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Planning is a key function of any organization and should be done with a focus on the present needs of the community, coupled with its future growth and how this will affect the service demands on the Fire Department. Through the work completed on their previous FMP (refer to Section 11, for further information) and the implementation of this FMP process, KFES has clearly demonstrated a proactive approach towards its planning initiatives.

### **2.1 Three Lines of Defence:**

The Office of the Fire Marshal and Emergency Management (OFMEM) have identified “Three Lines of Defence” to be utilized by all fire departments in Ontario when planning to meet the needs of the community.

The identified three lines of defence, as noted by the OFMEM are:

1. Fire Safety Education,
2. Fire Prevention/Inspection, and Enforcement
3. Emergency Response

Based on these three lines of defence, the following strengths, weaknesses, opportunities, and threats (SWOT) were identified.

### **2.2 Strengths, Weaknesses, Opportunities, and Threats (SWOT)**

This entire FMP document is the result of conducting a SWOT analysis on the community which has resulted in a list of recommendations for the Township’s Council, CAO and Fire Chief to consider and implement.

The strengths and weaknesses portion of this SWOT are based on an internal review of the Department to identify existing efficiencies, along with recognizing areas for improvement. The opportunities and threats portion are related to external influences and how these influences affect the operations and response capabilities of the Department.

#### Strengths

The Township of King benefits from having three fire stations that are staffed and well-equipped for response to emergencies. These stations are staffed by a team of dedicated volunteer firefighters who have noted during interviews and completion of the internal surveys that they are quite proud of the level of service they provide to the community. It was also noted that the fire stations and equipment are in favourable condition and the firefighters believe that they are well-equipped to effectively carry out their responsibilities.

KFES has strong relationships with neighbouring fire departments and a long history of cooperative services.

The Fire Prevention Division is very proactive within the community in relation to education, fire safety inspections and enforcement.

During our community surveys and stakeholder meeting, it was noted that quick response to emergencies, along with having a well-equipped and trained staff is expected. The community input also noted that supporting and promoting a robust public education program for the community rank as the top three anticipations of those who completed the surveys.

### Weaknesses

The KFES does have a compliment of volunteer firefighters that can respond to calls, but due to other commitments, such as their full-time jobs and family obligations, there is no guarantee these volunteer firefighters will be available to respond, as needed, for the situation. Presently, the response data confirms that KFES is doing an exceptional job at either meeting or falling within acceptable parameters of recommended industry best practices, which can be seen in the NFPA response chart on page 27 and the response data noted on pages 66 – 69.

Due to the growth of the Township, along with increased traffic flow, there is a belief from the volunteer firefighters that a reorganization of the fire station response zones should be reviewed and future consideration should be given to the construction of a fourth fire station in the northeast area of the Township. The Call Cluster Map, noted in Section 5, offers an indication of where the bulk of the calls are occurring within the municipality and as such, can assist in evaluating possible changes to response zones for the fire stations.

### Opportunities

KFES has a mutual aid program in place in which it can call on neighbouring fire departments for assistance whenever local resources are exhausted and there is an inability to handle the incident with the Department's resources in an efficient and effective manner. However, this type of mutual aid resource is not meant to supplement KFES's response ability; it is to be used when no other options are available such as automatic aid and fire services agreements. These two types of agreements offer the community a more consistent level of response to areas not properly covered by the local fire department.

As such, continued planning and cooperation with neighbouring municipalities is a cost-effective

option for such things as automatic aid and fire service agreements. This type of planning will ensure that King Township has the resources needed during any large-scale incident that may exhaust local resources.

### Threats/Challenges

The present level of volunteer firefighters and equipment must be considered as the community's population continues to grow in both the residential and commercial sectors. As noted earlier in this document, King can expect to see up to a 46% increase in population by 2031. The best way to deal with such a challenge is to plan ahead by using related industry standards and recommended best practices as a guideline. Researching comparable communities in relation to how they dealt with this level of community growth can give KFES an indication of future call volumes.

A final challenge that is being seen by all communities is the so-called "50-year storms". Due to changes in climate, inclement weather incidents such as freezing rain/ice storms are becoming more commonplace and need to be part of the response program for each community. This change in climate conditions along with the resulting frequency and severity of incidents has created the need for a larger response component to these emergencies.

## 2.3 National Fire Protection Association (1201, 1221, and 1720)

To assist with EMT's review and related recommendations, reference has been made to National Fire Protection Association Standards, which are seen as the North American benchmark for the fire service.

NFPA Standard 1201 – Standard for Providing Fire and Emergency Services to the Public

Section 4.3.5 notes:

- The Fire and Emergency Services Organization (FESO) shall provide customer service-oriented programs and procedures to accomplish the following:
  1. Prevent fire, injuries and deaths from emergencies and disasters
  2. Mitigate fire, injuries, deaths, property damage, and environmental damage from emergencies and disasters
  3. Recover from fires, emergencies and disasters
  4. Protect critical infrastructure
  5. Sustain economic viability
  6. Protect cultural resources

To accomplish this, an FESO must ensure open and timely communications with the CAO and governing body (Council); create a master plan for the organization; ensure there are mutual aid and automatic aid programs in place, along with an asset control system and maintenance program.

To provide the Fire Department more defined focus on what the ultimate goals for emergency response criteria are, the NFPA suggests that response times should be used as a primary performance measure in fire departments.

- NFPA 1720 refers to goals and expectation for Volunteer Fire Departments
  - Based on NFPA 1720, KFES is categorized as a Volunteer Fire Department because more than 85% of its staff are volunteer firefighters. As such, response time criteria should be focused on the recommendations as seen in the following chart

### NFPA 1720 Standards

Demand Zone	Demographics	Minimum # of firefighters responding	Response time (turnout + travel) in minutes	Performance Objective
Urban	>1000 people per square mile	15	9	90%
Suburban	500-1000 people per square mile	10	10	80%
Rural	<500 people per square mile	6	14	80%
Remote	Travel distance + or – 8 miles (12.9 km)	4	Dependent upon travel distance	90%
Special risks	To be determined by Fire Department	To be determined by Fire Department	To be determined by Fire Department	90%

The fourth standard noted in this section is NFPA 1221, which addresses the goals and objectives for the taking of calls for service and dispatching of these calls. King Fire & Emergency Services receives its dispatching services from Vaughan Fire Department.

KFES has adopted the use of response time measurements as a guide to evaluate their capabilities in relation to the previously noted NFPA standards. However, it should be noted that the KFES's Establishing and Regulating By-law does not actually specify what response time criteria is expected of its Fire Department. This in itself does not restrict KFES from tracking and reporting on its level of service, on a year-to-year basis. In fact, this is a good practice for the Fire Chief, as it allows for a proper assessment of response types, number or responses and a thorough evaluation of response times to assess if the Fire Department can keep up to the demands of the community.

### **Establishing & Regulating By-Law**

The current Establishing & Regulating (E&R) By-Law was updated in 2010, which makes this a relatively recent document. Based on the date, many parts of the E&R document still line up with the expectation of the *Fire Protection and Prevention Act*.

To assist the Fire Chief in meeting the needs and expectations of Council, the E&R By-law does note that the Fire Department shall respond to a variety of incidents (noted below) designed to protect the lives and property of the inhabitants of King. The following list has been extracted from the 2010 Establishing and Regulating By-law #2010-33.

## **1. FIRE PREVENTION**

- 1.0 Fire Prevention statement: The key to actively reducing the threat to the lives and property of our residents due to the unfortunate affects of fire is an active and efficient fire prevention and public education program.
- 1.1 Inspections arising from complaint, request, retrofit, or self initiated and fire investigations shall be provided in accordance with the FPPA and policies of the fire prevention division.
- 1.2 New construction inspections and plan reviews of buildings under construction in matters respective of fire protection systems within buildings shall be conducted in accordance with the applicable by-law and operating procedures.
- 1.3 The Ontario Fire Service Standard for Fire Prevention Officers and the Ministry of Municipal Affairs Standards shall be used as a reference guide for fire prevention training.

## **2. FIRE SAFETY EDUCATION**

- 2.1 Distribution of fire and life safety information and public education programs shall be administered in accordance with the FPPA and policies of the departments Fire Prevention & Public Safety Division.
- 2.2 A residential home fire safety awareness program shall be ongoing.
- 2.3 Smoke alarms for residential occupancies shall be provided to those in need.
- 2.4 Fire and life safety communiqués shall be distributed to the media on a regular basis.

## **3. FIRE SUPPRESSION AND EMERGENCY RESPONSE**

- 3.1 Fire suppression services shall be delivered in both an offensive and defensive mode and shall include search and rescue operations, forcible entry, ventilation, protecting exposures, salvage, and overhaul as appropriate.
- 3.2 Emergency pre-hospital care responses and medical acts such as defibrillation, standard first aid, CPR, and the Emergency Medical Responder Program shall be maintained to Base Hospital protocols as agreed.
- 3.3 Special technical and/or rescue services shall include performing extrication using hand tools, air bags and heavy hydraulic tools as required and water/ice rescue services up to and including the water entry level. The above services shall only be attempted when available resources including staffing are permitting.

- 3.4 Confined space rescue, trench rescue, high-angle rescue, HUSAR, hazardous materials response and other highly specialized technical and/or rescue services shall not be provided by King Fire & Emergency Services (KFES) beyond the basic awareness level.
- 3.5 The NFPA Standards, International Fire Service Training Association “Essentials of Fire Fighting”, Ontario Fire Service Standards and other related industry training standards and reference materials may be used as reference guides for KFES training as approved by the Fire Chief. All training will comply with the Occupational Health and Safety Act and applicable provincial legislation.

During meetings with KFES staff and review of documentation supplied, it would appear that KFES is doing an acceptable job in meeting the expectations of the 2010 E&R By-law.

Even though no actual response time expectations are noted in the Department’s E&R By-law, a review of the past three to five years offers a good understanding and baseline for how the Department has been performing, along with identifying areas for improvement.

## 2.4 Commission on Fire Accreditation International (CFAI)

*“When a Fire Department applies a model of risk assessment to help determine their level of emergency services commitment, they have moved from being reactive to being proactive.”* – quote from CFAI overview information.

In the Fire Service, the NFPA standards are seen as the benchmark to strive for. Many of these standards have, to a large degree, been adopted by the Office of the Fire Marshal and Emergency Management. The CFAI is recognized as the organization that has incorporated all national and local standards, which has become the model for best practices for a fire department (whether career, composite or volunteer).

Benefits of Accreditation:

- A system for risk assessment, decision making, and continuous improvement
- A plan for sustainment and self-assessment
- Agency performance objectives and performance measures
- Verification by peers

The CFAI program revolves around 10 categories, which are:

1. **Governance and Administration** – includes such things as organizational reporting structure, establishing and regulating by-law requirements, etc.
2. **Assessment and Planning** – evaluating the organization in relation to future planning
3. **Goals and Objectives** – what are the goals of the fire service; do they have a strategic plan in place
4. **Financial Resources** – does the organization have sufficient funding in place to effectively meet the needs of internal and external stakeholders
5. **Programs** – this includes fire prevention, fire suppression, training, emergency management
6. **Physical Resources** – what is the state of the fire stations and are they located in the best location to respond to the community in a timely manner
7. **Human Resources** – staffing of the organization in all divisions and how the fire service works with the municipality’s Human Resources Department
8. **Training and Competency** – review of all training programs based on what the fire department is mandated to provide
9. **Essential Resources** – this section covers such things as water supply, communications/dispatch and administrative services

10. **External Systems Relations** – includes such topics as mutual aid, automatic aid, third party agreements, etc.

These sections will be discussed within each related section of this FMP plan document.

## 2.5 Stakeholder Surveys

To get a clear understanding of how well KFES is meeting the needs of its staff and the community, surveys were conducted with both the internal staff of the KFES and external stakeholders of the Township.

To assist with the completion of the staff surveys, information meetings were held during the month of September 2016. The community survey was advertised through local media and was set up on the Department's web site (in the form of an electronic survey). Within the community surveys, participants were also offered the opportunity to be part of a focus group meeting. This community stakeholder meeting was held on November 23<sup>rd</sup> at the Fire Department Headquarters in King.

Meetings were also held in September with members of Council and with the Township's Administrative Officer (CAO).

### Internal Surveys

During the FMP process, feedback was gathered from internal staff, which included Firefighters, Administration, Training and Fire Prevention.

Much of the information received from the internal surveys identified the following:

- The majority of the staff are very proud of the service that they offer to the community and believe that the community feels that they are served by a professional and dedicated group of Firefighters.
- Overall, the Firefighters noted that they have good facilities to work out of, along with a good variety of equipment to do their jobs.
- The top three major challenges for the Fire Department are the rapid growth that is occurring in King; volunteer firefighter retention and the insurance of properly trained and equipped staff in meeting response challenges.
- The top four services that they feel are priority to the community are:
  - Firefighting
  - Rescue (i.e. motor vehicle accidents)
  - Technical rescue response (i.e. motor vehicle collisions) and

- Medical responses
- It was noted that in the future, staffing requirements should be reviewed which may include a full-time component as the community grows.

## **External Surveys and Stakeholder Meeting Results**

Input from the community is vital as it gives the Fire Department an accurate indication of how the public perceives the Department and suggests areas for improvement from those with first-hand interaction with the Department.

The following input was received:

- Most respondents see the KFES as a dedicated and professional service
- The top three concerns noted by external respondents are:
  - That the Fire Department responds in a timely manner to calls for assistance
  - The presence of the Fire Department within the community in relation to public education and related safety training, and
  - The cost of the fire service
- The top three services noted by external respondents are:
  - Firefighting, emergency preparedness
  - Rescue (i.e. motor vehicle accidents)
  - Medical assist and response
- In relation to what is needed over the next 10 years, the top responses were:
  - More staff to meet the growing demands of the community
  - More public safety education and attendance at community events
  - Well-equipped fire stations and equipment to meet the demands of a growing community

Overall, both internal and external surveys, and stakeholder meetings were quite positive in relation to the services being offered by KFES. The primary focus we heard (both internally and externally) was ensuring that the Fire Department continues to expand as the community grows so that KFES can continue to provide a quality service to the community.

## Recommendations

1. It is recommended that a full review of the 2010 Establishing and Regulating By-law document be completed to include the following items:
  - Incorporate, where appropriate, any references to NFPA standards that the Fire Department deems necessary and is supported by Council, such as:
    - Measurable service levels that can be reported to Council on an annual basis
    - Composition of the Department to represent the level of service to be provided as outline throughout the FMP, and
    - A final review to be conducted by the Township's Solicitor

### Associated Costs *(all costs are approximate)*

- There is no initial cost associated with updating the By-law. However, if changes in service levels are made, then some associated costs (or savings) may be realized.

### Timelines

- Short-term (1 – 3 years)

## SECTION 3 – Risk Assessment

3.1 Community Risk Assessment

3.2 Simplified Risk Assessment

3.3 Integrated Risk Management Web Tool

## Section 3: Risk Assessment

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### 3.1 Community Risk Assessment – Current and Future Needs

The King Fire & Emergency Services covers an area of approximately 333 square kilometres and serves a population of approximately 24,000 people. King is located in central Ontario, north of Toronto in the central portion of York Region. The community consists mainly of residential sectors with some commercial and light industrial sectors.

Due to its proximity to the Toronto area, the Township of King (and surrounding areas) have become a popular place to live as it offers the smaller community charm, and at the same time, possesses all the amenities of a large city. This has created a challenge for the municipality in relation to keeping up with the growth in both population and traffic congestion.

During interviews with the Fire Chief and staff, it became quite apparent that they are monitoring population and traffic in relation to call volume and response times.

#### Municipal Responsibilities

It is important to note that it is Council that sets the level of service within the community. The *Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4*, outlines the responsibilities of a municipality, providing a framework for protecting citizens from fire:

2. (1) Every municipality shall,

- (a) Establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and
- (b) Provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

Further, the Act provides a description for the methods of providing services.

#### Methods of Providing Services

(2) In discharging its responsibilities under subsection (1), a municipality shall:

- (a) Appoint a community fire safety officer or a community fire safety team; or
- (b) Establish a Fire Department.

The Township of King has established a Fire Department as outlined in Section 2.2(b) of the *Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4*. The level of service that must thereby be

provided is further outlined in Section 2.1(b) of the Act. The level of service to be provided is determined by the needs and circumstances of the community and can be derived from conducting a Fire Masterplan for Council. The 'needs' can be defined by the type of buildings, infrastructure, and demographics of the local area which in turn can be extrapolated into the types of services that would be offered and needed. The 'circumstances' are considered as the ability to afford the level of service to be provided.

Together, the needs and circumstances assist in identifying a level of service for the community. This combination meets the expectations of the public for safety and the affordability of this level provided.

King is currently experiencing significant growth in the community. While the majority of this growth is residential in design, there are commercial and industrial possibilities. This increase does impact the service delivery of the Fire Department, and undoubtedly the need and call for service will increase along with the population.

### **3.2 Simplified Risk Assessment**

As noted in the Ontario Fire Marshal's Public Fire Safety Guideline, PFSG 04-40A-03:

"The simplified risk assessment (SRA) and ensuing fire concern profile will assist in identifying the degree to which these activities are required in accordance with local needs and circumstances. The simplified risk assessment is made up of the following components:

- demographic profile
- building stock profile
- local and provincial fire loss profiles
- information analysis and evaluation
- priority setting for compliance
- implementing solutions

Conducting a simplified risk assessment is a practical information gathering and analyzing exercise intended to create a community fire profile that will aid in identifying appropriate programs or activities that can be implemented to effectively address the community's fire safety needs."

The SRA is an integral building block in the data gathering process to understand the community that is served by the fire department. As the community continues to change, the document should not remain stagnant as the results are only accurate to the time of which the review was conducted.

NFPA 1730 Standard on *Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations*, notes that this review should be conducted at a minimum every five (5) years or after significant change. This standard also establishes a process to identify and analyze community fire risks. This standard refers to the process as a Community Risk Assessment. There are seven (7) components of a Community Risk Assessment outlined in NFPA 1730. These components are:

1. Demographics
2. Geographic overview
3. Building stock
4. Fire experience
5. Responses
6. Hazards
7. Economic profile

### **Current Condition**

The SRA for the Township notes that there has and will be significant growth in building stock in the community (namely residential, but not exclusively). This growth has impacted the demographic profile and consequently, the needs and circumstances for the delivery of services by the Fire Department. It should be noted that one requirement to service updates, not only for KFES, but all fire departments, is in relation to Vulnerable Occupancies. With the inception of the legislation around Vulnerable Occupancies, the Fire Prevention Officers have done an admirable job in maintaining the departmental responsibilities. With the new requirements under the legislation, additional time is necessary for the Fire Prevention staff to adequately ensure compliance.

KFES needs to ensure that these types of occupancies are identified and that the building owners and occupants are being properly educated in the rules and requirements of fire safety.

### **Future Needs**

Understanding the community and its needs allows the Fire Administration to be proactive in education and enforcement programs to the community and to all Fire Department staff. When fires occur within the community, the firefighters can be ready to battle the fires because they are trained, not only in the basics of firefighting, but in the special hazards that are found within the community. These hazards are noted in the SRA/CRA so that Fire Administration can ensure programs are in place to deal with them. As the community grows, the frequency of, and the need for service will grow. There will be a need for additional staff in the Fire Prevention Office, the Fire Suppression Division, and perhaps even a dedicated Training Officer.

### 3.3 Integrated Risk Management Web Tool

The Ontario Fire Marshal's Communiqué 2014-12 introduced the Integrated Risk Management Tool to the Fire Service. The document notes:

“The IRM Web Tool was developed as part of a commitment made by the OFMEM to the Ontario Association of Fire Chiefs (O AFC) and other stakeholders. The IRM Web Tool can be used by all Ontario's municipalities and fire departments to determine building fire risks in their respective communities by taking into account building characteristics (building factors) and the three lines of defence against fire (Three Lines of Defence):

Line one: Public Fire safety education

Line two: Fire safety standards and enforcement

Line three: Emergency response”

The Integrated Risk Management Web Tool is built around the Three Lines of Defence and is intended for municipal and fire service decision-makers. The tool was designed to assist municipalities in fulfilling the responsibilities prescribed in Section 2 of the *Fire Protection and Prevention Act, 1997* (FPPA).

The concept of the IRM is a “building-by-building” assessment, but its goal is to go beyond simply taking stock of buildings within the community; it was intended to be a holistic approach that is meant to combine all of the fire department's efforts in relation to:

- Fire prevention and education initiatives, which includes updated community reviews through the use of the OFMEM Simplified Risk Assessment
- Fire station locations and ability to respond in an efficient and effective manner
- Identification of hazardous situations/locations within the community
- Training and equipping of the firefighters to execute their duties in a safe and efficient manner

As such, the IRM approach is a combination of all facets of the fire service that is meant to combine a review of building stock, fire safety and prevention related issues to be addressed, ability to effectively and efficiently respond to emergencies and how well-equipped and trained the firefighters are to deal with emergencies within the community. It should be realized that conducting a review of every building within the Township of King may not be practical. Utilizing NFPA 1730 definitions of risk categories may guide Council in deciding the focus and service level within the community. Council should decide (with input from the Fire Chief) what the acceptable risk is to manage in the community based on the needs and balanced with the circumstances to deliver the services.

NFPA 1730 defines the risks in three categories and provides examples for each. These risk categories are:

**High-Risk Occupancy** – an occupancy that has a history of high-frequency of fires, high potential for loss of life or economic loss, or that has a low or moderate history of fire or loss of life, but the occupants have a high dependency in the built-in fire protection features or staff to assist in evacuation during a fire or other emergency.

Examples: apartment buildings, hotels, dormitories, lodging and rooming, assembly, child care, detention, educational, and health care

**Moderate-Risk Occupancy** – an occupancy that has a history of moderate frequency of fires or a moderate potential for loss of life or economic loss

Examples: ambulatory health care, and industrial

**Low-Risk** – an occupancy that has a history of low frequency of fires and minimal potential for loss of life or economic loss

Examples: storage, mercantile, and business

## Current Condition

Based on EMT’s review of KFES’s Simplified Risk Assessment, it would appear that the key fire safety related issues facing the community are within:

- Vulnerable Occupancies
- Schools
- Residences

Utilizing the IRM tool, in conjunction with guidance from NFPA 1730, will provide a picture of the resources, time, and tools required to keep the fire risk in the community to a manageable level, as defined by Council. It is important to note the number of buildings within King and the continual growth that is expected. This current and future building stock puts pressure on the Fire Prevention Officers to accomplish an adequate amount of inspections to ensure fire code compliance within the community.

To determine the current staffing needs, NFPA 1730 outlines a five-step process within Appendix C of the standard. This sample staffing exercise is not part of the requirements of the standard, but forms a guide for informational purposes. It is important to restate that it is Council that sets the level of service within the community. This level of service must be based off the local needs and circumstances.

The activities of the Fire Prevention Division (FPD) for 2016 demonstrated a pro-active endeavour towards fire prevention and public fire safety education. These activities range from site plan

reviews, routine inspections, licensing, complaints, and requests, to name a few. The Fire Prevention Division has done a good job in ensuring ongoing inspections and education programs are being conducted. Fire Prevention Officers are duty-bound to conduct inspections upon request or complaint in accordance with the *Fire Protection and Prevention Act* (FPPA).

Even though interviews with FPD staff indicated that routine inspections are monitored and that the Division does more than meet the expectation of the FPPA, it is recommended that the FPD review its inspection program to identify levels of desired frequency for these inspections and that they should track, on an annual basis, the number of hours spent on inspections.

It should also be noted that the Fire Underwriters Survey supports and recommends that a level of frequency be identified by the Fire Department in its quest towards ensuring a fire safe community.

**FUS Suggested Frequency Chart:**

<b>Occupancy</b>	<b>FUS Benchmark</b>
Assembly (A)	3 to 6 months
Institutional (B)	12 months
Single Family Dwellings (C)	12 months
Multi-Family Dwellings (C)	6 months
Hotel/Motel (C)	6 months
Mobile Homes & Trailers (C)	6 months
Seasonal/Rec. Dwellings (C)	6 months
Commercial (F)	12 months
Industrial (F)	3 to 6 months

**Future Needs**

The utilization of the IRM tool will provide an understanding of a fire risk building-by-building that can be extrapolated to show the risk in given areas. Along with the Simplified Risk Assessment, this tool will aid in the building and providing for the fire prevention inspection and education programs. Upon updating the Simplified Risk Assessment, the IRM tool could be used to begin the process of measuring the community for fire risk. A thorough risk assessment can also avoid invalid comparisons between your fire department and others. A municipality with a similar population may have very different fire risks, and therefore very different fire protection needs. A thorough risk assessment will ensure that such comparisons are valid. By providing a valid basis for comparison, a sufficient risk assessment can also provide confidence that innovations introduced elsewhere can be successfully applied in your municipality.

### **3.3.1 Home Fire Sprinklers**

The NFPA, along with the Ontario Association of Fire Chiefs, are strong supporters of home sprinkler systems as a way to reduce the risk to life and property from fire.

In a recent NFPA on-line article, it was noted that because fire sprinklers react so quickly, they can dramatically reduce the heat, flames, and smoke produced in a fire. Properly installed and maintained fire sprinklers help save lives.

Fire sprinklers have been around for more than a century, protecting commercial and industrial properties and public buildings. What many people don't realize is that the same life-saving technology is also available for homes, where roughly 85% of all civilian fire deaths occur.

#### **Facts about home fire sprinklers**

Unfortunately, due to the lack of Canadian statistics, we must rely on American statistics. However, since there are so many similarities in building construction, the statistics are an accurate reflection of the Canadian experience.

Automatic sprinklers are highly effective and reliable elements of total system designs for fire protection in buildings. According to an American Housing Survey, 4.6% of occupied homes (including multi-unit) had sprinklers in 2009, up from 3.9% in 2007, and 18.5% of occupied homes built in the previous four years had sprinklers.

#### **Source: U.S. Experience with Sprinklers**

- 85% of all U.S. fire deaths occur in the home.
- Home fire sprinklers can control and may even extinguish a fire in less time than it would take the fire department to arrive on the scene.
- Only the sprinkler closest to the fire will activate, spraying water directly on the fire. In 84% of home fires where the sprinklers operate, just one sprinkler operates.
- If you have a fire in your home, the risk of dying is cut by about one-third when smoke alarms are present (or about half if the smoke alarms are working), while automatic fire sprinkler systems cut the risk of dying by about 80%.
- In a home with sprinklers, the average property loss per fire is cut by about 70% (compared to fires where sprinklers are not present.)
- The cost of installing home fire sprinklers averages \$1.35 per sprinklered square foot.

The Home Fire Sprinkler Coalition (HFSC) is a leading resource for accurate, non-commercial information and materials about home fire sprinklers for consumers, the fire service, builders, and other professionals.

By working with the developers and the public in promoting the installation of home sprinkler systems, the King Fire & Emergency Services would be demonstrating a pro-active approach in relation to educating the public on another viable option for home owners to help reduce the risk from fire. As such, it is recommended that KFES investigate this safety initiative as part of their fire prevention and public education initiatives.

## Recommendations

2. It is recommended that the Fire Prevention Division develop a fire safety awareness program for landlords and tenants in relation to student and non-student rental housing safety.
3. It is recommended that the Fire Prevention Division review its inspection program to identify levels of desired frequency as noted in the FUS Suggested Frequency Chart and that they should track, on an annual basis, the number of hours spent on the inspections.
4. It is recommended that the Simplified Risk Assessment/Community Risk Assessment (SRA/CRA) be updated in accordance with NFPA 1730, being every five years or as necessary with changes. To aid Council in their decision-making process, there is merit in providing an updated assessment at the beginning of every term of Council so that the sitting Council understands the platform on which the services conducted by the Fire Department are built.
5. It is recommended that the Fire Department meet with all local community groups to form a partnership in relation to organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community.
  - An example of community groups would be a local group that wishes to promote fire safety in the community or any local Lions Clubs (or other clubs) that want to support fire safety initiatives. The key is to reach out and take advantage of these groups to assist the Fire Department with its efforts towards ensuring safer communities.
6. It is recommended that the KFES work with developers and the public to make the Home Sprinkler Systems initiative a part of their fire prevention and public education program.

### Associated Costs *(all costs are approximate)*

- No cost associated with the initial development of these recommendations – staff time only. However, once approved, new/updated programs may evolve from the recommendations and could incur some associated costs
- FUS chart recommendation will incur more Fire Prevention staff related time

### Timelines

- Short-term (1-3 years), with ongoing reviews for all these recommendations

## SECTION 4 – Department Staffing & Related Programs

- 4.1 Administration Division
- 4.2 Training & Education Division
- 4.3 Fire Prevention and Public Education
- 4.4 Recruitment and Retention of Volunteer  
Firefighters

## Section 4: Department Staffing

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Within the scope of work noted in the original Request for Proposal document, staffing needs was identified as a priority in which EMT was to review the capabilities of existing staffing and identify future needs for each of the following divisions: Suppression, Training, Prevention and Administration.

When considering the overall staffing needs for the Department, some of the key questions that should be considered are:

- Is there a proper level of senior staff to manage the Department and its divisions?
- Is there adequate administrative support staff to assist with such things as records management and addressing day-to-day operations of the Department?
- Is there a need for other support staff in relation to vehicle and facility maintenance?
- When does a fire department need to consider moving from a volunteer service to a composite or full-time fire service – or does it?

This section will discuss the following divisions:

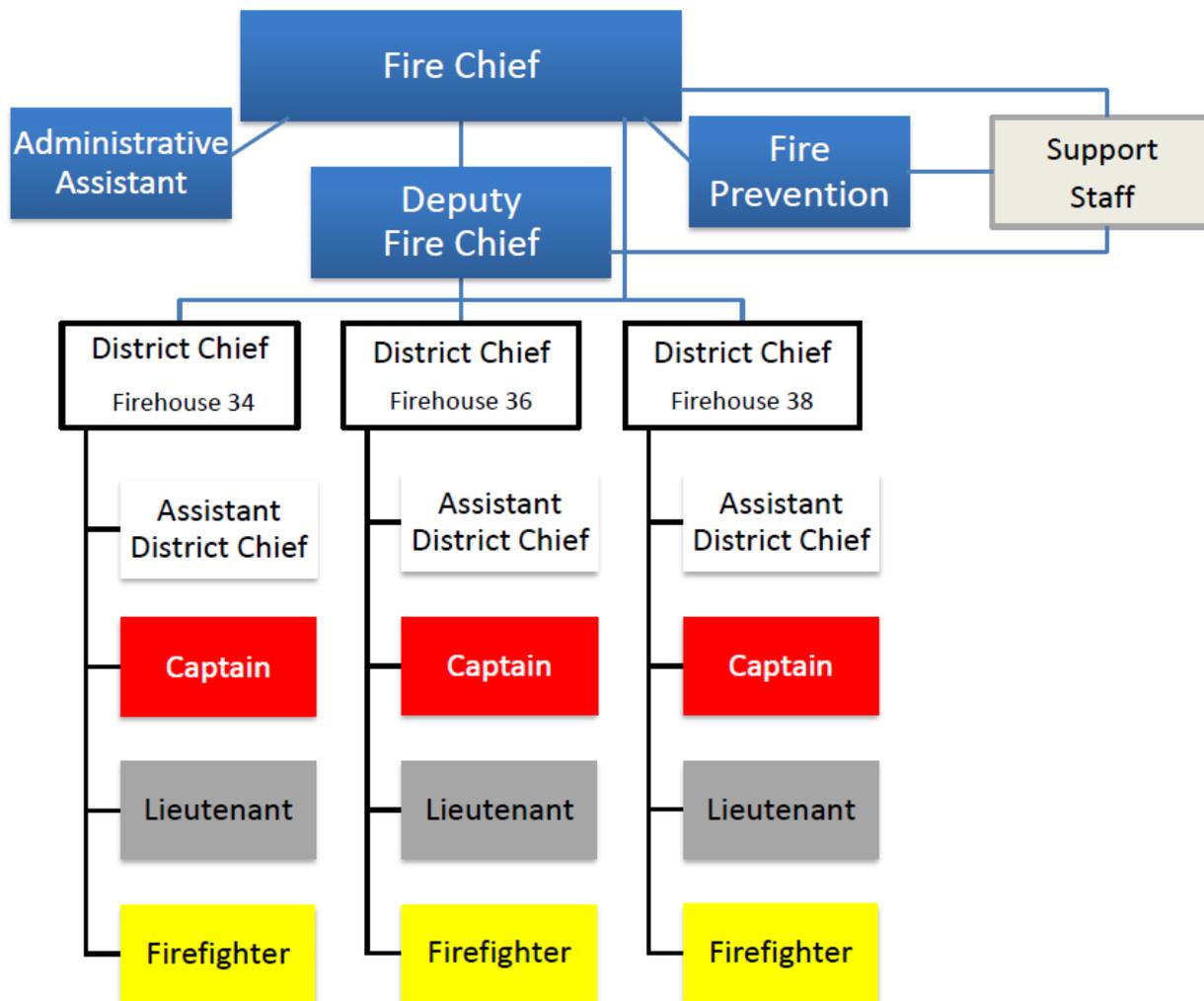
- Administration
- Training
- Fire Prevention, and
- Fire Suppression

### Fire Department Organizational Overview

The Fire Chief of the King Fire & Emergency Services reports to the Township's Chief Administrative Officer (CAO) in a council-manager style of government. The Fire Chief serves as the head of the Fire Department and is supported by:

- Deputy Chief (who also oversees training for the department)
- One Administrative Assistant, and
- Fire Prevention Division consisting of two Fire Prevention/Public Education Officers

**FIGURE 3: Fire Department Organizational Chart - Administration**



As previously noted, the King Fire & Emergency Services organizational chart identifies a present strength of 126 volunteer firefighters, and five administrative staff (which includes the Fire Chief, Deputy Fire Chief, Administrative Assistant and Fire Prevention).

To make an informed decision on staffing requirements, consideration is dependent on the following points:

- Does the Fire Department have an approved response criterion as a baseline?
  - Has Council given direction to the Fire Chief (based on his recommendations) on expected response times that are to be met by the Fire Department?

- If so, is the Department meeting this response criterion on a consistent basis or is it struggling to meet the response times and, perhaps, falling behind?
- Does the Department have issues/concerns with getting enough volunteer firefighters to respond during daytime hours (or other times) on a consistent basis to ensure a viable level of response?
- What local and national standards and guidelines exist to help direct the Fire Department in its decisions relating to station location and staffing models?
  - Specifically, NFPA 1720 along with reference to the CFAI “industry best practices” recommendations
- What growth or decrease in population and industry is occurring that may precipitate more or less fire stations and staffing?

For fire departments in Ontario, there are the Public Safety Guidelines that are created and distributed by the Office of the Fire Marshal and Emergency Management. These Guidelines advise fire services in relation to all aspects of delivering Fire Prevention, Fire Suppression and fire station location programs.

There are also industry best practices in the form of the National Fire Protection Association’s 1201 and 1720 standards, which guide:

- 1201 – Standard for Providing Fire and Emergency Services to the Public
- 1720 – Standard for Volunteer Fire Departments

### **NFPA 1201 – Standard for Providing Fire and Emergency Services to the Public**

The Fire and Emergency Services Organization (FESO) shall provide customer service-oriented programs and procedures to accomplish the following:

1. Prevent fire, injuries and deaths from emergencies and disasters
2. Mitigate fire, injuries, deaths, property damage, and environmental damage from emergencies and disasters
3. Recover from fires, emergencies, and disasters
4. Protect critical infrastructure
5. Sustain economic viability
6. Protect cultural resources

## NFPA 1720 – Volunteer Fire Departments

King Fire & Emergency Services is a Volunteer Fire Department that is supported by a full-time day staff that consist of the Fire Chief, Deputy Fire Chief, Administrative Assistant and a Fire Prevention Division.

- NFPA 1720 for volunteer fire departments, chapter 4, notes the following for the deployment of volunteer firefighters:
  - 4.3.1 notes the following; “The fire department shall identify minimum staffing requirements to ensure that a sufficient number of members are available to operate safely and effectively.”
    - *In Urban areas (population greater than 1000 per square mile), there should be a minimum response of **15 staff within 9 minutes**, 90 percent of the time*
    - *In Suburban areas (population of 500 – 1000 per square mile), there should be a minimum response of **10 staff within 10 minutes**, 80 percent of the time*
    - *In Rural areas (population of less than 500 per square mile), there should be a minimum response of **6 staff within 14 minutes**, 80 percent of the time.*

To accomplish this, as noted in the NFPA Standards, the Fire Department should endeavour to meet the stated minimum response standards based on responding to a 2,000 sq. ft. single family dwelling. The dwelling (noted in the Standard) does not have a basement or other exposures (buildings close enough to each other to create a greater possibility for fire spread). However, most homes in King have basements and are built close enough to each other to create an “exposure” for potential fire spread, which must be considered by the Fire Department in its response efforts.

KFES is diligently working at meeting this 1720 standard in relation to population verses staff/response times. Based on response data review and discussions with the Fire Chief, KFES is demonstrating a strong level of success in meeting the response criteria. It should also be noted that with its compliment of dedicated volunteer staff, they are also doing an admirable job at meeting the needs and expectations of the community, as noted by the input received through the community surveys and stakeholder meeting.

When does a fire department move from a volunteer service to a composite (blend of volunteer and career firefighters) or fully career service? There is no document that specifically identifies the tipping point for this move. It is based on the level of service set by the community’s Council, coupled with regular reports by the Fire Chief on how the Department is meeting or not meeting these service expectations.

There are many factors including the number of volunteer firefighters arriving when paged out, how quickly they respond to the page, what the turnout numbers are based on, the time of the day, and day of the week (e.g. availability, day shift vs. night shift), etc. Volunteer firefighters must be provided with the same minimum training certifications and equipment as career firefighters.

Recruitment and retention of volunteers is becoming more of a challenge with the increasing training that they must commit to on an annual basis and staff turnover with many younger volunteers actively looking for full-time firefighting careers.

Some composite fire departments have identified where to focus additional career firefighters by identifying call volume, growth of the community, and, more specifically, what times of the day were the most challenging for volunteer firefighter responses. As with most fire departments, the daytime hours from Monday to Friday are the greatest challenge for the volunteer component due to fact that most volunteer firefighters are either at work, school, or taking care of family. As such, some departments initially focus a full-time component that works Monday to Friday.

Another indicator for making this decision is tracking the number of firefighters that arrive at the fire station to respond. If the standard set by the Department is that three or more volunteer firefighters must arrive at the station before the fire truck can respond, then this should be monitored along with how many times a station is not able to muster up the needed personnel to have an effective response force.

Going to a composite or full-time service is a large cost to the community (\$2-2.5 million per 24/7 truck staffed by career firefighters) and therefore many communities have accomplished this in stages to meet the present needs of the community.

However, King's model of a volunteer fire department is a very cost-effective form of fire protection for a community of its size. KFES is currently doing an admirable job in relation to meeting the needs of the community and keeping in line with the noted NFPA standard.

## **4.1 Administration Division**

It was recommended within the 2006 Fire Masterplan that the part-time administrative staff position be moved to a full-time position, which is now in place. However, with the growth of the Department, along with the ongoing demands for more accurate records management, fire prevention programs and internal training needs, KFES will need to monitor administrative hours to identify the future need for another administrative position, whether that be a part-time or full-time position.

### **4.1.1 Commission on Fire Accreditation International**

The CFAI Accreditation program has a specific section that evaluates the administration component of a fire department. In this section the following points are noted:

#### Category 9C: Administrative Support and Office Systems

Administrative support services and general office systems are in place with adequate staff to efficiently and effectively conduct and manage the agency's administrative functions, such as organizational planning and assessment, resource coordination, data analysis/research, records keeping, reporting, business communications, public interaction, and purchasing.

With all this in mind, it was noted during creating of the FMP that there is a total of 3 full-time administrative staff, which include the Fire Chief, Deputy Fire Chief and one full-time Administrative Assistant. There is also one part-time Administrative Assistant. Due to the size of the KFES, it was discovered that the administrative staff are challenged to meet the daily demands of the Department, along with ensuring that all Departmental data and documents are kept up-to-date. As such, it is recommended that for the immediate future, the part-time Administrative Assistant hours be increased to full-time status.

## 4.2 Training and Education Division

A fire service is only capable of providing effective levels of protection to its community if it is properly trained (and equipped) to deliver these services. Firefighters must be prepared to apply a diverse and demanding set of skills to meet the needs of a modern fire service. Whether assigned to Communication, Administration, Fire Prevention or Fire Suppression, firefighters must have the knowledge and skills necessary to provide reliable fire protection.

In KFES, the responsibility for department training falls under the scope of the Deputy Fire Chief who is responsible for identifying the training needs of the suppression staff based on industry requirements. The Deputy Fire Chief is responsible for planning and tracking the training of all Fire Department staff.

During EMT's review, it was noted that the Deputy Fire Chief is very active in relation to ensuring that all required training programs are being addressed to the best of the Department's ability. Having noted this, it was identified by many of the internal surveys that as the community grows and the call volumes increase, there is need for a full-time Training Officer.

It was noted (during the station visits) that the Department does lack a proper training facility to conduct regular hands-on programs such as live fire training and other specialized programs that require more training props outside of those available at the fire station. The Schomberg fire station does have an area at the back of the building where some auto extrication training and other training can take place, but this facility is limited in what training can be accomplished.

NFPA 1201 – Providing Fire and Emergency Services to the Public notes in relation to training and professional development that:

- **4.11.1 Purpose.** The Fire & Emergency Services Organization shall have training and education programs and policies to ensure that personnel are trained and that competency is maintained to effectively, efficiently, and safely execute all responsibilities.

Presently, the Training Officer is aware of the program needs and facility requirements and has indicated that he is tracking much of this. However, to verify in a more formal manner that the Training Division is meeting the related NFPA program recommendations, the Training Officer should identify;

- What training programs are required in relation to the services that KFES is providing
- The number of hours that are required to meet each of those training needs
- Resources required to accomplish this training

- Joint partnerships with bordering fire departments and private organizations that can be entered to achieve the training requirements identified by the Training Officer
- To present an annual program outline at the start of each year to the Fire Chief, with noted goals and expectation, which are measured and reported on in relation to completion success rate at the end of each year

#### **4.2.1 Commission on Fire Accreditation International**

The CFAI Accreditation program has a specific section that evaluates the training component of a fire department. In this section the following points are noted:

- Category VIII: Training and Competency
  - *Training and educational resource programs express the philosophy of the organization they serve and are central to its mission. Learning resources should include a library; other collections of materials that support teaching and learning; instructional methodologies and technologies; support services; distribution and maintenance systems for equipment and materials; instructional information systems, such as computers and software, telecommunications, other audio visual media, and facilities to utilize such equipment and services. If the agency does not have these resources available internally, external resources are identified and the agency has a plan in place to ensure compliance with training and education requirements.*

Based on EMT's review, it is recommended that KFES continue to search out opportunities to conduct joint training programs with other fire departments by securing/scheduling neighboring training facilities. It is also recommended that KFES explore the opportunity to build a training facility within the capture area, which would be a cost-effective measure for all the departments.

### **4.3 Fire Prevention and Public Education**

Fire prevention and public education are number one in relation to the three lines of defence as noted by the Office of the Fire Marshal and Emergency Management. As such, fire prevention and public education should be seen as a priority.

NFPA 1730 is the standard relating to Fire Prevention and Public Education. This document makes note of the expectations of the division and offers a formula for the head of fire prevention to utilize.

In relation to fire prevention programs, NFPA 1730 notes that this review should be conducted at a minimum of every five years or after significant change. This standard also establishes a process to identify and analyze community fire risks. This standard refers to the process as a Community Risk Assessment. There are seven components of a Community Risk Assessment outlined in NFPA 1730. As can be noted, these components are very similar in nature to that of the OFMEM Simplified Risk criteria:

1. Demographics
2. Geographic overview
3. Building stock
4. Fire experience
5. Responses
6. Hazards
7. Economic profile

#### **4.3.1 Determination of Current Staffing Requirements**

To determine the current staffing needs, NFPA 1730 outlines a five-step process within Annex “C” of the standards. This sample staffing exercise is not part of the requirements of the standard, but forms a guide for informational purposes. It is important to restate that it is Council that sets the level of service within the community. This level of service must be based off the local needs and circumstances.

*Note: Annex C is not a part of the requirements of this NFPA document, but is included for informational purposes only.*

The five-step process involves a review of the following items:

## **Step 1 – Scope of service, duties, and desired outputs**

Identify the services and duties that are performed within the scope of the organization. Outputs should be specific, measurable, reproducible, and time-limited. Among the elements can be the following:

- Administration
- Data collection, analysis
- Delivery
- Authority/responsibility
- Roles and responsibilities
- Local variables
- Budgetary considerations
- Impact of risk assessment

## **Step 2: Time Demand**

Using the worksheets in Table C.2.2(a) through Table C.2.2(d), quantify the time necessary to develop, deliver, and evaluate the various services and duties identified in Step 1, taking into account the following:

- Local nuances
- Resources that affect personnel needs

Plan Review - Refer to Plan Review Services Table A.7.9.2 of the standard to determine Time Demand.

## **Step 3: Required Personnel Hours**

Based on Step 2 and historical performance data, convert the demand for services to annual personnel hours required for each program [see Table C.2.3(a) through Table C.2.3(e)]. Add any necessary and identifiable time not already included in the total performance data, including the following:

- Development/preparation
- Service
- Evaluation
- Commute
- Prioritization

## **Step 4: Personnel Availability and Adjustment Factor**

Average personnel availability should be calculated, considering the following:

- Holiday
- Jury duty
- Military leave
- Annual leave/vacation
- Training
- Sick leave
- Fatigue/delays/other

*Example:* Average personnel availability is calculated for holiday, annual, and sick leave per personnel member (see Table C.2.4).

### **Step 5: Calculate Total Personnel Required**

Division of the unassigned personnel hours by the adjustment factor will determine the amount of personnel (persons/year) required. Any fractional values can be rounded up or down to the next integer value. Rounding up provides potential reserve capacity; rounding down means potential overtime or assignment of additional services conducted by personnel (personnel can include personnel from other agencies within the entity, community, private companies, or volunteer organizations).

Correct calculations based on the following:

- Budgetary validation
- Rounding up/down
- Determining reserve capacity
- Impact of non-personnel resources (materials, equipment, vehicles) on personnel

More information on this staffing equation can be found within the NFPA 1730 standard. The Fire Prevention Division should assess the previous five steps and evaluate their present level of activity and the future goals of the Divisions.

To assist in this process, the Fire Prevention Division should more closely track the actual time spent on each of the Fire Prevention Office activities (ranging from site plan reviews, routine inspections, licensing, complaints, and requests, to name a few). Further, reporting should include clearly identifying the number of public education events including the numbers of adults and children reached. By identifying the time spent on each project and collating this into baseline (approximate) times, then the Fire Prevention Division can now use those hours spent as a baseline figure in applying

future initiatives.

Further to what has already been noted by the NFPA, the CFAI outlines the following in relation to fire prevention and public education:

- A public education program is in place and directed toward reducing specific risks in a manner consistent with the agency's mission and as identified within the community risk assessment and standards of cover. The agency should conduct a thorough risk-analysis as part of activities in Category 2 to determine the need for specific public education programs.

Along with the information noted in the previous paragraphs, the utilization of existing resources is a cost-effective option for the promotion of fire prevention and public education programs. To accomplish this, some fire departments have trained most, if not all their fire suppression staff to be certified to conduct fire prevention/public education related inspections and programs. This not only brings more resources to the table, it also enhances the level of fire safety awareness by those trained staff.

KFES is recognized for striving to have all new firefighter recruits trained to NFPA 1035 Fire and Life Safety Educator I as part of their recruitment training.

As such, at this time, KFES should move towards the training and certification of its fire officers in the areas of fire prevention and public education trained and certified to at least:

- NFPA 1031 – Fire Inspector I, and
- NFPA 1035 – Fire and Life Safety Educator I

#### 4.4 Recruitment and Retention of Volunteer Firefighters

King Fire & Emergency Services, as with many other fire departments, is always challenged when it comes to retention of volunteer firefighters. In many cases, this is not a reflection of the fire department; it is simply a reflection of the need for many of these firefighters to move to other communities for work, educational, or even family needs. This, however, does put a strain on the department in the areas of recruitment, training, and staffing of the fire stations.

The Office of the Fire Marshal and Emergency Management has put out a document on recruitment and retention in an effort to offer some criteria and/or guidelines that departments can utilize. Refer to Appendix “D” for the document.

Some of these points relate to enhancing training and special projects for the staff to become more involved in, such as:

- Long service awards in the form of remuneration or a stipend
- Education assistance programs to support staff in their professional development
- Increased training opportunities

All of these concepts are great, but have limited effect if the community is not offering the desired employment, education, or housing needs of the firefighters.

### Recommendations

7. The future need for more administrative staff should be monitored through hours spent on administrative duties to identify when another part or full-time Administrative Assistant should be hired.
8. To verify the training programs are meeting related NFPA (and other) training program recommendations, the Deputy Fire Chief should identify;
  - What training programs are required in relation to the services that KFES is providing
  - The number of hours that are required to meet each of those training needs
  - Resources required to accomplish this training
  - Joint partnerships with bordering fire departments and private organizations that can be entered into to achieve the training requirements identified by the Training Officer, and
  - To present an annual program outline at the start of each year to the Fire Chief, with noted goals and expectation, which are measured and reported on in relation to completion success rate at the end of each year.

9. It is recommended that a full-time Training Officer position be created. This will allow for greater focus on training initiatives, and free up some of the Deputy Chief's time to work on other programs.
10. KFES should continue to search out opportunities to conduct joint training programs with other fire departments by securing/scheduling neighboring training facilities whenever possible.
11. KFES should explore the partnership opportunity to build a training facility within the capture area, which would be a cost-effective measure for all of the fire departments.
12. It is recommended that greater utilization of the in-house Fire Officer resources be incorporated into an annual fire prevention program on a more formal basis. To accomplish this, all officers should be trained and certified to at least:
  - NFPA 1031 – Fire Inspector I, and
  - NFPA 1035 – Fire and Life Safety Educator IBy having all Officers trained to the noted levels, KFES will have a greater number of resources to draw upon in its public fire safety education and inspection programs.
13. The Fire Chief should investigate opportunities to promote retention of the volunteer firefighters as noted in the OFMEM document. The Fire Chief should continually recruit for volunteer firefighters in areas that are presently understaffed or have issues with response numbers to calls.
14. The Department should complete certification for staff for each position (that requires or recommends certification) and ensure that certifications are maintained.

Associated Costs *(all costs are approximate)*

- Recommendation 7: the cost would be related to the increase in staffing hours for either a part-time or full-time position – estimated to be approximately \$25,000 - \$50,000
- Recommendation 9: to hire a full-time Training Officer, estimated to be approximately \$60,000 - \$90,000
- Recommendations 8, 10, 11, 12: regarding the training related recommendations, the costs are mostly related to staff hours unless outside facilities or trainers need to be accounted for
- Recommendation 13: no identified costs at this time in relation to the retention of volunteer firefighters. Costing would be based on recommendations by the Fire Chief where costs may be incurred.
- Recommendation 14: these costs would be part of the current training budget.

## Timelines

- All recommendations, excluding Recommendation 11, are short-term (1 – 3 years).
- Recommendation 11: Mid-term (4 – 6 years)

# SECTION 5 – Fire Suppression/Dispatching

## 5.1 Fire Suppression/Emergency Response

## 5.2 Dispatching Services

## Section 5: Fire Suppression/Dispatching

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### 5.1 Fire Suppression/Emergency Response

#### National Fire Protection Association (1720)

To provide the fire department clearer focus on what the ultimate goals for emergency response criteria are, the National Fire Protection Association (NFPA) suggests that response times should be used as a primary performance measure.

When considering the response times and related needs for a community, the fire response curve (FIGURE 4) presents the reader with a general understanding of how fire can grow within a furnished residential structure over a short period of time.

Depending on many other factors, the rate of growth can be affected in many different ways, which can increase the burn rate or suppress it through fire control measures within the structure.

When we look at the response time of a fire department, it is a function of various factors including, but not limited to:

- The distance between the fire department and response location
- The layout of the community
- Impediments such as weather, construction, traffic jams, lack of direct routes (rural roads)
- Notification time
- Assembly time of the firefighters, both at the fire station and at the scene of the incident
  - Assembly time includes dispatch time, turnout time to the fire station, and response to the scene. It should be noted that assembly time can vary greatly due to weather and road conditions, along with the time of day as many firefighters are at their full-time jobs and cannot respond to calls during work hours.

As noted in the following fire propagation diagram (or any other related diagram or fire spread data), the need for initiating fire suppression activities as soon as possible is critical.

It must also be noted that KFES responds to more than just fires; for example, motor vehicle collisions can create a medical or fire emergency that needs to be dealt as soon as possible. Hence the reason to be as efficient and effective as possible in responding to calls for assistance.

FIGURE 4: Fire Response/Propagation Curve

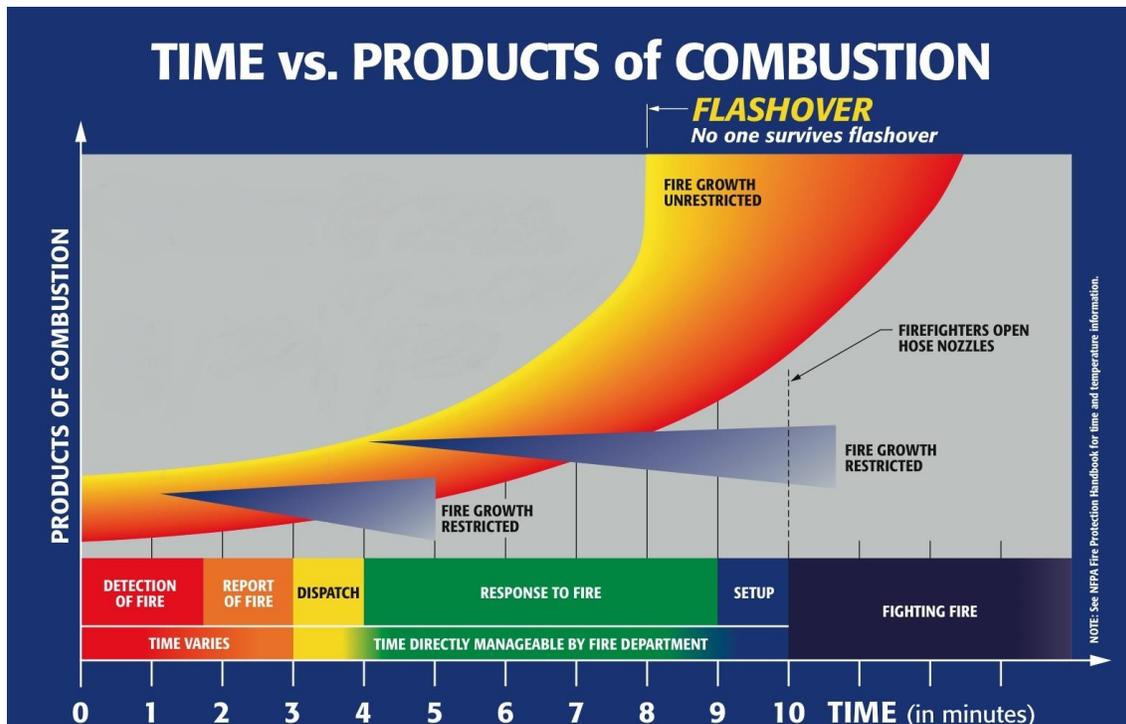


Figure 4 notes the following time variables:

- Detection of fire – this is when the occupant discovers that there is a fire. The fire may be in a very early stage or could have been burning for quite some time before being detected
- Report of fire – this is when someone has identified the fire and is calling 9-1-1 for help
- Dispatch – the time it takes the dispatcher to receive the information and dispatch the appropriate resources
- Response to the fire – response time is a combination of the following:
  - Turnout time – how long it takes the career firefighters to get to the fire truck and respond or how long it takes the volunteer firefighters to get to the fire station to respond on the fire truck
  - Drive time – the time from when the crew advises dispatch that they are responding, until the time that they report on scene
- Setup time – the time it takes for the fire crews to get ready to fight the fire, and
- Fighting the fire – actual time it takes to extinguish the fire on scene.

Fire department response time is a function of various factors including, but not limited to:

- The distance between the fire department and response location
- The layout of the community
- Impediments such as weather, construction, traffic, road networks
- Notification time

- Assembly time of the firefighters, both at the fire station and at the scene of the incident

Based on fire growth as demonstrated in figure 4 and the previously noted associated timelines, the overall goal of any fire department is to arrive at the scene of the fire and/or incident as quickly and as effectively as possible. In other words, if a fire truck arrives on scene in eight minutes or less, with a recommended crew of four or more firefighters then there is increased opportunity to contain the fire by reducing further spread of the fire to the rest of the structure.

Alternatively, if the first arriving fire attack team arrives with only three firefighters on board, then it is limited to what operations it can successfully attempt. Based on studies and evaluations conducted by the National Institute of Standards and Technology (NIST), the NFPA, and Ontario Firefighter Health and Safety Section 21 Guidelines, no interior attack should be made by the firefighters until more staff arrive on scene. The initial expectation is that a minimum of three firefighters and one officer arrive on scene to make up the initial response team. This team of 4 can effectively do an assessment of the scene, secure a water source (fire hydrant), ensure the fire truck is ready to receive the water and get the fire pump in gear, and finally to unload and advance the fire hose in preparation for entry into the structure. A team of four also allows for adherence to the recommended “two-in, two-out” rule, referring to having two firefighters in the structure with two outside ready to go in as back-up.

This information is a valid reason for the Fire Chief to ensure that each station has a compliment that allows for an initial full crew response to such incidents. To accomplish this, a response protocol is in effect that ensures whenever a station and its firefighters are dispatched to any type of call where back-up may be required, another station is automatically dispatched to the same incident.

### Response Data

The following charts identify a comparison of response types and the response breakdown among the three fire stations for 2015. *To view the 2013 and 2014 data, refer to Appendix “E”.*

As noted earlier in this document, there also needs to be a review of the future growth statistics and demographics of the community to understand where the potential future needs will be and where some efficiencies can be made.

The KFES response times should be monitored based on the OFMEM definition, which is from “dispatch time, to time of arrival at the incident”; in other words, from the time the call is received, to when the fire station or pager tones activate, to when the firefighters get on the fire trucks and arrive at the emergency scene location. Performance measurements that the fire department could benefit from include monitoring:

- *Response time is the total time from receipt of call (on 9-1-1) to the time the fire vehicle arrives at the incident location.*
- *Firefighter assembly time: time from page until the first vehicle is responding.*
- *Travel time: time tracked from when the fire vehicle has left the station until arrival at the incident location.*
- *Staffing time: time from the page until the appropriate number of firefighters are on scene (e.g. 10 firefighters).*

**Note:** *In monitoring time measurements the 90<sup>th</sup> percentile criterion is the recommended practice that is endorsed by the National Fire Protection Association (NFPA) and the Commission on Fire Accreditation International (CFAI). This data is seen as being more accurate since it is evaluating the times based on 90 percent of the calls, as opposed to averaging the times at the 50<sup>th</sup> percentile. For example:*

- *9 out of 10 times the fire department arrives on scene in 9 minutes or less, which means that only 10 percent of the time they are above that 9-minute mark,*
- *as opposed to 5 out of 10 times the fire department arrives on scene in 9 minutes or less, which means that 50 percent of the time they are above the 9-minute mark.*

The following set of charts (through the use of the supplied data) help to identify the types of calls that are creating the bulk of response demands and which station(s) are called upon the most for these responses.

**FIGURE(S) 5: Annual Comparison of Calls and Response Data between Fire Stations**

A more detailed overview by each year can be seen in Appendix “E”.

The following charts are a comparison of calls for service by fire stations 3-4, 3-6, and 3-8. The charts will note total calls and types per year by fire station.

	2013		2014		2015	
	Stn 3-4	% of Calls	Stn 3-4	% of Calls	Stn 3-4	% of Calls
Property Fires/Explosions	17	3.36%	16	3.76%	17	4.16%
Over pressure rupture/explosion (no fire)	0	0.00%	0	0.00%	0	0.00%
Pre-fire conditions/no fire	6	1.19%	19	4.46%	10	2.44%
Burning (controlled)	13	2.57%	17	3.99%	14	3.42%
CO Alarm Calls	16	3.16%	9	2.11%	16	3.91%
Fire Alarm Calls	74	14.62%	60	14.08%	68	16.63%
Public Hazard	41	8.10%	25	5.87%	28	6.85%
Rescue	118	23.32%	92	21.60%	98	23.96%
Medical/Resuscitator Call	160	32%	141	33.10%	102	24.94%
Other Response	61	12%	47	11.03%	56	13.69%
Total Calls	506	100.00%	426	100.00%	409	100.00%

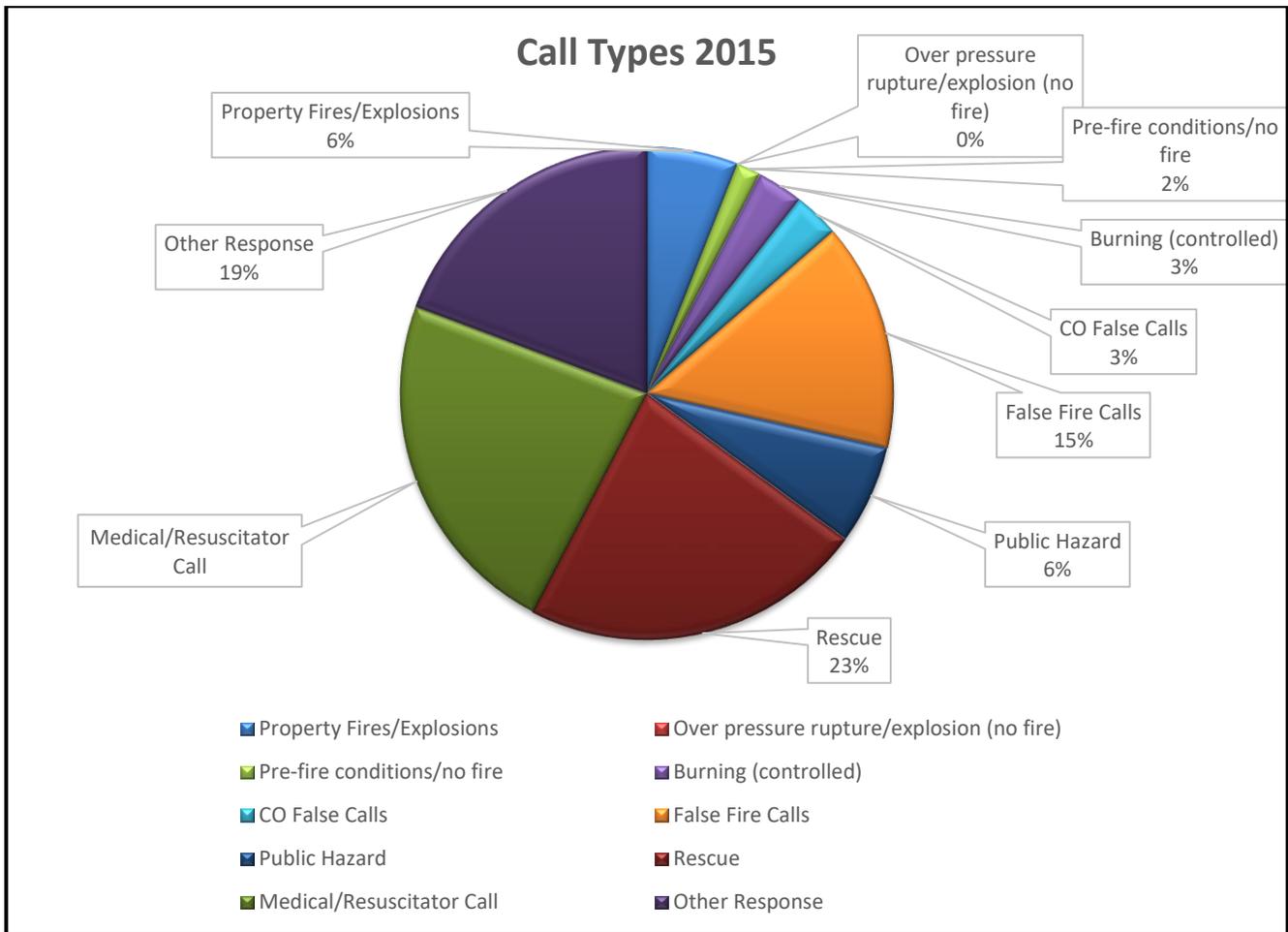
  

	2013		2014		2015	
	Stn 3-6	% of Calls	Stn 3-6	% of Calls	Stn 3-6	% of Calls
Property Fires/Explosions	34	8.29%	17	4.83%	25	6.65%
Over pressure rupture/explosion (no fire)	0	0.00%	0	0.00%	0	0.00%
Pre-fire conditions/no fire	14	3.41%	9	2.56%	3	0.80%
Burning (controlled)	22	5.37%	14	3.98%	13	3.46%
CO Alarm Calls	21	5.12%	7	1.99%	6	1.60%
Fire Alarm Calls	44	10.73%	42	11.93%	48	12.77%
Public Hazard	33	8.05%	9	2.56%	20	5.32%
Rescue	68	16.59%	79	22.44%	80	21.28%
Medical/Resuscitator Call	81	20%	39	11.08%	60	15.96%
Other Response	93	23%	136	38.64%	121	32.18%
Total Calls	410	100.00%	352	100.00%	376	100.00%

	2013		2014		2015	
	Stn 3-8	% of Calls	Stn 3-8	% of Calls	Stn 3-8	% of Calls
Property Fires/Explosions	0	0.00%	10	3.88%	18	8.33%
Over pressure rupture/explosion (no fire)	0	0.00%	0	0.00%	0	0.00%
Pre-fire conditions/no fire	0	0.00%	7	2.71%	3	1.39%
Burning (controlled)	0	0.00%	13	5.04%	3	1.39%
CO Alarm Calls	10	3.56%	12	4.65%	8	3.70%
Fire Alarm Calls	48	17.08%	37	14.34%	34	15.74%
Public Hazard	112	39.86%	19	7.36%	17	7.87%
Rescue	11	3.91%	50	19.38%	48	22.22%
Medical/Resuscitator Call	0	0%	60	23.26%	69	31.94%
Other Response	100	36%	50	19.38%	16	7.41%
Total Calls	281	100.00%	258	100.00%	216	100.00%

**Note: 2013 calls involved a major ice storm.**



Call type - 2015	
Property Fires/Explosions	60
Over pressure rupture/explosion (no fire)	0
Pre-fire conditions/no fire	16
Burning (controlled)	30
CO False Calls	30
False Fire Calls	150
Public Hazard	65
Rescue	226
Medical/Resuscitator Call	231
Other Response	193

As can be seen in the above chart, the top three types of calls that KFES responds to are:

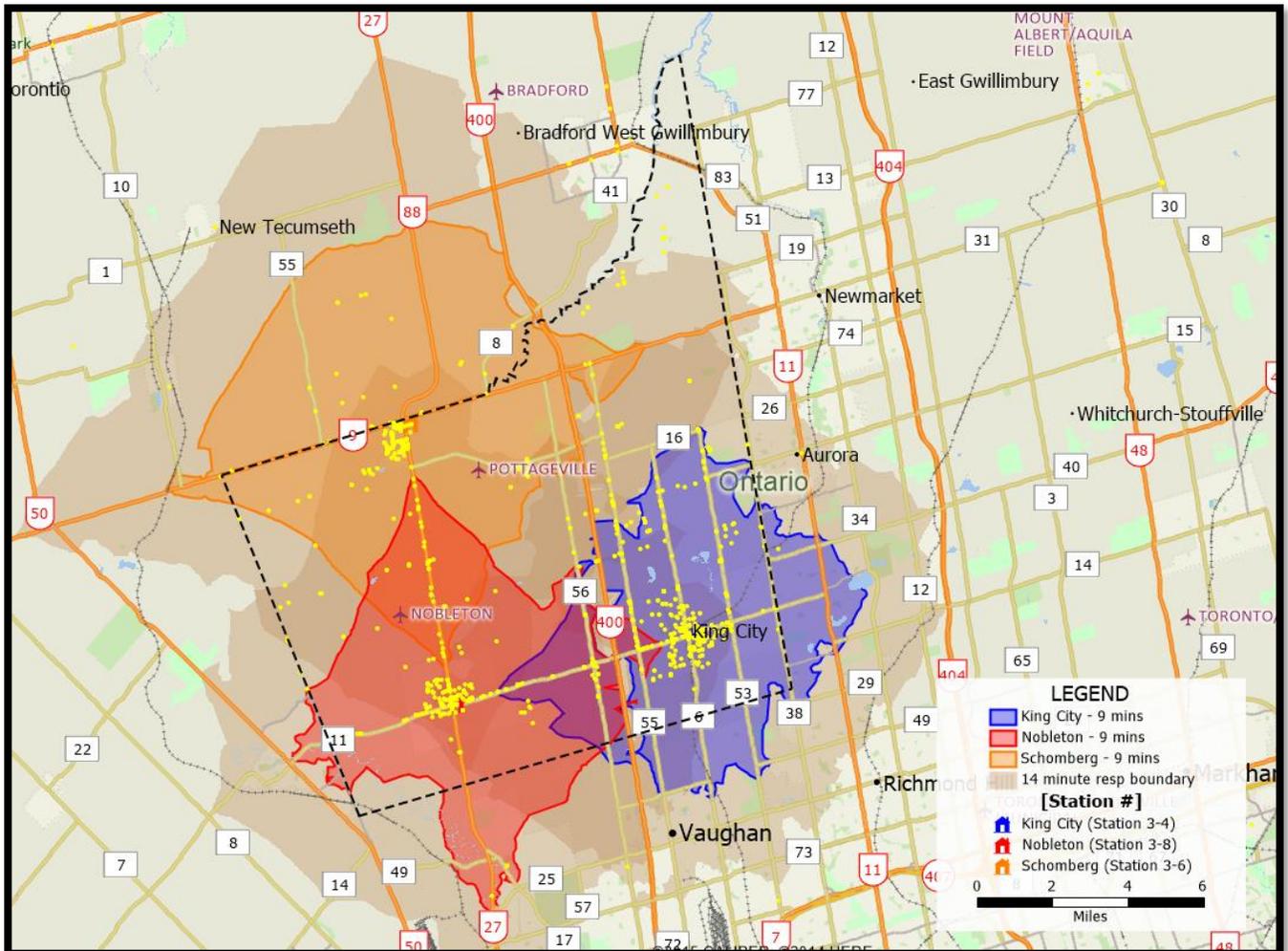
1. Medical/resuscitator, which accounts for 23% of the Department’s overall responses
2. Rescue related calls, which also accounts for 23% of the Department’s overall responses, and

3. Other Responses, which accounts for 19% of the Department's overall response. Other responses are those calls that do not fit into any of the above noted categories (i.e. a hazardous materials spill).

Based on this information, the percentage comparison gives the Fire Chief and his staff the ability to monitor where the bulk of their resources are being utilized. This also offers greater focus for the Training Division to ensure that the firefighters are receiving training related to the types of responses that will demand a higher skill set.

Another useful tool is to pinpoint where the bulk of the emergency responses are occurring. This ‘clustering’ of responses will help to identify where the majority of calls are occurring, which will indicate if the present fire station locations are properly positioned, or if there is a shift in call locations that would suggest the possible need for the relocation of a fire station.

**FIGURE 6 – Call Cluster Map**



## 5.2 Service Level Standards – Dispatching Services

King Fire & Emergency Services receives its dispatching services from the Vaughan Fire Department. Based on information received, along with a review of the dispatching data, it would appear that KFES is receiving adequate aid from Vaughan Fire.

It was noted that the dispatching agreement was renewed in 2014. Nevertheless, it is recommended that at the first available opportunity KFES incorporate the necessary performance measures as per the NFPA 1221, as noted below, to ensure a more consistent measure of the dispatching service (in relation to meeting all associated NFPA Standards):

### NFPA 1221, Section 7.4 Operating Procedures

**7.4.1\*** Ninety-five percent of alarms received on emergency lines shall be answered within 15 seconds, and 99 percent of alarms shall be answered within 40 seconds. *(For documentation requirements, see 12.5.2.)*

**7.4.1.1** Compliance with 7.4.1 shall be evaluated monthly using data from the previous month.

## Recommendations

15. It is recommended that the Fire Chief present a Standard of Cover for the approval of Council, which may reference the NFPA 1720 – 15 staff in 9-minute rule or a similar mid-line expectation of 10 staff in 10-minutes, and that performance measures are continuously examined.
16. The present dispatching agreement with the current dispatch provider should be updated to include NFPA related standards for KFES to incorporate the necessary performance measures as per the NFPA 1221 standard and those identified by the fire service for internal performance measurements.

### Associated Costs *(all costs are approximate)*

- Based on noted performance measure incorporation into the revised dispatching agreement, some cost may be associated with these changes, but no amount is offered at this time.

### Timeline

- Immediate for recommendations 15 and 16

## SECTION 6 – Facilities

### 6.1 Fire Station Review, Locations and Suitability for Future Growth

## Section 6: Facilities

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### 6.1 Fire Station Review, Locations, and Suitability for Future Growth

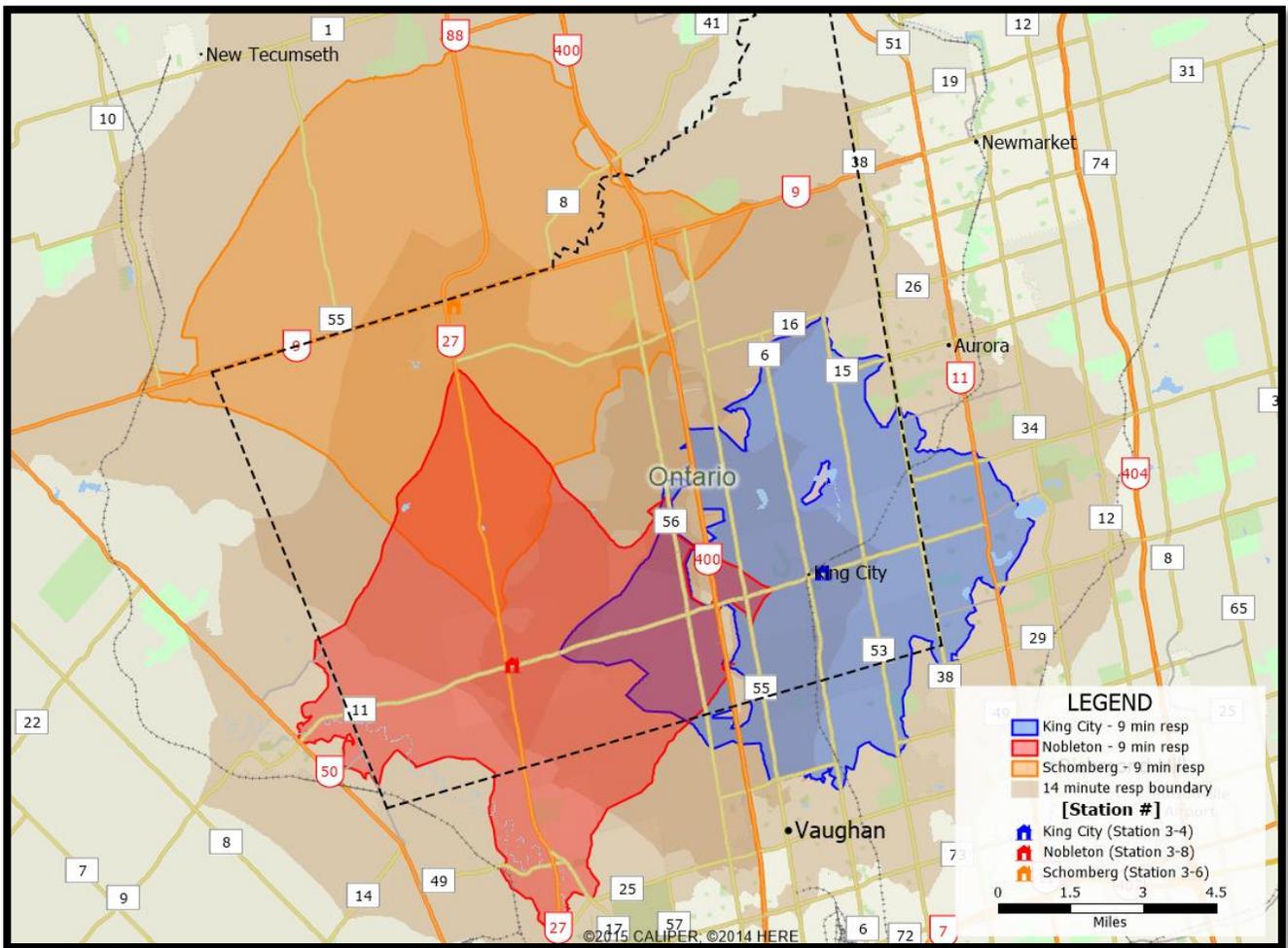
A review of the existing fire station facilities was separately conducted for the Fire Chief to utilize for the municipal Development Charges Review. This report is set in whole within Appendix “D” of the Fire Master Plan.

#### Fire Station Location and Other Considerations:

Fire stations should be positioned to offer the most efficient and effective response to the community they serve. Centering them within a determined response zone that is simply based on “timed” responses is not always the best option to implement. Fire station location depends on many factors such as key risks within the response zone, future growth of the community station staffing (full-time or volunteer firefighters). Another consideration is the geographical layout of the community that can include natural barriers or divides, such as water, that makes it necessary to have some stations located within close proximity of each other.

OFMEM Public Fire Safety Guideline – PFSG 04-87-13 on Fire Station Location notes fire stations should be situated to achieve the most effective and safe emergency responses. Distance and travel time may be a primary consideration. However, if a basic expectation of response time is set by the community’s decision makers, then a more realistic level of service and fire station location criteria can be identified.

**FIGURE 7: Present Fire Station Locations with NFPA Related Response Zones Noted**



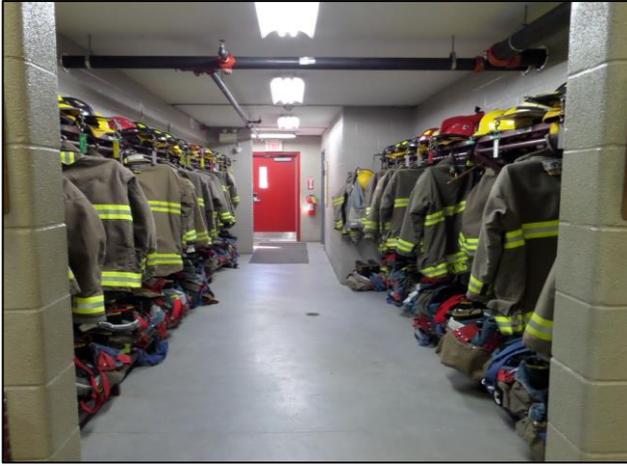
In the above noted map, the King fire station, Station 3-4, is illustrated in blue; the Schomberg fire station, Station 3-6, is illustrated in orange, and the Nobleton fire station, Station 3-8, is illustrated in red. The shaded areas around each fire station area denote a 9 and 14-minute response time zone. The 14 minute zones are depicted in light brown shading.

***Note:*** These response times depict the coverage area by travel time as if the crews were actually in the station and immediately ready to respond. However, there are many times when the volunteers are not in the fire station and may (or may not) be either engaged on another call or at a far end of their response zone. These factors can create a longer response time by the crews to the incident location.

The response mapping and related response data supplied in this document should not be taken in isolation. A full in-depth study along with an annual report submitted to Council by the Fire Chief with an update on the key performance measures and expectations is required.

## King Fire Station – 3-4





The King fire station also serves as the headquarters for Administration, Training and Fire Prevention. The station was opened in 2001 and was found to be in very good condition in relation to overall structural condition and in meeting the needs of the Department for staff and storage needs.

## Schomberg Fire Station – 3-6



The Schomberg fire station is located in an industrial park at the northwest end of Schomberg. The station was occupied in 1992, with its official opening in 1994.





The Schomberg station also serves as a training facility for the Fire Department. The training location is in the rear of the building.

## Nobleton Fire Station – 3-8



The Nobleton station is located in the south-western portion of the Township. This station was opened in 1996.





The second floor of the fire station offers a lot of room for the firefighters to conduct training and also offers room for growth needs, such as more office/work space.

Overall, the three fire stations were found to be in very good condition. The equipment and fire vehicles were also found to be in good condition.

## Recommendations

17. Even though the training set up found at the Schomberg fire station does meet some of the general day-to-day needs of the Department, it is recommended that consideration be given to the construction or rental of a larger facility for training on such topics as live fire, search and rescue, and other technical rescue programs.

- Opportunities for joint training with other local departments may also be used as a cost-effective measure

### Associated Costs *(all costs are approximate)*

- Recommendation 17: KFES should work with other bordering departments to look at joint opportunities for local training facility use and/or the development of a facility that would be within the recommended 8-kilometre distance from a fire department (as noted by Fire Underwriters Survey). Cost could vary greatly depending on the decision made by the Fire Chiefs within the Region.

### Timeline

- Short-term (1 – 3 years)

## SECTION 7 – Vehicles and Equipment

7.1 Fire Apparatus - New and Replacement Schedules

7.2 Maintenance

## Section 7: Vehicles and Equipment

### 7.1 Fire Apparatus - New and Replacement Schedules

When assessing a fire department’s ability to respond and meet the needs of the community, the Fire Underwriters Survey considers the age of a fire truck as one of its guidelines.

The KFES endeavours to ensure that the fire vehicles are on a 15 to 20-year replacement cycle which keeps them within the Fire Underwriters recommendations and more importantly creates a standard when it comes to forecasting fire truck replacements.

#### ***Fire Underwriters Survey – Vehicle Replacement Recommendations***

The Medium Sized Cities section (outlined in blue) is the recommendation for vehicle replacement for a township the size of King. This allows for up to a 20-year replacement cycle, in which the fire vehicle can be utilized as second-line response status. However, it is recommended that all first-line units should still be replaced by a new or younger unit when it reaches 15 years of age.

Apparatus Age	Major Cities <sup>3</sup>	Medium Sized Cities <sup>4</sup> or Communities Where Risk is Significant	Small Communities <sup>5</sup> and Rural Centres
0 – 15 Years	First-line	First-line	First-line
16 – 20 Years	Reserve	Second-line	First-line
20 – 25 Years <sup>1</sup>	No Credit in Grading	No Credit in Grading Or Reserve <sup>2</sup>	No Credit in Grading Or Reserve <sup>2</sup>
26 – 29 Years <sup>1</sup>	No Credit in Grading	No Credit in Grading Or Reserve <sup>2</sup>	No Credit in Grading Or Reserve <sup>2</sup>
30 Years <sup>1</sup>	No Credit in Grading	No Credit in Grading	No Credit in Grading

1. All listed fire apparatus 20 years of age and older are required to be service tested by a recognized testing agency on an annual basis to be eligible for grading recognition (NFPA 1071)
2. Exceptions to age status may be considered in small to medium sized communities and rural centre conditionally, when apparatus condition is acceptable and apparatus successfully passes required testing
3. Major cities are defined as an incorporated or unincorporated community that has:
  - a. a populated area (or multiple areas) with a density of at least 400 people per square kilometre; AND
  - b. a total population of 100,000 or greater.
4. Medium Communities are defined as an incorporated or unincorporated community that has:

- a. *a populated area (or multiple areas) with a density of at least 200 people per square kilometre; AND*
  - b. *a total population of 1,000 or greater.*
5. *Small Communities are defined as an incorporated or unincorporated community that has:*
- a. *no populated areas with densities that exceed 200 people per square kilometre; AND*
  - b. *does not have a total population in excess of 1,000.*

***FUS definition of first-line, second-line and Reserve is:***

- ***First-line is the first fire truck utilized for response at the fire station***
- ***Second-line is the next truck to be used if the first-line unit is tied up at a call, and***
- ***Reserve is the vehicle kept in the fleet to be put into service if a first-line or second-line vehicle is out of service.***

The Fire Underwriters Survey (FUS) is reviewed by insurance companies, and as long as the Fire Department adheres to the recommended replacement timelines through an approved capital replacement schedule, the department will retain its fire rating for vehicle replacement.

By ensuring that the vehicles are being replaced on a regular schedule, the Township is also demonstrating due diligence towards ensuring a dependable response fleet for the Fire Department and the community it serves. This in turn will keep the community's fire rating in good stance, which can also reflect on commercial and residential insurance rates.

A standard that supports a regular replacement schedule of fire vehicles is the NFPA 1911, Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus. This standard includes guidance on retirement criteria for fire apparatus. This standard recommends that all front-run vehicles are replaced on a 15 to 20-year cycle, depending on the community size.

Although there is no national standard that legally mandates the replacement of emergency vehicles, it must be kept in mind that it is critical to replace these and other apparatus before they become unreliable. Over the long term, delaying the replacement is inadvisable as it will add to the overall maintenance costs of the apparatus and can have an effect on insurance costs based on the fire department's FUS rating.

For the most part, the KFES is well-equipped with pumper trucks, ladder, rescues, and tankers. There also appears to be a sufficient level of support vehicles and equipment to meet the general needs of the Department.

Replacement schedules are identified in the capital forecast for the fire trucks and large cost items.

In relation to vehicle replacement and refurbish, the industry standard for the design and replacement of vehicles is the National Fire Protection Associations Standard 1901. It is recommended that this and other related NFPA standards relating to vehicle design, replacement, and refurbishing, be utilized. During the station and equipment review, it was noted that the vehicles and small engines (pumps, generators, etc.) are on a standard replacement cycle and that maintenance and repair work is addressed as quickly as possible by the Township or other recommended facilities.

## 7.2 Maintenance

KFES does not have its own in-house mechanical division to complete all related repairs and testing to its vehicles and equipment. This is handled in the following manner:

- Firefighting staff are expected to complete all weekly and monthly (general) inspections and testing of vehicles and equipment.
- If any mechanical repairs are required for a vehicle, it is contracted out to a third-party facility/mechanic that has an Emergency Vehicle Technician.

## Recommendations

18. The Township should endeavour to maintain a schedule that complies with the Fire Underwriters Survey (FUS) recommendations on the replacement of vehicles from a first-line to a second-line unit.
  - The industry standard for the design and replacement of vehicles is the National Fire Protection Associations Standard 1901. It is recommended that this and other related NFPA standards relating to vehicle design, replacement, and refurbishing, be utilized.

### Associated Costs (all costs are approximate)

- Continued financial forecasting of equipment replacement

### Timeline

- Long-term (7 – 10 years) – ongoing for fire vehicle replacement and future forecasting (see NFPA 1901)

# SECTION 8 – Emergency Management

## 8.1 Emergency Management Program

## Section 8: Emergency Management

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### 8.1 Emergency Management Program

As mandated by the Emergency Management and Civil Protection Act (EMCPA), all municipalities in Ontario must have an emergency response plan and an emergency planning program. For every community in Ontario, there must also be an identified Community Emergency Management Coordinator (CEMC); currently this duty falls to the Fire Chief of the Township.

Based on interviews with the Fire Chief, it would appear that the Township's Emergency Response Plan complies with all required legislation and that annual training exercises are conducted to ensure that the Emergency Plan is reviewed and practiced on a regular basis.

#### Current Condition

The primary and secondary Emergency Operations Centres (EOC) are functional spaces that can be set up, as needed, by the EOC group.

The primary EOC has emergency back-up power, which is a necessity for this type of facilities. The Trisan Centre serves as the alternate EOC, but does not have a backup generator.

The Township is well set-up in relation to its EOC, and as a result of the review by EMT, no recommendations are being put forth for this section.

#### **Recommendations**

19. Install a backup power generator for the Alternate EOC.

#### Associated Costs (all costs are approximate)

- The estimated cost for backup power would be \$200,000.

#### Timeline

- Immediate (2017)

## SECTION 9 – Mutual and Automatic Aid

### 9.1 Mutual Aid, Automatic Aid & Fire Protection Agreements

## Section 9: Mutual and Automatic Aid

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### 9.1 Mutual Aid, Automatic Aid & Fire Protection Agreements

#### Mutual and Automatic Aid

The King Fire & Emergency Services is also member of the York Region Mutual Aid Agreement Plan and Program, which includes Town of East Gwillimbury, Township of King, Central York (Aurora/New Market), Town of Whitchurch-Stouffville, City of Vaughan, Town of Richmond Hill, and the City of Markham.

At this time, it would appear that these agreements, which were last updated in 2016, are working well. A full review of the fire protection agreements with New Tecumseth should be completed in the short-term to identify any required revisions.

#### Recommendations

20. It is recommended that a full review of fire protection agreements be completed to identify any required revisions.

#### Associated Costs *(all costs are approximate)*

- No identified costs to this recommendation, but costs may be incurred depending on the recommendations made by the Fire Chief.

#### Timeline

- Short-term (1 – 3 years) and on an annual review basis

# SECTION 10 – Finance, Budgeting, and Capital Investment Plan

## Section 10: Finance, Budgeting, and Capital Investment Plan

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The King Fire & Emergency Services has an annual operating budget that appears to offer the Fire Chief the funds required to manage and support the Department's staff, facilities and equipment in an effective manner.

KFES's capital forecast fluctuates on an annual basis based on the equipment that has been identified for replacement (each year).

During the review of the budget process for both operating and capital, it was found that KFES is well set up in both areas. This would also indicate a adequate level of support by Council and the Township's senior management team in relation to assisting the Fire Department in meeting its service goals.

When reviewing this section, one of the key areas that EMT looks for are whether or not actual operating expenditures are identified and tracked by the Department. During the review of the operating budget, it was noted that all key accounts and operating sections are identified, such as:

### **Operating Budget Line Items:**

- Staffing related costs
- Training
- Fire Prevention and related Fire Safety Education
- Vehicle and equipment maintenance, and
- Station maintenance

### **Capital Budget Line Items:**

- Vehicle replacement, and
- Equipment replacement (for large cost items that are not covered in the operating budget)

### Operating Budget

A review of the operating budget for King Fire & Emergency Services shows that all general expenses and related revenues are accounted for.

### Capital Forecasts

It would appear that there is a 15 to 20-year replacement cycle for the fire trucks that is based on the FUS recommendations for frontline vehicles. This replacement cycle mirrors the industry standards of 15 and 20 years, depending on the vehicle's function. As such, the Township of King and its Fire

Department should be commended for its efforts in endeavouring to adhere to this industry standard.

Along with the replacement schedule, FUS recommends that there should be at least one spare fire truck for every eight related units, for example:

- one pumper truck for every eight,
- one spare aerial truck for every eight,
- one spare tanker truck for every eight, etc.

This would mean that if you have even eight or less of a certain type of vehicle, you should have a replacement unit in reserve, should one of those units go out of service.

Based on the review by EMT, it would appear that the Fire Chief and his staff are working hard to ensure that equipment is being replaced and/or upgraded on a regular cycle and also on an as needed basis. Some of the Department's fleet is at or near the recommended replacement age, but the Fire Chief is well aware of this and is working with Council and Township staff secure replacements.

## Recommendations

No recommendations are being put forth for this section

### Associated Costs *(all costs are approximate)*

- N/A

### Timeline

- N/A

# SECTION 11 – Review of Previous FMP

## 11.1 Building from the existing Fire Master Plan

## Section 11: Review of Previous FMP

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### 11.1 Building from the Existing Fire Master Plan of 2006

Listed below are the recommendations submitted in the 2006 Fire Master Plan. Most of the recommendations have been, or are in the process of being actioned by the Fire Chief, as appropriate.

Following is the excerpt from the 2006 King Fire & Emergency Services FMP document. This information can be found on pages IV to X of the original document.

The 2006 FMP Report includes the detailed analysis, results, findings, conclusions and recommendations summarized above. The report provides a detailed assessment of each division of the King Fire & Emergency Services.

KFES are to be commended on the completion of 14 of the 16 recommendations made in the 2006 FMP. One recommendation is no longer applicable, while the other recommendation still requires attention and is being addressed within the 2016 FMP.

### 11.2 Conclusions and Recommendations

The conclusions and recommendations contained within the 2006 report are summarized below, by topic, along with the present status of each recommendation.

#### Fire Department Organization

1. Change Assistant to the Fire Chief position from part-time to full-time
  - completed
2. Add an Administrative Support Position
  - Still required
3. Promote cross-station initiatives
  - Initiatives have been implemented

#### Response Tracking

4. Station call volumes and volunteer response should be monitored according to the OFM's Rural Response Guidelines
  - The OFM Guideline has been repealed and the NFPA 1720 Standard has taken its place as the reference
5. Department Emergency Response Statistics should be more readily available

- The Department has implemented the use of the Firehouse Program as its records management system

### Fire Prevention and Education

6. Add a Public Education staff person (e.g. Officer)
  - Completed in 2012
7. Add a Fire Prevention staff person
  - Completed, have two in office now,
  - but as the community grows a third Fire Prevention Office will be required.

### Training

8. Migrate to a Full-Time Training Director
  - In 2008, a full-time Deputy Fire Chief was hired, combining the operational roles of the Deputy Fire Chief with that of Training Director.
  - As the community and Fire Department continue to grow, the need for a dedicated Training Officer should be monitored closely.
9. Review the adequacy of the Training Curriculum Cycle
  - Training programs have now migrated to the NFPA standards
10. Explore need for Trench Rescue and Water Rescue Training
  - Evaluation completed – awareness level for trench rescue and “go level” for water rescue
11. Continue to explore potential of a regional training facility
  - This regional project is no longer applicable.
  - At the time of the 2006 FMP, a joint project between the York Regional Police, Seneca College, and all of the regional fire services was being investigated to establish a regional training facility on the Seneca College King Campus. Since that time, the YRPD have built their own training facility, Seneca College have withdrawn from the project proposal, and fire services are looking at more localized training facilities.
  - The 2016 FMP document will address current training facility needs.

### Fire Suppression

12. Review and update the apparatus and equipment replacement plan on a periodic basis
  - The Fire Chief effectively addresses this initiative annually to ensure that the firefighters are supplied with the most up-to-date equipment within the available funding/budget
13. Explore options for additional office space

- 600 sq. ft. was added to the Schomberg fire station to allow for future office space needs
14. Develop mapping of available water sources
    - Program completed
    - Dry hydrants have been added
  15. Improve response tracking and reporting
    - This has been completed with the implementation of the FIREHOUSE program

#### Development Projections

16. Continue to monitor emergency response
  - This is an ongoing initiative by the Fire Chief and staff

KFES are to be commended on the completion of 14 of the 16 recommendations made in the 2006 FMP. One recommendation is no longer applicable, while the other recommendation still requires attention and is being addressed within the 2016 FMP.

### **Recommendations**

21. Continue with the follow-up on the single outstanding recommendation noted in the 2006 Fire Masterplan – add a full-time Administrative Support position.

#### Associated Costs *(all costs are approximate)*

- \$40,000- 50,000, inclusive of benefits

#### Timeline

- Immediate (2017)

## SECTION 12 – Fire Underwriters Survey

## Section 12: Fire Underwriters Survey

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During this Fire Masterplan project, EMT worked with a representative from the Fire Underwriters group. This team effort was to complete a review of the Department from two different perspectives.

### Overview

The Fire Underwriters Survey is a national organization that provides data on public fire protection for fire insurance statistical work and underwriting purposes of subscribing insurance companies. Subscribers of Fire Underwriters Survey represent approximately 85 percent of the private sector property and casualty insurers in Canada.

Fire Underwriters Survey Certified Fire Protection Specialists conduct detailed field surveys of the fire risks and fire defences maintained in built up communities (including incorporated and unincorporated communities of all types) across Canada. The results of these surveys are used to establish a Public Fire Protection Classification (PFPC) for each community. While the Fire Underwriters Survey is not involved in rate making matters, the information provided through the Fire Insurance Grading Index is a key factor used in the development of Commercial Lines property insurance rates. The PFPC is also used by underwriters to determine the amount of risk they are willing to assume in a given community or section of a community.

The overall intent of the PFPC system is to provide a standardized measure of the ability of the protective facilities of a community to prevent and control the major fires that may be expected to occur by evaluating, in detail, the adequacy, reliability, strength and efficiency of the protective facilities and comparing the level of protection against the level of fire risk in the built environment.

The Fire Underwriters Survey also uses PFPC information to develop the Dwelling Protection Grade (DPG), which is utilized by Personal Lines insurers in determining property insurance rates for detached dwellings (with not more than two dwelling units). The Dwelling Protection Grade is a measure of the ability of the protective facilities of a community to prevent and control the structure fires in detached dwellings by evaluating the adequacy, reliability, strength and efficiency of the protective facilities and comparing the level of protection against the level of fire risk associated with a typical dwelling.

The Fire insurance grading system used does not consider past fire loss records but, rather, fire potential based on the physical structure and makeup of the built environment.

When a community improves its PFPC or DPG, insurance rates may be reduced, and underwriting capacities may increase. Every insurance company has its own formula for calculating their

underwriting capacities and insurance rates, however, the PFPC and DPG classifications are extremely useful to insurers in determining the level of insurable risk present within a community.

### **2016 Fire Underwriters Survey Report**

The original document contains 178 pages of information and has not been attached to this report in its entirety – only the 15 noted recommendations have been included.

***NOTE:*** *The Fire Underwriters Survey identifies where the fire department presently is, and identifies what the municipality would be required to do to obtain “FULL” marks for the classification status. Their recommendations do not imply that the fire department is not meeting the local needs, only that to obtain a perfect score or rating, they would be required to meet all their recommendations.*

## Overview of the 2016 FUS Recommendations

Township of King

Fire Underwriters Survey

### 2.1. Summary of Recommendations

Recommendation	Fire Insurance Grading Weighting	Grading Items
Recommendation 8.2-1 Provide Additional Engine Apparatus	Medium	PFPC - FD-1/FD-4
Recommendation 8.2-2 Provide a Reserve Engine Apparatus	Low	PFPC - FD-1/FD-4
Recommendation 8.2-3 Provide a Reserve Ladder Apparatus	Low	PFPC - FD-2/FD-4
Recommendation 8.2-4 Improve First Due Engine Coverage	High	PFPC - FD-3/FD-1/FD-4
Recommendation 8.2-5 Apparatus Replacement Program	Medium	PFPC - FD-1/FD-4/FD-5
Recommendation 8.2-6 Train and Qualify Additional Firefighters to Officer Positions	Low	PFPC - FD-6/FD-8
Recommendation 8.2-7 Improve Total Available Fire Force	High	PFPC - FD-7
Recommendation 8.2-8 Improve In Service Apparatus Company Staffing	Medium	PFPC - FD-8
Recommendation 8.2-9 Continue to Improve Facilities	Medium	PFPC - FD-13
Recommendation 8.2-10 Continual Development of Pre-Incident Plan Program	Medium	PFPC - FD-13
Recommendation 10.1-1 Qualifications for Fire Prevention Education Providers	Medium	PFPC - FSC-1/FSC-2
Recommendation 10.1-2 Improve Qualifications for Fire Prevention Inspectors	Medium	PFPC - FSC-1/FSC-2
Recommendation 10.1-3 Review NFPA 1730 to aid in the development of the Town's Fire Prevention Program	Low	PFPC - FSC-1/FSC-2
Recommendation 10.1-4 Improve Fire Prevention Inspection Program	High	PFPC - FSC-1/FSC-2
Recommendation 12.2-1 Develop Formal Water Supply Plan for Non-Hydrant Protected Areas; Consider Dry Hydrants	Medium	DPG

## Summary of Recommendations

### Fire Underwriters Survey

#### Recommendation 8.2-1 Provide Additional Engine Apparatus

The engine service requirements for fire insurance grading have not been fully met with King Fire & Emergency Service's existing fire apparatus fleet. King Fire & Emergency Services may wish to improve its firefighting capabilities by acquiring additional apparatus. Fire apparatus should be ULC listed, be of an appropriate age, have an adequate pumping capacity, and be proven reliable.

King Fire & Emergency Services received credit for 6.83 Engine Companies. Credit up to the maximum amount of 7.17 can still be awarded for this grading item.

Acquiring additional fire apparatus is a serious matter that requires careful consideration. There are many factors to consider and fire insurance grading is only one such factor.

#### Recommendation 8.2-2 Provide a Reserve Engine Apparatus

To ensure an adequate response when a fire department has an engine apparatus out for repair, a fire department should have a reserve engine apparatus equipped, maintained and ready for replacement purposes if its primary pumper is out of service. At a minimum, one engine apparatus should be kept in reserve for each eight engine apparatus.

For King Fire & Emergency Services to receive maximum credit in this portion of the engine service grading item, a reserve engine would be required.

#### Recommendation 8.2-3 Provide Additional Ladder Apparatus

The ladder service requirements for fire insurance grading have not been fully met with King Fire & Emergency Service's existing fire apparatus fleet. King Fire & Emergency Services may wish to improve its firefighting capabilities by acquiring additional apparatus. Fire apparatus should be ULC listed, be of an appropriate age, have an adequate pumping capacity, and be proven reliable.

King Fire & Emergency Services received credit for one ladder company. Credit up to the maximum amount of two can still be awarded for this grading item.

#### Recommendation 8.2-4 Provide a Reserve Ladder Apparatus

To ensure an adequate response when a fire department has a ladder apparatus out for repair, a fire department should have a reserve ladder apparatus equipped, maintained, and ready for replacement purposes. At a minimum, one ladder apparatus should be kept in reserve for up to eight ladder apparatus. A fire department should have a plan to ensure the availability of a reserve ladder apparatus, even if they only have a single ladder truck.

For the King Fire & Emergency Services to receive maximum credit in this portion of the ladder service grading item, a reserve ladder would be required.

#### Recommendation 8.2-5 Improve First Due Engine and Ladder Coverage

First due coverage for engines and ladder could be improved to receive additional credit for fire insurance grading purposes. First due engine and ladder response credit received less than 60 percent credit and it was determined that additional engine and ladder companies for distribution would be required to receive maximum credit for fire insurance grading purposes.

Credit up to the maximum can be received if additional fire stations with engine and ladder companies are developed within the municipality to improve first due coverage.

#### Recommendation 8.2-6 Train and Qualify Additional Firefighters to Officer Positions

King Fire & Emergency Services received a limited amount of credit for career officers when measured against the 68 career officers needed based on a shift factor of 4. King Fire & Emergency Services can receive additional credit up to the maximum if it increases the total number of Company Officers on the Fire Department. Credit can be received through a combination of career and auxiliary officers.

A fire department should have sufficient Company Officers available and assigned to provide one on duty response with each required engine or ladder company. The Company Officers should be adequately trained, preferably in accordance with NFPA 1021: Standard for Fire Officer Professional Qualifications, 2009 Edition or recent edition to receive full credit for fire insurance grading purposes.

#### Recommendation 8.2-7 Improve Total Available Fire Force

King Fire & Emergency Services is credited with 21.70 firefighter equivalent units in its available fire force out of the maximum it can receive of 102. King Fire & Emergency Services can receive additional credit up to the maximum if it improves its available fire force. Credit can be obtained through career and auxiliary members.

Note that the available fire forces can be improved through additional auxiliaries up to 50 of the required fire force. In the case of King Fire & Emergency Services, the required force is 66 firefighter equivalent units (FFEU), so the maximum available fire force that can be provided through auxiliary firefighters (volunteers) and other FFEU sources is 51.

Providing additional staffing is a serious matter that requires careful consideration. There are many factors to consider and the fire insurance grading is only one such factor.

#### Recommendation 8.2-8 Improve in Service Apparatus Company Staffing

King Fire & Emergency Services can receive additional credit up to the maximum in this grading item if it improves its staffing of in-service fire apparatus. It should be noted that this grading item is connected with other fire insurance grading items. They include engine service, ladder service and total available fire force. Changes in those grading items may affect the amount of credit received in this grading item.

### Recommendation 8.2-9 Continue to Improve Training Facilities

King Fire & Emergency Services does not have a dedicated training ground or facility. Additional training facilities should be acquired. The following props and facilities are recommended to be developed within the Township of King:

- Wet drill facilities
- Smoke facilities
- Training tower
- Additional training prop for scenario based training
  - Fuel spill fire
  - Vehicle fire
  - LP tank fire
  - Gas main break fire
  - Industrial fire
  - Live fire facilities

Training facilities should be developed by the Fire Department in relation to the level of fire risk within the community so that realistic firefighting training can be conducted.

It is recommended that facilities for drill and training be readily available for purposes that include necessary buildings or structures for ladder work, smoke and breathing apparatus training, use of pumper and hose lines, lecture space, etc. If the fire department were to develop its own training facilities, it is recommended NFPA 1402 Guide to Building Fire Service Centres recent edition be used for development.

Ideally for fire insurance grading purposes, training props and facilities should be located within the municipality of the fire department. Credit can be received for the use of training facilities and props in neighbouring communities if the Fire Department has access to them. To receive full or partial credit, training facilities and props should be within 8 km of the municipal boundary. If training facilities and props are beyond 8 km, credit can still be achieved, but sufficient fire department coverage must be maintained within the municipality when fire department resources are outside of the community for training purposes.

### Recommendation 8.2-10 Continual Development of Pre-Incident Plan Program

Additional credit within this grading item can be achieved as a greater number of high occupancy and high fire risk buildings are pre-planned. Regular updating and use in training of pre-incident plans should occur to ensure credit for fire insurance grading is achieved in the future. This may involve classroom discussions or visiting the site and performing firefighting or rescue scenarios. Increasing the inventory of pre-incident plans will be paramount in receiving additional credit points.

Credit awarded in this area of the fire insurance grading may help to improve the overall fire insurance grade of the community.

### Recommendation 10.1-1 Qualifications for Fire Prevention Education Providers

To ensure that individuals have the necessary skills and knowledge to provide fire prevention education programs and services, they should be certified as a Public Fire and Life Safety Educator in accordance with NFPA 1035: Standard for Professional Qualifications for Fire and Life Safety Educator, Public Information Officer, and Juvenile Firesetter Intervention.

Additional credit up to the maximum can be achieved if/when members of the Fire Department that are providing fire prevention education are certified to Level I and Level 2 as a Public Fire and Life Safety Educator.

At minimum, the most senior member of the Fire Department providing fire prevention education should be certified to Public Fire and Life Safety Educator Level 2 and additional educators should be certified at minimum to Level I.

### Recommendation 10.1-2 Improve Qualifications for Fire Prevention Inspectors

To ensure that individuals have the necessary skills and knowledge to provide fire prevention inspections, they should be certified as a Public Fire and Life Safety Educator in accordance with NFPA 1031: Standard for Professional Qualifications for Fire Inspector and Plan Examiner.

At minimum, individuals conducting fire prevention inspections should be certified to NFPA 1031: Level I and strive to achieve Level 2 for conducting inspections in occupancies with a higher risk factor.

### Recommendation 10.1-3 Review NFPA 1730 to aid in the development of the Town's Fire Prevention Program

As NFPA has recently released *NFPA 1730: Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations*, the King Fire & Emergency Services is encouraged to review the document to see how they may incorporate aspects of the Standard into development programs in the future as the fire prevention division of the Department grows.

### Recommendation 10.1-4 Improve Fire Prevention Inspection Program

Increasing the frequency of inspections while continuing to meet legislative requirements of the *Fire Protection and Prevention Act 1997*, The Ontario Fire Code and OFMEM Public Safety Guidelines should be a priority of the Fire Prevention/Public Education division of the King Fire & Emergency Services. To improve the frequency of inspections, additional resources in the form of Fire Prevention Inspectors will likely be necessary.

The amount of inspections should be improved if the Fire Department desires to receive additional credit within this grading item for fire insurance grading purposes. Incorporating a routine inspection program will be necessary to achieve better scoring under this item. The Department should develop an inspection frequency that meets the needs of the community while maximizing fire insurance credit. The development of a plan that includes at a minimum annual inspection frequency of all

properties should be investigated as it pertains to the needed resources and functions that will support the objective of annual inspections.

Two documents are recommended to be used as guides for developing an inspection program that goes beyond providing inspections on complaint and requests only.

- NFPA 1730: Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations, Chapter 6 Fire Prevention Inspection and Code Enforcement
- Fire Underwriters Survey - Technical Bulletin - Recommended Frequency of Fire Prevention Inspections. Appendix G

Recommendation 12.2-1 Develop Formal Water Supply Plan for Non-Hydrant Protected Areas; Consider Dry Hydrants

King Fire & Emergency Services provides structural fire protection to areas in the municipality that are without hydranted water supplies. In these areas, the Fire Department responds utilizing the onboard water storage of the fire apparatus to provide Superior Tanker Shuttle Service. Plans should be developed to improve continuous flow rates from the Fire Department in areas that do not have hydrants.

Consideration should be given to installing dry hydrants or water tanks connected to a dry hydrant in strategic locations to minimize travel times during shuttling operations. Dry hydrants should be installed and designed in accordance with NFPA 1142, *Standard on Water Supplies for Suburban and Rural Fire Fighting*, current Edition.

Any improvements made to water supplies should be reviewed/approved by Fire Underwriters Survey if they are intended to be credited for fire insurance grading purposes.

## SECTION 13 – Collaboration Initiatives Project

- 13.1 Key Performance Indicators
- 13.2 Station Location Considerations
- 13.3 Training Facilities
- 13.4 Canadian and International Fire Services Examples

## **Section 13: Collaboration Initiatives Project**

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The Collaboration Initiative project is ongoing at this time. Once all four Fire Masterplans have been completed, the Collaboration Initiative report will be completed Spring 2017.

The Collaboration Initiative report will address;

22. Key Performance Indicators for the fire service,
23. Station Location Considerations,
24. Training Facilities, which will evaluate present facility options along with recommended future options, and,
25. Canadian and International Fire Services Examples will be researched to identify examples from similar sized communities that may be implemented by the participating fire departments.

# SECTION 14 – Summary of Recommendations

## Final Summary of Recommendations, Solutions and Estimated Costs

## Section 14: Summary of Recommendations

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### Conclusion

During the review conducted by Emergency Management and Training Inc., it was demonstrated that the full-time staff and the volunteer firefighters are truly dedicated to the community they serve. Council, CAO and Fire Chief are sincerely committed to ensuring the safety of the community and the firefighters. Based on the present staffing, equipment and fire stations locations, King Fire & Emergency Services is endeavoring to offer the most efficient and effective service possible.

All costs and associated timelines are approximate estimates that can be implemented through prioritization between the Fire Chief, CAO and Council.

Most Fire Masterplans are 10-year documents with a review to be conducted at the five-year point. Due to some of the specific recommendations made in this document, it is advisable that the Fire Chief view this as a “living document” and conduct more frequent reviews of the recommendations, and bring forward updates to Council, as required.

## Recommendations and Estimated Costs

The following chart provides further overview of the recommendations found throughout this report along with any estimated costs that can be incurred in the associated areas.

This Fire Masterplan document is a culmination of three individual reports:

- A review of the 2006 FMP, of which, 14 of recommendations have been completed, one is no longer applicable, and one recommendation remains outstanding.
- The Fire Underwriters review, which contains 15 recommendations and
- The overarching 2016 FMP document, which contains a total of 21 recommendations

Between the three, there are synergies in the recommendations to keep moving the fire service forward over the next 10 years.

<b>FMP Recommendations for King Fire &amp; Emergency Services</b>			
<b>Rec #</b>	<b>Recommendation and Solution</b>	<b>Estimated Costs</b>	<b>Suggested Timeline</b>
1	<p>It is recommended that a full review of the 2010 Establishing and Regulating By-law document be completed to include the following items:</p> <ul style="list-style-type: none"> <li>• Incorporate, where appropriate, any references to NFPA standards that the Fire Department deems necessary and is supported by Council, such as:               <ul style="list-style-type: none"> <li>○ Measurable service levels that can be reported to Council on an annual basis</li> <li>○ Composition of the Department to represent the level of service to be provided as outline throughout the FMP, and</li> <li>○ A final review to be conducted by the Township’s Solicitor</li> </ul> </li> </ul>	No cost associated with this recommendation	Short-term (1-3 years)
2	It is recommended that the Fire Prevention Division develop a fire safety awareness program for landlords and tenants in relation to student and non-student rental housing safety.	Staff time associated with this recommendation	Short-term (1-3 years)

3	It is recommended that the Fire Prevention Division review its inspection program to identify levels of desired frequency as noted in the <u>FUS Suggested Frequency Chart</u> and that they should track, on an annual basis, the number of hours spent on the inspections.	Staff time associated with this recommendation	Short-term (1-3 years)
4	It is recommended that the Simplified Risk Assessment/Community Risk Assessment (SRA/CRA) be updated in accordance with NFPA 1730, being every five years or as necessary with changes. To aid Council in their decision-making process, there is merit in providing an updated assessment at the beginning of every term of Council so that the sitting Council understands the platform on which the services conducted by the Fire Department are built.	No cost associated with this recommendation – staff time only	Short-term (1-3 years)
5	<p>It is recommended that the Fire Department meet with all local community groups to form a partnership in relation to organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community.</p> <p>An example of community groups would be a local group that wishes to promote fire safety in the community or any local Lions Clubs (or other clubs) that want to support fire safety initiatives. The key is to reach out and take advantage of these groups to assist the Fire Department with its efforts towards ensuring safer communities.</p>	Staff related time – no other costs noted at this time	Short-term (1-3 years)
6	It is recommended that the KFES work with developers and the public to make the Home Sprinkler Systems initiative a part of their fire prevention and public education program.	Staff related time – no other costs noted at this time	Short-term (1-3 years)

7	The future need for more administrative staff should be monitored through hours spent on administrative duties to identify when another part or full-time Administrative Assistant should be hired.	Cost would be related to the status of the position but could be from \$20,000 to \$50,000 per year	Short-term (1-3 years)
8	<p>To verify the training programs are meeting related NFPA (and other) training program recommendations, the Deputy Fire Chief should identify:</p> <ul style="list-style-type: none"> <li>• What training programs are required in relation to the services that KFES is providing</li> <li>• The number of hours that are required to meet each of those training needs</li> <li>• Resources required to accomplish this training</li> <li>• Joint partnerships with bordering fire departments and private organizations that can be entered into to achieve the training requirements identified by the Training Officer, and</li> <li>• To present an annual program outline at the start of each year to the Fire Chief, with noted goals and expectation, which are measured and reported on in relation to completion success rate at the end of each year.</li> </ul>	No identified costs at this time	Short-term (1-3 years)
9	It is recommended that a full-time Training Officer position be created. This will allow for greater focus on training initiatives, and free up some of the Deputy Chief's time to work on other programs.	A full-time Training Office is estimated at \$60,000 - \$90,000	Short-term (1-3 years)
10	KFES should continue to search out opportunities to conduct joint training programs with other fire departments by securing/scheduling neighboring training facilities whenever possible.	No identified costs at this time	Short-term (1-3 years)

11	It is recommended that KFES explore the partnership opportunity to build a training facility within the capture area, which would be a cost-effective measure for all of the fire departments.	No identified costs at this time	Mid-term (4-6 years)
12	<p>It is recommended that greater utilization of the in-house Fire Officer resources be incorporated into an annual fire prevention program on a more formal basis. To accomplish this, all officers should be trained and certified to at least:</p> <ul style="list-style-type: none"> <li>• NFPA 1031 – Fire Inspector I, and</li> <li>• NFPA 1035 – Fire and Life Safety Educator I</li> </ul> <p>By having all Officers trained to the noted levels, KFES will have a greater number of resources to draw upon in its public fire safety education and inspection programs.</p>	No identified costs at this time	Short-term (1-3 years)
13	The Fire Chief should investigate opportunities to promote retention of the volunteer firefighters as noted in the OFMEM document. The Fire Chief should continually recruit for volunteer firefighters in areas that are presently understaffed or have issues with response numbers to calls.	No Immediate cost for this recommendation	Short-term and ongoing (1-3 years)
14	The Department should complete certification for staff for each position (that requires or recommends certification) and ensure that certifications are maintained.	Staff time based on training program	Short-term (1-3 years)
15	It is recommended that the Fire Chief present a Standard of Cover for the approval of Council, which may reference the NFPA 1720 – 15 staff in 9-minute rule or a similar mid-line expectation of 10 staff in 10-minutes, and that performance measures are continuously examined.	No cost associated with this recommendation	Immediate (0-1 year) and ongoing

16	The present dispatching agreement with the current dispatch provider should be updated to include NFA related standards for KFES to incorporate the necessary performance measures as per the NFA 1221 standard and those identified by the fire service for internal performance measurements.	No cost associated with this recommendation	Immediate (0-1 year) with ongoing review
17	Even though the training set up found at the Schomberg fire station does meet some of the general day-to-day needs of the Department, it is recommended that consideration be given to the construction or rental of a larger facility for training on such topics as live fire, search and rescue, and other technical rescue programs. <ul style="list-style-type: none"> <li>• Opportunities for joint training with other local departments may also be used as a cost-effective measure</li> </ul>	Costs can vary greatly depending on the option utilized	Short-term (1-3 years)
18	The Township should endeavour to maintain a schedule that complies with the Fire Underwriters Survey (FUS) recommendations on the replacement of vehicles from a first-line to a second-line unit. The industry standard for the design and replacement of vehicles is the National Fire Protection Association's Standard 1901. It is recommended that this and other related NFA standards relating to vehicle design, replacement, and refurbishing, be utilized.	Continued financial forecasting of equipment replacement	Long-term (7 – 10 years) – ongoing for fire vehicle replacement and future forecasting (see NFA 1901)
19	Install a backup power generator for the Alternate EOC.	Approximately \$200,000	Immediate (0-1 year)
20	It is recommended that a full review of fire protection agreements be completed to identify any required revisions.	No cost associated with this review and annual review	Short-term (1-3 years)
21	Continue with the follow-up on the single outstanding recommendation noted in the 2006 Fire Masterplan – add a full-time Administrative Support position.	Approximately \$40 – 50,000 inclusive of benefits	Immediate (0-1 year)

## SECTION 15 – Appendices

Appendix A - Definitions and References

Appendix B - Staff Surveys

Appendix C - Community Surveys

Appendix D - Public Fire Safety Guideline -  
Recruitment and Retention of Volunteer  
Firefighters

Appendix E – Call and Response Data for 2013 and  
2014

## Section 15: Appendices

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### Appendix A – Definitions and References

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#### Automatic Aid Agreements – Fire Protection and Prevention Act, 1997 (FPPA 1997)

4. For the purposes of this Act, an automatic aid agreement means any agreement under which,
- a) a municipality agrees to ensure the provision of an initial response to fires, rescues and emergencies that may occur in a part of another municipality where a Fire Department in the municipality is capable of responding more quickly than any Fire Department situated in the other municipality; or
  - b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and emergencies that may occur in a part of another municipality where a Fire Department situated in the municipality is capable of providing the quickest supplemental response to fires, rescues and emergencies occurring in the part of the other municipality. 1997, c. 4, s. 1 (4).
    - *Automatic aid is generally considered in other jurisdictions as a program designed to provide and/or receive assistance from the closest available resource, irrespective of municipal boundaries, on a day-to-day basis.*

#### Commission of Fire Accreditation International Community Definitions:

- Suburban – an incorporated or unincorporated area with a total population of 10,000 to 29,999 and/or any area with a population density of 1,000 to 2,000 people per square mile
- Rural – an incorporated or unincorporated area with a total population of 10,000 people, or with a population density of less than 1,000 people per square mile.

#### National Fire Protection Association (NFPA) Documents:

- NFPA 1201 - Standard for Providing Fire and Emergency Services to the Public
- NFPA 1500 – Standard on Fire Department Occupational Safety and Health Program, 2013 editions
- NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Medical Operations, and Special Operations to the Public by Career Departments
- NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments.

## **Municipal Responsibilities (FPPA 1997)**

2. (1) Every municipality shall,
  - a) establish a program in the municipality which must include public education with respect to Fire safety and certain components of Fire prevention; and
  - b) provide such other Fire protection services as it determines may be necessary in accordance with its needs and circumstances.

## **Mutual Aid**

- a) Mutual aid plans allow a participating Fire Department to request assistance from a neighbouring Fire Department authorized to participate in a plan approved by the Fire Marshal.
- b) Mutual aid is not immediately available for areas that receive fire protection under an agreement. The municipality purchasing fire protection is responsible for arranging an acceptable response for back-up fire protection services. In those cases where the emergency requirements exceed those available through the purchase agreement and the backup service provider, the mutual aid plan can be activated for the agreement area.

## **Public Fire Safety Guidelines:**

- PFSG 04-40A-12, Fire Prevention and Public Safety Education; Simplified Risk Assessment March 2001
- PFSG 04-41-12, Fire Prevention and Public Safety Education; Community Fire Safety Officer/Team, January 1998
- PFSG 04-08-13 on Fire Station Location, September 2004

## **Shared Responsibilities (FPPA 1997)**

FPPA notes that;

1. Two or more municipalities may appoint a community fire safety officer or a community fire safety team or establish a Fire Department for the purpose of providing fire protection services in those municipalities

## **Volunteer Firefighter (FPPA 1997)**

- Means a Firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance. (“pompier volontaire”) 1997, c. 4, s. 1 (1); 2001, c. 25, s. 475 (1).”

## Appendix B – Staff Surveys

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The following survey was presented to internal stakeholders:

### **Township of King Fire Masterplan - Internal Survey**

Emergency Management & Training Inc. (EMT) have been hired to prepare a Fire Master Plan for the King Fire & Emergency Services. Your feedback is necessary in assisting EMT in developing this document for the Fire Department. The intent of this document is to provide a 10-year community-driven master plan to guide operational improvements and enhance how services are provided throughout the community.

Please take the time to complete this survey. Your confidential responses will help to ensure focused action that continues to meet the diverse needs of our staff and residents.

#### Questions:

1. Are you a...:

- Career/full-time member
- Volunteer Firefighter

2. What are the things that make you most proud of the King Fire & Emergency Services – for example, the level of professionalism, community involvement or making a positive difference within the community?

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3. How do you think most people living in King perceive the Fire Department?

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4. What would you say are the top three issues facing the King Fire & Emergency Services today?

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5. There are nine core services that the King Fire & Emergency Services delivers. Which services do you believe are most valued by the community? Please rank in order of priority from 1 (most important) to 9 (least important). *Please use each number **only once** and use all nine numbers.*

- \_\_\_ Fire fighting
- \_\_\_ Rescue (motor vehicle)
- \_\_\_ Fire origin and cause investigations
- \_\_\_ Fire prevention and safety inspections
- \_\_\_ Community outreach / Public education
- \_\_\_ Hazardous materials and technical rescue response (water/ice rescue)
- \_\_\_ Public assist / Non-emergency responses
- \_\_\_ Emergency planning
- \_\_\_ Medical assist and response

6. Are there any other services that you believe the King Fire & Emergency Services should provide and why?

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7. What improvements does the King Fire & Emergency Services need to make to its services to be more efficient and what do you believe would be the outcome by implementing these efficiencies?

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8. If it were up to you, what would the Department be like 10 years from today and why?

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9. Are there any other comments/suggestions that you would like to add that would help to improve the services the King Fire & Emergency Services delivers to the community and to the Firefighters?

- For example: more public education, more training for staff, succession planning, equipment upgrades, etc.

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Thank you for completing this survey. Your feedback is greatly appreciated and will help to shape future service delivery efforts.

If you have any questions, please contact:

Lyle Quan

[lquan@emergencymgt.com](mailto:lquan@emergencymgt.com)

## Appendix C – Community Surveys

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During the FMP process, feedback was gathered from both the community in the form of an online survey and a meeting with those from the community who have utilized the services of the KFES.

The following survey was presented to the external stakeholders:

### **King Fire & Emergency Services Fire Master Plan - External Survey**



#### **ABOUT US**

The King Fire & Emergency Services has a proud tradition of assisting residents and businesses by effectively responding to emergencies.

We are comprised of Volunteer Fire fighters, plus an administrative staff complement that includes training and fire prevention officers. Our Department responds to approximately 1,000 emergency calls annually from our three fire stations for medical assists, motor vehicle collisions and structural fires.

#### **KING FIRE & EMERGENCY SERVICES FIRE MASTER PLAN**

In our ongoing efforts to ensure that we continue to meet the growing needs of the community we serve, we are creating a 10-year Fire Master Plan to help guide operational improvements and enhance our service.

We have engaged Emergency Management & Training Inc. (EMT), to assist us with this initiative. EMT is a local consulting firm that has worked with many Fire Departments to develop their Fire Master Plans, station assessments, and fire service reviews.

## YOUR INPUT IS IMPORTANT TO US

As part of this initiative, we are asking King residents and businesses to fill out our online survey. The survey will take approximately ten minutes to complete. Your identity and responses are confidential. It will be available until midnight on Wednesday, September 7.

Please feel free to contact Lyle Quan with EMT with any questions regarding the survey at [lquan@emergencymgt.com](mailto:lquan@emergencymgt.com)

## PUBLIC MEETING

A public meeting will be held on November 23<sup>rd</sup> at 7pm, at the King Fire Station, located at 2045 King Rd.

This meeting will allow members of the public to discuss the proposed Fire master plan as well as the survey.

We wish to thank you for your assistance in this very important process.

1. What is your general impression of the King Fire & Emergency Services in relation to its level of professionalism, community safety, education and Fire prevention awareness programs?

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2. Have you been approached by King Fire & Emergency Services staff in relation to their Smoke Alarm Program, and if so how did you find this interaction?

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3. How important are the following statements to you:

	Extremely important	Very important	Important	Not very important	Not important at all
How quickly the Fire Department gets to me if I have an emergency	<input type="checkbox"/>				
Whether the Fire Department will visit my home to give me safety advice and/or fit smoke alarms	<input type="checkbox"/>				
How much the Fire services costs me as a tax payer	<input type="checkbox"/>				

How well the Fire Department works with other agencies to provide wider community safety services	<input type="checkbox"/>				
How often the Fire Department consults me about their services	<input type="checkbox"/>				
How often the Fire Department provides community training opportunities (e.g. Fire extinguisher training; school safety programs; older and wiser program; smoke alarms; Fire escape planning)	<input type="checkbox"/>				
How visible the Fire Department is at local community events	<input type="checkbox"/>				
Contacting assistance services after an emergency, as required	<input type="checkbox"/>				
Timeliness to any request for services or assistance from the Fire Department	<input type="checkbox"/>				
Purchasing and maintaining new and applicable equipment	<input type="checkbox"/>				
Continued and relevant training	<input type="checkbox"/>				

4. What do you think are the top three issues facing our Fire service today?

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5. There are nine core services delivered by the King Fire & Emergency Services. Which services are most important to you? Please rank in order of priority from 1 (most important) to 9 (least important). *Please use each number **only once** and use all nine numbers.*

- \_\_\_ Fire fighting
- \_\_\_ Rescue (i.e. motor vehicle accidents)
- \_\_\_ Fire/Arson investigations
- \_\_\_ Fire prevention and safety inspections
- \_\_\_ Community outreach / Public education
- \_\_\_ Hazardous materials (i.e. gas or chemical spills) and technical rescue response (i.e. water rescues)
- \_\_\_ Public assistance requests / Non-emergency responses
- \_\_\_ Emergency management and planning
- \_\_\_ Medical assist and response

6. Are there any additional services that you believe should be provided? If so, please specify.

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7. Over the next 10 years, if you could implement up to three things to improve how the current services are provided by the King Fire & Emergency Services, what would those things be?

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8. Have you directly received service from the King Fire & Emergency Services? (If no, skip to question 10)

- Yes
- No

9. Could you share some details of your experience and any recommendations for service improvements?

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10. Would you be willing to participate in a special focus group to discuss improvements to the Fire service?

- Yes
- No

11. Please provide your name and contact information so we can get in touch with you about participating in a focus group.

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## Appendix D – Public Fire Safety Guideline - Recruitment and Retention of Volunteer Firefighters

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### Volunteer Fire Service Personnel Recruitment and Retention

<b>Public Fire Safety Guidelines</b>	Subject Coding <b>PFSG 04-84-13</b>
Section <b>Fire Administration</b>	Date <b>October 2006</b>
Subject <b>Volunteer Fire Service Personnel Recruitment and Retention</b>	Page

### Scope and Application:

This guideline provides municipal officials and Fire Chiefs of volunteers and composite fire services with a general overview of principles to consider in the recruitment and retention of volunteers.

There are many factors that contribute to the success of a volunteer recruitment and retention program. These include implementing organized marketing, recruitment, selection, hiring, training and retention plans.

Establishing and following a formal recruitment and retention program offers fire services the opportunity to increase the likelihood of finding, and keeping, the right people, doing the right tasks, at the right time.

### Definition of Volunteer:

According to the *Fire Protection and Prevention Act* 1997, a Volunteer Firefighter is defined as “a Firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance. (“pompier volontaire”) 1997, c. 4, s. 1 (1); 2001, c. 25, s. 475 (1).”

The majority of fire departments in Ontario (450 out of 478) utilize the services of Volunteer fire service personnel. Recognized for their commitment and generosity, saving residents in Ontario more than an estimated one billion dollars annually, these professionals strive to provide skilled, competent and caring service.

Fire services that rely on volunteers to comprise, or enhance, their staffing capability continue to face the challenge of recruiting and retaining a sufficient number of capable and experienced personnel. This impacts on the effective, efficient, safe and timely delivery of fire protection services.

## **Recruitment and Retention Program:**

### **The Benefits**

A coordinated, organized program demonstrates:

- how seriously the leadership takes the services provided and the individuals who provide that service,
- sound risk management principles,
- proactive vs. reactive leadership within the department, and
- leadership's commitment to recognize volunteers, families and employers who support volunteerism.

It identifies:

- shortfalls and availability of volunteers in the community and,
- the number, type and quality of volunteers required to meet current or future needs.

It allows planning for:

- recruitment and selection,
- retention and succession, and
- training and development of volunteers.

### **Responsibility for Recruitment**

Recruiting and retaining volunteers does take effort. Creating a committee within the municipality and assigning specific tasks can create opportunities for others besides the leadership to contribute to the growth of the fire service and allows for a more concentrated effort.

## Annual Recruitment and Retention Plan

An annual recruitment and retention plan is a cyclic, ongoing process that will assist the fire service in planning and focusing its efforts. It should be a logical consideration of the time of the year, changing commitments throughout the seasons, weather, and psychological impact of seasons, milestones in the department, annual events and other trends. This will prevent the department from coming up short in membership by not having good candidates to replace those leaving.



## Policies and Guidelines

Fire service leaders benefit from having the necessary policies and procedures to ensure a safe, lawful, organized, empowering, non-discriminatory environment for their volunteers. No matter how large or small a department, policies and operating guidelines are essential management tools that set the standard for conduct and provide guidance for action. It is suggested that existing municipal policies, if available, be referenced.

## Evaluation

Evaluation of the recruitment and retention program is necessary to identify strengths and areas to improve. It is an ongoing process that is built into all the components of the program.

### **Components in the Recruitment and Retention Cycle:**

#### Pre-Recruitment

Prior to recruiting, it would be beneficial to conduct a needs assessment to determine the role and number of volunteers required. Completing a Community Profile will determine community members who may best fit those roles. Answering these questions prior to recruiting enables

the fire services to target specific individuals for specific roles and may increase the chance of success.

### **Recruitment**

To promote diversity and involve volunteers with different skill sets, knowledge and perspectives, more than one recruitment method is necessary. Regardless of the method and knowing the department is seeking the best possible candidates, effective marketing and communication strategies are necessary to draw the interest of potential volunteers.

### **Selection and Hiring**

Once received and acknowledged, all applicants require screening to determine those who will move on to the next step in the hiring process.

The Fire Service takes great pride in service to communities. A screening process is essential in order demonstrate that the volunteers serve in the community's best interest. The leadership should decide which screening methods and tools are appropriate for their department and should ensure that they reflect human rights and privacy legislation and existing municipal policies.

Upon selection, a written agreement between the volunteer and the fire department will ensure that expectations and responsibilities for each side are clearly identified and agreed to.

### **Orientation and Probation**

Fire Departments and their volunteers will benefit from having an organized system to orient, train and advance recruits. One of the most successful and safe approaches for developing volunteers and establishing a commitment is to initially offer specific tasks that allow them to become involved in a limited way, followed by opportunities to grow into a role with more responsibilities.

### **Ongoing Recruitment Efforts**

Successful recruitment efforts should be ongoing throughout the year to ensure that there is a waiting list of interested individuals to draw from.

## **Ongoing Retention Efforts**

Recruiting and training new volunteers is just the beginning. The long-term challenge is to create an environment in which individuals continue to be motivated, interested, challenged, supported and satisfied with the work they've accomplished. Factors that contribute to this environment include leadership practices, operating guidelines, recognition initiatives, support efforts, teamwork and fellowship.

## **Exit Processes**

When an individual leaves the fire department, it is a good opportunity to solicit input to determine the department's strengths and opportunities for improvement. Exit processes should reflect understanding that, whether leaving on a positive or negative note, the volunteer and the fire department deserve fair and respectful treatment.

## **Resource Book:**

The Application of Recruitment and Retention Principles:

The Volunteer Recruitment and Retention Resource Book that supports this guideline, was developed by the Ontario Fire Marshal's Office, in collaboration with representatives from the Ontario Fire Service.

This resource describes effective practices and strategies for recruitment and retention of Volunteer Fire Service personnel. It also provides a compilation of tools and templates that can be used to support the best practice or strategy. These may be photocopied or edited to meet the needs of the individual Fire Service.

A CD-ROM and printed copy of this resource has been made available to all Fire Services that maintain a volunteer complement. It can also be accessed and downloaded from the Ontario Fire Marshal's public access website <http://www.mcscs.jus.gov.on.ca/>.

Codes, Standards & Best Practices:

Codes, standards and best practices resources are available to assist in establishing local policy. All are available at <http://www.mcscs.jus.gov.on.ca/>.

## **Volunteer Resource Management**

The following resources and links describe effective practices and strategies for Volunteer Resource Management. The principles and topics can be applied to the fire service.

The Canadian Code for Volunteer Involvement <http://www.Volunteer.ca>

HR Council for the Voluntary and Non-profit Sector <http://www.hrvs-rhsbc.ca>

Knowledge Development Centre, Canada Volunteerism Initiative <http://www.kdc-cdc.ca>

Please feel free to copy and distribute this document. We ask that the document not be altered in any way, that the Office of the Fire Marshal be credited and that the documents be used for non-commercial purposes only.

### **Additional References:**

See also:

Office of the Fire Marshal's Public Fire Safety Guidelines

The following guidelines can be referenced when conducting a needs assessment to determine the role, quantity and characteristics of Volunteers required by the fire service.

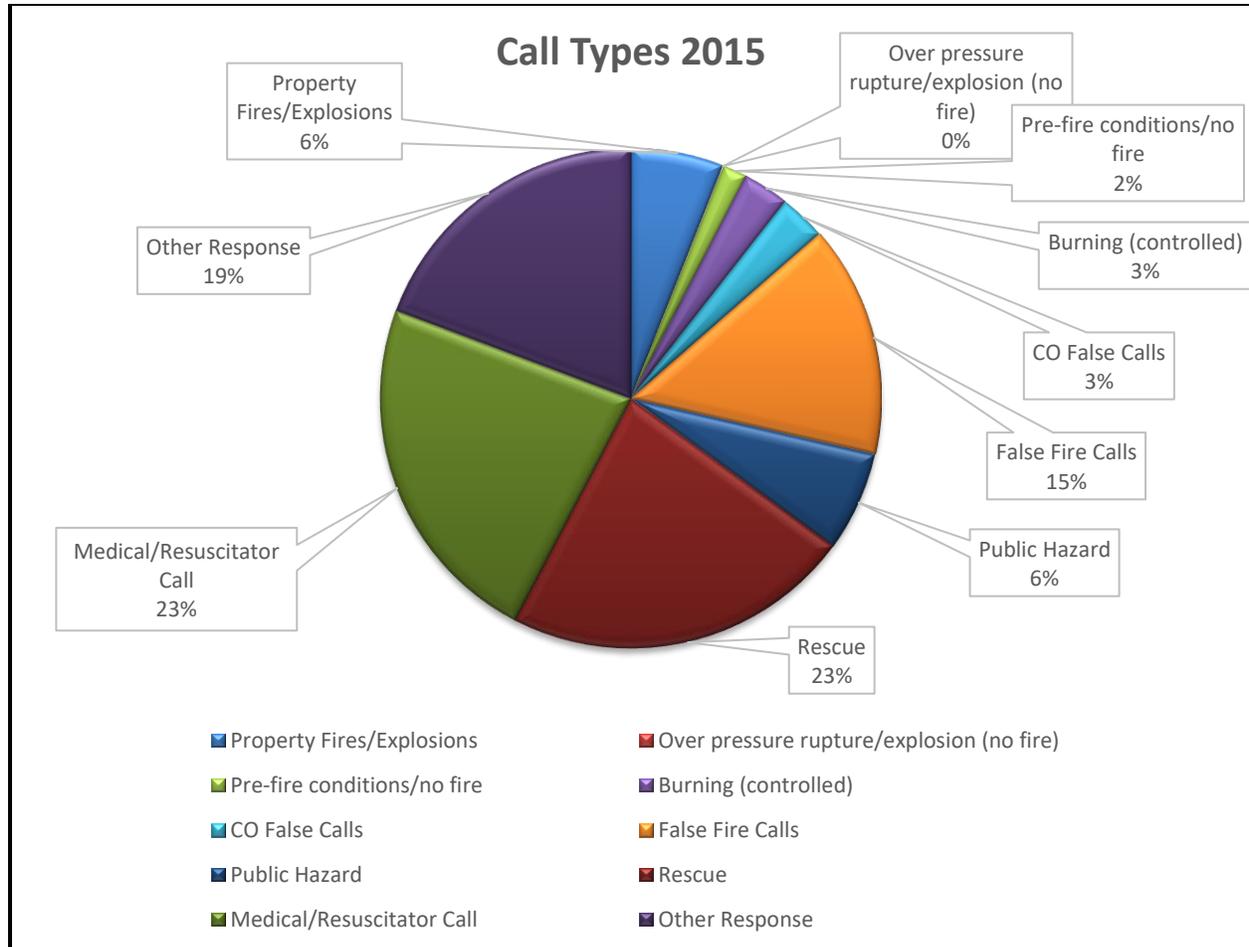
[04-08A-03](#) Optimizing Rural Emergency Response

[04-12-13](#) Core Services (Response and Support) and Associated Guidelines

[04-40A-03](#) Simplified Risk Assessment

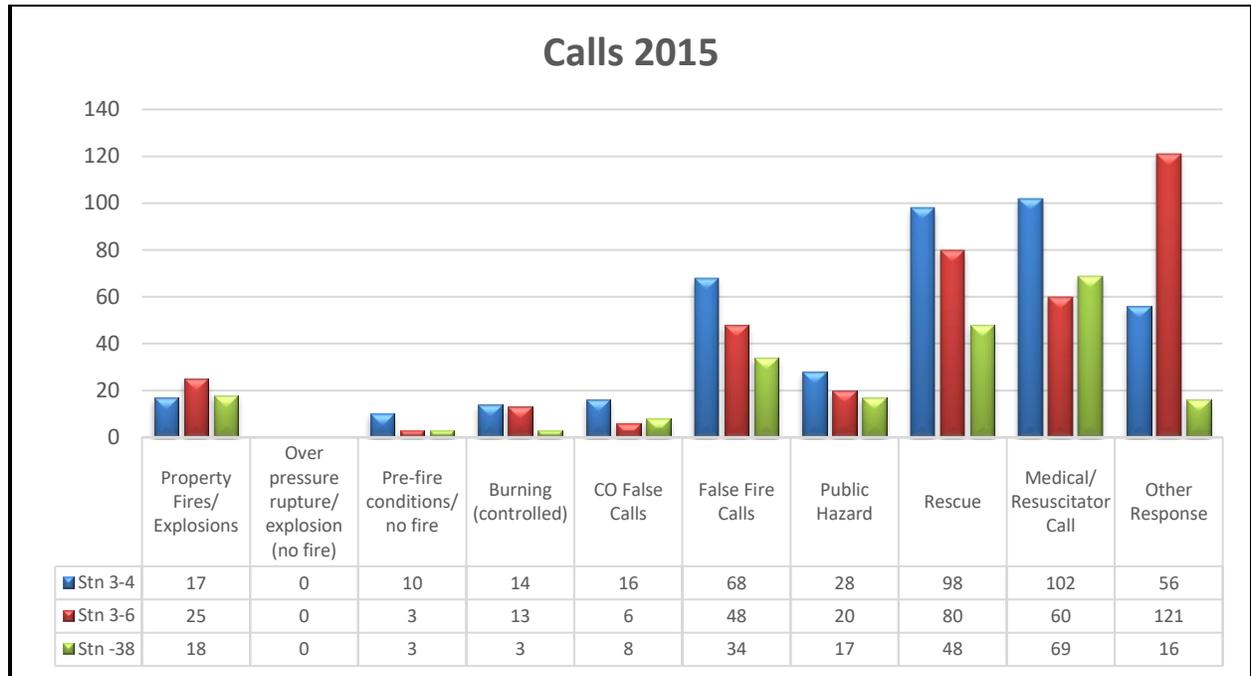
## Appendix E – Call and Response Data for 2015, 2014 and 2013

### 2015 Response Data

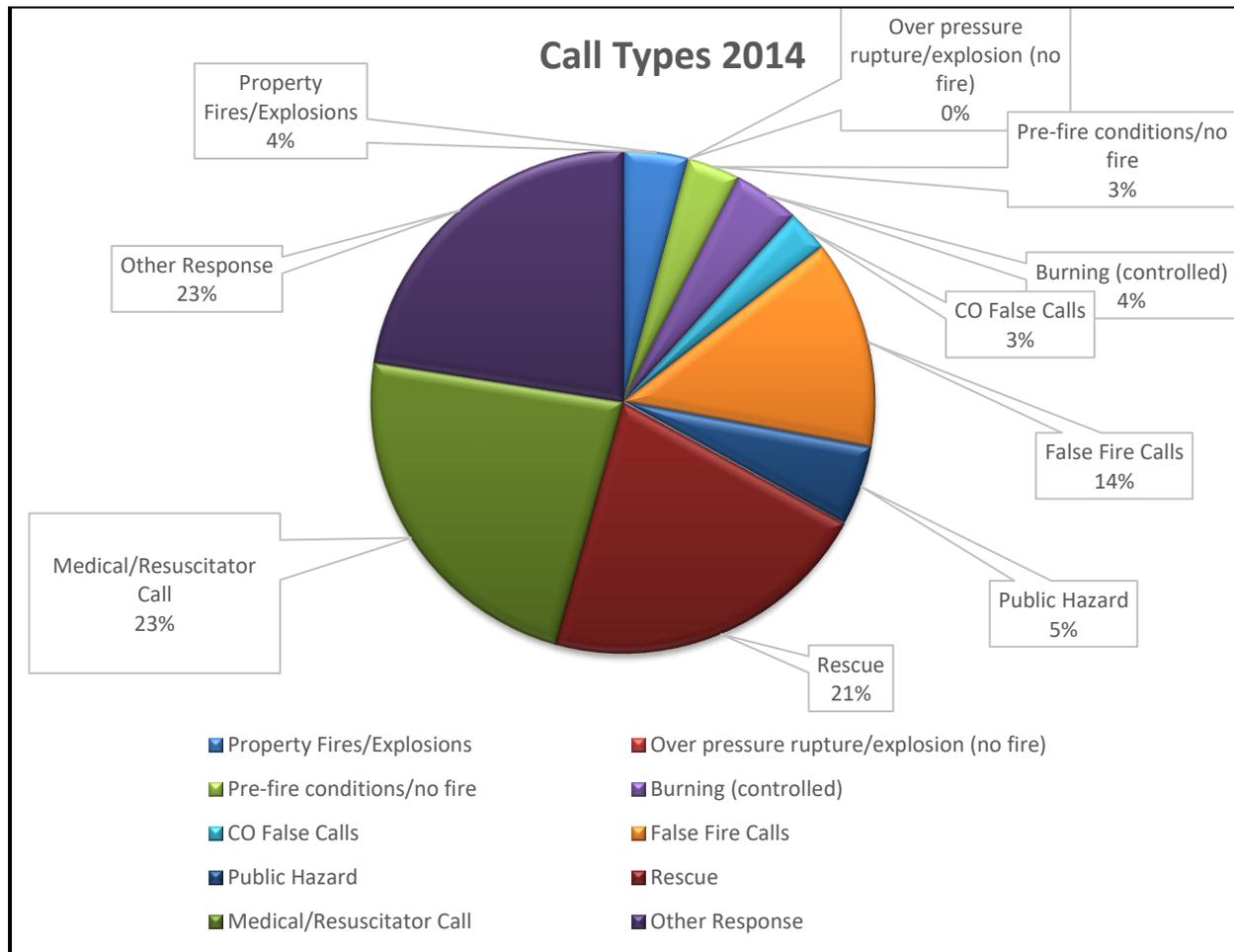


Call type - 2015	
Property Fires/Explosions	60
Over pressure rupture/explosion (no fire)	0
Pre-fire conditions/no fire	16
Burning (controlled)	30
CO False Calls	30
False Fire Calls	150
Public Hazard	65
Rescue	226
Medical/Resuscitator Call	231
Other Response	193

**Annual Comparisons of Calls for Stations 3-4, 3-6 and 3-8 for 2015**

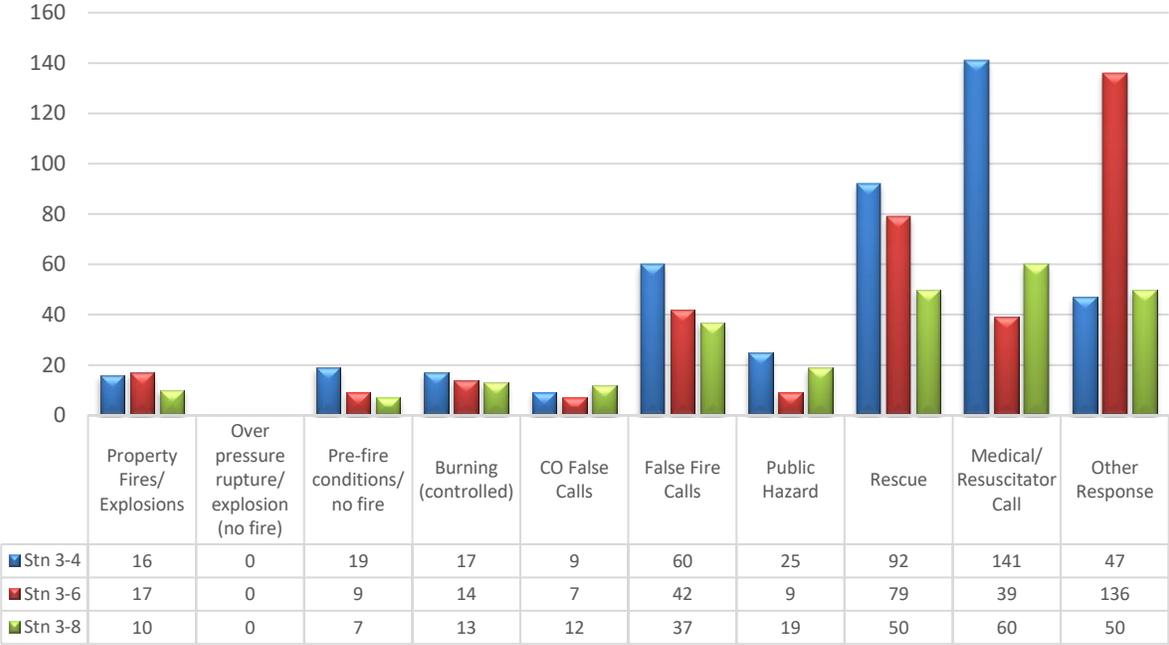


## 2014 Response Data

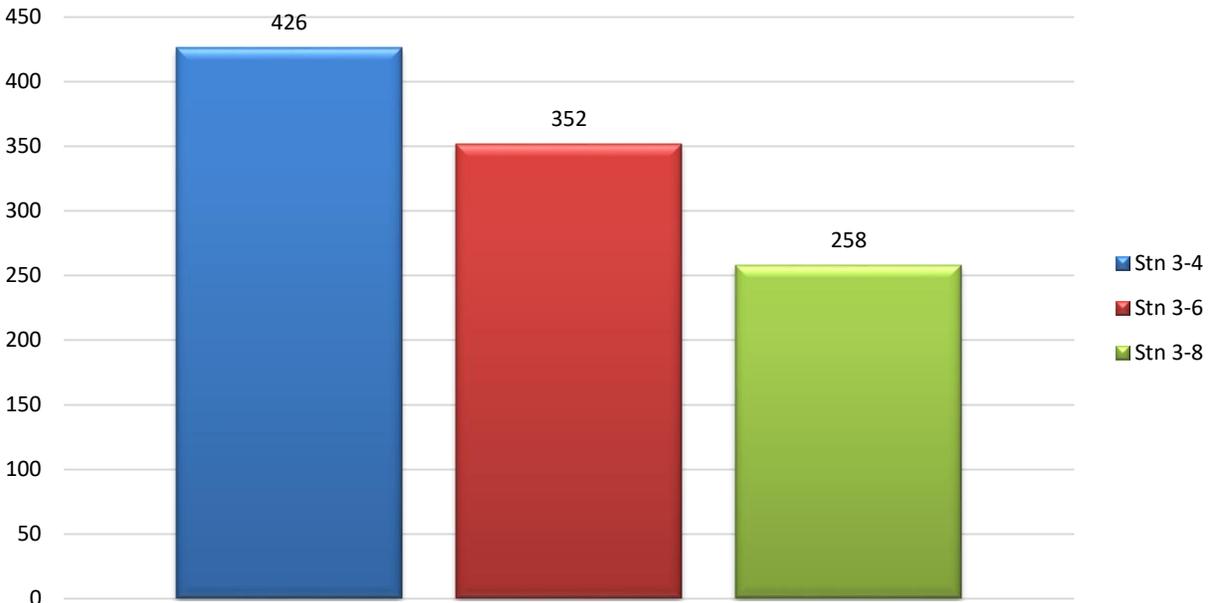


Call type - 2014	
Property Fires/Explosions	43
Over pressure rupture/explosion (no fire)	0
Pre-fire conditions/no fire	35
Burning (controlled)	44
CO False Calls	28
False Fire Calls	139
Public Hazard	53
Rescue	221
Medical/Resuscitator Call	240
Other Response	233

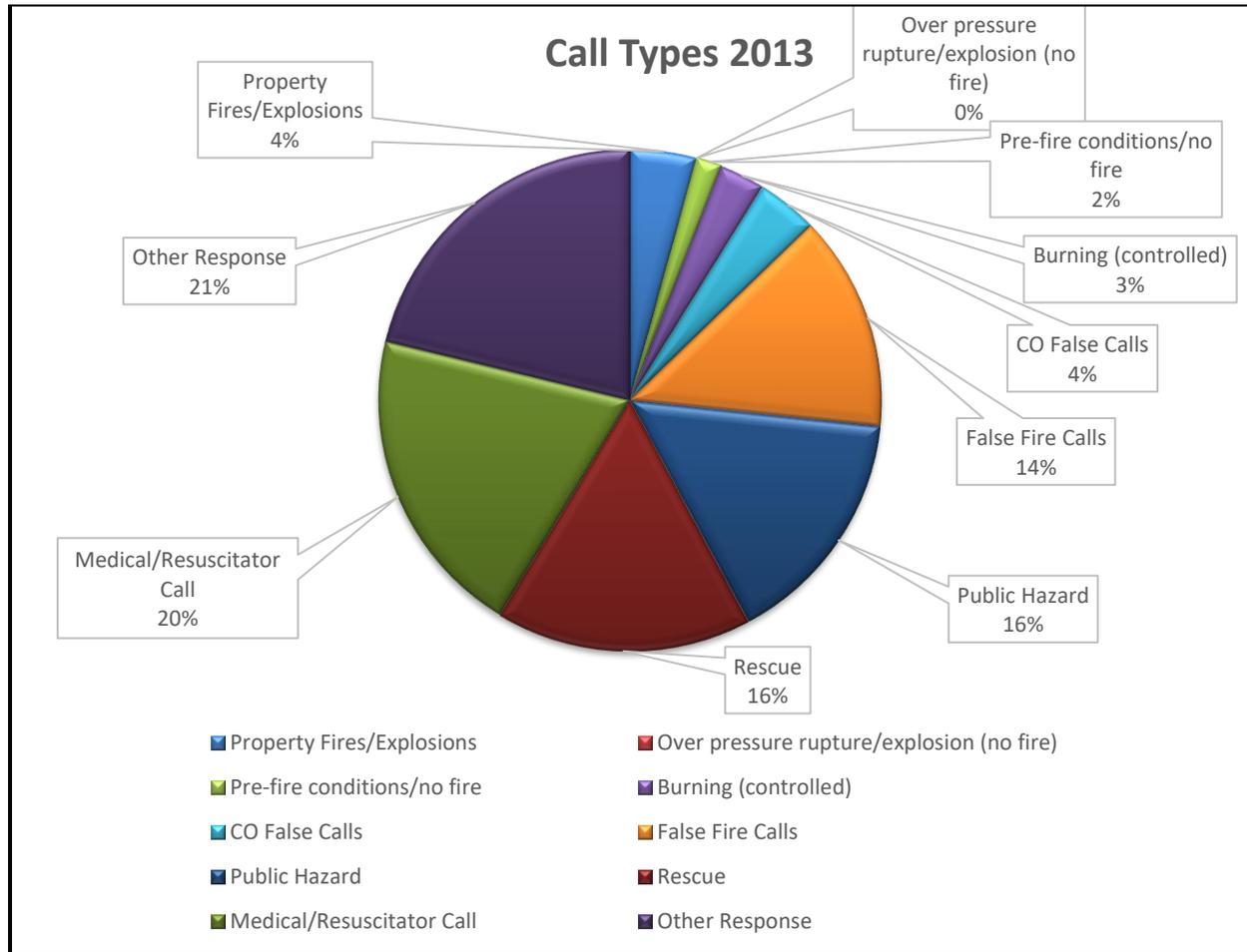
### Calls 2014



### 2014 Total Calls Per Station

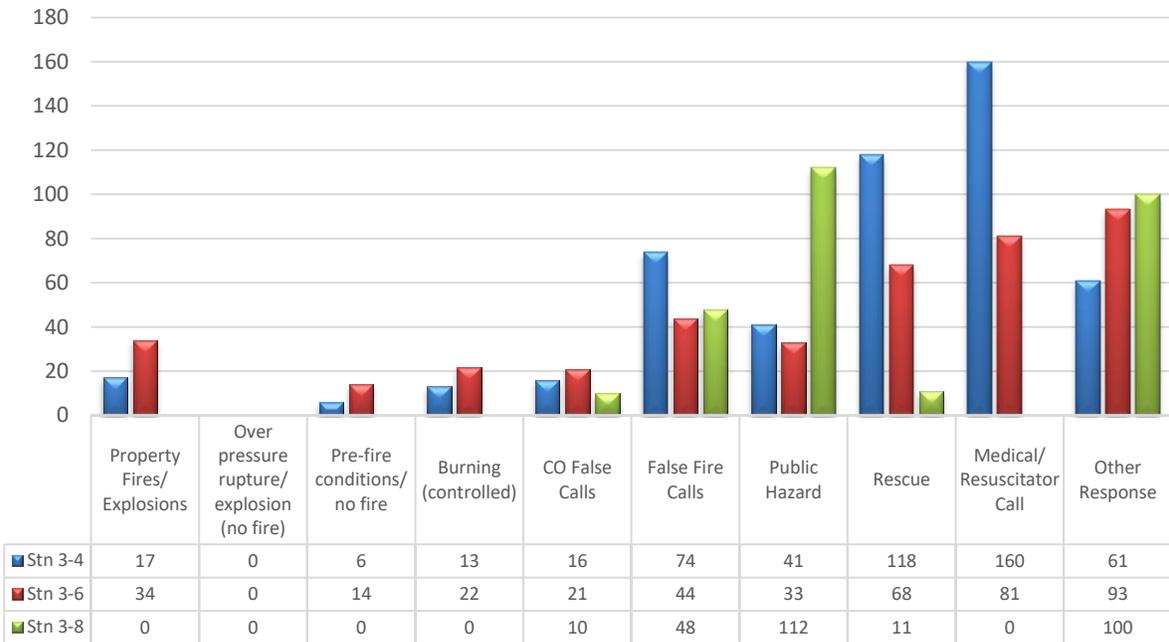


## 2013 Calls and Response Data



Call type - 2013	
Property Fires/Explosions	51
Over pressure rupture/explosion (no fire)	0
Pre-fire conditions/no fire	20
Burning (controlled)	35
CO False Calls	47
False Fire Calls	166
Public Hazard	186
Rescue	197
Medical/Resuscitator Call	241
Other Response	254

### Calls 2013



### 2013 Total Calls Per Station

