



# AGENDA

## CYFS - JCC

Tuesday, July 15, 2014 at 9:30 AM  
Town of Newmarket - Cane A & B

Agenda compiled on 04/07/2014 at 9:55 AM

### Open Forum (15 minutes)

### Additions & Corrections to the Agenda

### Declarations of Pecuniary Interest

### Approval of Minutes

1. Central York Fire Services - Joint Council Committee Minutes of May 13, 2014. p. 1

The Fire Chief recommends:

THAT the Central York Fire Services - Joint Council Committee Minutes of May 13, 2014 be approved.

### Presentations

2. Mr. Steve Thurlow, Dillon Consulting regarding Central York Fire Services Final Draft Master Plan Update.

Central York Fire Services - Joint Council Committee recommends to Council:

- a) THAT the presentation by Mr. Steve Thurlow, Dillon Consulting be received.

### Items

3. Central York Fire Services Final Draft Master Plan Update. (Related to Item 2) p. 6

Central York Fire Services - Joint Council Committee recommends to Council:

- a) THAT Central York Fire Services Final Draft Master Plan Update be received;
- b) AND THAT the Central York Fire Services Final Draft Master Plan Update be forwarded to the Councils of the Town of Newmarket and Aurora for approval;
- c) AND THAT the presentation by Dillon Consulting also be presented to the Councils of the Town of Newmarket and the Town of Aurora.

## **New Business**

### **Closed Session (if required)**

The Closed Session Agenda and Reports will be circulated under separate cover (Goldenrod).

4. Verbal Report by the Director of Human Resources (Newmarket) regarding a labour relations matter. (if required)

## **Addendum**

## **Adjournment**



Tuesday, May 13, 2014 at 9:30 AM  
Town of Aurora - Leksand Room

Moved by: Councillor Kerwin  
 Seconded by: Councillor Emanuel

THAT Central York Fire Services – Joint Council Committee Minutes of March 4, 2014 be approved.

**Carried**

2. Joint Council Committee (Closed Session) Minutes of March 4, 2014.

Moved by: Councillor Emanuel  
 Seconded by: Councillor Gallo

THAT Central York Fire Services – Joint Council Committee (Closed Session) Minutes of March 4, 2014 be approved.

**Carried**

**Items**

3. Fire Services Report 2014-04 regarding Automatic Sprinklers in all Vulnerable Occupancies.

Moved by: Councillor Emanuel  
 Seconded by: Councillor Kerwin

THAT Fire Services Report 2014-04 Automatic Sprinklers in all Vulnerable Occupancies dated March 12, 2014 be received for information purposes.

**Carried**

4. Central York Fire Services 2013 Annual Report presented by the Fire Chief.

The Fire Chief presented the Central York Fire Services 2013 Annual Report. Discussion ensued regarding service targets and orientation for new JCC members.

Moved by: Councillor Kerwin  
 Seconded by: Councillor Emanuel

THAT the Central York Fire Services 2013 Annual Report be received for information purposes.

**Carried**

An amendment to the main motion was presented.

Moved by: Councillor Emanuel  
Seconded by: Councillor Gallo

THAT the Central York Fire Services 2013 Annual Report be received;

AND THAT the Fire Chief provide a presentation to the Councils of Newmarket and Aurora.

### **Carried**

5. Joint Central York Fire Services and Corporate Services - Finance Report 2014-13 regarding the 2013 Central York Fire Services Budget Report - Fourth Quarter.

Moved by: Councillor Emanuel  
Seconded by: Councillor Kerwin

THAT Joint CYFS/Corporate Services Report - Financial Services - 2014-13 dated April 28, 2014 regarding the 2013 CYFS Budget Report - Fourth Quarter be received for information purposes.

### **Carried**

6. Joint Central York Fire Services and Corporate Services - Finance Report 2014-17 regarding 2014 Central York Fire Services Budget Report - First Quarter.

Moved by: Councillor Emanuel  
Seconded by: Councillor Gallo

THAT Joint CYFS/Corporate Services Report - Financial Services - 2014-17 dated April 28, 2014 regarding the 2014 CYFS Budget Report - First Quarter be received for information purposes.

## **New Business**

- a) The Fire Chief advised that the Master Fire Plan requires new information and that the Ontario Fire Marshall needs to be included. He proposed that the June meeting be cancelled and the July date be rescheduled.

Moved by: Councillor Kerwin  
 Seconded by: Councillor Gallo

THAT the June 17, 2014 CYFS-JCC Meeting be cancelled;

AND THAT the July meeting be held in Newmarket on July 15, 2014.

**Carried**

- b) Councillor Emanuel requested an update on the renovation project at Station 4-2. Deputy Chief Comeau advised that renovations are underway and staff have been relocated. Completion of the renovations is anticipated in mid-June. Councillor Emanuel requested that an opening of the Station occur in this term of Council.

Moved by: Councillor Emanuel  
 Seconded by: Councillor Kerwin

THAT the Joint Council Committee direct Staff to organize a re-opening event at Station 4-2 at the earliest opportunity in consultation with the Fire Chief.

**Carried**

- c) Councillor Abel read aloud a letter from the Ontario Municipal Management Institute and Ontario Association of Fire Chiefs regarding the Fire Chief's recent award of the CMM III Fire Suppression Professional enhancement to his Certified Municipal Manager designation.

**Closed Session**

There was no requirement for a closed session.

**Adjournment**

Moved by: Councillor Gallo  
 Seconded by: Councillor Emanuel

THAT the meeting adjourn.

**CARRIED**

There being no further business, the meeting adjourned at 10:40 a.m.

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Date

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Councillor Abel



# FIRE DEPARTMENT MASTER PLAN UPDATE

Central York Fire Services

*Proudly Protecting Aurora and Newmarket*

**Central York Fire  
Services**

**Fire Department  
Master Plan Update**

*July 2014*

Prepared By:

**Dillon Consulting  
Limited**



## EXECUTIVE SUMMARY

This Central York Fire Services 2014 Fire Department Master Plan Update (FDMPU) has been developed to provide the Central York Fire Services (CYFS) with a strategic framework to update the current 2008 – 2017 Fire Department Master Plan Update. It is also to assist the Town of Newmarket and the Town of Aurora Councils in making decisions regarding the provision of fire protection services based on their local needs and circumstances.

The analyses and recommendations contained within this plan have been prepared with regard for the legislated responsibilities of the municipalities as contained within the *Fire Protection and Prevention Act* (1997) (FPPA) and the *Occupational Health and Safety Act* (OHSA).

Our interpretation of the Joint Council Committee, Town of Aurora Council and Town of Newmarket Council commitment to public safety is to provide the optimal level of fire protection services as determined through the analyses of the “needs and circumstances” of the Town of Aurora and Town of Newmarket as referenced in the FPPA. This includes their commitment to achieving the most cost effective and efficient level of fire protection services resulting in the best value for both communities.

Significant emphasis has been placed on the use of Public Fire Safety Guidelines (PFSG) and the resources provided by the Office of the Fire Marshal and Emergency Management (OFMEM). One of the primary roles of the OFMEM is to provide assistance to municipalities through the provision of information and processes to support determining the fire protection services a municipality requires based on its local needs and circumstances. The Comprehensive Fire Safety Effectiveness Model and Fire Risk Sub-Model are examples of the OFMEM documents that have been utilized to prepare this FDMPU.

Within the Province of Ontario the delivery of fire protection services are guided by the FPPA including the strategic optimization of the three lines of defence which include:

- I. Public Education and Prevention;***
- II. Fire Safety Standards and Enforcement; and***
- III. Emergency Response.***

Optimization of the first two lines of defence has proven to be an effective strategy in reducing the impacts of fire, and fire related injuries across the province. Recently the Fire Marshal indicated that further optimization of programs targeted specifically at the first two lines of defence must be a priority for fire services within Ontario. Emergency response including fire suppression resources are a necessary tool in managing the overall fire risk within a community. However, as indicated by the Fire Marshal, preventing fires through the delivery of education and prevention programs, and utilization of the appropriate fire safety standards and enforcement strategies is the most effective means to further reduce the impacts of fire, and fire related injuries across the province.

The analyses within this report recognize three strategic priorities for the delivery of fire protection services within the Town of Aurora and the Town of Newmarket (municipalities / community) including:

- *The utilization of a Comprehensive Community Risk Assessment to determine the level of existing and projected fire safety risks within the two municipalities as the basis for assessing the current and future fire protection services;*
- *The optimization of the first two lines of defence including public education and prevention, and the utilization of fire safety standards and enforcement to provide a comprehensive fire protection program within the two municipalities based on the results of the Comprehensive Community Risk Assessment; and*



- *Emphasis on strategies that support the sustainability of fire protection services that provide the most cost effective and efficient level of fire protection services resulting in the best value for the community.*

The FPPA states that, "every municipality shall, establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances."

In our view the CYFS reflects a progressive fire service that, with the support of the current municipal Councils and JCC, has developed a comprehensive fire protection plan that is supported by a high degree of public satisfaction and support. The findings of this FDMPU reflect that the Town of Aurora and Town of Newmarket are currently providing a level of fire protection services commensurate with their legislated responsibilities as defined by the Fire Protection and Prevention Act, 1997 (FPPA). A summary of the 2014 Fire Department Master Plan Update recommendations are provided below.

### ***Summary of 2014 FDMPU Recommendations***

This review assessed the recommendations of the 2008-2017 Master Fire Plan Update of the Central York Fire Services. All of the recommendations contained within the 2008 plan were reviewed in completing this update. The majority of the 2008 recommendations have been implemented, where recommendations have not been acted upon, or work may be in progress they are addressed within this review. Additional recommendations are also included to assist the department in achieving its strategic objectives. The following are the recommendations of this 2014 – FDMPU:

#### **Strategic Report:**

1. *That subject to the consideration and approval of the 2014 Fire Department Master Fire Plan Update by the Joint Council Committee, the Town of Newmarket Council, and the Town of Aurora Council, that the Fire Chief be directed to update the Consolidated Fire and Emergency Services Agreement, and the required Establishing and Regulating By-Laws of both Towns.*
2. *That the Consolidated Fire and Emergency Services Agreement be revised to include that in conjunction with updating the Master Fire Plan on a five year cycle, that the updated Master Fire Plan include a Financial Business Plan including the operating and capital requirements for the next five year cycle for the delivery of fire protection services.*
3. *That the Fire Chief be directed update the Comprehensive Community Risk Assessment on an annual basis and include it within the CYFS Annual Report to the Joint Council Committee.*

#### **Administration Division:**

4. *It is recommended that the Joint Committee of Council review the Consolidated Fire and Emergency Services Agreement, including the status of the 2014 Fire Department Master Plan Update, CFESA Budget Process, Facility Management and CFESA Reporting Structure.*
5. *That the CYFS prioritize the development of a mission statement, vision statement and organizational values through a process of staff engagement and consultation.*



6. *That subject to the consideration and approval of the 2014 Fire Department Master Fire Plan Update by the Joint Council Committee, the Town of Newmarket Council, and the Town of Aurora Council, that the Fire Chief be directed to include the performance objectives identified within 2014 Fire Department Master Fire Plan Update and report against them as part of the CYFS annual operating and capital budget submission.*
7. *That the current part-time Administrative Assistant position be converted into a full-time position to support the administrative needs of the CYFS, and that the Administration Coordinator continue to identify efficiencies and the need for any additional administrative staff.*
8. *That the Town of Newmarket implement the position of Network and Communications Coordinator within the CYFS to oversee the technology needs of the department including the development of a Technology Architecture Plan in consultation with the Newmarket Information Technology department.*
9. *That the position of Human Resource Consultant be reinstated as a full-time position supporting the CYFS. This staff position would be a member of the Human Resources Department at the Town of Newmarket, providing full-time support to the CYFS (reporting to the Fire Chief and Director of Human Resources).*
10. *That job descriptions and a performance development program, consistent with the Town of Newmarket program be developed for all unionized CYFS staff.*
11. *That the CYFS prioritize professional development including a formal succession planning process that recognizes the importance, and provides the opportunities for mentoring, secondments, job shadowing, and cross training within the department, and where external opportunities may be identified.*
12. *That the CYFS develop a Standard Operating Guideline in consultation with the York Regional Police Services for joint responses.*
13. *That the CYFS explore further shared services opportunities and joint purchasing opportunities with the other emergency services within York Region.*

**Prevention /Education Division:**

14. *That subject to the consideration and approval of the Fire Department Master Plan Update by the Joint Council Committee, the Town of Newmarket Council, and the Town of Aurora Council the proposed Fire Safety Program Delivery Cycles be included within the Fire Department Master Plan Update be included within the Establishing and Regulating By-Laws of both Towns.*
15. *That an additional full-time position of Fire and Life Safety Educator be created to reflect CYFS continued commitment to optimizing the first two lines of defence and the delivery of public fire and life safety programs.*
16. *That an additional Fire Inspector position be created to reflect Councils' continued commitment to optimizing the first two lines of defence and the delivery of public fire and life safety programs.*



17. That subject to the consideration and approval of the Fire Department Master Plan Update by the Joint Council Committee, the Town of Newmarket Council, and the Town of Aurora Council the proposed enhanced Fire Inspection Cycles be included within the Fire Department Master Plan Update be included within the Establishing and Regulating By-Laws of both Towns.
18. That the CYFS develop a Fire Prevention Policy that reflects the requirements of PFSG 04-45-12 “Fire Prevention Policy” for consideration and approval by the JCC to be included within a new Establishing and Regulating By-law for each municipality.
19. That CYFS develop an SOG for Fire Investigation following the framework of PFSG 04-52-03 Fire Investigation Practices as presented within this FDMPU.
20. That in consultation with staff from both Towns the CYFS initiate a review of the current by-laws regulating the display and sales of fireworks, and that where possible the by-laws of both Town be revised to be consistent in definition and application of the regulations.
21. That the CYFS implement the proposed fire prevention/public education staffing model as presented within the Central York Fire Services Fire Department Master Plan Update.

**Fire Suppression Division:**

22. That the CYFS emergency response dispatch protocols be revised to reflect the proposed minimum staffing deployments for low, moderate and high risk occupancies (Table 16) and the proposed revised performance objectives for emergency response (Table 19).

**Table 16: Recommended Depth of Response – CYFS**

Fireground Critical Tasks		Low Risk	Moderate Risk	High Risk
Incident Response	Incident Command	1	1	1
	Pump Operator	1	1	1
	Additional Pump Operator	0	0	1
	Initial Attack Line (Confine & Extinguish)	2	2	2
	Additional Attack Line (Confine & Extinguish)	0	2	2
	Search and Rescue	0	2	2
	Initial Rapid Intervention (RIT)	0	2	2
	Ventilation	0	2	2
	Water Supply- pressurized	0	1	1
	Forcible Entry Team	0	1	2
	Laddering	0	0	2
	Exposure Protection	0	0	2
	Incident Safety Officer	0	0	1
	Accountability	0	0	1
	Rehabilitation	0	0	2
	<b>Minimum firefighter deployment</b>	<b>4</b>	<b>14</b>	<b>24</b>



**Table 19: Recommended Revised CYFS Performance Objectives**

<i>Initial Response</i>
<i>CYFS should strive to achieve a goal of first arriving crew consisting of at least three firefighters and an officer responding to emergencies within 6 minutes <b>and 20 seconds</b> of receiving an emergency call, 90% of the time.</i>
<i>Depth of Response</i>
<i>CYFS should strive to achieve a goal of responding to reported structure fires with <b>fourteen</b> firefighters within ten minutes <b>and 20 seconds</b>, 90% of the time.</i>
<i>Turnout Time</i>
<i>CYFS should strive to achieve a goal of <b>80</b> seconds or less for turnout time of firefighters, <b>90% of the time</b>.</i>

23. *That the CYFS continue to prioritise pre-incident planning and work towards the development of Quick Action Plans for all buildings within the CYFS response area with priority assigned to high risk buildings.*
24. *That the CYFS develop a fifth fire station (Station 4-5) including space for administration, fire prevention/public education, and training, including a new training centre in the area of the intersection of St. John's Sideroad and Industrial Parkway within the short-term (1-2 year) horizon of this five year plan.*
25. *That in considering the recommendation for a fifth fire station (Station 4-5) with administrative and training functions (as proposed within the 2014 FDMPU) the CYFS also consider the current use of fire Station 4-1 as a headquarters facility and the identified infrastructure improvements in considering the sustainability of this station, reuse or alternative use, or the relocation of Station 4-1 in close proximity to its current location in a similar building to that of Station 4-4.*
26. *That the CYFS implement a phased recruitment process for 20 additional firefighters to be coordinated with the development and construction of the fifth fire station (estimated completion late 2016) proposed within the FDMPU.*
27. *That the Town of Newmarket and Town of Aurora should include the CYFS in the ongoing planning and development of the road network where emergency response travel times may be impacted as the result of traffic calming measures, road network design and development, and traffic congestion.*
28. *That the CYFS develop an SOG for wildland/grass fires that identifies staff roles and responsibilities and identifies the operation of Utility 410.*
29. *That the CYFS should continue to develop tanker operations and achieve a certified tanker shuttle accreditation.*
30. *That the JCC request an update from Public Works staff of both Towns to develop a strategic time frame to implement the Fire Hydrant Compatibility Plan referenced in Fire Services Report 2013-06 to update flow rates and fire hydrant conspicuity.*



**Training Division:**

31. *That the CYFS implement the position of Assistant Deputy Chief within the short-term (1-2 year) horizon of this five year plan.*
32. *That the proposed Assistant Deputy Chief- Training & Emergency Management be tasked to monitor the workload pressures on the training division as a result of the increased fire suppression staffing proposed, technological changes affecting training, changes in provincial regulations, administrative support and corresponding need for increased staffing in three to five years as recommended by the 2008 plan.*
33. *That the role of the Training Officers should be clarified in a Standard Operating Guideline. Their responsibilities should be noted as:*
  - *Researching and developing appropriate training programs for all CYFS staff;*
  - *Developing and delivering (or assisting with the delivery) of new training initiatives;*
  - *Ongoing review of training records and assessing individual progress;*
  - *Overseeing a quality assurance program for the delivery of all training programs; and*
  - *Monitoring the CYFS requirements for certification, and compliance with legislative and regulatory requirements for staff training.*
34. *That Standard Operating Guidelines be developed to provide clear direction to all staff as to their roles and responsibilities relative to department training and staff development.*
35. *That the CYFS conduct a comprehensive training facilities assessment as part of the design and development of the proposed fifth fire station.*
36. *That the CYFS develop an enhanced Comprehensive Annual Training Program to facilitate the transition of the CYFS to the NFPA Professional Qualifications Standards adopted by the OFMEM.*



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- Appendix C: PFSG 04-40-03 “Selection of Appropriate Fire Prevention Programs”
- Appendix D: PFSG 04-08-10 “Operational Planning: An Official Guide to Matching Resource Deployment and Risk”
- Appendix E: PFSG 01-02-01 “Comprehensive Fire Safety Effectiveness Model (CFSEM)”
- Appendix F: PFSG 01-01-01 “Fire Protection Review Process”
- Appendix G: PFSG 02-03-01 “Economic Circumstances”
- Appendix H: PFSG 02-02-03 “Fire Risk Assessment”
- Appendix I: PFSG 02-04-01 “Capabilities of Existing fire Protection Services
- Appendix J: Comprehensive Community Risk Assessment & IRM Web Tool User Guide
- Appendix K: Definitions of OFMEM Response Types
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## GLOSSARY OF TERMS

ANSI	American National Standards Institute
CACC	Central Ambulance Communications Centre
CAO	Chief Administrative Officer
CFESA	Consolidated Fire and Emergencies Services Agreement
CFSEM	Comprehensive Fire Safety Effectiveness Model
CFPO	Chief Fire Prevention Officer
CPI	Consumer Price Index
CVA	Current Value Assessment
CYFS	Central York Fire Services
EMS	Emergency Medical Services
ERF	emergency response facilities
ERU	emergency response units
FDMPU	Fire Department Master Plan Update
FPPA	Fire Protection and Prevention Act (1997)
FPO	Fire Prevention Officer
GIS	Geographic Information Systems
GTA	Greater Toronto Area
IMS	Incident Management System
IRM	Integrated Risk Management
JCC	Joint Council Committee
JHSC	Joint Health and Safety Committee
MOH	Ministry of Health (Ontario)
MW	Megawatt
NFPA	National Fire Protection Association
NFPA Pro-Qual	National Fire Protection Association Professional Qualifications
OBC	Ontario Building Code
OFC	Ontario Fire Code
OFMEM	Office of the Fire Marshal and Emergency Management (Ontario)
OFSS	Ontario Fire Services Standards
OHSA	Occupational Health and Safety Act, R.S.O. 1990
OPs	Operating Procedures
PFSG	Public Fire Safety Guidelines
PIL	Payments in Lieu
RIT	Rapid Intervention Team
SCBA	Self-Contained Breathing Apparatus
SOG	Standard Operating Guideline



## 1.0 INTRODUCTION

### 1.1 *Municipal Overview*

The Town of Aurora and the Town of Newmarket are two separate, but neighbouring municipalities in York Region. Both towns have become increasingly more urbanized over the past ten years, continuing to provide small town charm while offering big city amenities. Both have been experiencing residential and commercial growth as a result of their location within the Greater Toronto Area (GTA). The Town of Aurora's current population is approximately 53,203 people (2011 Census) and has already increased to 56,115 according to the planning department. Since 2006, the population has increased by 11.7%. The Town's residential and employment growth is expected to continue. The population is expected to reach approximately 70,000 persons by 2031 (According to the 2011 Town of Aurora Community Profile); this represents an additional increase of 31.5% over the next 20 years.

Similarly, the Town of Newmarket's current population is approximately 79,978 people (2011 Census) and has already increased to 84,000 according to the Town's website. Since 2006, the population has increased by 7.6%. The Town's residential and employment growth is also expected to continue. The population is expected to reach 98,000 persons by 2026, representing an additional increase of 22.5% over the next 15 years.

Central York Fire Services serves a population of approximately 137,000 and covers an area of 90 square kilometres. CYFS operates from four fire stations: two in Aurora and two in Newmarket. It is a full-time fire department comprised of 138 staff, including a Fire Chief, Deputy Fire Chief, Platoon Chiefs, Training Officers, Fire Prevention Officers and Inspectors, administrative support, captains and firefighters. CYFS continues to show its commitment to providing sustainable fire protection services through several initiatives, including the proactive step to conduct this Fire Department Master Plan Update.

### 1.2 *Supporting Reports and Plans*

There are a number of supporting reports and plans that inform this 2014 Fire Department Master Plan Update which are summarized in this section.

#### 1.2.1 *CYFS Annual Reports*

CYFS prepares annual reports that summarize the year's activities. The 2013 report in particular provides an overview of the budget allocation, as well as an analysis of overtime and call-back statistics. The Fire Prevention Division reported on inspecting and performing evacuation drills within seventeen vulnerable occupancies and lists the number of fire code inspections completed. The Operations Division summary includes an overview of suppression data such as type of responses and average response times by station.

#### 1.2.2 *Master Fire Plan 2002-2011*

The 2002-2011 Master Fire Plan formed the basis for developing the fire protection services provided by the CYFS. This initial plan identified the structure of the CYFS and highlighted other means of service delivery including communications, mutual aid emergency response assistance, automatic aid and secondary fire investigations. Level of service for inspections, advisory services, plan reviews, public education, statistical reporting and emergency response were established within this plan.



### ***1.2.3 The 2008 – 2017 Master Fire Plan Update***

The 2008 – 2017 Master Fire Plan Update was the first update conducted of the initial 2002 – 2011 Master Fire Plan and is comprised of six main sections. The first section is the Strategic Report which provides a strategic overview of high-level issues and assesses the status of the objectives stated in the 2002 Master Fire Plan. Based on the status, fourteen strategic recommendations were provided as part of this review process. Sub-Report 2 has a similar structure, but is focused on administration. Sub-Report 3 reviews fire prevention. Sub-Report 4 focuses on operations (or suppression services). Sub-Report 5 examines training or staff development.

All of the final recommendations (a total of 123) are attached as ***Appendix A*** through an operational task tracking matrix. It is these recommendations that form a basis for the sections following in this report. Those recommendations that are outstanding are a central focus.



## 2.0 LEGISLATION

### 2.1 Fire Protection and Prevention Act, 1997

Within the Province of Ontario the relevant legislation for the operation of a fire department is contained within the *Fire Protection and Prevention Act, 1997* (FPPA). The following are applicable sections of the FPPA for reference purposes:

#### PART I DEFINITIONS

##### Definitions

1.(1) In this Act,

“**fire chief**” means a fire chief appointed under section 6 (1), (2) of (4);

“**fire code**” means the fire code established under Part IV;

“**fire department**” means a group of firefighters authorized to provide fire protection services by a municipality, group of municipalities or by an agreement made under section 3;

“**Fire Marshal**” means the Fire Marshal appointed under subsection 8 (1);

“**fire protection services**” includes fire suppression, fire prevention, fire safety education, communication, training of persons involved in the provisions of fire protection services, rescue and emergency services and the delivery of all those Services;

“**municipality**” means the local municipality as defined in the Municipal Act, 2001;

“**prescribed**” means prescribed by regulation

“**regulation**” means a regulation made under this Act;

“**volunteer firefighter**” means a firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance;

##### Application of definition of firefighter

(3) The definition of firefighter in subsection (1) does not apply to Part IX. 1997, c. 4, s. 1 (2)

##### Automatic aid agreements

(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 and 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 other 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 other emergencies occurring in the part of the other municipality. 1997, c. 4, s. 1 (4)

#### PART II RESPONSIBILITY FOR FIRE PROTECTION SERVICES

##### Municipal responsibilities

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.

##### Services to be provided

(3) In determining the form and content of the program that it must offer under clause (1)(a) and the other fire protection services that it may offer under clause (1)(b), a municipality may seek the advice of the Fire Marshal.



<b>Automatic aid agreements</b>	(6) A municipality may enter into an automatic aid agreement to provide or receive the initial or supplemental response to fires, rescues and emergencies.
<b>Review of municipal fire services</b>	(7) The Fire Marshal may monitor and review the fire protection services provided by municipalities to ensure that municipalities have met their responsibilities under this section, and if the Fire Marshal is of the opinion that, as a result of a municipality failing to comply with its responsibilities under subsection (1), a serious threat to public safety exists in the municipality, he or she may make recommendations to the council of the municipality with respect to possible measures the municipality may take to remedy or reduce the threat to public safety.
<b>Failure to provide services</b>	(8) If a municipality fails to adhere to the recommendations made by the Fire Marshal under subsection (7) or to take any other measure that in the opinion of the Fire Marshal will remedy or reduce the threat to public safety, the Minister may recommend the Lieutenant Governor in Council that a regulation be made under subsection (9).
<b>Regulation</b>	(9) Upon the recommendation of the Minister, the Lieutenant Governor in council may make regulations establishing standards for fire protection services in municipalities and requiring municipalities to comply with the standards.
<b>Fire departments</b>	(1) A fire department shall provide fire suppression services and may provide other fire protection services in a municipality, group of municipalities or in territory without municipal organization. 1997, c. 4, s. 5 (1).
<b>Same</b>	(2) Subject to subsection (3), the council of a municipality may establish more than one fire department for the municipality. 1997, c. 4, s. 5 (2).
<b>Exception</b>	(3) The council of a municipality may not establish more than one fire department if, for a period of at least 12 months before the day this Act comes into force, fire protection services in the municipality were provided by a fire department composed exclusively of full-time firefighters. 1997, c. 4, s. 5 (3).
<b>Same</b>	(4) The councils of two or more municipalities may establish one or more fire departments for the municipalities. 1997, c. 4, s. 5 (4).
<b>Fire chief, municipalities</b>	6. (1) If a fire department is established for the whole or part of a municipality or for more than one municipality, the council of the municipality or the councils of the municipalities, as the case may be, shall appoint a fire chief for the fire department.
<b>Same</b>	(2) The council of a municipality or the councils of two or more municipalities may appoint a fire chief for two or more fire departments.
<b>Responsibility to council</b>	(3) A fire chief is the person who is ultimately responsible to the council of a municipality that appointed him or her for the delivery of fire protection services
<b>Powers of a fire chief</b>	(5) The fire chief may exercise all powers assigned to him or her under this Act within the territorial limits of the municipality and within any other area in which the municipality has agreed to provide fire protection services, subject to any conditions specified in the agreement.

### PART III FIRE MARSHAL

<b>Appointment of Fire Marshal</b>	8 (1) There shall be a Fire Marshal who shall be appointed by the Lieutenant Governor in Council.
<b>Powers of Fire Marshal</b>	9.(1) the Fire Marshal has the power,  (a) to monitor, review and advise municipalities respecting the provision of fire



protection services and to make recommendations to municipal councils for improving the efficiency and effectiveness of those services;

(b) to issue directives to assistants to the Fire Marshal respecting matters relating to this Act and the regulations;

(c) to advise and assist ministries and agencies of government respecting fire protection services and related matters;

(d) to issue guidelines to municipalities respecting fire protection services and related Matters;

(e) to co-operate with anybody or person interested in developing and promoting the principles and practices of fire protections services;

(f) to issue long service awards to persons involved in the provision of fire protection services; and

(g) to exercise such other powers as may be assigned under this Act or as may be necessary to perform any duties assigned under this Act.

#### **Duties of Fire Marshal**

9.(2) It is the duty of the Fire Marshal,

(a) to investigate the cause, origin and circumstances of any fire or of any explosion or condition that in opinion of the Fire Marshal might have caused a fire, explosion, loss of life, or damage to property;

(b) to advise municipalities in the interpretation and enforcement of this Act and the regulations;

(c) to provide information and advice on fire safety matters and fire protection matters by means of public meetings, newspaper articles, publications, electronic media and exhibitions and otherwise as the Fire Marshal considers available;

(d) to develop training programs and evaluation systems for persons involved in the provision of fire protection services and to provide programs to improve practices relating to fire protection services;

(e) to maintain and operate a central fire college;

(f) to keep a record of every fire reported to the Fire Marshal with the facts, statistics and circumstances that are required under the Act;

(g) to develop and maintain statistical records and conduct studies in respect of fire protection services; and

(h) to perform such other duties as may be assigned to the Fire Marshal under this Act.



## ***2.2 Occupational Health and Safety Act, R.S.O. 1990***

The Occupational Health and Safety Act, R.S.O. 1990 (OHSA) requires every employer to, “take every precaution reasonable in the circumstances for the protection of the worker.” The OHSA provides for the appointment of committees, and identifies the “Ontario Fire Services Section 21 Advisory Committee” as the advisory committee to the Minister of Labour with the role and responsibility to issue guidance notes to address firefighter-specific safety issues within Ontario.

Where 20 or more workers are regularly employed at a workplace, the OHSA requires the establishment of a Joint Health and Safety Committee (JHSC). The committee must hold regular meetings including the provision of agendas and minutes.

Firefighter safety must be a high priority in considering all of the activities and services to be provided by a fire department. This must include the provision of department policies and procedures, or Operating Procedures (OPs) that are consistent with the direction of the OHSA Section 21 Guidance Notes for the fire service.



### 3.0 OFFICE OF THE FIRE MARSHAL AND EMERGENCY MANAGEMENT

As indicated within the FPPA (Act) the duties of the Fire Marshal include responsibilities to assist in the interpretation of the Act, to develop training and evaluation systems and enforcement of the Act and its regulations. One of these roles includes the review of compliance with the minimum requirements of a Community Fire Safety Program, which must include:

- ✓ *A smoke alarm program with home escape planning;*
- ✓ *The distribution of fire safety education material to residents/occupants;*
- ✓ *Inspections upon complaint or when requested to assist with code compliance (including any necessary code enforcement); and*
- ✓ *A simplified risk assessment.*

The OFMEM has developed Public Fire Safety Guidelines (PFSG) to assist municipalities in making informed decisions with regard to determining local “needs and circumstances” and achieving compliance with the FPPA.

#### 3.1 PFSG 00-00-01 “Framework for Setting Guidelines within a Provincial-Municipal Relationship”

PFSG 00-00-01 (attached as **Appendix B**) is an example of the guidelines that have been developed. Information within the background section of this document includes the following:

*“Municipalities are compelled to establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention. The act also states that municipalities are responsible for arranging such other fire protection services as they determine may be necessary according to their own needs and circumstances. The relationship between the province and municipalities is based on the principle that municipalities are responsible for arranging fire protection services according to their own needs and circumstances”.*

As referenced in this document, guidelines represent one component of the strategy that the Ministry of Community Safety and Correctional Services proposes for public fire protection in Ontario. The strategy referenced includes:

- *Clarifying municipal responsibility for local fire protection, while protecting the provincial interest in public safety.*
- *Removing remaining legislative barriers which forestall the restructuring and reorganization of municipal fire services.*
- *Facilitating a shift in focus which places priority on fire prevention and public education as opposed to fire suppression.*
- *Providing municipalities with decision-making tools to help them provide services according to their own needs and circumstances.*
- *Facilitating more active involvement of the private sector and other community groups in fire prevention and public education through the Fire Marshals Public Fire Safety Council.*



### **3.2 PFSG 04-40-03 “Selection of Appropriate Fire Prevention Programs”**

PFSG 04-40-03 and 04-40-12 (attached as **Appendix C**) identifies the four minimum requirements of the FPPA Section 2 (1) (a) “establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention” including:

- ✓ Simplified risk assessment;
- ✓ A smoke alarm program;
- ✓ Fire safety education material distributed to residents/occupants; and
- ✓ Inspections upon compliant or when requested to assist with code compliance.

### **3.3 PFSG 04-08-10 “Operational Planning: An Official Guide to Matching Resource Deployment and Risk”**

PFSG 04-08-10 (attached as **Appendix D**) was developed by the OFMEM to assist municipalities in meeting their responsibilities under Section 2 (1) (b) “provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances” of the FPPA.

As stated by the OFMEM in PFSG “04-08-10 Operational Planning: An Official Guide to Matching Resource Deployment and Risk”:

*“The overall public safety objective of a municipality is to provide the community with an optimal level of fire protection. Fire suppression is one aspect of the three lines of defence; the other two lines are Public Education and Prevention and Fire Safety Standards and Enforcement. A municipality needs to evaluate its existing fire suppression capabilities to ensure that it is managing all fire risk levels within the community, responding to and addressing fires that occur, and meeting public and council expectations.”*

On May 6, 2014 the OFMEM released a new “*Integrated Risk Management (IRM) Web Tool.*” The OFMEM describes the purpose of the new IRM Web Tool as:

*“The purpose of the IRM Web Tool is to provide best practices to municipal and fire service decision makers when conducting individual building fire risk assessments. The IRM Web Tool is an evidence based risk management tool designed to assist Ontario’s municipalities to establish appropriate levels of service by integrating Public Fire Safety Education, Fire Safety Standards and Enforcement and Emergency Response (The Three Lines of Defence) to meet their legislative obligations in the Fire Prevention and Protection Act (FPPA), 1997. This will assist municipalities by providing for better informed decision making to determine levels of fire protection services with respect to the Three Lines of Defence through utilization of the IRM Web Tool”.*

The OFMEM has indicated that the new IRM Web Tool will include a new PFSG that will replace the current PFSG “04-08-10 Operational Planning: An Official Guide to Matching Resource Deployment and Risk”. The OFMEM has indicated that this new PFSG is still in development and will be released upon completion.



The new IRM Web Tool has been utilized in developing the Community Risk Assessment contained within this review.

### 3.4 PFSG 01-02-01 “Comprehensive Fire Safety Effectiveness Model” (CFSEM)

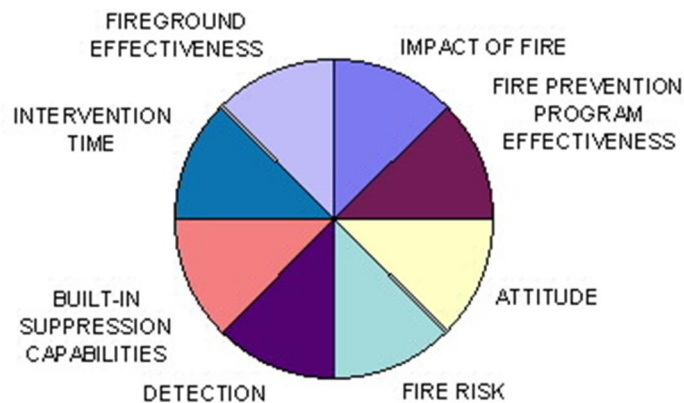
PFSG 01-02-01 (Attached as *Appendix E*) was developed by the OFMEM to assist communities in evaluating their level of fire safety. The model recognizes that there is more to providing fire protection services than just building fire stations, purchasing equipment and deploying firefighters. The CFSEM confirms that the fire service within Ontario is in a period of change. In response to increasing public expectations and diminishing financial resources municipalities are being forced to critically assess their fire protection needs in identifying new and innovative ways to providing the most cost effective fire protection services. The following is an excerpt from PFSG 01-02-01:

*“This model looks at community fire protection as the sum of eight key components, all of which impact on the fire safety of the community. Deficiencies in one of the components can be offset by enhancements in another component or components”.*

The CFSEM identifies that every municipality should be guided by a master or strategic plan covering a planning horizon of five to ten years. Shifting from the traditional focus of hazard identification and fire suppression response the CFSEM recognizes that more comprehensive risk assessment and optimizing the use of fire prevention and control systems are part of a paradigm shift within the fire service.

**Figure 1** below shows each of the factors which make up the comprehensive model. Although the chart is divided equally, each factor will in reality contribute differently to the total level of protection provided to a community.

**Figure 1: Factors in a Comprehensive Fire Safety Effectiveness Model**

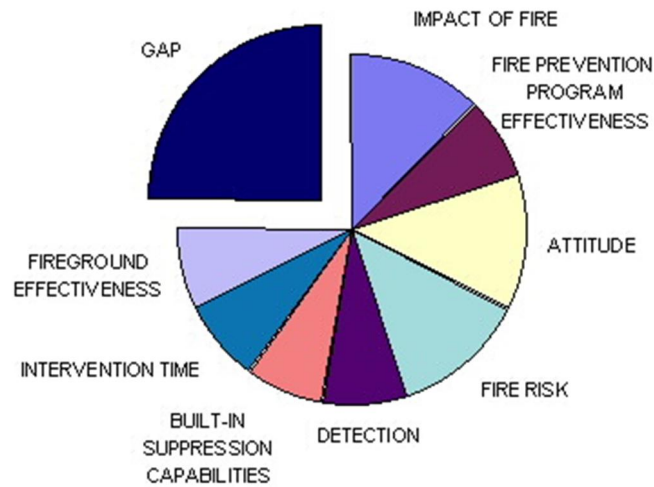


(Source: OFMEM PFSG 01-02-01)

**Figure 2** shows how the comprehensive model can be applied to a typical fire department. The "gap" depicts the difference between the existing level of protection and the ideal.



**Figure 2: Comprehensive Model applied to a typical Fire Department**



(Source: OFMEM PFSG 01-02-01)

Utilizing the framework of the CFSEM and the fire protection service assessment processes developed by the OFMEM the primary objective of this FDMPU is to identify through evidence based analyses the presence of any existing gaps in fire protection services within the Town of Aurora and the Town of Newmarket.

In response to any existing gaps identified this FDMPU recommends strategies that are intended to optimize the use of the “three lines of defence” including:

- I. Public Education and Prevention***
- II. Fire Safety Standards and Enforcement***
- III. Emergency Response***

A further description of each line of defence includes:

***I. Public Education and Prevention:***

*Educating residents of the community on means for them to fulfill their responsibilities for their own fire safety is a proven method of reducing the incidence of fire. Only by educating residents can fires be prevented and can those affected by fires respond properly to save lives, reduce injury and reduce the impact of fires;*

***II. Fire Safety Standards and Enforcement:***

*Ensuring that buildings have the required fire protection systems, safety features, including fire safety plans, and that these systems are maintained, so that the severity of fires may be minimized;*



### ***III. Emergency Response:***

*Providing well trained and equipped firefighters directed by capable officers to stop the spread of fires once they occur and to assist in protecting the lives and safety of residents. This is the failsafe for those times when fires occur despite prevention efforts.*

The CFSEM emphasises the importance and value of preventing a fire. This is important from both an economic and public safety perspective, at the same time, ensuring an appropriate level of health and safety for firefighters. The model also recognizes that developing programs and providing resources to effectively implement the first line of defence (a proactive public education and prevention program) can be an effective strategy to reduce and potentially minimize the need for the other lines of defence.

### **3.5 PFSG 01-01-01 “Fire Protection Review Process”**

Analysing local circumstances is a core component of the fire master planning process. PFSG 01-01-01 (Attached as **Appendix F**) identifies the three main issues that define local circumstances including the guidelines to be utilized:

- ✓ PFSG 02-03-01 “Economic Circumstances” (Attached as **Appendix G**)
- ✓ PFSG 02-02-03 “Fire Risk Assessment” (Attached as **Appendix H**)
- ✓ PFSG 02-04-01 “Capabilities of Existing Fire Protection Services (Attached as **Appendix I**)

Detailed analysis of these issues is included within this report to provide the background and rational to support the recommendations of this Fire Department Master Plan Update.



## 4.0 STRATEGIC REPORT REVIEW

The 2008 – 2017 Master Fire Plan Update provided an overall strategic report on high-level and high-impact issues that require significant attention from the Fire Chief and Joint Council Committee. Since that 2008 plan was considered many of recommendations that inform the strategic direction have been achieved. Objectives met include developing a comprehensive communications strategy, reviewing agreements with neighbouring municipalities, establishing target service levels, and establishing an accommodations and facilities plan.

The outstanding recommendations and updated strategic direction recommendations include the following:

### **2008 – 2017 Master Fire Plan Update – Recommendation 1:**

The department should continue to serve both municipalities and the two Towns should commit to a permanent consolidation. Appropriate changes to the agreement would need to be made that includes means of resolving disputes and, if necessary, a mechanism for dissolution or expansion and include a regular master fire planning process every five years to ensure continuous improvement and strategic direction.

In our view the actions of the Joint Council Committee, Town of Aurora Council and Town of Newmarket Council to date reflect their desire to deliver fire protection services within the framework of the current governance and operational model. This recommendation speaks to committing to a permanent consolidation which, in our view, has been made. There are, however, some outstanding components required to fulfill the intent of this recommendation. Preliminary meetings with legal staff from both Towns have been initiated to investigate the addition of a dispute resolution process and termination process. Revised recommendations are contained within the FDMPU to achieve the objective of this recommendation including requirements to update the Master Fire Plan on a five year cycle.

### **Recommendation 1:**

*That subject to the consideration and approval of the 2014 Fire Department Master Fire Plan Update by the Joint Council Committee, the Town of Newmarket Council, and Town of Aurora Council, that the Fire Chief be directed to update the Consolidated Fire and Emergency Services Agreement, and the required Establishing and Regulating By-Laws of both Towns.*

### **2008 – 2017 Master Fire Plan Update – Recommendation 3:**

A vision statement should be developed for Central York Fire Services and subsequently a mission statement and values should be developed by CYFS.

The CYFS supports this recommendation and has been moving forward with implementation. The department is in the process of selecting a consultant to assist in facilitating a collaborative process with staff and stakeholders to develop a mission statement. Further analyses and a revised recommendation are contained within the Administration Section of this review to respond to this recommendation.



#### **2008 – 2017 Master Fire Plan Update – Recommendation 4:**

Financial principles stated in original plan do not need to be revisited with the exception that Joint Council Committee revisits the issue of surpluses and uncommitted reserves. Revenue opportunities need to be investigated. Develop an ongoing five year financial plan.

In our view the CYFS, under the leadership of the Joint Council Committee and the Fire Chief, have shown the level of financial stewardship anticipated at the onset of the Consolidated Fire and Emergency Services Agreement. Sustaining this high degree of fiscal accountability should be considered within developing the five year financial plan recommended.

#### **Recommendation 2:**

*That the Consolidated Fire and Emergency Services Agreement be revised to include that in conjunction with updating the Master Fire Plan on a five year cycle, that the updated Master Fire Plan include a Financial Business Plan including the operating and capital requirements for the next five year cycle for the delivery of fire protection services.*

#### **2008 – 2017 Master Fire Plan Update – Recommendation 8:**

The Fire Chief shall report to JCC at each meeting on the status of the implementation of the Master Fire Plan tasks and recommendations with more comprehensive reports twice a year or as set by JCC. Business plans are to be developed for the department on an annual basis and shared with the JCC.

In our view the administrative functions identified within this recommendation are reflected within the Fire Chiefs roles and responsibilities as identified within the Consolidated Fire and Emergency Services Agreement. The Fire Chief is aware of, and provides regular reporting to, the JCC. In our view this recommendation is being implemented and no further recommendations are required.

#### **2008 – 2017 Master Fire Plan Update – Recommendation 11:**

That the Fire Chief is to assess the risks to the communities and review response capabilities and all other fire protection matters and report to Joint Council Committee on an annual basis.

This 2014 update includes a Comprehensive Community Risk Assessment and analyses of the CYFS current emergency response capabilities and performance objectives. Subject to the consideration and approval of this report by the Joint Council Committee, Town of Aurora Council and Town of Newmarket Council, the Comprehensive Community Risk Assessment should be updated by the CYFS on an annual basis and included with the Fire Chief's annual report to the Joint Council Committee. This strategy is consistent with the role and responsibility of the JCC to monitor the ongoing levels of services provided by the CYFS. This process will allow the Fire Chief and the Joint Council Committee to identify any trends and make service level amendments as required.

#### **Recommendation 3:**

*That the Fire Chief be directed update the Comprehensive Community Risk Assessment on an annual basis and include it within the CYFS Annual Report to the Joint Council Committee.*



### **2008 – 2017 Master Fire Plan Update – Recommendation 13:**

Concerns about delaying dispatch of CYFS by the MOH (Ministry of Health) CACC (Central Ambulance Communication Centre) should continue to be voiced to the province at every opportunity. Until such time as improvements are made, alternative actions that can reduce the delay should be explored.

Municipalities across the province share the same concerns as reflected in this recommendation. The Fire Chief has identified these concerns and is working with the other Fire Chiefs in York Region, the York Regional Police, and York Emergency Medical Services (EMS) to improve fire dispatch services. Platoon Chiefs monitor these calls on a regular basis and report any concerns directly to the Fire Chief for follow up. In our view this recommendation has been acted upon and will continue to be addressed by the Fire Chief as necessary, no further recommendations are required.

## ***4.1 Summary and Recommendations of the Strategic Report***

This review assessed the Strategic Report recommendations of the 2008-2017 Master Fire Plan Update of the Central York Fire Services. The majority of the 2008 Strategic Report recommendations have been implemented, where recommendations have not been acted upon, or where work may be in progress they are addressed within this review. Additional recommendations are also included to assist the CYFS in achieving the strategic priorities of this plan.

The following are the Strategic Report recommendations of this review:

- 1. That subject to the consideration and approval of the 2014 Fire Department Master Fire Plan Update by the Joint Council Committee, the Town of Newmarket Council, and the Town of Aurora Council, that the Fire Chief be directed to update the Consolidated Fire and Emergency Services Agreement, and the required Establishing and Regulating By-Laws of both Towns.***
- 2. That the Consolidated Fire and Emergency Services Agreement be revised to include that in conjunction with updating the Master Fire Plan on a five year cycle, that the updated Master Fire Plan include a Financial Business Plan including the operating and capital requirements for the next five year cycle for the delivery of fire protection services.***
- 3. That the Fire Chief be directed update the Comprehensive Community Risk Assessment on an annual basis and include it within the CYFS Annual Report to the Joint Council Committee.***



## 5.0 COMPREHENSIVE COMMUNITY RISK ASSESSMENT

The Office of the Fire Marshal and Emergency Management (OFMEM) provides a number of tools to assist municipalities, and ultimately municipal councils, in determining local needs and circumstances as required by the FPPA. These tools include the Comprehensive Fire Safety Effectiveness Model; the Fire Risk Sub-Model, Integrated Risk Management (IRM) Web Tool, and Public Fire Safety Guideline 01-01-01 “*Fire Protection Review Process*” (**Appendix F**).

The Office of the Fire Marshal and Emergency Management (OFMEM) *Fire Risk Sub-model*<sup>1</sup> introduces the importance of community risk in the following paragraph:

*“Assessing the fire risk within a community is one of the seven components that comprise the Comprehensive Fire Safety Effectiveness Model. It is the process of examining and analyzing the relevant factors that characterize the community and applying this information to identify potential fire risk scenarios that may be encountered. The assessment includes an analysis of the likelihood of these scenarios occurring and their subsequent consequences.”*

### 5.1 Comprehensive Risk Analyses Assessment Process

The Comprehensive Community Risk Assessment is included as **Appendix J** and provides a detailed assessment of the current and future (planned growth) fire risk within the Town of Aurora and Town of Newmarket.

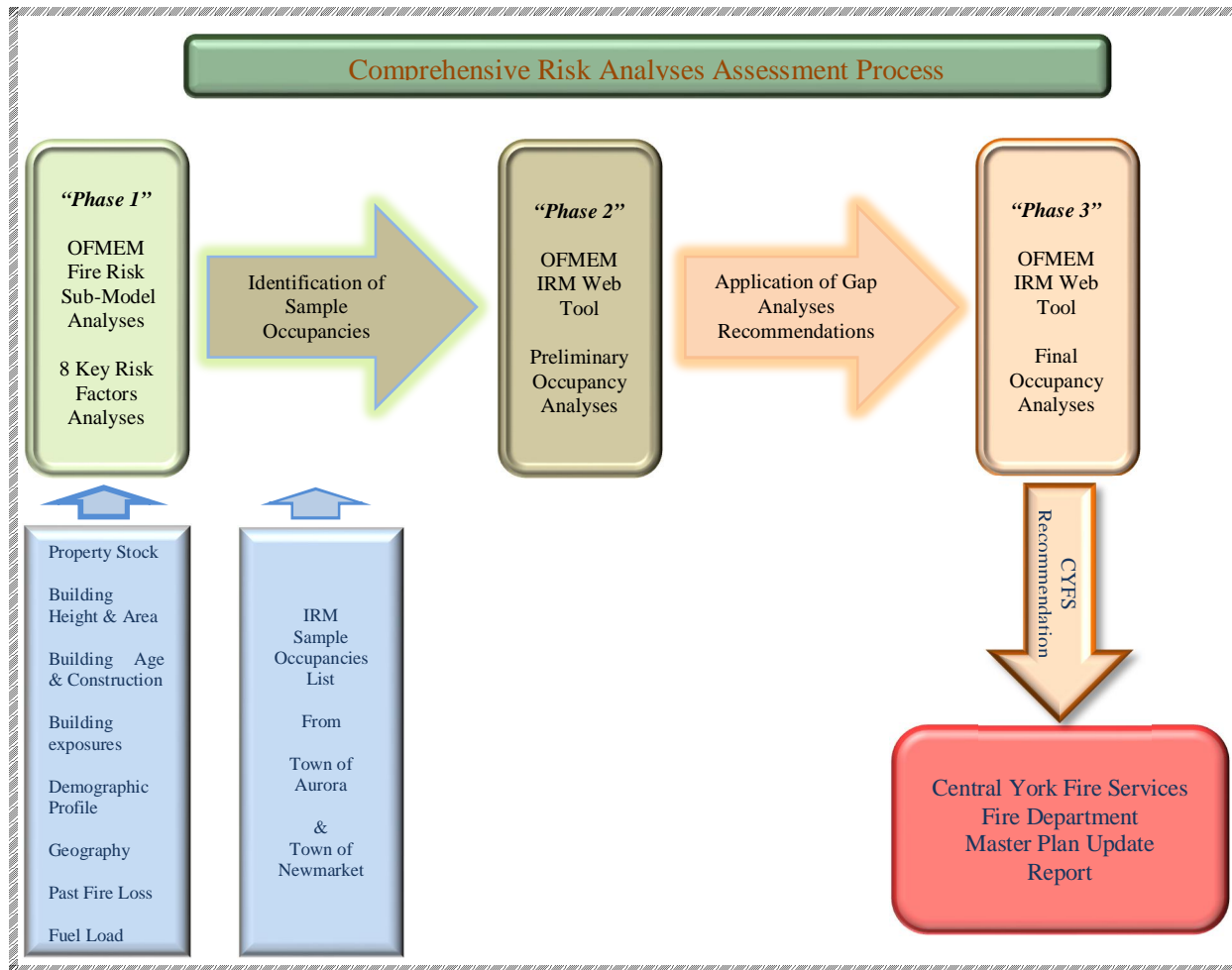
**Figure 3** reflects the comprehensive risk analyses assessment process used in developing this FDMPU.

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<sup>1</sup> Source: *Comprehensive Fire Safety Effectiveness Model, Fire Risk Sub-Model*, June 2009 Office of the Fire Marshal, Ontario



**Figure 3: Comprehensive Risk Analyses Assessment Process**



“Phase 1” of the Comprehensive Community Risk Assessment analyses within this report follows the OFMEM framework and specifically the OFMEM Fire Risk Sub-Model. The model identifies the importance of community risk in the following introductory paragraphs:

*“The types of fire risks that a community may be expected to encounter are influenced by its defining characteristics. For example, a “bedroom community” presents a different set of circumstances over one that is characterized as an “industrial town.” Communities that are distinguished by older buildings will pose a different set of concerns over those that are comprised of newer buildings constructed to modern building codes. Communities populated by a high percentage of senior citizens present a different challenge over ones with a younger population base.*

*Assessing fire risk should begin with a review of all available and relevant information that defines and characterizes your community. Eight key factors have been identified that contribute to the community’s inherent characteristics and circumstances. These factors influence events that shape potential fire scenarios along with the severity of their outcomes:*



- *Property Stock*
- *Building Height and Area*
- *Building Age and Construction*
- *Building Exposures*
- *Demographic Profile*
- *Geography/Topography/Road Infrastructure*
- *Past Fire Loss Statistics*
- *Fuel Load*

The Fire Risk Sub-Model provides communities with the flexibility to determine how their municipality should be defined in terms of fire risk scenarios. Specifically, the model states that:

*“For analyses purposes, the community being assessed can be defined as the municipality in its entirety or as a particular segment of it that distinguishes it from other parts. For smaller municipalities, it may be sufficient to simply define the community based on town boundaries. For larger municipalities, it may be appropriate to subdivide it into separate and distinct components to permit more detailed analysis. For example, it may be convenient to subdivide a municipality based on residential subdivision, downtown sections, industrial park, and a rural area. Hence, the first step in conducting a fire risk analyses is to identify and define the community (s) being analyzed.”*

“Phase 1” of assessing community fire risk within this FDMPU utilizes the major building occupancy classifications of the Ontario Building Code (OBC) to subdivide the Towns of Aurora and Newmarket. The major building occupancy classifications for each community are then evaluated against the eight key risk factors identified within the Fire Risk Sub-model. This analyses determines a level of fire risk for each of the major building classifications.

“Phase 2” of the community fire risk analyses within this report follows the application of the new OFMEM “*Integrated Risk Management (IRM) Web Tool*” that was released by the OFMEM on May 6, 2014, as discussed above in **Section 3.3**. “Phase 2” of the analyses process includes identifying a sample of building occupancies from “Phase 1” for each of the Towns. The IRM Web Tool is then applied to each of these sample buildings to identify the current CYFS fire protection plan conditions.

“Phase 3” of the community fire risk analyses process assesses the findings and recommendations reflected in the analyses of the existing fire protection services provided by the CYFS contained within this review. The recommendations of this FDMPU are again applied to each of the sample buildings within each Town.

The results of “Phase 3” provide valuable insight into confirming how the recommendations within this FDMPU provide opportunities for the CYFS to further optimize the use of the “*Three Lines of Defence*” in meeting the Towns legislative obligations in the Fire Prevention and Protection Act (FPPA), 1997 and achieving the strategic priorities of this plan.



## ***5.2 Summary of Comprehensive Community Risk Assessment***

The Comprehensive Community Risk Assessment for the Town of Aurora and the Town of Newmarket represents similar levels of risk that would be expected in comparable municipalities within the Province of Ontario. These include municipalities with large residential populations and some employment land uses. The CYFS response area road network layout is typical of a suburban community that includes a grid network of major and minor arterials with a series of curvilinear (and some grid) residential streets. Residential areas are well served and connected by the road network.

Residential occupancies dominate the CYFS response area at 95.6% of the building stock, reflecting the profile of a suburban community. The second largest percentage of property stock (2.7%) consists of Group F industrial uses. Some of the industrial uses count as a single occupancy though they employ a large number of people (e.g. State Farm Insurance, Magna International).

The CYFS response area experienced extensive population growth (an increase of 76%) over a short 15-year period (from 1996 to 2011). It is projected that growth will continue to take place, but at a slower rate over the next 20 years. From 2011 to 2031, there is a projected population increase of 17% and a 33% growth in employment projected for the CYFS response area. Most of this growth is expected to take place by 2016.

In Newmarket, both population and employment growth is slated to occur primarily as intensification within the Yonge-Davis Provincial Urban Growth Centre and the Yonge Regional Centre. At the time of writing this report, a Draft Secondary Plan for the Urban Centre is being reviewed, revised and finalized with the intention that infrastructure will meet related demand through appropriate phasing. However, the Newmarket Official Plan states that municipal boundary adjustments may be needed in order to grow the land base for employment.

In Aurora, 66% of the residential growth will be through greenfield development in the north-east area of the community which is currently rural. Of all the projected employment growth designated for Aurora, 53% will occur in this same north-east area. Employment uses will include prestige industrial businesses (e.g. research and development, communication facilities, etc.), professional offices, institutional uses, and hotels. Of the 34% of residential growth that is to occur through intensification in Aurora, 92% (or 4,120 people) will be absorbed by the Aurora Promenade.

At the time of writing this report, both Towns are experiencing extensive residential (and related commercial) development applications which are at varying states of approval. Seven major development applications have been submitted for the north-east area of Aurora. Similarly, Newmarket has approved development for a large subdivision within the Urban Centre area and the Ontario Municipal Board recently approved the conversion of Park and Open Space to residential uses. As a result, CYFS needs to be prepared for large amounts of growth in the short term.

According to an analysis of 2008 to 2012 data from the OFMEM, residential occupancies have historically accounted for 72% of all structure fires and 94% of all fire-related deaths in the province. For the same five-year period, the CYFS reported 242 fires (80 in Aurora and 162 in Newmarket). Of these fires, an average of 71.5% occurred in Group C - Residential occupancies.

However, looking at the municipalities individually, Newmarket had significantly more 'Group B – Institutional' and 'Other Occupancy' fires than Aurora. As a result, Newmarket only saw 68% of structural fires take place in residential occupancies. Misuse of ignition source represented the leading cause of fires in both municipalities (an average of 37%). The next leading cause of fire was undetermined, averaging to 18%.



Analysis of the buildings within the CYFS response area indicates that building height and area represent a typical level of risk found in newer suburban communities. There are a limited number of large area (by square footage) buildings. These include big-box retail buildings and strip malls that are frequented by clientele that are unfamiliar with the emergency exits. There are also some industrial buildings that have large areas and employ a large number of people (e.g. Magna International, State Farm Insurance, Region of York, etc.). In terms of height, there are a few existing high-rise buildings in Aurora and in Newmarket. The number of high-rise buildings will continue to increase as development occurs as intensification within the two Towns. Ensuring all required life safety systems are in place and functioning is a priority for these occupancies.

The demographic analysis of the CYFS response area reveals that by age category the municipalities have a slightly younger population. Although there is an average of 10.9% seniors versus 14.6% in the Province, the senior population is still considered a vulnerable component of the population. In relation, 19.1% of the CYFS response area population consists of children under the age of 14; this age group should also be considered a vulnerable component of the population. There were eight buildings in Aurora and twenty-one in Newmarket that were identified as vulnerable occupancies. These include seniors' residences and hospitals. These buildings should be considered as high risk with regard to developing a pro-active fire prevention and protection program. Public education programs should also be developed and delivered to target these demographics.

English is the predominate language within the CYFS response area representing 77% of the population. This indicates a very moderate probability for language barriers in the delivery of fire prevention and public education programs. Common non-official and non-Aboriginal languages spoken in Aurora and Newmarket include Italian, Russian, Spanish, and Chinese. This should be considered when working with specific community groups.

Income levels and value of housing in both municipalities is much higher than that of provincial averages. These factors also relate to a lower percentage of rental housing compared to the provincial average (16% for the CYFS response area versus 28% for the province).

A Geographic Information Systems (GIS) model was developed to assess risk based on historic call locations, risk geography, land use, and the department's existing and future predicted emergency response travel times as they relate to these risks. Using this risk model, calculations were carried out to estimate the number of historic calls that occurred within each risk zone category and the travel time associated. The model was also used to approximate geographic coverage of the existing and future risk zones. These calculations were completed on the basis of NFPA standards. **Section 6.0** of this report outlines in detail the performance objectives used to compare CYFS performance.

As indicated by the OFMEM, residential occupancies have historically accounted for 72% of all structure fires and 94% of all fire-related deaths in the province. The Comprehensive Community Risk Assessment identified 'B2 - Care and Treatment occupancies', 'B3 - Care occupancies, and 'C - Residential occupancies' as the most vulnerable occupancies. In part this is due to the demographics associated with these occupancies, and the overnight (sleeping) associated.

The analysis of the Integrated Risk Management (IRM) Web Tool is included in **Appendix J**. This analysis was conducted to assess existing conditions as well as predicted future conditions, following the implementation of the recommendation of this 2014 Fire Department Master Plan Update.

Through applying the recommendations of the 2014 FDMPU the probability of a fire occurring in a 'Class C – Residential Multi-Unit occupancy' - less than seven storeys and greater than seven storeys - were reduced by 34.3% and 30.6%. The consequences of a fire occurring in these same occupancies were reduced by 42.2% and 39.3%, respectfully.



Although the probability of a fire occurring was reduced only nominally in Class B – Care occupancies, the consequences of a fire related incident were reduced in a 'B2 – Care and Treatment' occupancy by 36.2% and for a 'B3 – Care occupancy' by 19.8%.

The recommendations within this 2014 FDMPU support the three strategic priorities identified for the delivery of fire protection services within the Town of Aurora and the Town of Newmarket.



## 6.0 ECONOMIC CIRCUMSTANCES

The detailed analyses of the current economic circumstances of the Towns of Aurora and Newmarket are contained within **Appendix G**. This appendix also contains the related PFSG 02-03-01 “Economic Circumstances.”

### 6.1 Summary of Economic Circumstances – Town of Aurora

The Town of Aurora Council has taken proactive and creative steps to introduce financial strategies targeted at sustainably managing property tax increases, while sustaining appropriate service levels in all areas to meet the community’s needs.

York Region projected in 2009 that the Town of Aurora would continue to experience significant population growth, totalling approximately 32.3% growth between 2011 and 2031. Between 2008 and 2012, the property tax levy in the Town of Aurora increased by an average of 3.7% per year, exceeding the average annual rate of inflation across the province (1.84%). The median household income in the Town of Aurora increased by 14.3% between census years of 2006 to 2011, a larger increase than the 9.8% experienced province-wide.

The Town’s overall municipal operating costs grew from \$38,831,300 in 2008 to \$49,772,900 in 2012, representing a 28.2% increase; in comparison, operating costs relating to fire services grew 30.1% over the period, from \$6,129,465 in 2008 to \$7,973,200 in 2012.

Over a similar period, the cost to deliver fire services per capita increased by 20.7%, from \$118 in 2008 to \$142 in 2012. Costs per \$1,000 of assessed property value decreased by 3.4% between 2008 and 2012, while costs per household increased by 25.1% between 2008 and 2012.

Relative to a sample of eleven comparable municipalities across Ontario using 2012 data, while the cost of fire protection services per capita in the Town of Aurora was at par with the sample average, costs per \$1,000 of assessed property value were 20.6% lower than the sample average. Costs per household were 13.7% higher than the average of sampled municipalities.

This analysis demonstrates that the absolute cost of fire protection services rendered by the Town of Aurora has increased in the past several years. Aurora’s fire services are measured as more costly relative to household population levels in comparison to the average of the Ontario peer municipalities sampled in this review. However in the context of the local property market, Aurora’s fire services remain less costly relative to property assessments in comparison to the average of the sample municipalities. In our view, given the current economic circumstances of the Town of Aurora, the costs of fire protection represent the levels of fire protection service delivered and are sustainable relative to municipal finances and the local property tax base.

### 6.2 Summary of Economic Circumstances – Town of Newmarket

The Town of Newmarket Council has taken proactive and creative steps to introduce financial strategies targeted at sustainably managing property tax increases, while sustaining appropriate service levels in all areas to meet the community’s needs.



York Region projected in 2009 that the Town of Newmarket would continue to experience significant population growth, totalling approximately 21.7% growth between 2011 and 2031. Between 2008 and 2012, property tax levy in the Town of Newmarket increased by an average of 4.9% per year, exceeding the average annual rate of inflation across the province (1.8%). The Town's overall municipal operating costs grew from \$77,041,104 in 2008 to \$95,765,508 in 2012, representing a 24.3% increase; in comparison, operating costs relating to fire services grew 29.3% over the period, from \$9,717,629 in 2008 to \$12,567,018 in 2012.

Over the same period, the cost to deliver fire services per capita increased by 23.1%, from \$118 in 2008 to \$146 in 2012. Costs per \$1,000 of assessed property value increased by 1.4%, while costs per household increased by 19.7%.

Relative to a sample of eleven comparable municipalities across Ontario using 2012 data, while the cost of fire protection services per capita in the Town of Newmarket was only 1.7% higher than the sample average, costs per \$1,000 of assessed property value were 7.0% lower than the sample average. Costs per household were 13.4% higher than the average of sampled municipalities.

This analysis demonstrates that as the cost of fire protection services rendered by the Town of Newmarket has increased in the past several years, Newmarket's contributions to the cost of shared fire services have become slightly more costly relative to population levels in comparison to the average of peer municipalities in Ontario. In the context of the local property market, Newmarket's fire services remain marginally less costly relative to property assessments in comparison to the average of the sample municipalities. However, caution must be applied when comparing fire service costs for the Town of Newmarket to its peers given that the municipality engages in shared fire services through Central York Fire Services. Overall, in our view, given the current economic circumstances of the Town of Newmarket, the costs of fire protection represent the levels of service delivered relative to municipal finances and the local property tax base.



## 7.0 ADMINISTRATION DIVISION

Since its inception in 2002 the CYFS has evolved into a unique fire service model within Ontario. This model reflects the efficiencies that can be garnered through looking for new non-traditional municipal service delivery options. One of the key benefits of this model has been the efficiencies of a single administration overseeing two growing communities.

Within the 2008-2017 Master Fire Plan Update there was recognition that the evolution of this new administrative model may require further consideration as the efficiencies of technology and performance measurement were introduced. This section of the FDMPU assesses the previous 2008 recommendations and future needs of the CYFS.

### 7.1 Governance/Operating Model

Central York Fire Services was established through the Corporation of the Town of Newmarket, By-Law 2001-146 that approved an agreement between the Corporation of the Town of Newmarket and the Corporation of the Town of Aurora to establish a Consolidated Fire and Emergency Service Department.

The Consolidated Fire and Emergency Services Agreement (CFESA) identifies the terms of reference for the Joint Council Committee (JCC) within the agreement. This governance model is comprised of six councillors, three from Aurora and three from Newmarket. Staff support is provided by the respective chief administrative officers (CAOs) and financial service directors from both Towns. The Fire Chief is appointed by both Towns and reports to the JCC and both Town Councils through the JCC.

The following is listed within the agreement as the responsibilities of the JCC:

1. *Conduct planning for the provision of effective and efficient fire and emergency services, in accordance with the Consolidated Fire and Emergency Services Agreement including fire suppression, fire prevention, fire safety, education communication, training of persons involved in the provision of fire protection services, rescue and emergency services and delivery of all these services, in a fiscally prudent manner within the municipalities;*
2. *Present and maintain a Fire and Emergency Services Master Plan to meet the community needs and provide strategic direction for approval of the municipal councils;*
3. *Recommend service levels, capital budgets, and operating budgets in accordance with the consolidated Fire and Emergency Services Agreement and the approved Fire and Emergency Services Master Plan;*
4. *Administer the provision of fire services to the municipalities in accordance with the approved plans and budgets including the provision and use of facilities, equipment, human resources and programs;*
5. *Ensure that any agreements currently in effect relating to communications services and mutual aid with other municipalities are maintained and properly performed; and*
6. *Provide regular and proactive information to the councils of the participating municipalities on the operations of the consolidated fire services.*

The Master Fire and Emergency Services Master Plan forms an appendix to the CFESA and sets out the prescribed levels of service of the Central York Fire Services including:



### *Prescribed Service Levels*

*5.1 The Parties acknowledge that each has approved the Master Fire and Emergency Services Master Plan (the "Master Plan") attached hereto as Schedule "B" and forming part of this Agreement.*

*5.2 The Parties hereby agree that the level of service to be provided throughout the combined geographic and municipal boundaries of the Towns of Aurora and Newmarket is the level of service as established by the Master Plan and each party shall, subject to any mutually agreed amendment of the Master Plan, commit all necessary funding and capital resources through the annual budget to ensure that the Committee and Department have all of the necessary resources, including prescribed staffing levels, to provide the level of service.*

*5.3 The Committee shall be responsible to provide fire protection and prevention services at the level as prescribed by the approved Master Plan.*

*5.4 The Parties hereby covenant to review the Master Plan every five years during the currency of this Agreement and shall, no later than twenty-four (24) months prior to the end of each ten (10) year term of this Agreement, finalize the said Master Plan which shall prescribe service levels for the next ensuing ten (10) year term of this Agreement.*

*5.5 Notwithstanding the foregoing, the Master Plan may be reviewed and, if necessary, amended at any time during the currency of this Agreement as circumstances warrant by mutual agreement of the Parties.*

The original Master Fire Plan was updated and approved through the Fire Services Report 2009-01 by the Town of Newmarket Council on February 9, 2009, and the Town of Aurora Council on February 10, 2009. The approval process included the following recommendations;

- 1. THAT Recommendation 11 contained within the Master Fire Plan (Page 11) be amended by adding the following clause after the words "annual basis";*
- 2. AND THAT this will be the basis for setting requirements for such items as communication needs, equipment needs, facilities, staffing levels, etc.*
- 3. AND THAT Fire Services Report 2009-01 dated January 6, 2009 be received for information purposes;*
- 4. AND THAT the Council of the Town of Newmarket approves the recommendations, as amended, contained in the Master Fire Plan report;*
- 5. AND THAT staff be authorized to prepare the necessary documentation and conduct the necessary tasks in order to give effect to the recommendations contained in the report;*
- 6. AND THAT staff report back to Joint Council Committee on any issues requiring further direction.*

This governance model provides a unique approach to the coordinated delivery of fire protection services by one fire department to two distinct municipalities. We think it is important to note that the Master Fire Plan forms an integral component of the CFESA in prescribing the levels of fire protection services to be provided by the CYFS. As indicated above one of the roles of the JCC is to review the Master Fire Plan every 5 years. As part of this current review we are suggesting that in addition to reviewing the Master Fire Plan that the JCC also review the CFESA.



Our review and consultation with staff has identified four areas of the current CFESA that are suggested for review by the JCC. These include the following:

#### **7.1.1 2014 Fire Department Master Plan Update (FDMPU)**

The Town of Aurora and the Town of Newmarket initiated this 2014 Fire Department Master Plan Update (FDMPU) study as required by the CFESA and as part of their comprehensive community planning process to guide the delivery of fire protection services over the next twenty years. This FDMPU will identify opportunities to improve and update the current 2008-2017 Fire Department Master Plan Update and outline an updated process for sustainable growth to meet the challenges facing the CYFS over the next five years.

Continuing to review and update the plan every five years is considered best practice within the industry. Development of a FDMPU recognizes the continued commitment of the JCC, both Councils and senior staff to providing the highest level of services and programs to the community in the most cost-effective and efficient manner.

This FDMPU provides a comprehensive update of the current 2008-2017 Fire Department Master Plan Update to assist both Councils and the Joint Council Committee in establishing key objectives for the department. The plan includes recommendations to address both short-term and long-term strategies for both municipalities, consistent with the fire master planning process outlined within the Office of the Fire Marshal and Emergency Management, *Shaping Fire-Safe Communities Initiative*.

The overarching goal of this report is to present a clear understanding of the existing and future requirements of the Central York Fire Services. Referencing best practices, including relevant standards and legislation, this report was prepared to respond to the following objectives identified by both Towns and contained within the Request for Proposal (terms of reference) for this study:

- *Use of best practices, industry standards and current legislation as the foundation;*
- *Assessment of station, staffing and apparatus implications of National Fire Protection Association (NFPA) 1710 and Office of the Fire Marshal and Emergency Management (OFMEM) Public Fire Safety Guidelines (including Operational Planning: An Official Guide to Matching Resource Deployment and Risk);*
- *Consideration of population and employment growth impacts on department operations and service delivery, within the twenty year plan horizon;*
- *Review and consideration of all areas of the fire rescue (i.e. staffing, station location, apparatus, vehicle and apparatus maintenance, equipment, administration, training, mechanical, fire prevention, public education and efficient utilization of municipal resources);*
- *Development of recommendations, financial implications and an implementation timetable;*
- *Consideration of mutual and automatic aid agreements with neighbouring municipalities;*
- *Confirmation of non-growth related department needs and identification of general approach / methodology of CYFS;*
- *Collection and review of background reports and data; and*
- *Consultation and meetings with CYFS staff and stakeholders to gather input and present study findings and results.*



This report documents issues facing the CYFS as it copes with the existing challenges and looks ahead to the future. This report is structured into nine main components.

- 1) Executive Summary
- 2) Project Overview
- 3) Fire Risk Assessment
- 4) Economic Circumstances
- 5) Administration
- 6) Fire Prevention
- 7) Operations
- 8) Staff Development
- 9) Operational Task Tracking Matrix

In our view consideration should be given to the relationship of this FDMPU with the intent of the current CFESA. The CFESA speaks clearly to the Master Fire Plan setting the prescribed levels of services, and that the JCC be empowered to implement the recommendations of the approved Master Fire Plan. We suggest there should be more clarity to ensuring there is a clear understanding of the status of the original Master Fire Plan and the process to update the plan every five years. The previous updated was titled “*Master Fire Plan Central York Fire Services 2008-2017*” this report presents the second update based primarily on the 2009-2017 plan.

As there is a requirement within the CFESA to update the Master Fire Plan every five years we suggest that subject to the approval of the JCC and both Council’s the updated plan, for example this plan should become the approved Master Fire Plan and replace the existing appendix within the CFESA.

#### **7.1.2 CFESA Budget Process:**

The process to develop both operating and capital budgets is clearly defined within the CFESA. The approval process is also defined within the CFESA and includes the following:

*“The Committee, in consultation with the Fire Chief, shall prepare draft annual operating and capital budgets setting out estimated operating and capital costs and projected revenue for the Department based on the provision of services at levels defined by the Master Plan. The estimates shall be submitted to the Municipal Council of Aurora for comment and then to the Municipal Council of Newmarket for consideration and approval. It shall be understood that Newmarket shall have sole authority to determine and approve the budgets”.*

Budgets are prepared based on three criteria including, population, assessment value, and number of emergency calls per community. This criteria seems to be working well for both communities in providing an appropriate cost sharing formula.

Our analyses identified that the cost sharing process is based on the actual number of emergency calls that occurred in the previous years, whereas the other two criteria may be forecasted. This can result in some significant revisions to the cost sharing agreement during the annual operating budget preparation process. Our review indicates changes ranging from \$50,000 to \$200,000 back and forth between the two Towns over the past few years. In our experience this can be cause for some significant challenges in preparing the annual corporate operating budgets.



There are a number of strategies that could be implemented to improve the application of the cost sharing agreement to provide more control over the annual operating budget impact. These strategies could include averaging the fluctuation over a number of years and applying a fixed increase/decrease that is calculated every 3 to 5 years, or alternatively creating a “gap” of one year whereby the previous year ratios are used in the annual budget preparation process.

Our recommendation is that the finance departments of both Towns be tasked with developing a solution to the year to year fluctuation and provide more insight into preparing the corporate budgets of both Towns.

### **7.1.3 Facility Management**

Under the current CFESA both Towns continue to maintain ownership and responsibility for the capital expenditures related to the fire stations within their respective community. This can be a challenge for the CYFS when developing a facility renewal plan that strives to maintain standardization in all stations. It can be further challenging for staff if the priorities of a renewal plan are not addressed sequentially. This can make it difficult for staff operating in a station that does not receive the capital funding when another station in a different Town may. The current CFESA states the following in relation to major capital expenditures:

*“Notwithstanding the foregoing, major capital expenditures relating to structural work, additions or construction of any buildings on real property owned by a party shall not form a part of the capital budget of the Department and the party owning the said property shall be solely responsible for any costs relating to such capital expenditures. It is agreed that day today maintenance of all real property will be the responsibility of, and at the cost of, the Department”.*

This is one of the only areas of the CFESA where the overall concept of creating a consolidated fire service has not been fully applied. Both Towns remain responsible for the fire stations within their respective communities.

In our view further consideration should be given to adopting a strategy and agreement whereby the JCC and the CYFS are provided with more authority in planning and managing the major capital expenditures for all facilities operated by the CYFS.

### **7.1.4 CFESA Reporting Structure**

In our view the current fire protection model is working effectively in seeking the most cost efficient and effective levels of fire protection services without regard to traditional municipal boundaries.

The most unique challenges of the current model in our view is the reporting status and administrative process required of the Fire Chief. The Fire Chief must first report to the JCC and then the two municipal Councils. If revisions are required affecting the original recommendation or strategy then the Chief must in some situations repeat the process to seek approval. It must be recognized that there is some significant duplication in this process.

This process is consistent with the Consolidated Fire and Emergency Service Agreement, however where possible consideration should be given to limiting this duplication and if possible putting more clarity to the roles and responsibilities of the JCC and both Town Councils.

In our view further the current reporting structure could be enhanced through further emphasis on the role of the JCC. This should include their responsibility to review reports including the operating and capital budget submissions presented by the Fire Chief, make revisions where required, and ultimately support recommendations to the respective Councils related to the operations of the CYFS.



#### **Recommendation 4**

***It is recommended that the Joint Committee of Council review the Consolidated Fire and Emergency Services Agreement, including the status of the 2014 Fire Department Master Plan Update, CFESA Budget Process, Facility Management and CFESA Reporting Structure.***

### **7.2 2008 – 2017 Master Fire Plan Update – Sub-Report on Administration**

Within the existing 2008 – 2017 Master Fire Plan Update the Sub-Report on Administration made a total of 24 recommendations around the topics of staffing, inventory control, records management, information technology, human resources, by-laws and agreements, media and public relations, health and safety, equipment management and revenue generation.

A number of these recommendations have been undertaken and completed either fully or in part. This includes those recommendations related to information technology and records management whereby the current filing system was reviewed, electronic file storage options were explored and research into the feasibility of an upgraded phone system was carried out. Under the category of health and safety, the 'Fitness and Wellness Committee' was re-established and advertised to staff. Several recommendations were related to developing Standard Operating Guidelines (SOGs) for: the maintenance of vehicles, buildings, and equipment; media and public relations; and expectations on completing and filing exposure reports.

The following sections include recommendations that incorporate, revise and/or update the recommendations of the 2008 plan; and where further analyses has been completed, additional recommendations are provided.

Where common areas of analyses within the 2008 plan were identified, such as information technology, by-laws and agreements, coordination with other departments and agencies, they were combined and assessed within the Administration Division review.

### **7.3 Mission Statement, Vision and Values**

PFSG 03-02-13 Master Planning Process for Fire Protection Services identifies the importance of a mission statement, values and roles of a fire department. Within Schedule "B" of the Terms of Reference for the Aurora-Newmarket Fire and Emergency Services Committee the mission statement of the committee is stated as:

*"Excellence in the provision of preventable and protective fire and emergency services to the communities of Aurora and Newmarket".*

The 2008-2017 Master Fire Plan Update included a recommendation for the department to embark on a process to develop a Mission Statement, Vision Statement and Values for the department.

#### **2008 – 2017 Master Fire Plan Update – Recommendation A.1.1:**

CYFS develop, with consultation with staff, a mission statement, a vision for the department and a set of department values."

The CYFS has initiated a process to respond to this recommendation including retaining a consultant to develop a collaborative process to engage staff. In our view this is an important step in seeking to garner a sense of engagement and ownership throughout the organization.



**Recommendation 5:**

*That the CYFS prioritize the development of a mission statement, vision statement and organizational values through a process of staff engagement and consultation.*

## **7.4 Goals and Objectives**

PFSG 01-01-01 *Fire Protection Review Process* identifies the importance of establishing clear goals and objectives to measure the performance of all services provided. Ongoing evaluation of organizational performance provides a necessary and critical process to assessing current and future service levels.

**PFSG 01-01-01 (Appendix F) includes the following:**

- *It is imperative that there is a clearly stated goal and objective for every program, service, and activity.*
- *Once the goals are clarified in a meaningful way, specific objectives can then be made to operationalize the program.*

For example, the vague goal of improved fire safety can be made more meaningful and specific as follows:

***"Increased number of working smoke alarms in the home."***

With the goal specifically defined, it provides direction and guidance as to what objectives must be achieved in order to reach this goal. For example:

**Goal:**

***"Increased number of working smoke alarms in the home".***

**Objectives:**

- ✓ Public awareness of the value of smoke alarms through media advertising;
- ✓ Promotional campaign as part of Fire Prevention Week; and
- ✓ Provide quality smoke alarms to the public at a reduced price.

*(Source OFMEM - PFSG 01-01-01)*

The 2008-2017 Master Fire Plan Update includes performance objectives for a number of services the CYFS currently provides including emergency response. Identifying additional performance objectives for consideration by the CYFS and JCC is included within the scope of this review.



The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation A.2.1:**

Each of the four divisions should set annual goals and objectives, tied to the forecast budget and linked to a performance management system.

**Recommendation 6:**

*That subject to the consideration and approval of the 2014 Fire Department Master Fire Plan Update by the Joint Council Committee, the Town of Newmarket Council, and Town of Aurora Council, the Fire Chief be directed to include the performance objectives identified within the 2014 Fire Department Master Fire Plan Update and report against them as part of the CYFS annual operating and capital budget submission.*

## 7.5 Organization

Under the leadership of the JCC and the Fire Chief the CYFS has successfully implemented an efficient and effective fire protection model that transcends the historical municipal boundaries of two communities. Fire protection services are provided by a highly professional team. The current operational model provides fire suppression services from four fire stations staffed by full-time firefighters. Specific subjects and tasks are addressed through ten different committees. These committees focus on topics such as information technology, respiratory protection and pre-planning and mapping.

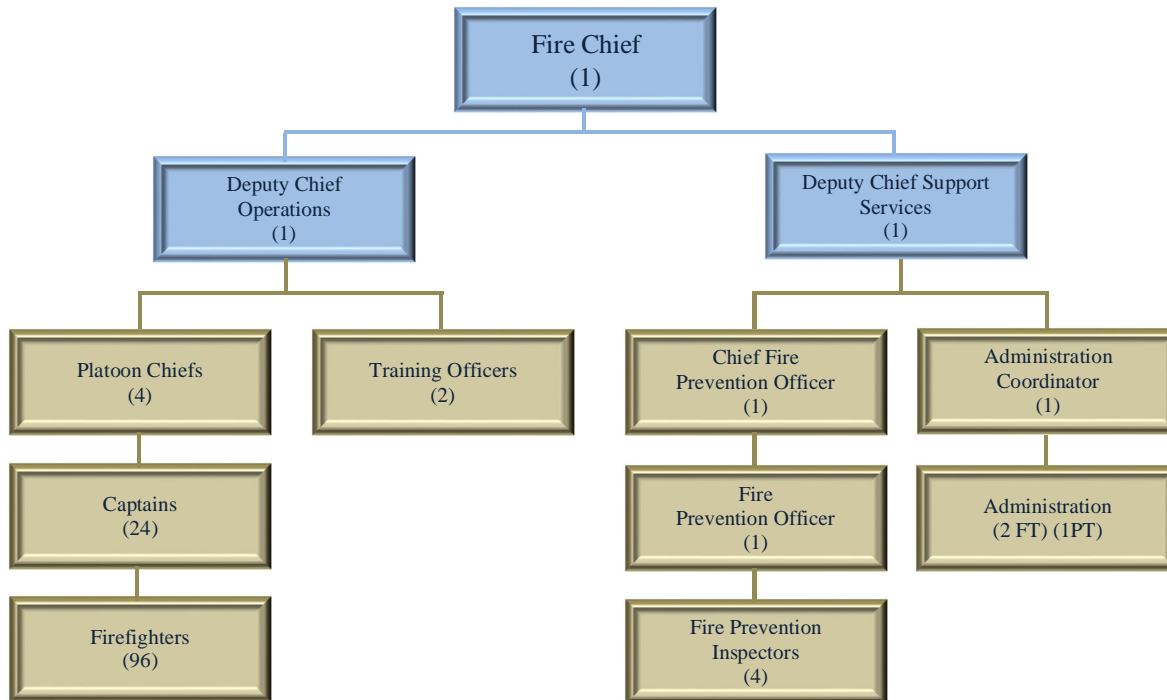
The CYFS is currently organized into four divisions:

- 1) Administration
- 2) Fire Prevention
- 3) Training
- 4) Suppression

**Figure 4** illustrates the current organizational structure. The CYFS currently employs 138 full-time staff and 0.6 part-time staff. These staff members are assigned to various roles and positions as outlined below in **Table 1**.



**Figure 4: Central York Fire Services Organizational Chart**





**Table 1: CYFS Department Staffing**

Role / Division	#Full-Time Staff	#Part-Time Staff
Fire Chief	1	0
Deputy Fire Chief	2	0
Administration Assistants	3	0.6
<b>Suppression</b>		
Platoon Chief	4	0
Captain	24	0
Firefighter	96	0
<b>Training</b>		
Training Officer	2	0
<b>Fire Prevention/Public Education</b>		
Chief Fire Prevention Officer	1	0
Fire Prevention Officer	1	0
Fire Prevention Inspector	4	0
<b>Total Staffing:</b>	<b>138</b>	<b>0.6</b>

(Source: CYFS)

## 7.6 Administration Staffing

As illustrated in **Table 1**, the Administration Division is made up of three senior management personnel: the Fire Chief, the Deputy Chief of Operations and the Deputy Chief of Support Services. The three senior management personnel are responsible for the overall management of the CYFS and represent the non-union management positions within the CYFS.

The administrative support staff report directly to the Deputy Chief of Support Services and currently include three full-time and one part-time (0.6 full-time equivalent) administrative assistants. The department also has access to a Human Resources Consultant from the Town of Newmarket.

Through the transition to its current model of operation the CYFS has strived to implement efficiencies in the use of technology to enhance the administrative functions. The department has also recognized where further efficiencies could be achieved as a department through aligning workload with the right resources. For example, Training Officers and Fire Inspectors continue to complete a number of administrative functions that could be completed by an Administrative Assistant. This would result in improved efficiencies within these areas.

The 2008 plan also identified the importance of confidentiality, this is particularly important when either the Fire Chief or one of the Deputy Chiefs is managing a labour relations issue or dealing with a sensitive issue. Overall supervision of the administrative functions was also identified within the 2008 plan as an area of concern as the Administrative Assistants report to the Deputy Chief Support Services.



Oversight of the administrative assistants was addressed in 2013 through implementing the position of Administration Coordinator. This new position is working effectively at managing the administrative needs of the department. In our view there is a current need to transition the part-time (0.6) administrative position into a full-time position. The additional hours for this position could be assigned to assisting the Training and Prevention Divisions.

As the CYFS has evolved into its current form there should be recognition that the number of non-union management positions is small in comparison to the number of unionized staff and related labour/management functions that require daily oversight. A recommendation is included within this plan to increase the number of non-union senior positions within the CYFS.

The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation A.4.2:**

CYFS should continue to monitor the workload of Administration support staff, identify efficiencies and evaluate the need for any additional staff.

**Recommendation 7:**

*That the current part-time Administrative Assistant position be converted into a full-time position to support the administrative needs of the CYFS, and that the Administration Coordinator continue to identify efficiencies and the need for any additional administrative staff.*

## **7.7 Budget, Purchasing and Inventory Control**

The 2008 plan identifies a number of action items such as including the Chief Officers and respective committees in the budget development and monitoring process. These items have been acted upon and have become core business programs within the CYFS. Standard Operating Guidelines have also been developed and implemented to address consistency in the maintenance of vehicles, equipment and facilities.

As recommended within the 2008 plan the CYFS has been moving towards application of a more comprehensive inventory management system. CYFS staff have been working with staff from the Information Technology department to identify solutions that are consistent with those currently utilized by the Town of Newmarket. These efforts are currently focused on utilization of the Firehouse software program the CYFS currently uses for many data collection and analyses functions.

The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation A.5.2:**

A comprehensive inventory management system, consistent with the Town of Newmarket system, be developed and implemented. This system should include date of purchase, life expectancy and location. Note that it is intended that records management software will be implemented in 2008 and this will incorporate inventory controls.

In our view this recommendation has been acted upon and there is no need for further reporting.

## **7.8 Records, Reports, Data**

The 2008 plan included a number of recommendations related to electronic file storage and records retention policies.



## **7.9 Information Technology**

The use of technology as a business solution has become a core component of the success the CYFS has both achieved and the challenges it faces. The Firehouse software program has been implemented and is utilized as one of the primary technology solutions within the department.

Mobile computers have been purchased and installed on emergency response apparatus to provide onsite access to pre-incident planning information, building hazards and response information. The CYFS has been the beneficiary of the Town of Newmarket information technology plan that provides for life cycle planning and replacement of hardware needs within the department.

The two most significant technology challenges that were identified during this review are the daily oversight and coordination of the technology needs of the department, and the integration availability of the various software solutions utilized by the department. This component is an ongoing challenge within the fire service and one that many of the software providers are working to overcome.

In our view the CYFS would benefit from a staff resource assigned to oversee and coordinate all of the technology requirements of the CYFS. Optimizing the staffing model that has been utilized to provide human resource support this position could be a member of the corporate Information Technology department assigned to the fire department with an office at Headquarters.

This new position, similar to the current “Network and Communications Coordinator” role would be tasked with the responsibilities to oversee all technology applications within the CYFS such as the telephone system, computers, and radio system. Through coordinating with other corporate I.T. staff this position would provide a link to all corporate technology initiatives and resources.

The second area focused on the need for ongoing research and implementation of new and enhanced technology solutions as they become available. In our view this challenge can be successfully overcome by developing a Technology Architecture Plan and assigning a lead person within the department for managing and updating the plan based on the needs of the CYFS.

A Technology Architecture Plan is very much like a blueprint for constructing a building. It is able to identify the foundation and various elements that connect and make technology solutions function effectively. Maintaining the core building functions such as heating and electrical, or in technology the core solutions such as Firehouse and the CAD system, allow the system to function effectively.

In our experience a Technology Architecture Plan can identify how different technology solutions can interact in providing the most efficient and effective application. Developing a plan can provide insight into where potential gaps may exist, and where through the development and application of integration solutions, or alternatively different technology productivity can be increased.

In our view the CYFS should develop a Technology Architecture Plan in consultation with the Newmarket Information Technology department and assign the lead for this to the proposed I.T. staff resource.

In our view the 2008 – 2017 Master Fire Plan Update recommendations for Information Technology across the CYFS have been acted upon. Our recommendation for Information Technology includes:

### **Recommendation 8:**

***That the Town of Newmarket implement the position of Network and Communications Coordinator within the CYFS to oversee the technology needs of the department including the development of a Technology Architecture Plan in consultation with the Newmarket Information Technology department.***



## 7.10 Human Resources

Managing the human resource needs within any organization requires the appropriate skills and experience related to managing compliance with various legislation, regulatory requirements and resource needs to achieve the level of performance required both individually and organizationally.

CYFS has previously benefitted from a full-time Human Resource Consultant provided by the Town of Newmarket's Human Resources Department. The availability of this position has been reduced to a 0.2 full time equivalent position. The 2008 plan identified a number of recommendations that are directly related to the role of the Human Resources Consultant.

The 2008-2017 Master Fire Plan Update included the following recommendations:

### **2008 – 2017 Master Fire Plan Update – Recommendation A.8.1:**

CYFS should develop job descriptions for each position within the department.

### **2008 – 2017 Master Fire Plan Update – Recommendation A.8.2:**

CYFS should develop a performance development program, consistent with the Town of Newmarket program, for all staff.

In our view the Human Resources Consultant position is an integral component of the CYFS management team. This position brings a high degree of human resource management skills and experience to the CYFS while maintaining an independent perspective as a member of the Town of Newmarket Human Resources Department. This position will be key to the successful completion of the above-listed outstanding recommendations from the previous plan.

The 2008-2017 Master Fire Plan Update also recommended:

### **2008 – 2017 Master Fire Plan Update – Recommendation A.8.3:**

Succession planning and professional development for the department should be established in a more formal process with educational opportunities, including mentoring, secondments, job shadowing, cross training, incorporated.

In the absence of the Human Resource Consultant the Fire Chief and Deputy Fire Chiefs are faced with a larger work load to manage this area within the department. As the department continues to move forward, including the addition of new staff to address growth and expanding services, managing the human resources function will place further demand on the department.

In our view the recommendations of the 2008 plan are consistent with the current needs of the CYFS in its transition to meeting the goals and objectives of the Consolidated Fire and Emergency Services Agreement. The roles and responsibilities of the Human Resources Consultant are also consistent with the desire of the department to establish performance objectives for the services provided. In our view developing performance objectives for all staff positions should be included within this goal. The performance development program has been applied to all non-union staff of the CYFS.

We have assessed the 2008 recommendations and revised them to include the following new recommendations for human resources:



**Recommendation 9:**

*That the position of Human Resource Consultant be reinstated as a full-time position supporting the CYFS. This staff position would be a member of the Human Resources Department at the Town of Newmarket, providing full-time support to the CYFS ( reporting to the Fire Chief and Director of Human Resources).*

**Recommendation 10:**

*That job descriptions and a performance development program, consistent with the Town of Newmarket program be developed for all unionized CYFS staff.*

**Recommendation 11:**

*That the CYFS prioritize professional development including a formal succession planning process that recognizes the importance, and provides the opportunities for mentoring, secondments, job shadowing, and cross training within the department, and where external opportunities may be identified.*

## **7.11 By-laws and Agreements**

Central York Fire Services operates under the provisions of the Consolidated Fire and Emergencies Services Agreement (CFESA) between the Town of Aurora and the Town of Newmarket. The Town of Aurora has an Establishing and Regulating By-Law that refers to the CFESA and the services and programs provided by the CYFS. Our review could not find a similar Establishing and Regulating By-Law for the Town of Newmarket.

Subject to the approval of the recommendations contained within this 2014 Fire Department Master Plan Update by the Joint Council Committee, the Town of Aurora Council and Town of Newmarket Council, revisions to both the CFESA and the Establishing and Regulating By-Laws of both Towns will be required. Direction to make the required revisions is included within **Recommendation 1** of this FDMPU.

Our review confirmed that the required appointment by-laws appointing the Fire Chief and Deputy Fire Chiefs are in place.

As the employer and administrator of the CYFS the Town of Newmarket administers a number of agreements on behalf of the JCC. These include the following:

### **7.11.1 Fire Dispatch Services Agreement**

The Town of Newmarket participates in a Fire Dispatch Services Agreement with the Town of Richmond Hill for the provision of fire dispatch services. The current agreement expires on December 31<sup>st</sup> 2014 and will require renewal. The current agreement includes a provision that all incoming calls and dispatch shall be conducted within the times referenced within the NFPA 1221 *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*. In our view this is an appropriate standard that reflects current best practices within the fire service industry.

### **7.11.2 Emergency Services Agreement – Town of Whitchurch-Stouffville**

This agreement recognizes that the CYFS shall provide fire protection services to an area of the Town of Whitchurch-Stouffville as defined within the schedule attached to the agreement. The current agreement expires on December 31<sup>st</sup> 2016.



### **7.11.3 Emergency Services Agreement – Township of King**

This agreement recognizes that the CYFS shall provide fire protection services to an area of the Township of King as defined within the schedule attached to the agreement. The current agreement also expires on December 31<sup>st</sup> 2016.

### **7.11.4 York Region Mutual Aid Plan**

The CYFS is a participant in the York Region Mutual Aid Plan that forms an integral component of the province wide fire service mutual aid system. The mutual aid plan is current and reflects the components required to facilitate an effective response. During this review the CYFS implemented the mutual aid plan for a large fire in a church that resulted in the response of multiple fire departments from across the region. This included response to the fire and support from other fire departments to provide coverage to the CYFS response area.

## **7.12 Coordination with Other Departments and Agencies**

The CYFS is an active participant in collaborating with both internal and external departments and agencies. Several members of the CYFS including the Fire Chief, Deputy Fire Chiefs and other members of the department also provide leadership roles in several joint supporting committees. CYFS staff participate on the Regional Training Committee, Regional Fire Prevention Committee and Regional Fire Chiefs.

The CYFS also works closely with a number of departments within Aurora and Newmarket including the areas of communications, planning and building. The 2008 plan included a number of recommendations for developing Standard Operating Guidelines (SOG) to assist in defining the role and responsibilities of staff. SOG have been developed and implemented for both the building and planning departments.

The 2008 plan identified a recommendation to develop a guideline to clarify the roles and responsibilities of the CYFS when it interacts with the York Regional Police Services. This recommendation has not been completed. In our view developing this SOG remains an important element for the CYFS. This SOG would be beneficial in clarifying the types of responses and the roles and responsibilities of these two organizations when responding together. This is particularly relevant when responding to incidents related to risks, including clandestine drug laboratories, bomb-related incidents and where decontamination procedures may be required.

The 2008-2017 Master Fire Plan Update included the following recommendation:

#### **2008 – 2017 Master Fire Plan Update – Recommendation C.13.1:**

CYFS should develop an SOG for providing assistance to York Regional Police.

#### **Recommendation 12:**

*That the CYFS develop a Standard Operating Guideline in consultation with the York Regional Police Services for joint responses.*

## **7.13 Media and Public Relations**

CYFS staff have developed a good working relationship with communications staff from Aurora and Newmarket. The CYFS has also developed SOG-S-010 *Media Request for Information* to establish a guideline so requests from the media are handled in a prompt and professional manner and to ensure the Towns legal responsibilities are met (i.e. Freedom of Information Act, Trespass Laws) and to establish a good relationship with media personnel.



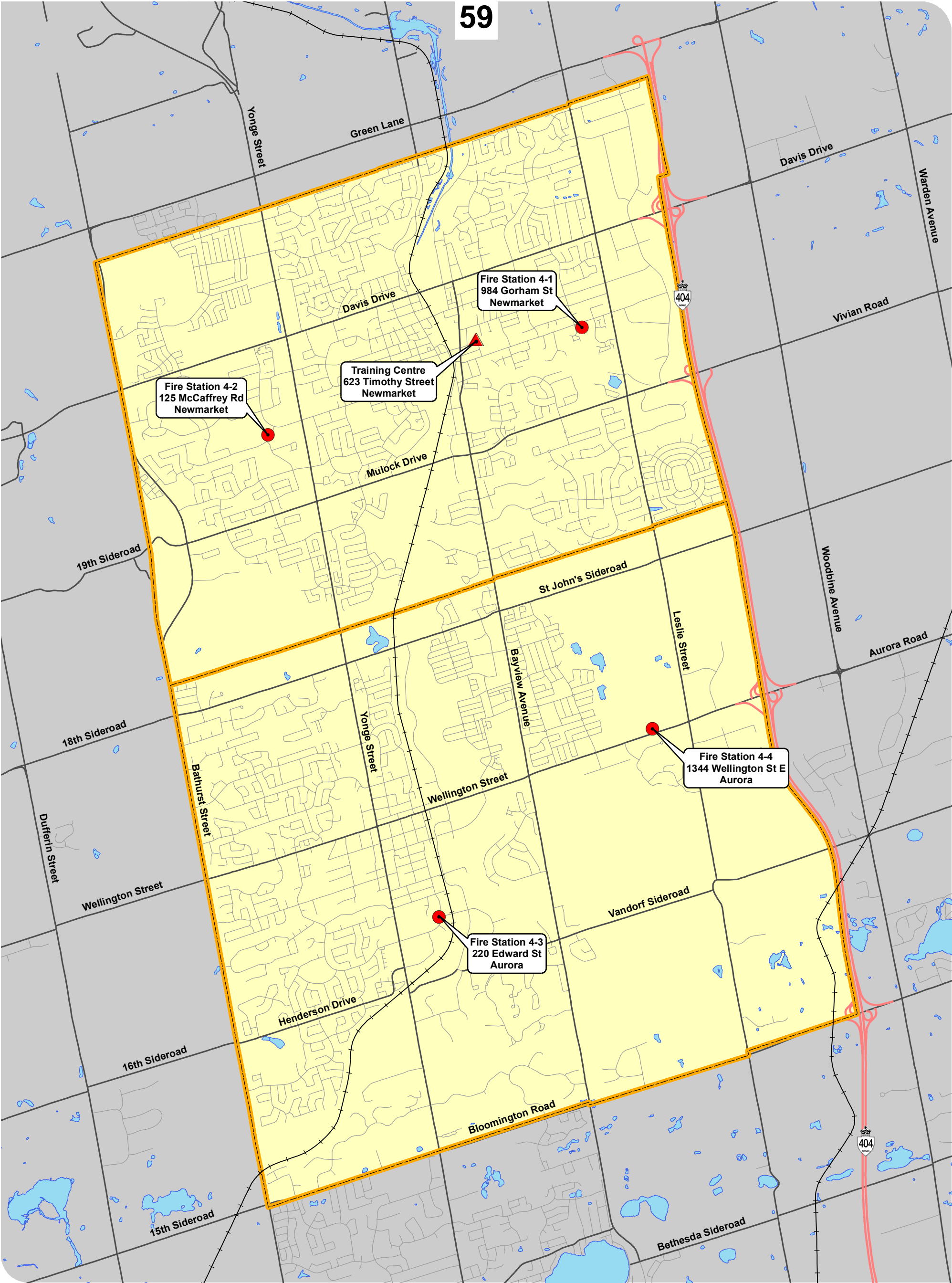
In our view the 2008 – 2017 Master Fire Plan Update recommendations for media and public relations have been acted upon.

## ***7.14 Infrastructure, Vehicles and Equipment***

### ***7.14.1 Infrastructure***

Central York Fire Services operates out of four fire stations, two in Aurora and two in Newmarket. The department also utilizes the former Town of Newmarket Operations Centre as a training centre. The fire station and training centre locations are found in **Figure 5**.

The CYFS Fire Chief prepared and submitted a report to the JCC in April 2013 regarding the facilities to provide an update regarding facility renovations (Fire Services Report 2013-02).



**CENTRAL YORK  
FIRE SERVICES**  
FIRE MASTER PLAN UPDATE

**Central York Fire Services  
Station and Facility Locations**  
FIGURE 5



- |  |                 |  |          |  |                    |
|--|-----------------|--|----------|--|--------------------|
|  | Fire Station    |  | Arterial |  | Waterbody          |
|  | Training Centre |  | Local    |  | Municipal Boundary |
|  | Highway         |  | Railway  |  |                    |

MAP DRAWING INFORMATION:  
DATA PROVIDED BY TOWN OF  
AURORA & TOWN OF NEWMARKET

MAP CREATED BY: JJA  
MAP CHECKED BY: SC  
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\138358 - Central York Fire  
Services FMP Update\Mapping\StationLocation.MXD

0 200 400 600 800 m

SCALE 1:45,000



PROJECT: 13-8358

STATUS: FINAL



DATE: 06/04/14

**DILLON  
CONSULTING**





**Table 2** includes with a brief description of each station and the Training Centre.

**Table 2: Existing Fire Station Descriptions**

Station Number	Description
<p><b>Station 4-1</b>            984 Gorham St., Newmarket</p> 	<p>Built in 1991, Station 4-1 is home to fire suppression staff and is the headquarters of the CYFS including housing the Administration and Fire Prevention Divisions.</p>
<p><b>Station 4-2</b>            125 McCaffrey Road, Newmarket</p> 	<p>Station 4-2 was built in 1998.</p>



Station Number	Description
<p style="text-align: center;"><b>Station 4-3</b>            220 Edward St., Aurora</p> 	<p>Recently renovated in the Fall of 2011, Station 4-3 is the oldest CYFS fire station being built originally in 1979.</p>
<p style="text-align: center;"><b>Station 4-4</b>            1344 Wellington St. E, Aurora</p> 	<p>Station 4-4 was built in 2003 and is therefore the youngest station.</p>



Station Number	Description
<p style="text-align: center;"><b>Training Centre</b>          623 Timothy Street, Newmarket</p> 	<p>The Training Division currently resides in the former Newmarket Operations Centre on an interim basis.</p> <p>The facility provides the Training Division with office space for two training officers, administration staff and staff assigned to the Training Division on modified duties (four offices). Some outdoor space for external training such as auto extrication and rope training.</p>

Station 4-1 in Newmarket is currently the headquarters for the CYFS. In addition to housing fire suppression staff this station includes amenities for the non-suppression services including administration, prevention and public education. This station has reached its capacity in terms of the number of staff and activities. The current office layout is not designed to provide optimal efficiencies to support the work functions and both internal and external customer interaction.

In 2013 the Fire Chief presented Fire Services Report 2013-02 to the JCC including a recommendation that proposed renovations to Fire Station 4-1 be the first project undertaken. The proposed Station 4-1 renovations included the following:

- *Adequate reception area;*
- *Relocation of work areas for Administration and Prevention staff;*
- *Restore the historical equipment and apparatus display area;*
- *Appropriately sized meeting area;*
- *Lunch room for the 14 administrative staff; and*
- *Possible addition to the rear of the building.*

The project budget was approved at \$550,000.00. Other capital replacements at this station included driveway reconstruction, emergency generator replacement and HVAC system replacement for a total project of \$795,000.00. The project has not proceeded at this time.

The current Training Centre has seen minimal renovations from its former role as the Newmarket Operations Centre to its current form that includes offices, a classroom, and indoor training areas for firefighters. The site accommodates some space for external training such as auto extrication and rope training. Under the leadership of the Training Officers the life expectancy and usefulness of this building has been extended in creating some unique and effective training aids.



In our view the Training Centre is nearing the end of its life cycle. Major building components such as the heating system and roof system are in need of replacement. The department has been directed not to invest capital funding into the facility, and remains on a year to year agreement with the Town of Newmarket for the use of the building. As a fire training centre the current facility has served the CYFS well as an interim solution. However, it is limited in its function to meet the long-term needs of the CYFS.

**The 2008-2017 Master Fire Plan Update included the following recommendation:**

**2008 – 2017 Master Fire Plan Update – Recommendation A.13.1:**

The office space and storage for administration should be reviewed and suitable plan developed to provide adequate storage space, meeting room facilities and improve the office layout for support staff. Options to consider:

1. *Facilities at a new station;*
2. *Alterations and expansion of Station 4-1 to include Training Division;*
3. *Alterations and expansion of Station 4-3; and*
4. *Move administration off site (not recommended).*

This review identifies the need for a fifth fire station to be located centrally in proximity to the Aurora/Newmarket municipal boundary. In our view the decision to build a fifth station should include consideration of the administrative needs identified within recommendation A.13.1 above. This should include developing a new headquarters facility for the CYFS able to house all non-suppression staff including administration, prevention/public education, and training. This new facility should also include a training centre to support the long-term training needs of the CYFS.

Consideration of the fifth fire station as proposed, including a new headquarters and training centre also provides the opportunity to re-evaluate the use of the current Station 4-1. With relocated administrative staff the physical size of this station exceeds what would be required of a fire suppression only station. One option to optimize the use of this station would be to relocate the HAZMAT Team from its current location at Station 4-3 to this station. This would provide more space for the HAZMAT equipment and operation of the team. Alternate uses or sale of this building and property and construction of a smaller station similar to Station 4-4 could also be considered.

The supporting analyses and recommendations for considering a fifth fire station is included within the Fire Suppression Division section of this review.

The 2008 plan also identified a number of facility repairs to the existing stations that were either planned or required. In part, the challenge to completing these projects has been the capital funding allocation. The Consolidated Fire and Emergency Services Agreement define how the capital funding will be allocated by each municipality based on the approved Fire Department Master Plan. This funding process, although consistent with the agreement requires a significant amount of effort by CYFS and municipal staff from both municipalities to administer.

The facility repairs identified within recommendation C.17.1 of the 2008 plan have either been completed or are schedule for completion.



#### **7.14.2 Vehicles and Equipment**

The Town of Newmarket Public Works - Fleet Services, is responsible for the maintenance and repair of all CYFS vehicles and equipment. A Service Agreement signed on April 1, 2009 identifies the deliverables, expectations and key performance indicators as agreed to by the Public Works, Fleet Services including the following:

- Reviewing the vehicle mileage forms from Fire Services;
- Determining a preventative maintenance schedule based on inspection forms and input from Fire Services;
- Book designated appointments for vehicles to be serviced;
- Open and maintain work orders;
- Provide information back to Fire Services regarding status of service;
- Review Malfunction Reports as received;
- Determine urgency of repair;
- Determine if service to be done by outside agency;
- Provide Fire Services with an on-call list weekly; and
- Respond when required for emergency repairs.

The agreement further identifies the roles and responsibilities of the CYFS including the following deliverables:

- Forwarding weekly vehicle mileage forms to Fleet Services;
- Reviewing vehicle mileage forms and provide Fleet Services with information on vehicles to be serviced;
- Ensuring that vehicles to be serviced are delivered to Fleet Services by 7:30 a.m. on the days they are scheduled for service;
- Provide Malfunction Reports to Fleet once reviewed by Platoon Chief;
- If critical repair is required CYFS will place a phone call to Fleet Services;
- Enter service information, received from Fleet Services, into CYFS' tracking sheet; and
- Provide information to Fleet Services as to when vehicles are available for maintenance/repair.

In our view the agreement between the Public Works – Fleet Services and the CYFS reflects that of best practices with respect to apparatus and equipment maintenance within a municipal inter-department framework.

#### **7.14.3 Vehicle and Equipment Replacement**

Life cycle planning is a core component of the fleet standardization strategy. The current major fire apparatus standardization strategy and life cycle plan is consistent with best practice in the fire service. Our review of apparatus replacement and major equipment replacement plans for municipalities with similar types of use and wear reflect a best practice strategy of 15 years of service as front-line apparatus and a further five years of service in a reserve capacity reflecting a 20 year overall life cycle for major apparatus such as pumpers and tankers. **Table 3** shown below summarizes the planned replacement dates and associated costs for CYFS' existing major fire apparatus. **Table 4** summarizes the planned replacement dates associated with the existing light vehicles.

Our analyses of maintenance costs reflects that the American LaFrance apparatus (Pumper –E421 and Pumper E-431) are consistently high than those of other similar apparatus. It should also be noted that American LaFrance is no longer in business and as such access to parts is difficult for the CYFS.



**Table 3: Major Fire Apparatus Replacement Plan**

Major Fire Apparatus	Fleet #	Historical Cost	Useful Life (Years)	Year To Be Replaced/ Purchased	Estimated Replacement Cost At the Replacement Year
Pumper - <b>E411</b> 2012 Crimson	12-08	\$565,000	15	2027	\$880,252
Pumper- <b>E421</b> 2005 American LaFrance	06-14	\$471,483	15	2021	\$734,555
Aerial- Telesquirt - <b>S423</b> 1996 Freightliner	96-05	\$565,000	15	2016	\$800,000
Pumper Rescue - <b>E431</b> 2005 American LaFrance	06-15	\$465,514	15	2021	\$725,256
Aerial - <b>A436</b> 2012 Smeal	12-07	\$798,489	15	2027	\$1,244,020
Pumper, <b>E441</b> 2009 Smeal	10-09	\$448,949	15	2025	\$699,448
Pumper- <b>E412</b> 1997 Superior (E-One)	97-02	\$565,000	15	2015	\$617,391
Pumper FL80 <b>E442</b> 1999 Freightliner	99-21	\$565,000	15	2017	\$635,912
Pumper - <b>E432</b> 1986 Mack	87-01	\$565,000	15	2013	\$581,950
Aerial - Platform - <b>P427</b> 2013 Smeal	13-01	\$1,200,000	15	2028	\$1,869,561
Tanker- <b>T444</b> 2012 Smeal	12-09	\$465,000	15	2024	\$724,455
Haz Mat <b>H438</b> 1999 Freightliner	98-05	\$140,000	15	2018	\$350,000



**Table 4: Light Vehicle Replacement Plan**

Light Vehicles	Historical Cost	Useful Life (Years)	Year To Be Replaced/ Purchased	Estimated Replacement Cost At the Replacement Year
2011 Chief 4-1 Ford Explorer (Lights, Siren, Radio)	\$40,000	4	2015	\$42,000
2010 Chief 4-2 Ford Explorer (Lights, Siren, Radio)	\$40,000	4	2014	\$42,000
2011 Chief 4-3 Ford Explorer (Lights, Siren, Radio)	\$40,000	4	2015	\$42,000
2012 Chief 4-4 Ford Max SSV Expedition	\$65,000	6	2016	\$72,000
2008 Chief 4-5 Chevrolet Tahoe (Back-up)	\$53,472	6	2015	\$50,000
2011 U410 Ford F250 4X4 Pickup (Brush Pump & Tank)	\$47,500	6	2017	\$50,000
2000 U410 Chev 250 Sierra Pick up with Plow (Back-up)	\$30,000	6	2015	\$30,000
2010 Ford Pickup Truck F150 (Training - 4602)	\$24,826	6	2016	\$35,000
2007 Chev Uplander (Training - 4601)	\$25,000	6	2015	\$30,000
2009 Chev Silverado Pickup (Prevention - 4406)	\$20,000	6	2015	\$40,000
2007 Chev Uplander (Prevention - 4404)	\$25,000	6	2015	\$30,000
2010 Ford Fusion Hybrid White (Prevention- 4401)	\$30,989	6	2016	\$37,003
2010 Ford Fusion White (Prevention - 4402)	\$19,782	6	2016	\$23,621



Light Vehicles	Historical Cost	Useful Life (Years)	Year To Be Replaced/ Purchased	Estimated Replacement Cost At the Replacement Year
2010 Ford Fusion White (Prevention - 4403)	\$19,293	6	2016	\$23,037
2010 Ford Fusion White (Prevention - 4405)	\$19,293	6	2016	\$23,037

The CYFS has recently transitioned to the use of ordering all light vehicles in white so that subject to life cycle planning the vehicles can easily be re-purposed for other functions to extend the life of the vehicle. In our view the current vehicle and equipment maintenance and replacement strategies of the CYFS reflect those of municipal best practices and no further recommendations are required at this time.

### 7.15 Potential for Revenue Generation

The 2008 plan included a number of recommendations related to fees for service, cost sharing, cost avoidance and revenue generation. The CYFS has implemented the recommendations of the 2008 plan with exception of exploring purchasing and further shared service opportunities with other York Region emergency services.

#### 7.15.1 Fees for Service

All fees for service have been reviewed and updated with the new fees for service approved within a new by-law. Most of the fees stayed at the same rate. **Table 5** provides an overview of the new fees including the adjustments from the 2013 approved fees.

**Table 5: 2014 Fees for Services**

Unit of Measure (Time Allotted)	2014 Fee Excluding HST	Total Fee Including 13% HST (where applicable)	% Increase from 2013 Fee
<b>Apartment/Office Inspections Base Building</b>			
One to Five Storeys (6 hours)	\$334.38	\$377.85	-14.3%
Six or More Storeys (8 hours)	\$445.84	\$503.80	-11.1%
Each Additional Unit (1.5 hours)	\$83.60	\$94.47	0%
Day Care Home Inspection (1.5 hours)	\$83.60	\$94.47	0%
Day Nursery Inspection (1.5 hours)	\$83.60	\$94.47	0%



Unit of Measure (Time Allotted)	2014 Fee Excluding HST	Total Fee Including 13% HST (where applicable)	% Increase from 2013 Fee
Faxing or Mailing Reports (0.5 hours)	\$27.86	\$31.48	0%
<b>Hazardous Materials Response (any location)</b>			
First Hour per fire unit/flat rate	\$410.00	\$410.00	0%
Each additional ½ hour per fire unit	\$205.00	\$205.00	0%
Per hour/firefighter plus material used	\$43.00	\$43.00	14.7%
Per hour/officer plus material used	\$49.45	\$49.45	14.7%
<b>Industrial &amp; Commercial Inspection</b>			
Per single industrial unit (1.5 hours)	\$83.60	\$94.47	0%
Each additional unit (1.5 hours)	\$83.60	\$94.47	0%
LLBO Inspections (2 hours)	\$111.47	\$125.96	0%
<b>Provincial Highway Accident Responses</b>			
First hour per fire unit/flat rate	\$410.00	\$410.00	0%
Each additional ½ hour per fire unit	\$205.00	\$205.00	0%
<b>Paid Duty Truck Stand-by</b>			
First hour per fire unit/flat rate	\$410.00	\$410.00	0%
Each additional ½ hour per fire unit	\$205.00	\$205.00	0%
Per hour/firefighter plus material used	\$43.00	\$43.00	14.7%
Per hour/officer plus officer used	\$49.45	\$49.45	14.7%
<b>Other Fees</b>			
Request for Incident Reports/Property File Search	\$41.80	\$47.23	-53.1%
Retrofit Inspections	\$178.34	\$201.52	0%
Extinguisher Training Using Classroom and Burn Pan (Group Max. 20)	\$350.00	\$395.50	N/A
Chronic False Alarm (preventable cause) after Two Responses (Per unit/per incident)	\$410.00	\$410.00	0%

Source: Central York Fire Services



In our view municipal best practices reflects an annual review of all fees for service as a component of preparing the annual operating budget for consideration.

### ***7.15.2 Shared Services/Purchasing Opportunities***

The CYFS currently participates in joint purchasing opportunities when they align with other fire and emergency services within York Region. Vehicle and equipment purchases are examples of where the CYFS is participating in joint purchasing with other emergency services within York Region.

Aurora and Newmarket are participants in the N6 collaboration of the Northern Six municipalities within York Region. The N6 is an example of municipalities working together to find the most cost effective and efficient service delivery model irrespective of traditional municipal boundaries and service delivery models. In our view the N6 collaboration provides a unique opportunity to explore further shared services opportunities and joint purchasing opportunities for the CYFS.

#### ***Recommendation 13:***

***That the CYFS explore further shared services opportunities and joint purchasing opportunities with the other emergency services within York Region.***

### ***7.16 Departmental Policies and Procedures***

Best practices within the Ontario fire service reflect the use of department policies as the appropriate tool to communicate specific direction to all staff. In comparison to operating guidelines, which provide a framework to guide decision making, department policies reflect more stringent and defined practices that minimizes variance from the directive given. An example of a fire department policy would be a “Respect in the Workplace Policy” where specific direction is given to all members of the department that reflects the policy of the department in consideration of relevant legislation governing the topic.

Standard Operating Guidelines (SOGs) are commonly used within the fire service to establish a written statement to guide the performance or behaviour of departmental staff. *PFSG 04-69-13 “Co-ordination, Development, Approval and Distribution of Standard Operating Guidelines for Various Disciplines”* identifies enhancing safety, improving training efficiency, preventing litigation, and permitting flexibility in decision-making as some of the guiding points for the purposes of SOGs.

Central York Fire Services has extensive SOGs under six categories:

- Administration,
- Fire Prevention,
- Hazardous Material,
- Medical,
- Suppression, and
- Training

**Table 6** summarizes the number and subject of the SOGs that have been revised since the 2008 -2017 Master Fire Plan Update.



**Table 6: Standard Operating Guidelines Updated Since 2008**

SOG #	Subject	Original Date	Last Revision Date
<b>Administration</b>			
A-033	Supplementary Shift Coverage – Minimum Vehicle Staffing	2004-07-17	2008-12-22
A-004	Incident Reports	2002-02-20	2012-02-14
A-010	Uniform Wear & Appearance	2008-08-07	2009-09-03
A-011	Seat Belt Use in Department Vehicles	2008-08-07	2011-02-15
A-012	Securing Tools, Equipment & Paraphernalia in Department Vehicles	2008-08-07	-
A-013	Uniform Issue – The Point System	2009-01-14	-
A-014	Reporting to Duty	2007-11-28	2010-01-12
<b>Fire Prevention</b>			
FP-001	Smoke Alarm Program	2014-03-24	-
FP-002	Site Plan Review	2008-03-20	
FP-003	Delegation of CFO Authority	2008-04-07	-
FP-004	Fire Safety Plan Review & Approval	2009-10-21	-
<b>Medical</b>			
M-005	Disinfection & General Cleanliness	98-06-19	2013-05-01
<b>Fire Suppression</b>			
S-001	Wearing of Personal Protective Equipment During Emergency Incidents	2002-02-10	2013-03-18
S-003	Carbon Monoxide Investigation	2006-10-30	2010-06-02
S-005	Paging Call-Back	2005-06-16	2011-09-14
S-006	Wearing of SCBA During Property Conservation Activities	2002-01-18	2013-03-18
S-009	Incident Command System	2002-07-21	2012-11-22
S-012	Securing a Water Supply	2002-09-19	2013-02-13
S-013	Post Incident Analysis and Review	2002-02-17	2009-05-27



SOG #	Subject	Original Date	Last Revision Date
S-014	Personnel Accountability System & Entry Control System	2002-02-02	2012-02-07
S-015	Fire Watch After Structure Fire	2002-03-21	2012-01-17
S-016	Overhaul	2002-03-21	2012-01-17
S-022	Ice/Water Rescue	2003-01-31	2010-09-14
S-025	Responding to Incidents & unit Status Radio & Mobile Data Terminal	2002-05-06	2012-10-28
S-027	Emergency Radio Transmissions	2002-05-06	2012-10-28
S-028	Care and Maintenance of SCBA	2010-10-02	2012-03-07
S-030	Response to Multi-Storey Units	2002-09-24	2013-09-09
S-031	Hydrostatic Hose Testing	2004-02-05	2012-04-23
S-033	Whitchurch-Stouffville Fire Protection Agreement	2007-06-27	2010-06-22
S-035	Water Supply for Non-Hydrant Areas	2008-01-08	2010-09-14
S-036	Equipment Transfers to Reserve Vehicles	2008-01-08	-
S-037	Station Cleaning	2008-12-22	2012-12-31
S-038	Radio Communication – Patching of York EMS or YRP Radio to CYFS Frequency	2008-12-22	-
S-039	Emergency Lockout Kit	2009-05-27	-
S-041	Hydraulic Rescue Tool Check-In and Maintenance	2007-11-28	2010/01/05
S-042	CYFS Emergency Vehicle Cell Phones	2010-09-01	
S-043	Use of Personal Electronic Devices	2010-09-01	
S-044	Ice Water Equipment Inspection/Check-In and Maintenance	2010-03-23	2010-09-07
S-045	Respiratory Protection Program	2010-09-07	2013-03-18
S-046	Rehabilitation	2010-09-14	-
S-047	Rapid Intervention Teams	2011-07-07	2011-12-08
S-048	Wearing of High Visibility Traffic Vest During Roadway Incidents	2011-07-20	2011-10-31
S-049	Station Maintenance	2011-06-17	-



SOG #	Subject	Original Date	Last Revision Date
S-050	Trench Rescue	2012-07-20	-
S-051	Digital Vehicle Repeater Systems	2012-10-28	-
S-052	Radio Operation – Assisting Other Departments/Agencies	2012-10-28	-
S-053	Simplex (B1) Radio Communications	2012-10-28	-
<b>Training</b>			
T-001	Recording Training	2012-12-28	-

(Source: CYFS)

Considerable effort has been made to update the guidelines since the approval of the 2008 Master Fire Plan Update. There are still some guidelines that require updating and several areas particularly in respect to training that require renewal or new guidelines to be developed. Subject to the approval of this report further revisions will also be required.

The review and renewal of SOG should be considered an ongoing process in order to stay current with relative legislation, best practices and operational changes. In our view the CYFS has developed an appropriate internal review and renewal process identified within SOG A-001 *Development, Revision and Implementation of Standard Operating Guidelines*.

### **7.17 Administration Division Summary and Recommendations**

The majority of the 2008 Sub-Report on Administration recommendations has been implemented. Where recommendations have not been acted upon or work may be in progress they are addressed within this review. Additional recommendations are also included to assist the department in achieving its strategic objectives.

The following are the Administration recommendations of this review:

- 4. It is recommended that the Joint Committee of Council review the Consolidated Fire and Emergency Services Agreement, including the status of the 2014 Fire Department Master Plan Update, CFESA Budget Process, Facility Management and CFESA Reporting Structure.**
- 5. That the CYFS prioritize the development of a mission statement, vision statement and organizational values through a process of staff engagement and consultation.**
- 6. That subject to the consideration and approval of the 2014 Fire Department Master Fire Plan Update by the Joint Council Committee, the Town of Newmarket Council, and the Town of Aurora Council, that the Fire Chief be directed to include the performance objectives identified within 2014 Fire Department Master Fire Plan Update and report against them as part of the CYFS annual operating and capital budget submission.**
- 7. That the current part-time Administrative Assistant position be converted into a full-time position to support the administrative needs of the CYFS, and that the Administration**



*Coordinator continue to identify efficiencies and the need for any additional administrative staff.*

- 8. That the Town of Newmarket implement the position of Network and Communications Coordinator within the CYFS to oversee the technology needs of the department including the development of a Technology Architecture Plan in consultation with the Newmarket Information Technology department.*
- 9. That the position of Human Resource Consultant be reinstated as a full-time position supporting the CYFS. This staff position would be a member of the Human Resources Department at the Town of Newmarket, providing full-time support to the CYFS (reporting to the Fire Chief and Director of Human Resources).*
- 10. That job descriptions and a performance development program, consistent with the Town of Newmarket program be developed for all unionized CYFS staff.*
- 11. That the CYFS prioritize professional development including a formal succession planning process that recognizes the importance, and provides the opportunities for mentoring, secondments, job shadowing, and cross training within the department, and where external opportunities may be identified.*
- 12. That the CYFS develop a Standard Operating Guideline in consultation with the York Regional Police Services for joint responses.*
- 13. That the CYFS explore further shared services opportunities and joint purchasing opportunities with the other emergency services within York Region.*



## 8.0 FIRE PREVENTION & PUBLIC EDUCATION DIVISION

The minimum requirements of fire prevention and fire safety education programs are outlined within the *Fire Protection and Prevention Act, 1997 (FPPA)*. The minimum required services are referenced in the following section of the FPPA:

Section 2 (1) of the Fire Protection and Prevention Act states:

*(1) Every municipality shall,*

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

PFSGs 04-40-03 and 04-40-12 “*Selection of Appropriate Fire Prevention Programs*” provides further information defining the minimum acceptable level of fire prevention and fire safety education services that municipalities must provide including:

- *Simplified Risk Assessment;*
- *A smoke alarm program;*
- *Fire safety education material distributed to residents/occupants; and*
- *Inspections upon complaint or when requested to assist with code compliance.*

Assessing community risk, including existing and future risk as a result of growth within a community, allows a municipality to determine the level of fire protection services required based on local needs and circumstances. This includes the level fire prevention and public fire safety education required to comply with the minimum levels identified within the FPPA.

Integrating risk analyses into the process to determine the level of fire protection services to be provided by a municipality recognizes that there are alternatives to simply providing fire suppression services and emergency response. The introduction of sprinkler system is an example of integrating alternatives to managing the inherent risks of a building rather than simply developing a larger emergency response deployment plan.

### 8.1 2008 – 2017 Master Fire Plan Update – Sub-Report on Fire Prevention Division

Within the existing 2008-2017 Master Fire Plan Update, the sub-report completed for the Fire Prevention Division had 23 recommendations under: staffing, records management, information technology, by-laws, coordination, public fire safety education, fire inspection programs, fire safety plans, fire investigations, fireworks, fire prevention training and personal protective equipment.



Completed recommendations include developing a more comprehensive reporting for fire prevention inspection and public education goals. Under information technology recommendations, a CYFS website was made and a records management system (Firehouse software) was implemented. Standard Operating Guidelines were approved to identify roles and responsibilities for building code permit plan reviews, approvals, inspections, and enforcement (SOG FP-002).

## **8.2 Comprehensive Fire Safety Effectiveness Model**

The Fire Prevention and Public Education services provided by a fire department are intended to optimize impact of applying the first two lines of defence identified within the Ontario Fire Protection Model including:

- I. Public Education and Prevention**
- II. Fire Safety Standards and Enforcement**
- III. Emergency Response**

The first two lines of defence have been defined as:

### ***“I. Public Education and Prevention:***

*Educating residents of the community on means for them to fulfill their responsibilities for their own fire safety is a proven method of reducing the incidence of fire. Only by educating residents can fires be prevented and can those affected by fires respond properly to save lives, reduce injury and reduce the impact of fires; and*

### ***II. Fire Safety Standards and Enforcement:***

*Ensuring that buildings have the required fire protection systems, safety features, including fire safety plans, and that these systems are maintained, so that the severity of fires may be minimized.”*

Information reported by the OFMEM indicates that from 2008 to 2012 the number of loss fires, described as any fire with an injury, fatality or dollar loss reported, have declined from 13,151 in 2008 to 11,295 in 2012 resulting in a decrease of 14%. This occurred during a time period when the population and number of structures across Ontario continued to grow.

Through our discussions with Fire Chiefs across the province and staff from the OFMEM there is consensus that the efforts of fire departments dedicated at optimizing the first two lines of defence are responsible for reducing fire losses and improving the overall level of fire protection within the community.

Applying these lines of defence across the community and prioritizing these programs to address areas of the community identified by the Community Risk Assessment (**Appendix J**) should be considered a strategic priority of this plan. For example, high priority should be given to optimizing the first two lines of defence in areas of the community where vulnerable occupants such as where children or seniors reside.

The Community Risk Assessment identifies risk factors such as new residential and industrial development and increasing seniors’ population where the expansion of existing programs or development of new programs will be required to sustain the proactive strategy the department has adopted.



### 8.3 Fire Prevention Division Staffing

Under the supervision of the Deputy Chief of Support Services, the CYFS employs one full-time Chief Fire Prevention Officer (CFPO), one full-time Fire Prevention Officer (FPO) and four Fire Prevention Inspectors (FPI). The department is responsible for fire prevention inspections, public education activities and fire investigations. All activities are shared amongst all staff in the division. Staff are assigned to specific tasks based on the demands at the time, as well as the skills and interest of the individual. One inspector is assigned to most of the fire safety education activities and coordinates all such activities. One inspector does the majority of portable extinguisher training. All of the fire inspectors with the exception of one conduct fire investigations.

This current operational model supports diversity amongst the Fire Inspectors with recognition given to specialization in the areas of interest of each Inspector. This model appears to work well for the CYFS. It also supports the delivery of a wide range of activities and programs.

The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation B.1.1:**

CYFS should monitor the productivity of the Fire Prevention Division and the implementation of this report's recommendations and evaluate the need for any additional staffing in three to five years.

The analyses within this review assessed the current programs and services provided by the Fire Prevention Division. All program and services were evaluated against the municipality's regulated responsibilities, best practices and a strategic approach to optimizing the first two lines of defence identified within the Comprehensive Fire Safety Effectiveness Model.

Specific recommendations with respect to staffing are contained within public education and fire inspection sections of this review. These are then summarised within the proposed Fire Prevention and Public Education staffing model at the end of this section.

### 8.4 Public Fire Safety Education

The CYFS acknowledges the benefits and importance of providing fire and life safety public education programming to the community residents. Staff provides a variety of fire safety education and awareness programs including elementary school programs, public group lectures / demonstrations, information circulation and community event attendance. Fire Prevention staff also conduct special awareness campaigns, such as Fire Prevention Week in the fall and Christmas and holiday season safety messages. Public awareness campaigns are also coordinated to follow any significant events.

#### 8.4.1 Key Functions

The primary goal of providing public fire safety education is to create and deliver public education programs that promote the importance of fire safety. Examples include:

- Evacuations/fire safety training at nursing home, domiciliary, hotels etc.;
- Conduct fire drills at nursing homes, businesses, etc.;
- Emergency management training;
- Conduct special training events (Fire Awareness Day, Fire Prevention Week and Emergency Management Week);
- Conduct station and fire safety education tours;



- Assess fire statistics and develop proactive interventions to reduce and prevent fires;
- Schedule all public relation events; and
- Coordinate and schedule all fire suppression involvement in public relation events.

#### 8.4.2 Current Public Education Activities and Programs

Fire Prevention staff currently provide public fire safety education programs covering a number of subject areas for all age groups and participate in a number of community events promoting fire safety. Staff continues to evaluate these programs to ensure they meet the needs of the community. **Table 7** provides a summary of the education programs offered by the department.

**Table 7: Public Education Activity/Programs**

Public Education Activity / Programs	
Risk Watch	Fire Extinguisher Demonstrations
Pre-School Program	Fire Station Tours
School Program	Baseball Card Program
Girl Guides Program	Smoke Alarm Ambassadors
High Rise Seminars	Stay Fire Smart Program
Home Safety Inspections	Radio interviews
Seniors Program	Annual Open Houses (each Town)
TAPP-C Arson Prevention Program	Special Events (Canada Day)
Junior Firefighter Program	Safety banner messages
Fire Drills	Fire Safety Trailer (from Innisfil)

As indicated within this report, best practices of other municipalities has proven that expanding and enhancing public education efforts can be an effective strategy to mitigating emergency call volume and increase the overall level of fire protection within a community. The Community Risk Assessment identifies that seniors (age 65+) currently represent 10.9% of the combined population of Aurora and Newmarket reflecting approximately 14,500 residents currently in this age category. The profile also indicates that this is an area of community demographic that has grown and will continue to grow in the future.

Information provided by the Office of the Fire Marshal indicates that “*between 2000 and 2004 the leading cause of senior (aged 65 and over) fire deaths in the province were attributed to “open flame tools/smoker’s articles” and “cooking equipment”. These ignition sources were responsible for 35% and 10% respectfully of fire deaths for this age category during this period. It is believed that the decline in cognitive and physical abilities contributes to the frequency of fire incidents relating to careless use of these ignition sources*”.

In our view seniors programs is one area the CYFS should consider as a priority in enhancing and broadening the scope of educational awareness program delivery. This should include developing cycles for the delivery of public education to the occupancy types identified by the Comprehensive Community Risk Assessment (**Appendix J**), and programs that recognize the different demographics of buildings and communities.



#### **8.4.2.1 Stay Fire Smart Program**

The Stay Fire Smart Campaign initiated in 2013 is delivered by on duty fire suppression staff (firefighters) from June through October each year. Standard Operating Guideline FP-005 details the purpose, scope and guidelines for the delivery of this program. Subject to the weather the program is offered Monday through Thursday in the evening from 19:00 to 21:00 hours. Working in groups of two firefighters visits homes within both communities to deliver public education information including:

- ✓ *Stay Fire Smart – correspondence outlining the importance of fire safety;*
- ✓ *Plan Your Escape – home fire escape planning information;*
- ✓ *Smoke Alarm Pointers - providing information on smoke alarms; and*
- ✓ *Stay Fire Smart Don't Get Burned – fire inspection checklist;*

This program reinforces the importance of home fire escape planning and working smoke alarms on all levels of the home. In our view this program is another example of the commitment of the CYFS towards public life safety initiatives.

The CYFS currently utilizes a Master Tracking Form to record the number of homes that are contacted including whether there was interaction with the occupants or the information was left at the home.

This program is integrated with the departments 'Smoke Alarm Program' through the distribution of information to residents indicating how they can contact the department and request a home inspection. In 2013 the fire suppression staff visited 8222 homes within the CYFS response area.

#### **8.4.2.2 Smoke Alarm Program**

The CYFS is required by the FPPA to provide a smoke alarm program that includes home escape planning. Standard Operating Guideline FP-001 Smoke Alarm Program outlines the purpose of the program as "the provision and maintenance of working smoke alarms". Associated activities are identified as:

- ✓ *Distribution of educational pamphlets;*
- ✓ *Education to residents regarding the testing and maintenance of smoke alarms;*
- ✓ *Provide smoke alarms and smoke alarm batteries at no cost to the residents;*
- ✓ *Installation of smoke alarms; and*
- ✓ *Inspections of premises to determine compliance with smoke alarm provisions of the Ontario Fire Code.*

The CYFS utilises two summer college students (Fire Safety Assistants) to deliver this program. The Fire Safety Assistants are provided training in the delivery of the program including how to test and install smoke alarms as well as the Ontario Fire Code requirements for where smoke alarms should be located. Since 2005 this program has been provided to 4601 homes, an average of 511 homes per year. During this period the department has provided 2526 smoke alarms, an average of 280 per year, and 1907 new batteries, and average of 211 per year.

In our view the provision of an effective Smoke Alarm Program is one of the most valuable tools in focusing the efforts of a fire department at optimization of the first two lines of defence of the Comprehensive Fire Effectiveness Model. Including goals and objectives within the Standard Operating Guideline to support regular monitoring of the program can provide valuable insight into emerging trends within the community.



#### 8.4.2.3 Public Fire Safety Goals and Objectives

In our view the CYFS should also consider additional methods to optimize the use of readily available technology, such as social networking sites (e.g. Facebook, Twitter, etc.) as well as enhancing the use of public media (e.g. radio, television, etc.) to broaden the base of exposure for public education information and specifically the student population throughout the community. These strategies are proving effective for other fire services in large, urban centres within the Greater Toronto Area.

The 2008-2017 Master Fire Plan Update included the following recommendation:

#### **2008 – 2017 Master Fire Plan Update – Recommendation B.6.1:**

CYFS should research and identify program goals and achievable outcomes for all public education programs on an annual basis.

The current public fire safety activities and programs are coordinated by one of the Fire Inspectors with assistance provided by other Inspectors when required. This recommendation is consistent with one of the overall objectives of the 2008 plan to develop performance measures for all services and programs provided by the CYFS.

In our view the current CYFS public education activities and programs reflect that of a department that recognises the value of public education in reducing the impacts of fire. In our view the CYFS is well positioned to implement further activities and programs to respond to the strategic priorities of this plan including:

*“The optimization of the first two lines of defence including public education and prevention, and the utilization of fire safety standards and enforcement to provide a comprehensive fire protection program within the municipalities based on the results of the Comprehensive Community Risk Assessment”. (Appendix J)*

In our view this should include the implementation of a dedicated full-time staff position to prioritise the current public education activities and programs in response to the results of the Comprehensive Community Risk Assessment. This position would also be tasked with developing specific goals and objectives for each current activity and program as recommended in the 2008 plan. In addition, this additional staff resource would be assigned responsibility for identifying and implementing additional public education activities and programs to enhance the delivery of public fire education to both communities.

The fire service industry lead by the OFMEM and the Ontario Association of Fire Chiefs has recognized the value of public fire safety education through the development of the Public Fire and Life Safety Educators Certificate Program. Consistent with the NFPA 1035 “*Standard for Professional Qualifications for Fire and Life Safety Educator, Public Information Officer, and Juvenile Fire-setter Intervention*” the core competencies to complete tasks such as:

- *Select instructional materials, given a subject, learning objectives, and related resources, so that the materials are specific to the audience and activity objectives;*
- *Adapt a lesson plan, given the lesson content and information on the audience, so that the material presented meets the needs of the audience;*
- *Analyze community risk, design and manage program, integrate prevention interventions to address community risk, create and lead a risk reduction program; and*



- *Develop informational material, given an identified fire or life safety objective and characteristics of the target audience, so that information provided is accurate, relevant to the audience and specific to the audience and needs of the target audience.*

In response to Recommendation B.6.1 an appropriate initial step would be the development of a cycle for providing fire safety education to the various occupancies classifications identified by the Comprehensive Community Risk Assessment. Developing a cycle provides the opportunity to prioritize the delivery of fire safety education programs based on the results of the Comprehensive Community Risk Assessment specifically for vulnerable demographics such as children and seniors.

Our research into developing fire safety program delivery cycles looked at the relevant NFPA standards, industry best practices, and the new IRM Web Tool. **Table 8** reflects the proposed fire safety program delivery cycles for occupancy classifications.

**Table 8: Proposed Fire Safety Program Delivery Cycles**

<b>Occupancy Classification (OBC)</b>	<b>Buildings</b>	<b>Proposed Fire Safety Program Delivery Cycles</b>
Group A – Assembly	Schools, Recreation Centres (Arenas)	Annually
Group A – Assembly	Licensed Properties, Nursery/Day Care Facilities, Churches, Special Occasion Permits	1 – 2 Years
Group B – Institutional	B1 - General	1 – 2 Years
Group B – Institutional	B-2 & B-3 Long-Term Care and Care Facilities	Annually
Group C – Residential	Apartments regulated by Part 9.3 of the OFC	1 - 2 Years
	Apartments regulated by Part 9.5 of the OFC	1 – 2 Years
	Apartments regulated by Part 9.8 of the OFC	1 - 2 Years
	Hotels, Motels and occupancies regulated by Part 9.9 of the OFC	2-3 Years
	Stay Fire Smart Program	5 -Years
Group D - Business	Business and Personal Services Occupancies	Upon Request
Group E - Mercantile	Mercantile Occupancies	Upon Request
Group F - Industrial	F1 – High Hazard	1 – 2 Years
Group F - Industrial	F2 – Medium Hazard	3 – 4 Years



In our view implementing the proposed fire safety program delivery cycles fully supports the strategy of optimizing the first two lines of defence. This strategy also responds to recommendation B.6.1 of the 2008 Plan.

To achieve the proposed fire safety program delivery cycles the CYFS will require the implementation of the proposed full-time position of Fire and Life Safety Educator. This new position should be tasked with the responsibility to coordinate and optimize the efforts of the CYFS designed at the delivery of fire and life safety programs including the proposed fire safety program delivery cycles and establishing further goals and objectives for all activities and programs. In our view this new position would report directly to the Fire Prevention Officer.

This review includes further recommendations to reflect the impacts of this recommendation on the current Fire Inspectors roles and responsibilities.

***Recommendation 14:***

***That subject to the consideration and approval of the Fire Department Master Plan Update by the Joint Council Committee, the Town of Newmarket Council, and the Town of Aurora Council the proposed Fire Safety Program Delivery Cycles be included within the Fire Department Master Plan Update be included within the Establishing and Regulating By-Laws of both Towns.***

***Recommendation 15:***

***That an additional full-time position of Fire and Life Safety Educator be created to reflect CYFS continued commitment to optimizing the first two lines of defence and the delivery of public fire and life safety programs.***

## **8.5 Fire Safety Inspections**

The primary roles of CYFS Fire Prevention Inspectors are to ensure compliance with the Ontario Fire Code (OFC) through a program of proactive fire inspections, and conducting inspections upon complaint or when requested to assist with code compliance.

### **8.5.1 Key Functions**

The primary goal for fire inspection is to minimize the impact of fire risks and to decrease the threat of fire incidents. The main objectives of a fire inspection program are to:

- *Reduce the likelihood of a fire which may cause death or injury to any person;*
- *Reduce the impacts and incidences of all fires; and*
- *Achieve compliance with the fire prevention and public education requirements detailed in the FPPA.*

### **8.5.2 Current Fire Safety Inspection Cycles**

The primary roles of CYFS inspectors are to ensure compliance with the Ontario Fire Code through a program of proactive fire inspections and in the absence of achieving compliance, utilizing the authority of the Ontario Fire Code to achieve compliance through enforcement.



The department works with building owners when fire inspections have identified areas of non-compliance. Through collaborative efforts the majority of building owners have been able to complete the necessary work to achieve compliance with the Ontario Fire Code (OFC). In some instances this has not been the situation and the department must utilize its authority to issue orders and work through the prosecution process to achieve compliance. This practice is not uncommon across Ontario and has resulted in the OFM releasing Technical Guideline OFM-TG-01-2012 “*Fire Safety Inspections and Enforcement*”. An excerpt from this new guideline states that the scope is “*to assist municipalities and their fire services in meeting their fire safety inspection and enforcement responsibilities in the most effective and efficient way possible, as provided by the FPPA*”.

In our view this guideline supports the direction of the first two lines of defence and provides municipalities with tactics, particularly related to enforcement of the OFC, in situations where achieving compliance has been difficult to complete.

Historically across the province there has not been a high frequency of fire inspectors enforcing the prosecution process. This trend is changing provincially with the support of the OFMEM to assist municipalities. Although these files may be low frequency, the time commitment of a Fire Inspector to conduct the inspection, prepare the required documentation, and participate in the prosecution process requires the dedication of a significant amount of time.

Best practices reflect that fire inspection cycles should be identified and approved by Council within the Fire Department Establishing and Regulating By-Law. The current Establishing and Regulating By-Laws does not include specifics with regard to the types of occupancy inspections and the inspection cycles.

In our view a list of the occupancy types and inspection cycles should be included within the Establishing and Regulating By-Law to authorise the CYFS to conduct these activities and indicate to the community the levels of service to be provided. Identifying key performance measures such as fire prevention inspection cycles is also a core component of fire master planning and the ongoing monitoring and evaluation of the levels of fire protection services provided by the fire department.

The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation B.7.2:**

CYFS should establish frequency of inspections for all occupancy types in both towns. Annual records should be reviewed and reported on to determine success of achieving these frequencies.

**Table 9** below indicates the current fire inspection cycles conducted by the CYFS.



**Table 9: CYFS Current Fire Inspection Cycles**

<b>Occupancy Classification (OBC)</b>	<b>Buildings</b>	<b>Current Inspection Target (Performance Measure)</b>
Group A – Assembly	Schools, Recreation Centres (Arenas)	Annually
Group A – Assembly	Licensed Properties, Nursery/Day Care Facilities, Churches, Special Occasion Permits	Upon Request
Group B – Institutional	B1 - General	Upon Request
Group B – Institutional	B-2 & B-3 Long-Term Care and Care Facilities	Annually
Group C – Residential	Apartments regulated by Part 9.3 of the OFC	2 – Years
	Apartments regulated by Part 9.5 of the OFC	2 – Years
	Apartments regulated by Part 9.8 of the OFC	2 - Years
	Hotels, Motels and occupancies regulated by Part 9.9 of the OFC	2 - Years
	Stay Fire Smart Program	5 – Years
Group D - Business	Business and Personal Services Occupancies	Upon Request
Group E - Mercantile	Mercantile Occupancies	Upon Request
Group F - Industrial	Factories and Complexes	Upon Request

Our review indicates that although the CYFS has established an inspection frequency of every two years for multi-unit high rise and low rise occupancies the department is not currently achieving that target.

**Table 10** reflects the number of fire inspections that were completed over the period from 2009 to 2013. As this table shows the highest amount of resources were committed to ‘Group C – Residential’ (182 inspections) and Group A – Assembly (148 inspections) occupancies.



**Table 10: Fire Prevention Inspections by Occupancy Classification, 2009 - 2013**

Occupancy Classification		2009		2010		2011		2012		2013	
		#	% Total	#	% Total	#	% Total	#	% Total	#	% Total
Group A	Assembly	199	29%	132	25%	127	28%	121	25%	148	28%
Group B	Institutional	44	6%	14	3%	16	4%	34	7%	23	4%
Group C	Residential	224	32%	210	40%	191	42%	201	42%	182	34%
Group D	Business/Personal Services	52	8%	72	14%	48	10%	48	10%	64	12%
Group E	Mercantile	103	15%	59	11%	48	10%	46	10%	82	15%
Group F	Industrial	69	10%	35	7%	29	6%	27	6%	40	4%

(Source: 2009, 2010, 2011, 2012 & 2013 CYFS Annual Reports)

### **8.5.3 Enhancing Fire Safety in Occupancies Housing Vulnerable Ontarians, Ontario Regulation 150/13**

Ontario Regulation 150/13 'Requirements for Retirement Homes, Care Occupancies, and Care and Treatment Occupancies' was filed on May 9, 2013. This regulation introduced amendments to the Ontario Fire Code that came into force on January 1, 2014. The OFMEM led the development of this new regulation in consultation with a Technical Advisory Committee consisting of industry experts.

The OFMEM has provide additional directives to the fire service to assist in the application of this new regulation. As of January 1<sup>st</sup> of 2014 these include that fire departments will be required to complete the following:

- ✓ Mandatory inspections for all vulnerable occupancies (Hospital, Licensed Retirement Homes, Care occupancies, and Care and Treatment occupancies).
- ✓ Mandatory fire drills for all vulnerable occupancies (Hospital, Licensed Retirement Homes, Care occupancies, and Care and Treatment occupancies).
- ✓ Mandatory inspections for all request and complaint inspections.

Compliance with this new regulation will be achieved through a multi-pronged strategy including mandatory inspections by local fire departments and a process of providing training for facility staff and upgrades to existing buildings. The installation of automatic sprinkler systems is also a mandatory requirement of this new legislation.

Under the direction of the OFMEM one of the first impacts on local fire departments including the CYFS has been the requirement to develop a building registry of all buildings affected by the new legislation. The CYFS is in the process of developing the building registry. Once completed the building registry will assist in providing the CYFS with a tool for managing the workload requirements of this new legislation. Requirements for annual testing of fire safety plans including conducting an evacuation, and an inspection of each building will increase the workload on the department.



### **8.5.4 Proposed Fire Inspection Cycles**

The analyses within this report reflects three strategic priorities for the delivery of fire protection services within the Town of Aurora and the Town of Newmarket including:

*“The optimization of the first two lines of defence including public education and prevention, and the utilization of fire safety standards and enforcement to provide a comprehensive fire protection program within the municipalities based on the results of the Comprehensive Community Risk Assessment”. (Appendix J)*

In our view the department is currently under resourced in its ability to conduct the current fire inspection cycles presented by the CYFS. This is reflected in the department’s inability to complete the two year cycle for ‘Group C –Residential occupancies’. As indicated within the Community Risk Assessment residential occupancies should be considered a priority. According to an analysis of 2008 to 2012 data from the Ontario Fire Marshal, residential occupancies have historically accounted for 72% of all structure fires and 94% of all fire-related deaths in the province. For the same five-year period, Central York reported 242 fires (80 in Aurora and 162 in Newmarket). Of these fires, an average of 71.5% occurred in Group C - Residential occupancies.

In our view the CYFS should implement an additional Fire Inspector position. With this additional Inspector and the availability of the current Fire Inspector position that is overseeing the public education programming which will be replaced by the proposed position of Fire and Life Safety Educator the CYFS will in our view have sufficient staff resources to conduct the enhanced fire inspection cycles proposed including the new mandatory inspections required by Ontario Regulation 150/13.

#### **Recommendation 16:**

***That an additional Fire Inspector position be created to reflect Councils’ continued commitment to optimizing the first two lines of defence and the delivery of public fire and life safety programs.***

**Table 11** below indicates the proposed enhanced fire inspection cycles for the CYFS.



**Table 11: CYFS Proposed Enhanced Fire Inspection Cycles**

Occupancy Classification (OBC)	Buildings	Current Inspection Target	Proposed Inspection Target
Group A – Assembly	Schools, Recreation Centres (Arenas)	Annually	1 – 2 Years
Group A – Assembly	Licensed Properties, Nursery/Day Care Facilities, Churches, Special Occasion Permits	Upon Request	1 – 2 Years
Group B – Institutional	B1 - General	Upon Request	1 – 2 Years
Group B – Institutional	B-2 & B-3 Long-Term Care and Care Facilities	Annually	Annually
Group C – Residential	Apartments regulated by Part 9.3 of the OFC	2 – Years	2 – 3 Years
	Apartments regulated by Part 9.5 of the OFC	2 – Years	2 – 3 Years
	Apartments regulated by Part 9.8 of the OFC	2 – Years	2 – 3 Years
	Hotels, Motels and occupancies regulated by Part 9.9 of the OFC	2 – Years	2 – 3 Years
	Stay Fire Smart Program	5 – Years	5 Years
Group D - Business	Business and Personal Services Occupancies	Upon Request	3 – 5 Years
Group E - Mercantile	Mercantile Occupancies	Upon Request	3 – 5 Years
Group F - Industrial	Factories and Complexes	Upon Request	1 – 2 Years

**Recommendation 17:**

*That subject to the consideration and approval of the Fire Department Master Plan Update by the Joint Council Committee, the Town of Newmarket Council, and the Town of Aurora Council the proposed enhanced Fire Inspection Cycles be included within the Fire Department Master Plan Update be included within the Establishing and Regulating By-Laws of both Towns.*

### 8.5.5 Fire Prevention Policy

The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation B.7.1:**

CYFS should develop SOG's for all significant Fire Prevention Division activities and tasks.

Utilizing the Community Risk Assessment included within this report (*Appendix J*) we assessed the current fire prevention and public safety programs provided by the CYFS in relation to the municipality's legislative responsibilities and our understanding of best practices within the Ontario Fire Service.



In our view the department should develop a Fire Prevention Policy that reflects the requirements of PFSG 04-45-12 “Fire Prevention Policy” (included in **Appendix L**). An example of the purpose of a fire prevention policy includes:

- To establish policies and procedures for fire department personnel for fire prevention, public education programs and activities as a primary means of protecting lives and property from fire; and
- To maintain compliance with the minimum fire prevention and public education activities as required by the Fire Protection and Prevention Act, 1997.

A Fire Prevention Policy should also identify the following fire prevention and fire safety education activities such as:

- Inspection
- Code enforcement
- Fire and life safety education
- Fire investigation and cause determination
- Fire loss statistics
- Fire department operational guidelines identifying how, when and where activities will be conducted.

**Recommendation 18:**

***That the CYFS develop a Fire Prevention Policy that reflects the requirements of PFSG 04-45-12 “Fire Prevention Policy” for consideration and approval by the JCC to be included within a new Establishing and Regulating By-law for each municipality.***

## **8.6 Existing Fire Prevention and Public Education Activities**

The department’s fire prevention and public education efforts are focused on the first two lines of defence of the Comprehensive Fire Safety Effectiveness Model. These include the delivery of public education and fire prevention programming and activities related to fire safety standards and enforcement. **Table 12** summarizes the time commitment (in hours) dedicated to Fire Prevention and Public Education activities in 2012.



**Table 12: Time Commitment to Fire Prevention & Public Education Activities**

Activity / Program Name	Time Commitment (hours)
Inspections - OFC	1290
OBC Plans Review incl. Site Plans	607
Inspections - OBC	610
Fire Investigation	213
Public Education (including fire drills)	387
Junior Firefighter Program	70
Open House & other Community Events	254
Program Development	380
Program Delivery Trainer/Facilitator	280
Stay Fire Smart Campaign	700
Prevention Career Development Education/Training	640
Website Maintenance	113
Firehouse Administration for Prevention	118

(Source: CYFS)

An overview of these programs and activities is provided in the following sections.

### **8.6.1 Fire Safety Plans**

The Ontario Fire Code requires a fire safety plan for specific occupancy types. These plans provide the onsite staff and the responding fire department with an understanding of the protocols to be utilized in the event of an emergency. Plans typically include building layouts, evacuation plans, fire alarm and life safety systems details as well as emergency staff protocols.

The 2008 plan recommended that the CYFS develop and SOG for Fire Safety Plans including establishing an inventory of buildings and performance measures for conducting the fire safety plan review. SOG FP-004 – *Fire Safety Plan Review and Approval* has been developed and implemented.

In our view the 2008 – 2017 Master Fire Plan Update recommendations for Fire Safety Plans reviewed by the CYFS have been acted upon.



### 8.6.2 Fire Investigations

The CYFS is required by the FPPA to conduct fire investigations to determine the origin and cause of all fires and report this information to the OFMEM. Subject to the severity of the incident and factors such as a fatality or large dollar loss the OFMEM will assign a fire investigator to conduct the investigation. All but one of the CYFS Fire prevention staff conduct fire investigations for CYFS.

Our review indicates that there is no current SOG for conducting fire investigations. PFSG 04-52-12 *Fire Investigation Practices* provides the framework for what should be included within an SOG. PFSG 04-52-03 *Fire Investigation Practices* provides further information with regard to the criteria for when an investigation is to be conducted.

In our view the CYFS should develop and SOG for Fire Investigations that reflect the framework of the PFSG listed above.

#### **Recommendation 19:**

*That CYFS develop an SOG for Fire Investigation following the framework of PFSG 04-52-03 Fire Investigation Practices as presented within this FDMPU.*

### 8.6.3 Fireworks

The 2008 plan identified that the current by-laws in each Town for regulating the sale and use of fireworks do not address specific about the insurance requirements or provide sufficient regulation with regard to the retail sale of fireworks including details as to locations, times and inspections required. Our analyses included a review of the Town of Aurora By-law 5373-11 and the Town of Newmarket By-law 1989-98.

The 2008-2017 Master Fire Plan Update included the following recommendation:

#### **2008 – 2017 Master Fire Plan Update – Recommendation B.10.1:**

CYFS should work with the two towns to review the by-laws regulating firework sales and displays and make necessary revision.

Our analyses indicate that this review has not been completed at this time. It is still an outstanding recommendation from the 2008 plan that should be completed.

#### **Recommendation 20:**

*That in consultation with staff from both Towns the CYFS initiate a review of the current by-laws regulating the display and sales of fireworks, and that where possible the by-laws of both Town be revised to be consistent in definition and application of the regulations.*

### 8.6.4 Site Plan Review

Fire department participation in site plan reviews for new constructions or site alterations is an invaluable component of fire protection. Site plan reviews involve the assessment of the location of fire hydrants, site entrance turning radii for emergency vehicles, the locations of connections to sprinkler and standpipe connections, signage, firebreaks, and traffic calming.

Site plans are reviewed by the Chief Fire Prevention Officer or a designate. Upon receipt, a review is completed within two weeks and a report provided to the Planning Department and/or Building Department for each Town, as appropriate.



SOG FP-002 *Site Plan Review* identified the purpose and scope of the CYFS' participation in the site plan review process.

### 8.7 Proposed Fire Prevention/Public Education Staffing Model

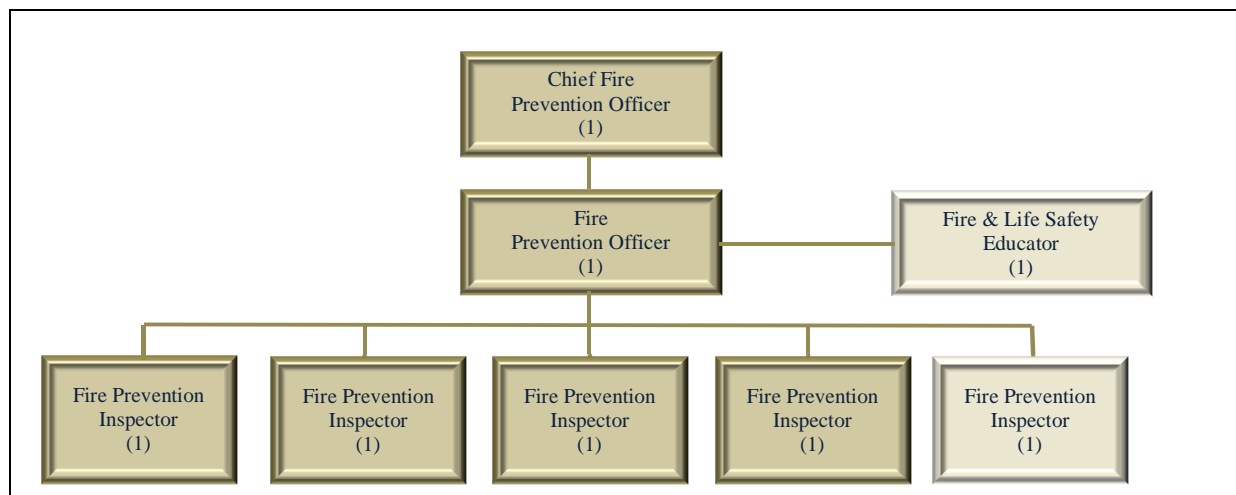
This FDMPU contains recommendations to enhance the current public education and fire prevention activities and programs provided by the CYFS in response to the strategic priority identified, including:

*“The optimization of the first two lines of defence including public education and prevention, and the utilization of fire safety standards and enforcement to provide a comprehensive fire protection program within the municipalities based on the results of the Comprehensive Community Risk Assessment”.*  
(Appendix J)

In our view the implementation of the proposed public education and fire prevention activities and programs requires the addition of the proposed full-time Fire and Life Safety Educator, as well as an additional Fire Inspector position. In our view both of these positions should be considered short-term priorities.

The proposed fire prevention/public education staffing model is presented in **Figure 6**.

**Figure 6: Proposed Fire Prevention/Public Education Staffing Model**



#### **Recommendation 21:**

***That the CYFS implement the proposed fire prevention/public education staffing model as presented within the Central York Fire Services Fire Department Master Plan Update.***



## **8.8 Fire Prevention/Public Education Division Summary and Recommendations**

The majority of the 2008 recommendations for Fire Prevention have been implemented, where recommendations have not been acted upon or work may be in progress, they are addressed within this review. Additional recommendations are also included to assist the department in achieving its strategic objectives.

The following are the Fire Prevention/Public Education recommendations of this review:

- 14. That subject to the consideration and approval of the Fire Department Master Plan Update by the Joint Council Committee, the Town of Newmarket Council, and the Town of Aurora Council the proposed Fire Safety Program Delivery Cycles be included within the Fire Department Master Plan Update be included within the Establishing and Regulating By-Laws of both Towns.*
- 15. That an additional full-time position of Fire and Life Safety Educator be created to reflect CYFS continued commitment to optimizing the first two lines of defence and the delivery of public fire and life safety programs.*
- 16. That an additional Fire Inspector position be created to reflect Councils' continued commitment to optimizing the first two lines of defence and the delivery of public fire and life safety programs.*
- 17. That subject to the consideration and approval of the Fire Department Master Plan Update by the Joint Council Committee, the Town of Newmarket Council, and the Town of Aurora Council the proposed enhanced Fire Inspection Cycles be included within the Fire Department Master Plan Update be included within the Establishing and Regulating By-Laws of both Towns.*
- 18. That the CYFS develop a Fire Prevention Policy that reflects the requirements of PFSG 04-45-12 "Fire Prevention Policy" for consideration and approval by the JCC to be included within a new Establishing and Regulating By-law for each municipality.*
- 19. That CYFS develop an SOG for Fire Investigation following the framework of PFSG 04-52-03 Fire Investigation Practices as presented within this FDMPU.*
- 20. That in consultation with staff from both Towns the CYFS initiate a review of the current by-laws regulating the display and sales of fireworks, and that where possible the by-laws of both Town be revised to be consistent in definition and application of the regulations.*
- 21. That the CYFS implement the proposed fire prevention/public education staffing model as presented within the Central York Fire Services Fire Department Master Plan Update.*



## 9.0 FIRE SUPPRESSION DIVISION

The Fire Suppression Division provides a range of services beyond responding to fires, including emergency medical assistance, response to motor vehicle fires and accidents and patient extrication when required. Fire suppression staff also respond to incidents requiring technical rescues, including high angle rescues, confined space rescue, trench rescue and hazardous materials incidents. Staff must train to a high-level of proficiency and sustain the level of competency required to conduct these types of rescues.

The analyses within this report utilizes the findings of the Community Risk Profile and the optimization of the first two lines of defence identified by the Comprehensive Fire Protection Model as a strategy towards providing the most cost effective and efficient level of fire protection services to the community.

### 9.1 Key Functions

The key functions of the Fire Suppression division as outlined in the 2013 CYFS Annual Report include:

- Fire protection services;
- Medical emergency response;
- Hazardous materials mitigation;
- Motor vehicle extrication;
- Ice and water rescue;
- Carbon monoxide detection;
- Natural gas emergency response;
- Other public assistance response; and
- Mutual aid to neighbouring communities.

### 9.2 2008 – 2017 Master Fire Plan Update – Sub-Report on Operations,

Within the existing 2008-2017 Master Fire Plan Update, the sub-report completed for Operations (suppression) had 35 recommendations under staff and training delivery, records management, training requirements, driver training and emergency medical training, among others. As part of the completed recommendations, SOG regarding vehicle operation and driver training were developed. Reviews of training programs and developing employee orientation packages were also completed.

### 9.3 Established Levels of Service

The current fire suppression staffing model includes four Platoon Chiefs, 24 Captains, and 96 firefighters assigned on a four platoon system reflecting a “**total staffing**” of 31 fire suppression staff on each platoon. The CYFS staffs six fire apparatus including four pumpers, one platform, and one aerial in addition to the Platoon Chief and respective vehicle.



To accommodate vacation, sick time, banked time, bereavement leave, and extended illnesses the CYFS will incrementally decrease the apparatus staffing by 6 firefighters to maintain the minimum of six fire apparatus in service representing the “**operating staffing**” level of a minimum of 25 firefighters. To accommodate events when more than 6 firefighters are not available the department will remove either Platform 427 or Aerial 436 and reduce staffing to the “**minimum staffing**” on duty level of 21 firefighters as contained within the Collective Agreement. If the minimum staffing drops below 21 the department will call in off duty firefighters on overtime to maintain the minimum staff of 21 at all times.

The CYFS currently benefits from the flexibility obtained between the total staffing of 31 firefighters per platoon and the minimum staffing level of 21 firefighters on duty that is contained within the Collective Agreement. The Collective Agreement requires the staffing of five apparatus with a minimum of 4 firefighters per apparatus plus the Platoon Chief equalling the 21 firefighter minimum.

This benefit is related to managing the overtime costs for firefighters to maintain the required minimum staffing of 21 firefighters on duty, and the availability of a 6<sup>th</sup> apparatus when staff are available to provide an additional staffed apparatus to enhance the depth of response capabilities of the department.

This strategy of maintaining sufficient firefighters to staff the 6<sup>th</sup> apparatus has shown to be very effective in achieving the current performance objectives of the CYFS while providing the flexibility for the Fire Chief to manage the overtime costs within this division.

**Table 13** provides an overview of the current apparatus assignment including the total and minimum staffing.

**Table 13: Current Apparatus and Staffing Assignments**

Station #	Address	Apparatus	Total Staffing (31)	Operating Staffing (25)	Minimum Staffing (21)
4-1	984 Gorham Street	Platoon Chief 44	1	1	1
		<b>Fire Apparatus</b>			
4-1	984 Gorham Street	Pumper 411	5	4	4
4-2	125 McCaffrey Road	Pumper 421	5	4	4
		Platform 427	5	4	4
4-3	220 Edward Street	Pumper 431	5	4	4
		Aerial 436	5	4	0
4-4	1344 Wellington Street East	Pumper 441	5	4	4
<b>Platoon Staffing</b>			<b>31</b>	<b>25</b>	<b>21</b>

(Source: CYFS)



For presentation purposes **Table 13** shows Aerial 436 with no staff when the CYFS is at the minimum staffing of 21 that occurs approximately 25% of the time. Our analyses indicates that when the CYFS is at the minimum staffing of 21 Platform 427 and Aerial 436 are removed from service on a relatively equal basis. This strategy distributes the change in service level as a result of taking the 6<sup>th</sup> apparatus out of service across the entire response area of the CYFS as consistently as possible.

## 9.4 Current Fire Suppression Performance Objectives

The prescribed levels of service (performance objectives) for fire suppression services are identified within the Consolidated Fire and Emergency Services Agreement that states:

### 14. Prescribed Service Levels

14.2 *The parties hereby agree that the level of service to be provided throughout the combined geographic and municipal boundaries of the Town of Aurora and the Town of Newmarket is the level of service as established by the Master Plan and each party shall, subject to any mutual agreed amendment to the Master Plan, commit all necessary funding and capital resources through the annual budget to ensure that the Committee and Department have all of the necessary resources, including prescribed staffing levels, to provide the level of service.*

The 2002-2011 Fire and Emergency Service Master Fire Plan established the initial prescribed service levels for the CYFS. The 2008 plan updated the prescribed service levels as a result of changes to the benchmarks for emergency response referenced by the OFMEM. The current emergency response performance measures of the CYFS are contained within **Table 14**.

**Table 14: Current CYFS Emergency Response Performance Objectives**

Initial Response
CYFS should strive to achieve a goal of first arriving crew consisting of at least three firefighters and an officer responding to emergencies within 6 minutes of receiving an emergency call, 90% of the time.
Depth of Response
CYFS should strive to achieve a goal of responding to reported structure fires with twelve firefighters within ten minutes, 90% of the time.
Turnout Time
CYFS should strive to achieve a goal of 60 seconds or less for turnout time of firefighters.

The analysis within this review examines the current performance objectives for emergency response of the CYFS to those of the current PFSG, NFPA standards and best practices.

## 9.5 Importance of Time with Respect to Fire Growth

Time is a critical component with respect to the growth of a fire and the success of intervention by firefighters. Research conducted by the OFMEM and National Research Council of Canada indicates that a fire in a non-sprinklered residential occupancy can spread from the room where the fire originates in ten minutes or less. Tests have shown that the fire can extend from this room of origin in as little as three minutes, under fast fire growth conditions.



Fire growth rates, defined by the Society of Fire Protection Engineers, as slow, medium and fast are listed in **Table 15**. The fire growth rates are measured by the time it takes for a fire to reach a 1 megawatt (MW) fire. This is roughly equivalent to an upholstered chair burning at its peak. A 2 MW fire is approximately equal to a large upholstered sofa burning at its peak.

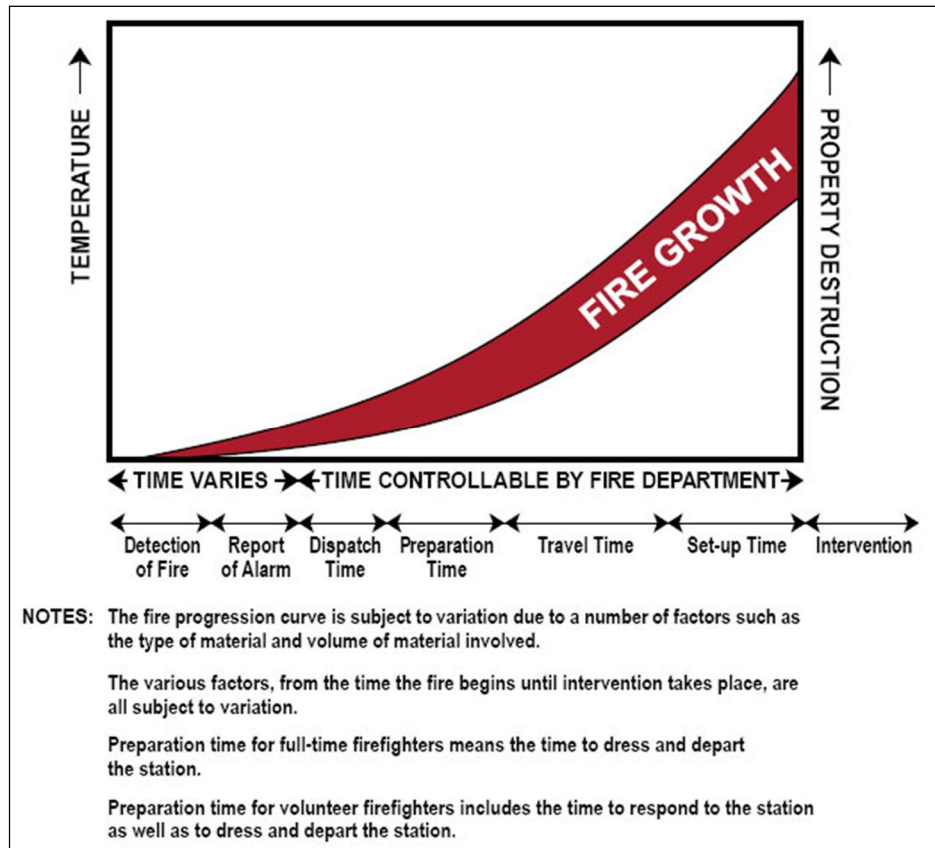
**Table 15: Fire Growth Rates as Defined by Society of Fire Protection**

<b>Time to Reach 1 MW and 2 MW Fire Growth Rates in the Absence of Fire Suppression</b>		
<i><b>Fire Growth Rate</b></i>	<i><b>Time in Seconds to Reach 1MW</b></i>	<i><b>Time in Seconds to Reach 2 MW</b></i>
Slow	600 seconds	848 seconds
Medium	300 seconds	424 seconds
Fast	150 seconds	212 seconds
<i>Source: Office of the Fire Marshal and Emergency Management and Emergency Management- Ontario, 'Operational Planning: An Official Guide to Matching Resource Deployment and Risk', January 7, 2011 (<a href="http://www.OFMEM.gov.on.ca">www.OFMEM.gov.on.ca</a>)</i>		

Within this ten minute time period flashover conditions can occur. Flashover occurs when the combustible items within a given space reach a temperature that is sufficiently high for them to auto-ignite. The graph in **Figure 7** highlights the importance of firefighting intervention, given the exponential increase in fire temperature, and the potential for loss of property/loss of life with the progression of time.



**Figure 7: OFMEM Fire Progression Curve**



(Source: Previous OFMEM Public Fire Safety Guidelines)

The fire progression curve reflects the importance of time during the “*detection – report*” stage. This is the time period not impacted by any actions by the fire department. The time period controlled by the fire department begins when the call is initially received by “*dispatch*” and includes several other components leading up to the initiation of “*intervention*” by fire suppression staff.

Understanding factors such as “growth rate” and “time” in terms of how quickly a fire can reach a critical stage such as “flashover” are important considerations in assessing fire suppression performance targets. For example, where areas of the community may have extended response times due to long travel distances, in excess of 10 minutes, the potential for the fire to have spread from the room of origin, and or already reached a “flashover” state, will be significantly higher.

In these situations consideration should be given to the first two lines of defence including the provision of more public education and fire prevention activities as a means to inform the public on how to be prepared.



## 9.6 Total Response Time

Measuring the total response time to an emergency call can be defined by three primary components: *dispatch time*, *turnout time*, and *travel time*. Together these components make up the total response time it takes for a fire and emergency service to receive a call either from someone at the scene or with knowledge of the fire, identify the location of the emergency and dispatch appropriate vehicles and staff, travel to the scene of the incident, and set up to begin fire suppression activities. The common definitions of these three components are:

1. **Dispatch Time:** The time that it takes for the person responsible for “*alarm answering*”, and “*alarm processing*” to be able to receive the call, and dispatch the appropriate apparatus and staff to respond to the emergency.
2. **Turnout Time:** The time interval that begins from when the emergency response staff receives the required dispatch notification, and ends at the beginning point of travel time.
3. **Travel Time:** The travel time interval begins when the assigned emergency response apparatus begins the en-route travel to the emergency, and ends when the apparatus arrives at the scene.

One of the important factors to recognize with regard to these times is when the responding fire department begins to take “*care and control*” of the incident. Within PFSG 04-08-10 (**Appendix D**) the OFMEM describes this as:

*“Once notified of an emergency, your department accepts its “care and control”. If your department handles its own call-taking and dispatching, you can see that you have care and control right from the earliest moment, when the emergency was reported. But if you hire a call-taking or dispatching or both, you do not accept care and control until sometime later. Nevertheless, the fire department has responsibility for ensuring that hired agencies manage call-taking and dispatching effectively, and in accordance with establishes protocols”.*

## 9.7 Fire Suppression Guidelines, Industry Standards, Industry Best Practices

Within Ontario there is no specific legislated standard that a community must achieve with regard to the type of firefighter (career/part-time/volunteer) or the number of firefighters required to respond to any given incident. The FPPA does require that a municipal Council assess this level of resources based on determining its “*local needs and circumstances*.”

Over the past decade there has been a transition within the fire service industry across North America to the utilization of community-based risk analyses to determine the appropriate level of firefighter deployment based on the critical fireground tasks to be performed effectively, efficiently and safely in order to conduct fire suppression operations.

Utilizing the findings of the Community Fire Risk Assessment contained within this review this section assesses the relevant PFSG authored by the Office of the Fire Marshal and Emergency Management – Ontario and the current standards of the National Fire Protection Association, the most highly recognized fire service association in North America.

In our view the OFMEM and NFPA cumulatively represent the appropriate authorities to reflect best practices for identifying an appropriate methodology and process for determining firefighter deployment by the CYFS.



### **9.7.1 OFMEM - PFSG 04-08-10 Operational Planning: An Official Guide to Matching Resource Deployment and Risk**

PFSG 04-08-10 (*Appendix D*) was released by the OFMEM in January 2011 and includes a “Critical Task Matrix” to assist municipalities in determining the level of fire ground staffing capabilities based upon low, moderate, high and extreme risks. In May of 2013 the OFMEM indicated that this PFSG was under review. That review remains ongoing and the current version of the PFSG identified within this report remains the most current publication from the OFMEM.

The Critical Task Matrix is defined by the OFMEM as:

*“The critical Task Matrix is based on the Incident Management System (IMS). It will assist in identifying fireground staffing capabilities based upon low, moderate, high and extreme risk levels within your community. The Office of the Fire Marshal and Emergency Management (OFMEM) has identified the critical tasks from the Incident Management System that are used during fireground operations. These tasks are consistent with applicable legislation, industry best practices and the Ontario Fire College Curriculum”.*

The matrix further recognizes that within the IMS that:

- *Upon arrival and rapid size-up, the incident commander can upgrade or downgrade response;*
- *Crews can be reassigned to other tasks once original assignments are complete;*
- *Response protocols can be established with specific risk levels used to assist with pre-planning to obtain more resources based on the escalating nature of the emergency;*
- *Fire departments perform rescue and building personnel conduct evacuations according to their approved fire safety plans;*
- *Some tasks will never be assigned based on the tactical approach chosen by the incident commander (offensive versus defensive).*

On May 6, 2014 the OFMEM released a new “*Integrated Risk Management (IRM) Web Tool*”. The OFMEM describes the purpose of the new IRM Web Tool as:

*“The purpose of the IRM Web Tool is to provide best practices to municipal and fire service decision makers when conducting individual building fire risk assessments. The IRM Web Tool is an evidence based risk management tool designed to assist Ontario’s municipalities to establish appropriate levels of service by integrating Public Fire Safety Education, Fire Safety Standards and Enforcement and Emergency Response (The Three Lines of Defence) to meet their legislative obligations in the Fire Prevention and Protection Act (FPPA), 1997. This will assist municipalities by providing for better informed decision making to determine levels of fire protection services with respect to the three Lines of Defence through utilization of the IRM Web Tool”.*

The OFMEM has indicated that the new IRM Web Tool will include a new PFSG that will replace the current PFSG “04-08-10 Operational Planning: An Official Guide to Matching Resource Deployment and Risk”. The OFMEM has indicated that this new PFSG is still in development and will be released upon completion. This review utilizes the current PFSG 04-08-10 for the purposes of comparing existing PFSG, NFPA standards and best practices.



The Critical Task Matrix provides a lower and upper range of the number of firefighters required to respond for each of the four risk levels. The actual number of firefighters within each range is based upon analysis of actual fires, the *Occupational Health and Safety Act Section 21 Guidance Notes* affecting firefighters, and industry best practices. **Figure 8** reflects the PFSG 04-08-10 (**Appendix D**) Critical Task Matrix.

**Figure 8: PFSG 04-08-10 Critical Task Matrix**

Fireground Critical Tasks		Low Risk		Moderate Risk		High Risk		Extreme Risk	
		LERL	UERL	LERL	UERL	LERL	UERL	LERL	UERL
Incident Response (Note: Where zero or no number has been assigned, the task may be performed at the direction of the incident commander.)	Incident Command *	1	1	1	1	1	1	1	1
	Pump Operator	1	1	1	1	1	1	1	1
	Attack Line (Confine & Extinguish)	2	2	2	2	2	2	2	2
	Additional Pump Operator(s)	0	0	0	2	2	4	4	6
	Additional Attack Line (Confine & Extinguish) + Backup	0	0	0	4	4	8	8	12
	Search & Rescue	0	0	2	4	2	6	2	8
	Initial Rapid Intervention Team (IRIT)	0	0	4	6	8	16	12	22
	Ventilation	0	2	2	2	2	4	2	8
	Water Supply – pressurized	0	1	1	1	1	1	1	2
	Water Supply – non-pressurized	0	3	1	4	2	6	4	8
	Forcible Entry Team	0	0	0	0	0	1	0	1
	Utilities	0	1	1	1	1	1	1	1
	Laddering (Ground Ladders)	0	2	0	2	0	4	0	6
	Laddering (Aerial or elevating device operator)	0	0	0	2	0	2	0	2
	Exposure Protection			0	4	2	6	2	6
	Incident Safety Officer			0	1	1	1	1	1
	Accountability			1	1	1	1	1	1
	Entry Control			0	2	1	4	1	4
	Rehabilitation			0	1	1	1	1	1
	Salvage			0	2	2	2	2	2
	Lighting					0	2	0	2
	Directing Occupants					0	4	0	4
	Scribe					1	1	1	1
	Sector Officers					1	4	1	4
	Air Management (air refilling station, etc.)							1	2
Other or Additional Response Considerations	Logistics Officer								
	Administrative and/or Finance Officer								
	Planning Officer								
	Evacuations (large scale)								
	Communications (dispatch)								
	Public Information Officer								
	Overhaul								
	Additional Firefighters								
Summary	Incident Response Range	4	13	16	43	36	83	49	108
	Total Fire Department Including External								
	Fire Call Incident Response Range (+, -, within)								
<b>Notes:</b> <ul style="list-style-type: none"> <li>• LERL = Lower Effective Response Level &amp; UERL = Upper Effective Response Level, [together form the critical staffing range]</li> <li>• This tool provides a range of staffing requirements only. Actual numbers may vary depending on the fire risk that exists in the municipality. Tasks performed on fireground based on decisions made by Incident Commander.</li> <li>• Planning moderate, high and extreme risk occupancies/locations will further validate staffing requirements to ensure the optimum level of protection for the municipality.</li> <li>• Simultaneous events will require further consideration due to additional personnel requirements beyond the scope of this matrix.</li> <li>• Incident Command will assume responsibilities for the accountability and entry control tasks when no person has been assigned, or until a person has been assigned the task.</li> </ul>									

(Source: PFSG 04-08-10)



The OFMEM Critical Task Matrix indicates that the lower and upper level incident response range to effectively, efficiently and safely conduct fire suppression operations to safely complete the tasks associated with a fire in moderate risk (Group C - Residential Occupancy) would be 16 to 43.

In comparison, the matrix indicates that the lower and upper level incident response range to effectively, efficiently and safely conduct fire suppression operations tasks associated with high risk occupancy (e.g. Group B – Institutional Occupancy) would be 36 to 83.

### ***9.7.2 National Fire Protection Association (NFPA) 1710 Standard***

The National Fire Protection Association (NFPA) is an international non-profit organization that was established in 1896. The company's mission is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education. With a membership that includes more than 70,000 individuals from nearly 100 nations NFPA is recognized as one of the world's leading advocates of fire prevention and an authoritative source on public safety.

NFPA is responsible for 300 codes and standards that are designed to minimize the risk and effects of fire by establishing criteria for building, processing, design, service, and installation in the United States, as well as many other countries. Its more than 200 technical code and standard development committees are comprised of over 6,000 volunteer seats. Volunteers vote on proposals and revisions in a process that is accredited by the American National Standards Institute (ANSI).

NFPA 1710 "*Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*" provides a resource for determining and evaluating the number of career firefighters required based upon recognized industry best practices.

NFPA 1710 is a standard that is designed for larger municipalities that as a result of many factors are operating their fire department utilizing substantially career firefighters. Relevant references from NFPA 1710 include the following:

- This standard applies to the deployment of resources by a fire department to emergency situations when operations can be implemented to save lives and property.
- The standard is a benchmark for most common responses and a platform for developing the appropriate plan for deployment of resources for fires in higher hazard occupancies or more complex incidents.

The NFPA references support the strategic priority of saving lives and property, as well as recognising the standard as a "*benchmark*" for determining the appropriate level of resources based on the complexity and level of risk present.

This standard identifies the minimum deployment of firefighters based on an "Initial Arriving Company" and an "Initial Full Alarm Assignment".

## ***9.8 Initial Arriving Company – "Initial Response"***

Initial response is consistently defined in the fire service as the number of firefighters initially deployed to respond to an incident. Fire service leaders and professional regulating bodies have agreed that until a sufficient number of firefighters are assembled on-scene, initiating tactics such as entry into the building to conduct search and rescue, or initiating interior fire suppression operations are not safe practices. If fewer than four firefighters arrive on scene, they must wait until a second vehicle, or additional firefighters arrive on scene to have sufficient staff to commence these activities.



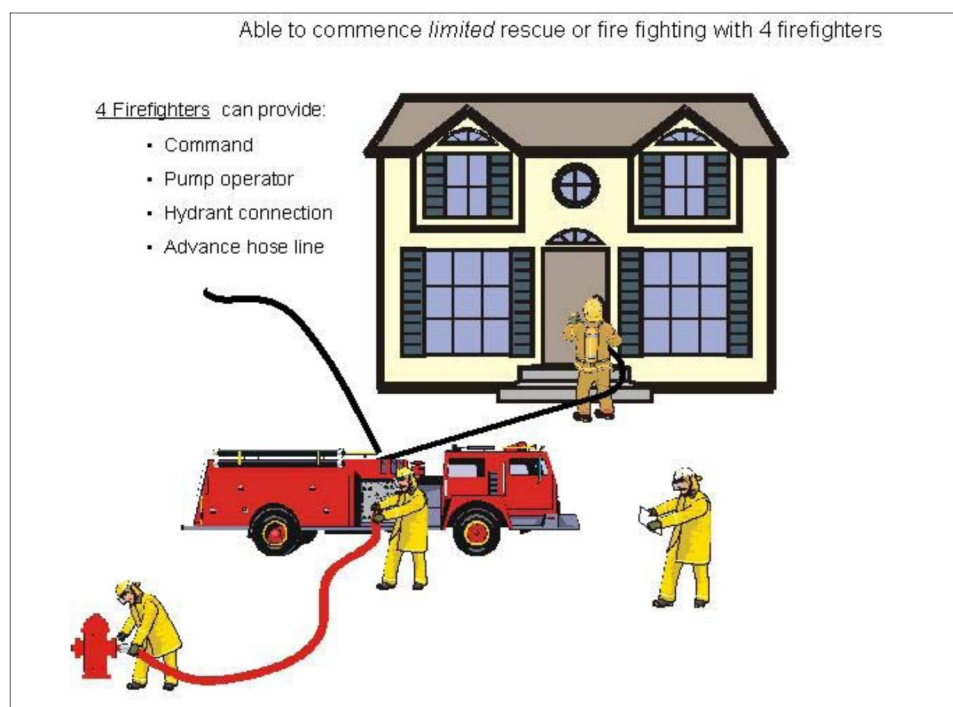
NFPA 1710 refers to the Initial Arriving Company as an Engine Company and further defines the minimum staffing level of an Engine Company as four firefighters whose primary functions are to pump and deliver water and perform either limited rescue or limited firefighting operations.

A first response of four firefighters once assembled on-scene is typically assigned the following operational functions. The officer in charge shall assume the role of Incident Command; one firefighter shall be designated as the pump operator; one firefighter shall complete the task of making the fire hydrant connection; and the fourth firefighter shall prepare an initial fire attack line for operation.

The assembly of four firefighters on the fire scene provides sufficient resources to safely initiate limited rescue or firefighting operations. This first crew of four firefighters is also able to conduct the strategic operational priority of “size-up” whereby the Officer in-charge can evaluate the incident and where necessary, request an additional depth of resources that may not have been dispatched as part of the first response.

Fire scene responsibilities of the Initial Response are highlighted in **Figure 9** below.

**Figure 9: Initial Response Fire Scene Responsibilities**



(Source: Previous OFMEM Public Fire Safety Guidelines)

The NFPA 1710 standard identifies an initial response deployment of four firefighters to effectively, efficiently and safely conduct initial fire suppression operations. As listed in the Fireground Critical Tasks and summarized in **Figure 8** the critical tasks with four firefighters on-scene include incident command, pumper operator and an attack line. This relates to a low-risk call response or a first response for all calls.



## 9.9 Initial Full Alarm Assignment – “Depth of Response”

In comparison to the first response, the depth of response relates to the “total” number of firefighters initially assigned to an incident. Depth of response is also commonly referred to as “First Alarm” or “Full Response.” For example NFPA 1710 defines “*Initial Full Alarm Assignment*” as “*Those personnel, equipment, and resources ordinarily dispatched upon notification of a structure fire.*”

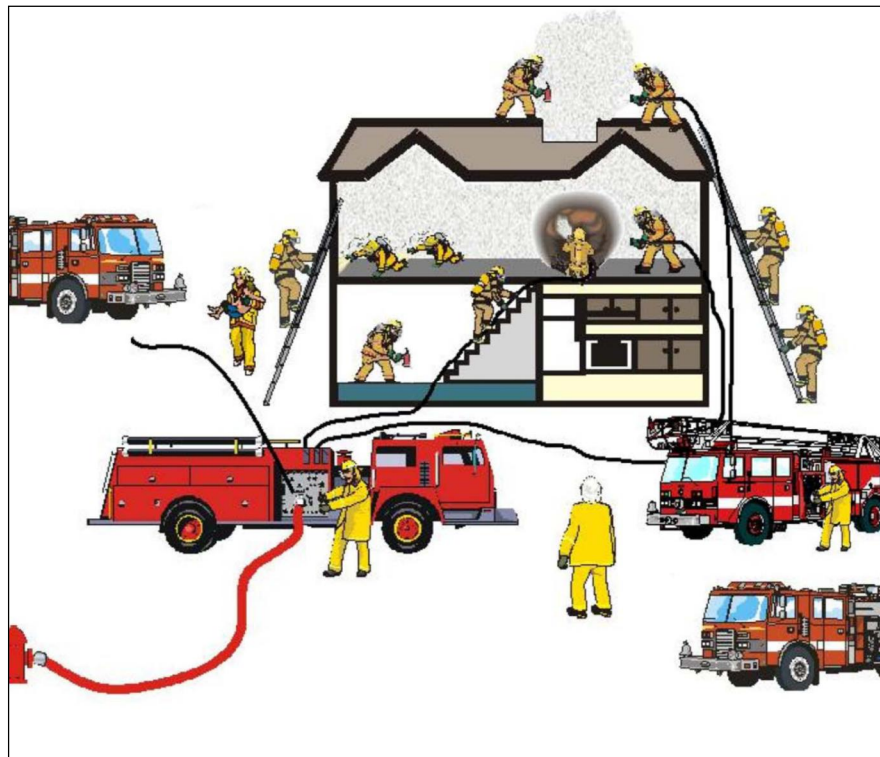
The standard utilizes the example of a fire risk scenario in a 2,000 square foot, two-story single-family dwelling without a basement and with no exposures present. This represents a typical home of wood frame construction located in a suburban neighbourhood having access to a municipal water supply including fire hydrants. Within this study this occupancy would be classified as a ‘Group C - Residential Occupancy’ (moderate risk).

It is very important to recognize that depth of response is referring to the “total” number of firefighters **initially** assigned to an incident. The total number of firefighters assigned to an incident can vary based on the type of occupancy and the level of risk present. Fires involving occupancies that have been assigned a higher level of risk such as high, or extreme may require a higher number of firefighters as part of the initial depth of response.

The NFPA 1710 standard for depth of response to the fire risk scenario presented is fourteen firefighters, fifteen if an aerial device is to be used. The NFPA 1710 fire scene responsibilities for depth of response including an aerial are highlighted in **Figure 10**.



**Figure 10: Depth of Response Fire Scene Responsibilities**



*(Source: Previous OFMEM Public Fire Safety Guidelines)*

The NFPA 1710 standard identifies a depth of response deployment of 14 firefighters (with one additional firefighter with an aerial on-scene) to effectively, efficiently and safely conduct initial fire suppression operations in a fire risk scenario representing a single-family detached dwelling. Within this FDMPU this occupancy would be classified as a Group C - Residential Occupancy (moderate risk). As listed in the Fireground Critical Tasks shown in **Figure 10**, the critical tasks for a moderate level risk include:

- Incident Command / Accountability (1 firefighter)
- Pump Operator (1 firefighter)
- Two Attack Lines (4 firefighters)
- Search and Rescue (2 firefighters)
- Forcible Entry (1 firefighter)
- Water supply (1 firefighter)
- Initial Rapid Intervention Team (2 firefighters)
- Ventilation (2 firefighters)
- Laddering - Aerial – (additional 1 firefighter, optional)



## ***9.10 Summary of Fire Suppression Guidelines, Industry Standards, and Industry Best Practices***

Our analyses included a review of current OFMEM public fire safety guidelines and relevant NFPA standards; together with our experience in working with other similar size municipalities across the Province the following represents our findings in relation to the staff deployment for initial response and depth of response for the CYFS.

### ***Initial Response:***

For the deployment of an initial response to effectively, efficiently and safely conduct initial fire suppression operations including limited rescue or limited firefighting operations our analyses reflects a minimum deployment of four firefighters.

In our view an appropriate deployment for initial response by the CYFS should include a **minimum initial response of four firefighters** to provide sufficient firefighting resources to effectively, efficiently and safely conduct either a limited rescue or limited firefighting operations including the fireground critical tasks of:

- *Incident Command- 1 firefighter/officer*
- *Pump Operation – 1 firefighter*
- *Attack Line - 2 firefighters (Confine and Extinguish)*

### ***Depth of Response:***

Fireground critical tasks refer to the types of activities that are required to be completed by firefighters to effectively and safely mitigate a fire situation. PFSG 04-08-10 provides a lower and upper effective range of firefighters for each of the occupancy risks levels including low, moderate, high and extreme. The OFMEM has identified the critical tasks from the Incident Management System (IMS) that are used during fireground operations. These tasks are consistent with applicable legislation, industry best practices and the Ontario Fire College curriculum.

Residential occupancies and specifically single family residences provide an example of the type of fire risk present and fireground critical tasks required to effectively, efficiently and safely mitigate an incident. This is particularly relevant to Ontario where residential occupancies have historically accounted for 71% of all structure fires and 85% of all fire related deaths.<sup>2</sup>

The fireground critical tasks and initial full response assignment (depth of response) identified within NFPA 1710 utilize the following definition of a residential occupancy:

*“The fire risk scenario in a 2,000 square foot, two-story single-family dwelling without a basement and with no exposures present. This represents a typical home of wood frame construction located in a suburban neighbourhood having access to a municipal water supply including fire hydrants”.*

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<sup>2</sup> Source: 2012 Ontario Fire Marshall data



The NFPA staffing deployment for this residential fire risk is 14 firefighters, 15 if an aerial device is deployed.

The identification of fire risk classifications (e.g. low, moderate, high and extreme) is determined based on analyses of all available information that defines the characteristics of a community. The Comprehensive Community Fire Risk Assessment included within this FDMPU (*Appendix J*) provides these analyses for the Town of Aurora and the Town of Newmarket. The analyses consider the eight key risk factors identified within the OFMEM Fire Risk Sub-Model.

The fire suppression resources necessary to complete the fireground critical tasks can vary based on the type of occupancy. For example, a fire situation in the example of a single family dwelling (moderate risk) will require sufficient fire suppression resources that are determined based on the Community Risk Assessment including the eight key factors and the relevant PFSG and the NFPA 1710 and OHSA standards reflecting best practices in fire suppression activities.

High risk occupancies such as a nursing home where higher risks such as on older demographic (seniors) that may become disoriented, or unable to evacuate themselves present a different challenge for responding firefighters. The nature of these occupancies to have more residents than a single family home present further challenges for conducting search and rescue and evacuation activities.

To determine the appropriate firefighter deployment for low, moderate, high and extreme risks occupancies by the CYFS, an assessment of the Comprehensive Community Fire Risk Assessment, relevant PFSG and the NFPA 1710 standards, and OHSA Section 21 Guidance Notes was completed.

These analyses identified a best practices firefighter deployment to complete the fireground critical tasks associated with each occupancy risk level. For low risk occupancies this reflects a minimum depth of response deployment of four firefighters.

For moderate risk occupancies including 'Group C - Residential occupancies' (Single – Family Dwelling) a minimum depth of response deployment of 14 firefighters is required to complete the additional fireground critical tasks based on the fire risks present. The additional fireground critical tasks include activities such as providing an additional fire attack line requiring two firefighters, and providing a Rapid Intervention Team (RIT) comprised of two firefighters who are assigned the specific task of being prepared to respond quickly in the event one of the fire attack teams or other firefighters on scene require immediate assistance.

In comparison to the low and moderate risk occupancies, high risk occupancies such as the nursing home referenced above require additional fireground critical tasks to be completed and a higher minimum deployment of firefighters. The additional fireground critical tasks include activities such as providing a dedicated crew of two firefighters for positioning ladders on the building to support fire suppression and rescue activities and the provision of an Incident Safety Officer to oversee and ensure all firefighting activities are conducted safely.

The results of the Community Fire Risk Assessment indicate that for the Town of Aurora and the Town of Newmarket there are no extreme risk occupancies.

Based on our analyses of the current PFSG's, NFPA Standards and best practices within Ontario an appropriate minimum depth of response to the low, moderate and high risks occupancies by the CYFS to achieve the identified critical fireground tasks includes a minimum of four firefighters to low risk occupancies, 14 firefighters to moderate risk occupancies and 24 firefighters to high risk occupancies.

The recommended minimum depth of response firefighter deployment is identified in *Table 16* below.



**Table 16: Recommended Depth of Response – CYFS**

Fireground Critical Tasks		Low Risk	Moderate Risk	High Risk
Incident Response	Incident Command	1	1	1
	Pump Operator	1	1	1
	Additional Pump Operator	0	0	1
	Initial Attack Line (Confine & Extinguish)	2	2	2
	Additional Attack Line (Confine & Extinguish)	0	2	2
	Search and Rescue	0	2	2
	Initial Rapid Intervention (RIT)	0	2	2
	Ventilation	0	2	2
	Water Supply- pressurized	0	1	1
	Forcible Entry Team	0	1	2
	Laddering	0	0	2
	Exposure Protection	0	0	2
	Incident Safety Officer	0	0	1
	Accountability	0	0	1
	Rehabilitation	0	0	2
	<b>Minimum firefighter deployment</b>	<b>4</b>	<b>14</b>	<b>24</b>

### ***Performance Objectives***

In contrast to the CYFS and NFPA 1710 the current PFSG 04-08-10 does not include performance benchmarks for response time, and an objective for achievement. **Table 17** provides a comparison of the current CYFS and NFPA 1710 performance objectives.



**Table 17: Comparison of Current CYFS and NFPA 1710 Performance Objectives**

Performance Objective	CYFS		NFPA 1710	
	Benchmark	Objective	Benchmark	Objective
Dispatch Time	60 seconds	----	60 seconds	80%
Turnout Time	60 seconds	---	80 seconds	90%
Initial Response	4 firefighters arriving on scene within 6 minutes of <i>Total Response Time</i>	90%	4 firefighters arriving on scene within 4 minutes of <i>Travel Time</i>	90%
Depth of Response	12 firefighters arriving on scene within 10 minutes of <i>Total Response Time</i>	90%	14 firefighters arriving on scene within 8 minutes of <i>Travel Time</i>	90%

The CYFS performance objectives use *Total Response Time* in comparison to the NFPA 1710 measures that utilize *Travel Time* only. The NFPA standard assumes that the additional components of dispatch time, and turnout time included within the CYFS performance objective are tracked separately.

The CYFS performance objectives for dispatch are included within the current Dispatch Agreement with Richmond Hill.

Based on our analyses of the CYFS and NFPA standard presented the following revisions to the current CYFS performance objectives for emergency responses are recommended. The additional 20 seconds proposed for initial response and depth of response are as a direct result of the increased turn out time of 80 seconds from the previous 60 seconds recommended by NFPA. The addition of two firefighters for depth of response from the current 12 to 14 proposed reflects the analyses included within this review. **Table 18** provides a comparison of the proposed CYFS and NFPA 1710 performance objectives. **Table 19** shows the performance objectives recommended for CYFS.

**Table 18: Comparison of Proposed CYFS and NFPA 1710 Performance Objectives**

Performance Objective	CYFS		NFPA 1710	
	Benchmark	Objective	Benchmark	Objective
Dispatch Time	60 seconds	----	60 seconds	80%
Turnout Time	<b>80 seconds</b>	<b>90%</b>	80 seconds	90%
Initial Response	4 firefighters arriving on scene within 6 minutes <b>and 20 seconds of</b> <i>Total Response Time</i>	90%	4 firefighters arriving on scene within 4 minutes of <i>Travel Time.</i>	90%
Depth of Response	<b>14</b> firefighters arriving on scene within 10 minutes <b>and 20 seconds of</b> <i>Total Response Time</i>	90%	14 firefighters arriving on scene within 8 minutes of <i>Travel Time</i>	90%



**Recommendation 22:**

*That the CYFS emergency response dispatch protocols be revised to reflect the proposed minimum staffing deployments for low, moderate and high risk occupancies (Table 16) and the proposed revised performance objectives for emergency response (Table 19).*

**Table 19: Recommended Revised CYFS Performance Objectives**

<b>Initial Response</b>
<i>CYFS should strive to achieve a goal of first arriving crew consisting of at least three firefighters and an officer responding to emergencies within 6 minutes <b>and 20 seconds</b> of receiving an emergency call, 90% of the time.</i>
<b>Depth of Response</b>
<i>CYFS should strive to achieve a goal of responding to reported structure fires with <b>fourteen</b> firefighters within ten minutes <b>and 20 seconds</b>, 90% of the time.</i>
<b>Turnout Time</b>
<i>CYFS should strive to achieve a goal of <b>80</b> seconds or less for turnout time of firefighters, <b>90% of the time</b>.</i>

## **9.11 Historical Emergency Response Overview**

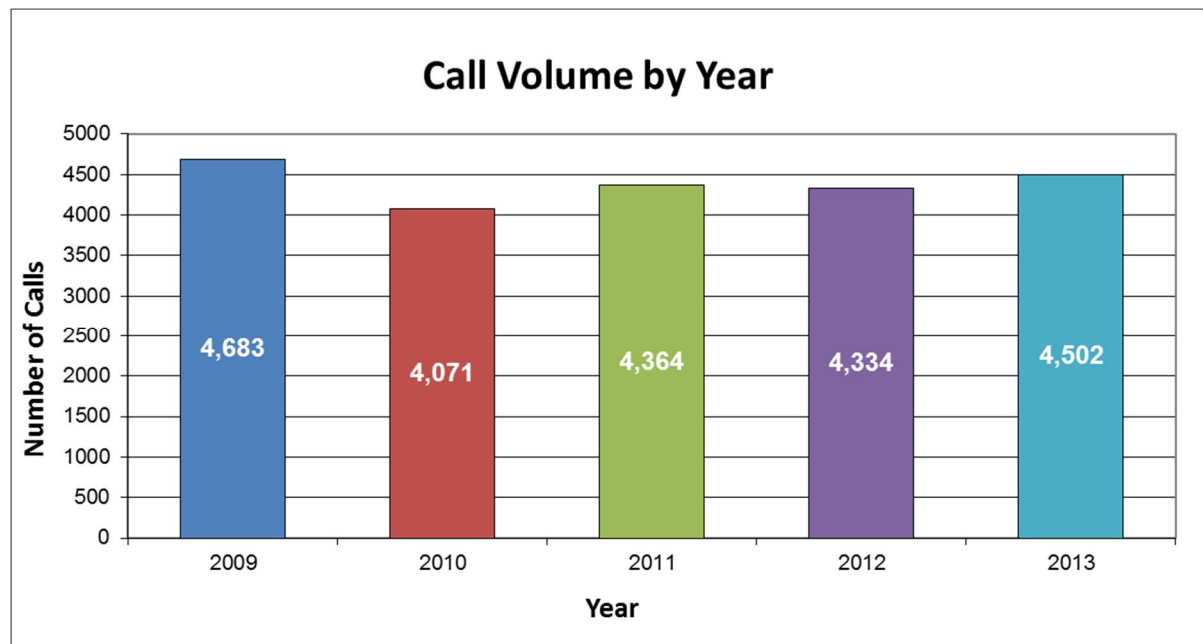
The analysis within the following sections looks at the emergency response activity of the CYFS over the period from 2009 through 2013.

### **9.11.1 Emergency Response Call Volume**

Our analysis of emergency response statistics for the CYFS from 2009 to 2013 reveal a modest decrease in call volume as seen in **Figure 11**. Over the five-year period call volume saw an average annual decrease of 4% with a small 4% increase from 2012 to 2013, against a backdrop of increasing population and employment. Overall, call volume rates are variable and a successful prevention and education program has assisted in decreasing call volume levels.



**Figure 11: Emergency Call Volume, 2009 to 2013**



### ***9.11.2 Emergency Call Volume Assessed by Response Types***

Throughout the following section the historical emergency response call volume is assessed by response type, this reflects the type of call that was responded to by the CYFS. Response types are defined by the OFMEM and are used by jurisdictions throughout Ontario for reporting purposes.

Where appropriate, this section presents historical emergency response call data for the CYFS in two ways. The first illustrates the data similar to how it is reported through the CYFS annual reports. CYFS groups some response types and includes a key category in annual reporting: fire-related. This category reflects the unknown nature and potential consequence of an emergency call before a response takes place.

The second method illustrates the data as it is analyzed for the purpose of providing recommendations through this FDMPU. For the purpose of analysis, Dillon has grouped the OFMEM response types based on the additional detailed piece of knowledge of the actual emergency response call outcome. **Table 20** illustrates the relationship between the OFMEM defined response types, the CYFS fire-related response type category, and the response types categories used for analysis by Dillon.



**Table 20: Response Type**

<b>Dillon Response Type</b>	<b>OFMEM Response Type</b>	<b>CYFS Fire-Related Response Type</b>
Fire	Property fires / explosions - Fire, Explosion & No Loss outdoor fire	Fire-related
Medical	Medical / resuscitator call -Oxygen administered, CPR, Defibrillator used, Electric Shock, Burns, DOA, Alcohol or Drug related, etc.	Medical
Other	Pre-fire conditions / no fire -Overheat (no fire, e.g. engines, mechanical devices), Pot on Stove (no fire), Lightning (no fire), Fireworks (no fire), etc.	Fire-related
	Burning (controlled) -Open air burning / Unauthorized controlled burning (no uncontrolled fire) & Authorized controlled burning - complaint	Fire-related
	False fire calls - Alarm System Equipment – Malfunction / Accidental activation, Human – Perceived Emergency / Accidental / Prank, etc.	Fire-related
	CO false calls - CO false alarm – perceived emergency (no CO present) & CO false alarm – equipment malfunction (no CO present)	Other
	Public hazard - CO incident (NOT false alarm) , Gas Leak, Spill – Gas or Fuel, Ruptured Pipe, Power Lines Down / Arcing, Etc.	
	Rescue -Vehicle Collision, Vehicle Extraction, Water Rescue, Ice Rescue, Animal Rescue, Building Collapse, etc.	
	Other response - Illegal drug operation (no fire), Assisting other FD, Assisting Police, Call cancelled on route, etc.	
	Overpressure rupture / explosion (no fire) -Overpressure Rupture (no fire, e.g. steam boilers, hot water), Munition Explosion – (no fire, e.g. bombs, dynamite), etc.	

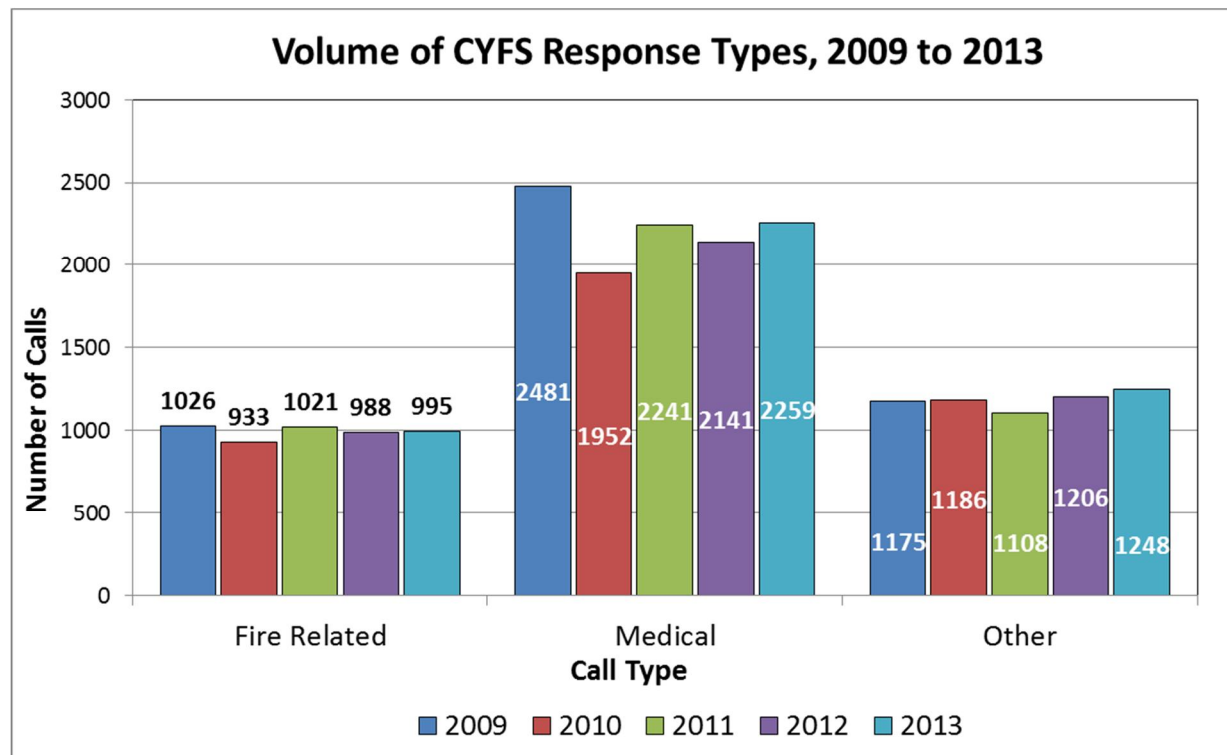
#### **9.11.2.1 CYFS Response Type Analyses**

The CYFS analyses as contained with the department's Annual Reporting reflects a summary of the response types the CYFS was initially deployed to. This represents the response types at the time of dispatching apparatus based on the information received at the time of the call.



The number of fire related, medical and other response types responded to over the period from 2009 through 2103 is shown in **Figure 12**.

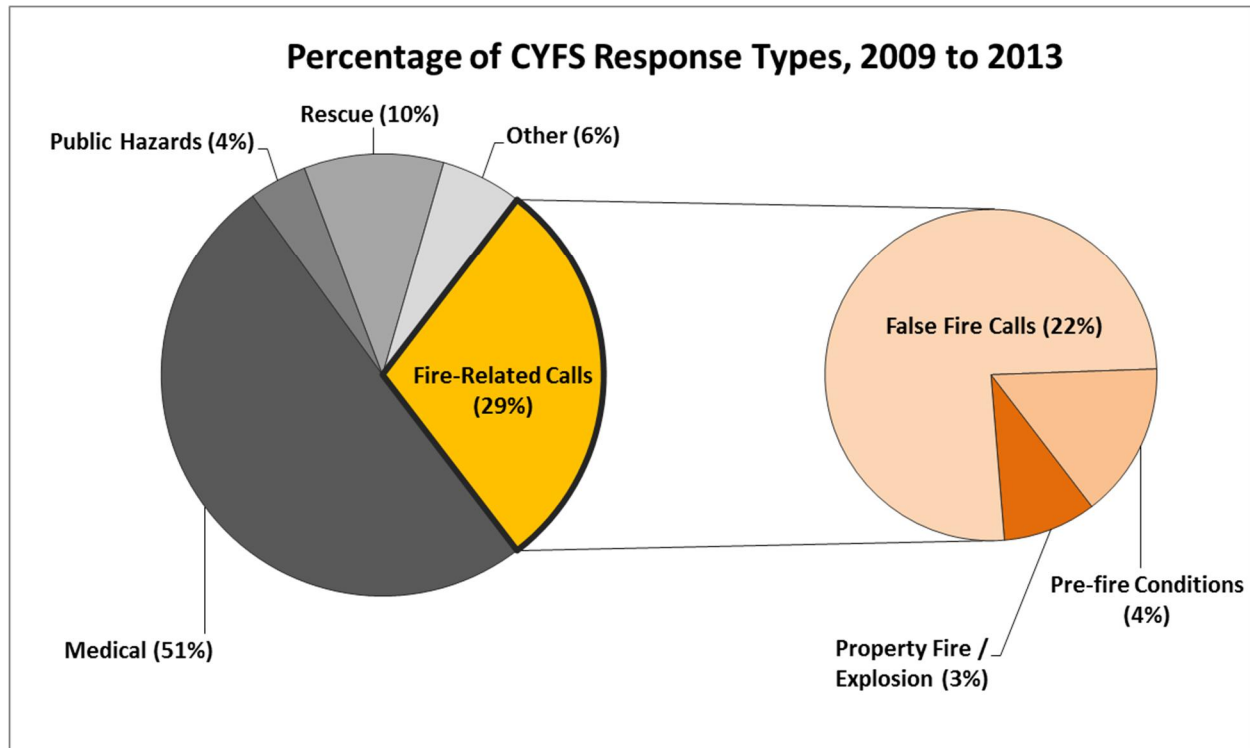
**Figure 12: Volume of CYFS Response Types, 2009 to 2013**



The proportion of fire-related calls based on a total for the 2009 to 2013 period is shown in **Figure 13**. Fire-related calls make up 29% of total calls, which is the second most frequent type of call behind medical calls (51%). Of the fire-related calls, the majority (22%) are false fire calls, followed by pre-fire conditions (4%) and property fire/explosion (3%).



**Figure 13: Percentage of CYFS Response Types, 2009 to 2013**

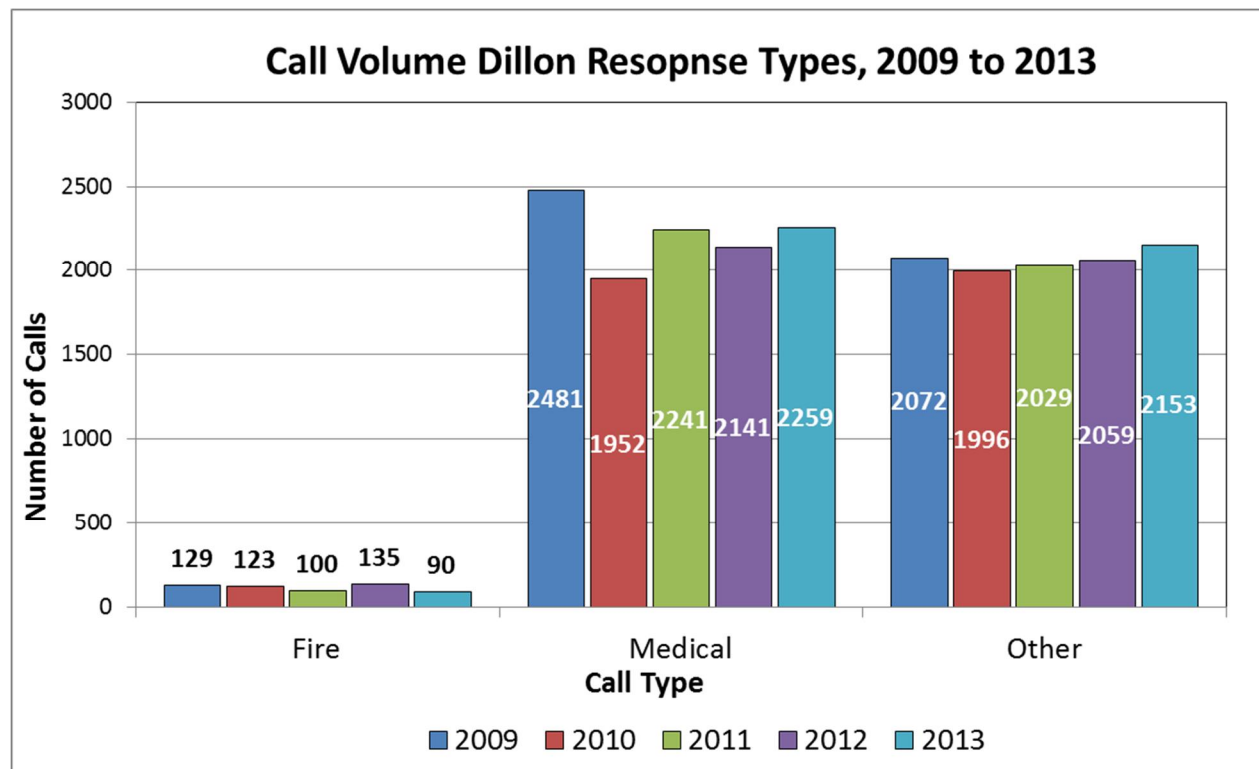


#### **9.11.2.2 Dillon Response Type Analyses**

Fire-related calls from 2009 to 2013 ranged from 933 to 1,026 calls each year, as seen in **Figure 12**. Using the Dillon categorization of OFMEM response types, the number of calls per type of incident is shown in **Figure 14**. Despite the categorization approach, medical calls consistently make up the majority of calls. Percentage of incident types are discussed in the following section.



Figure 14: Call Volume of Dillon Response Types, 2009 to 2013



### 9.11.3 Response Time Assessment

Response times are measured and analyzed according to percentile ranking (i.e. percentage of responses meeting a specified timeframe). The 90th percentile (i.e. where 90% or 90 out of 100 responses meet a specific response time target) is a common industry best practice for reporting and understanding emergency first responder performance. Fire services commonly utilize 90th percentile response time data for system planning and resource deployment purposes.

### 9.11.4 Dispatch Time

Dispatch time is defined by the NFPA in a standard called “NFPA 1221<sup>3</sup> – Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems”, as follows:

*“Emergency Alarm Processing / Dispatching: A process by which an alarm answered at the communications centre is transmitted to emergency response facilities (ERFs) or the emergency response units (ERUs) in the field.”*

<sup>3</sup> NFPA 1221 2013 Edition was referenced within this report

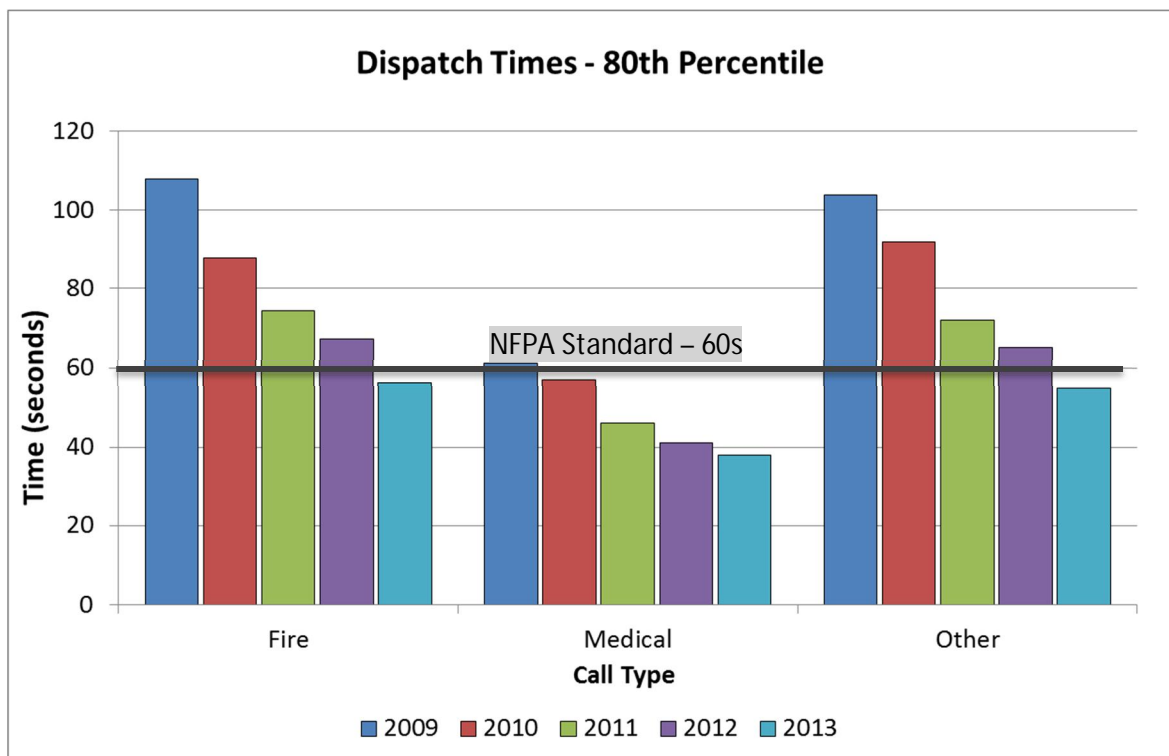


NFPA 1221 is an industry best practice for dispatch time requirements. It requires that 95% of alarms received on emergency lines shall be answered within 15 seconds, and 99% of alarms shall be answered within 40 seconds. It requires processing of the alarm call (dispatching) to be completed within 60 seconds, for 80% of all calls (80<sup>th</sup> percentile), and within 106 seconds for 95% of calls. This means that 80 out of 100 calls are required to be dispatched within 60 seconds and 95 out of 100 calls must be dispatched within 106 seconds. There are some exceptions that have been identified. For the following call types, emergency alarm processing shall be completed within 90 seconds 90% of the time and within 120 seconds 99% of the time:

- *Calls requiring emergency medical dispatch questioning and pre-arrival medical instructions*
- *Calls requiring language translation*
- *Calls requiring the use of a TTY/TDD device or audio/video relay services*
- *Calls of criminal activity that require information vital to emergency responder safety prior to dispatching units*
- *Hazardous material incidents*
- *Technical Rescue*

**Figure 15** presents a summary of the 80<sup>th</sup> percentile of historical dispatch times from the period of 2009 to 2013.

**Figure 15: Historical Dispatch Times by Type - 80<sup>th</sup> Percentile, 2009 to 2013**



Dispatch times for all call types have decreased from 2009 to 2013 and CYFS is currently below the NFPA performance standards for all call types.



In 2013, the 80<sup>th</sup> percentile dispatch time for fire calls was 56 seconds – a decrease of 11 seconds from the year prior and a 52 second decrease from 2009 (from 108 seconds).

In 2013, the 80<sup>th</sup> percentile dispatch time for medical calls was 38 seconds, which falls well below the 60 second NPFA performance measure target. Since 2009 medical call dispatch has decreased by 23 seconds. Dispatching for “other” call types has also reduced from 104 seconds in 2009 to 55 seconds in 2013. Overall, the analysis indicates that dispatch times have improved considerably from 2009 to 2013.

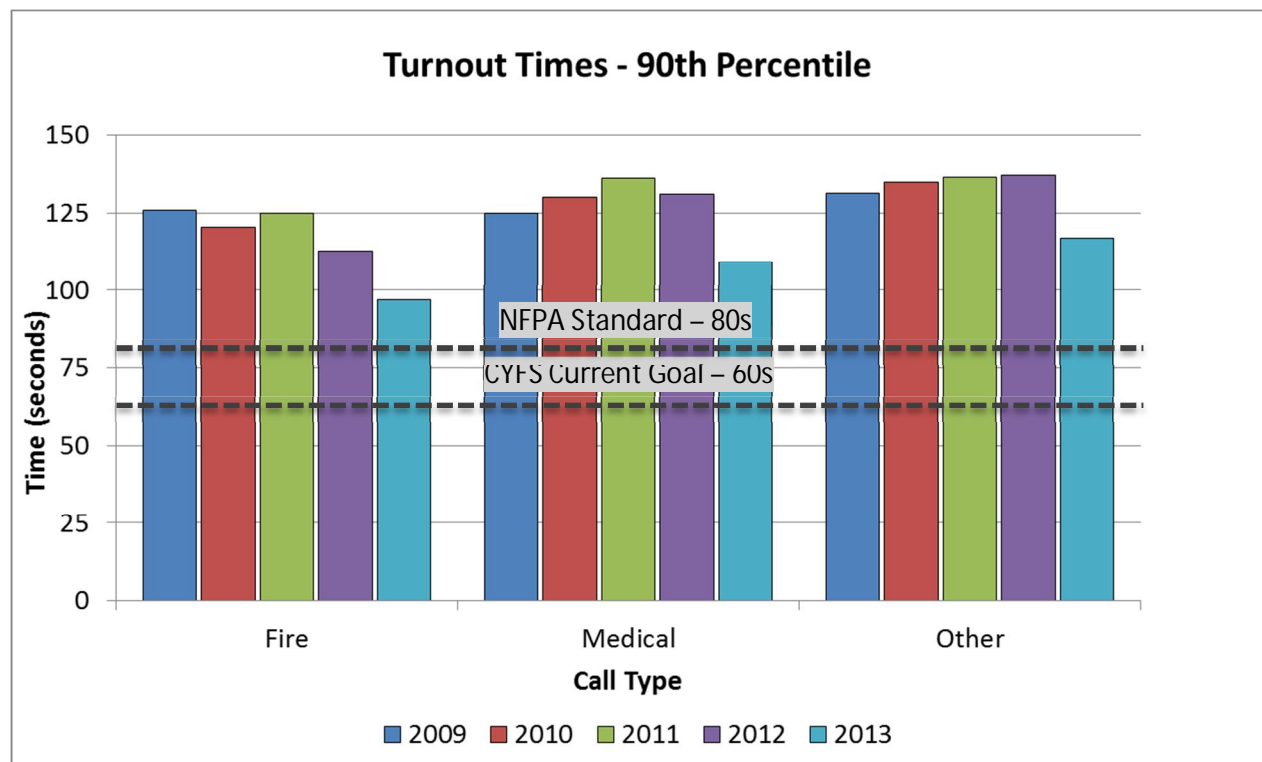
### 9.11.5 Turnout Time

Turnout time is defined by the NFPA, within the Standard for Organization and Deployment of Fire Suppression Operations by Career Fire Departments (NFPA 1710), as:

*“the time interval that begins when the emergency response facilities (ERFs) and emergency response unit (ERUs) notification process begins by either an audible alarm or visual annunciation of both and ends at the beginning point of travel time.”*

In general, it is considered to be the preparation time required between the call being received at the fire station and the time the truck and firefighters leave the station. The objective set by NFPA 1710, for career departments, is to meet a turnout time of 60 seconds or less for medical calls and 80 seconds or less for fire or special operations calls. **Figure 16** presents a summary of CYFS historical turnout times for the period of 2009 to 2013.

**Figure 16: Historical Turnout Times by Type - 90<sup>th</sup> Percentile 2009 to 2013**





The 2013 90<sup>th</sup> percentile turnout time for fire, medical, and other calls are all above the recommended performance measure target. Fire calls in 2013 at 97 seconds are 17 seconds above the set target of 80 seconds, while “other” calls are 37 seconds above the same target. Medical calls are 49 seconds above the recommended time (at 109 seconds).

Although the turnout is decreasing overall, each year, the time taken to receive the emergency call and prepare to depart the station exceed both the current CYFS goal and the NFPA standard. Turn out time for full-time firefighters is an important component impacting the overall total response time of the department.

It is recommend that the CYFS revise the current goal of striving to achieve a 60 second objective to the NFPA’s current standard of 80 seconds, implementing a process of ongoing monitoring and reporting of turn out times by all fire suppression crews should also be considered.

## ***9.12 Travel Time***

NFPA 1710 defines travel time as:

*“The time interval that begins when a unit is en route to the emergency incident and ends when the unit arrives at the scene.”*

### ***9.12.1 Initial Response Travel Time:***

The NFPA 1710 performance measure identifies a travel time of 240 seconds (four minutes) for the first arriving engine company (four firefighters) on-scene for 90% of calls (90<sup>th</sup> percentile).

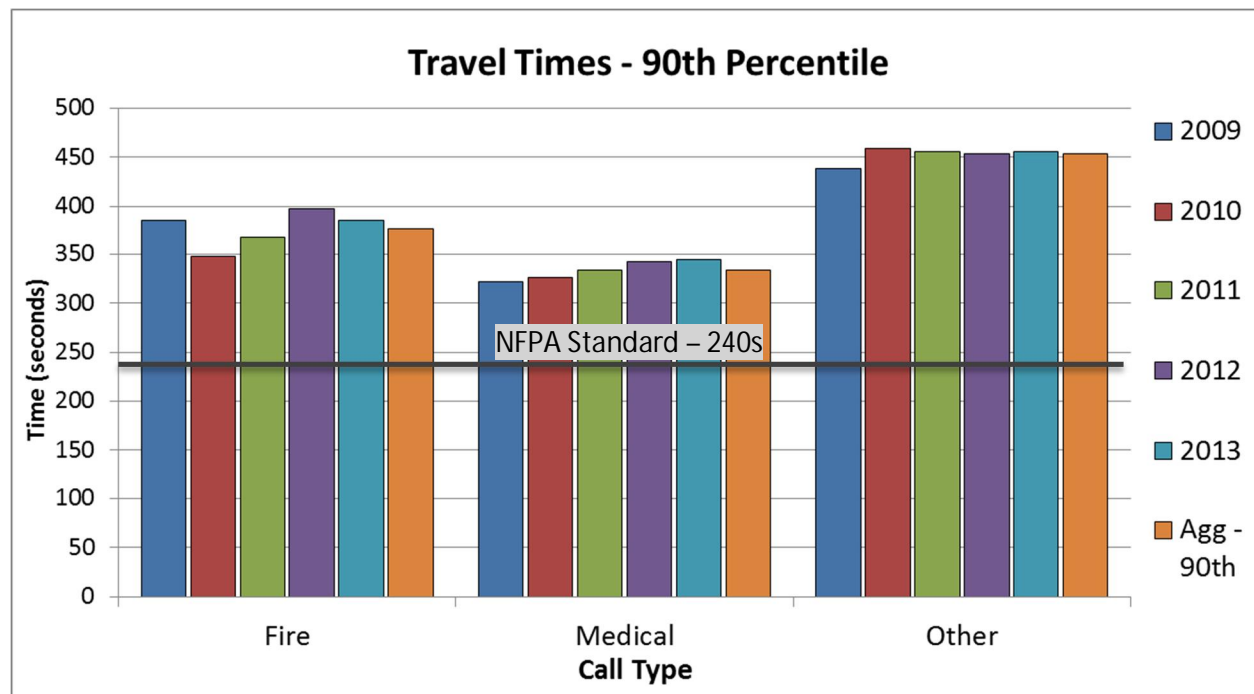
**Figure 17** presents a summary of historical 90<sup>th</sup> percentile CYFS travel times for the first arriving vehicle (initial response) for the period of 2009 to 2013. The aggregate 90<sup>th</sup> percentile initial response travel time ranges from 423 seconds (medical calls) to 553 seconds (other calls).

For fire-related calls, the aggregate 90<sup>th</sup> percentile travel time was 462 seconds or nearly eight minutes. The initial response travel times are directly related to the location of fire stations and the areas that they are responding to. Travel times can be delayed as a result of factors such as road construction, traffic congestion, traffic calming devices (speed humps) and the road network. Limited access to residential developments can also be a factor impacting the travel time of responding apparatus.

This report recommends consideration of a fifth fire station to improve the initial response performance objectives of the CYFS. It should be noted that the fifth station although improving the performance of initial response for the first arriving apparatus still requires the arrival of multiple apparatus to achieve the performance objectives of depth of response. These additional apparatus can also be impacted by the same factors that may delay the initial response in addition to travelling a longer distance from other station locations.



**Figure 17: Historical Travel Times (Initial Arriving Vehicle) by Type, 2009 to 2013**



### 9.12.2 Total Response Time

Total Response Time is defined by the NFPA within NFPA 1710 as follows:

*“The time interval from the receipt of the alarm at the public safety answering point (PSAP) to when the first emergency response unit is initiating action or intervening to control the incident.”*

Total response time includes dispatch time, turnout time and travel time components.

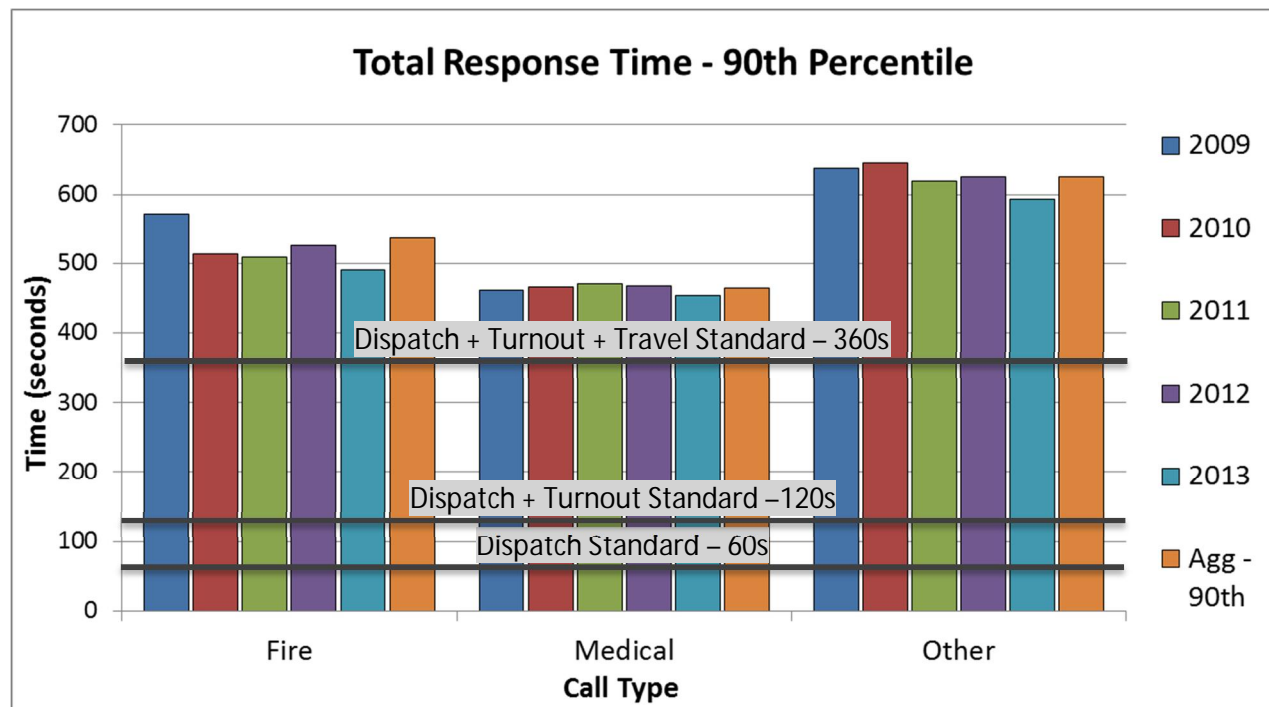
**Figure 18** presents the historical total response times for the first arriving vehicle from 2009 to 2013. The total response performance measure for first response is the sum of dispatch time, turnout time and travel time. This equates to a 90<sup>th</sup> percentile total response time of 360 seconds for medical calls and 380 seconds for fire / other calls as performance targets. CYFS 90<sup>th</sup> percentile total response times are 464 seconds for medical calls, 539 seconds for fire calls, and 626 seconds for other calls.

In comparison to this particular NFPA standard the total response times for the CYFS are higher than the performance measures identified. In our experience achieving the performance measures for total response time as referenced in this NFPA standard is challenging for many municipalities across Ontario.

This analyses highlights the importance of each component including dispatch time, turnout time and travel time as each component incrementally impacts the total response time of the department.



**Figure 18: Total Response Times by Type, 2009 to 2013**



### 9.13 Pre-Incident Planning

Pre-incident planning includes the activities required to collect information such as site plans, floor plans, fire safety plan, hazard identification, demographics and other information related to a specific occupancy (building). This information is then utilized to develop a Pre-Plan or Quick Action Plan to assist fire suppression crews when they respond to incidents in these buildings.

The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation C.15.1:**

CYFS should review and revise the SOG for pre-incident planning.

The CYFS has a Committee in place that was expanded in response to the 2008 plan to address pre-incident planning.

The 2008-2017 Master Fire Plan Update also included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation C.15.3:**

CYFS should develop a computer based system to store and use pre-incident planning information and make it available in each front line apparatus. Note that the anticipated computer records management system implementation in 2008 will facilitate this effort.

In our view the CYFs recognizes the value and importance of pre-incident planning and the development of Quick Action Plans for use of fire suppression staff. It also recognizes the positive impact these planning tools can have on the outcome of mitigating an emergency.



### **Recommendation 23:**

***That the CYFS continue to prioritise pre-incident planning and work towards the development of Quick Action Plans for all buildings within the CYFS response area with priority assigned to high risk buildings.***

## **9.14 Assessment of Emergency Response Coverage**

The following sections detail the assessment of emergency response coverage within the CYFS response area. Various methods were employed to assess the fire services emergency response coverage capabilities for existing conditions as well as for projected future conditions. The analysis was carried out using ESRI's Network Analyst, a GIS tool developed specifically for the purpose of assessing networks, such as roads.

### **9.14.1 Methodology**

This section provides a brief outline of the scope and methodology used in order to provide insight into the modeling procedures adopted to assess existing and future response coverage and to test various combinations of fire suppression resources.

A Geographic Information System (GIS) program was used to assess the fire services' response coverage. Digital copies of GIS layers were provided by the Town of Aurora and the Town of Newmarket for the existing road network. Relevant base road information, such as road length and speed, was extracted from the GIS data. The historic call locations were then added to the network and coded based on travel time to reach the call. An iterative process was used to adjust the posted speeds throughout the road network and calibrate the model to accurately reflect historic travel times of first responding units. The calibrated network resulted in posted road speeds reduced by 10 kilometres per hour across the entire network.

This information, combined with the station locations, was used to build graphical "response areas" around each station. These polygons represent the coverage each station can provide in the specified amount of time. The model assessed response coverage over the entire area of the Town of Newmarket and Town of Aurora combined. This assessed whether the CYFS is providing the initial response coverage according to the current CYFS initial response performance objective that reflects a four minute travel time. A similar process was carried out to determine the eight minute travel time, overlaying the associated staffing and apparatus at each station, to assess the CYFS depth of response performance objective. This analysis also identifies the areas where the fire department is not currently able to achieve the response time elements or the staffing elements of the current CYFS performance objective.

### **9.14.2 Analytic Results**

This section documents the results of the analysis for the existing four station model and the proposed future five station model. In undertaking the analysis, a number of station locations scenarios were evaluated. Based on discussions with CYFS the addition of a fifth station along St. John's Sideroad (locations assessed at and the intersection of Industrial Parkway as well as the intersection of Earl Stewart Drive). Various options for apparatus and staffing deployment are presented in the scenarios below. For ease of reference, the station staffing and vehicle assignments modeled are summarized in a tabular format included within each depth of response model figure.



### 9.14.3 Coverage Assessment Scenarios

As previously described in **Table 13** the operating staffing level for the CYFS when all six apparatus are in service is 25 firefighters. This represents the four pumpers, one at each station, Platform 427 at station 4-2, Aerial 436 at station 4-3, and the Platoon Chief at station 4-1. For analyses purposes a fully staffed (4 firefighters) apparatus (Pumper, Platform, and Aerial) will be referred to as “**1-Crew**”. Within the current operating staffing model the CYFS has “**6 –crews**” in service.

When the CYFS is required to reduce to the minimum staffing level of 21 firefighters the CYFS has only “**5-Crews**” in service.

For this analysis, the deployment of apparatus was based on geography, for the closest responding apparatus. The staffing and apparatus assignments are identified within each of the depth of response figures below for ease of reference.

#### 9.14.3.1 Initial Response

The performance target for initial response was measured (as a percentage) as the geographical area that four firefighters could reach within four minutes of travel time. For illustrative purposes “response bands” for five minutes or less and more than five minutes are also shown. The historic fire calls (all fire and fire-related calls within 2009 – 2013) are also overlain on the network to provide an understanding of the historic call coverage in addition to the geographic coverage.

#### 9.14.3.2 Depth of Response

The performance target for the depth of response was measured as 12 or more responding firefighters within eight minutes of travel time, consistent with CYFS existing performance measure. Results for the recommended depth of response staffing target of 14 or more firefighters arriving in eight minutes of travel time are also indicated. For illustrative purposes “staffing bands” for various numbers of firefighter responses are also shown.

### 9.14.4 Existing and Future Initial Response Conditions

This scenario represents the existing “do-nothing” condition at the study outset. The road network and station locations reflect the conditions in 2013, the existing conditions at the study outset.

Under existing conditions, the initial response coverage of the first vehicle arriving on-scene within four minutes of travel time is 60% of the municipality’s urban geography and 71% of the historic fire call locations. This is considered to be the baseline initial response coverage. Results of the initial response assessment are shown in **Figure 19**. There are three significant areas within the results that highlight response challenges (i.e. greater than four minute first response coverage). These areas are shown in yellow and red on the figure. The first is the centre of the response area, from Bathurst Street to just east of Bayview Avenue, directly north and south of the boundary between the Town of Aurora and the Town of Newmarket. The second is the area directly south of the northern limit of Newmarket and the third is directly north of the southern limit of Aurora. Boundaries of the community are typically challenging for initial response. For this, automatic aid considerations were assessed. To improve the response to the centre of service area, the addition of a fifth station was assessed.

Consideration of automatic aid options for CYFS, both into and out of the municipal boundaries of the Towns of Aurora and Newmarket were assessed. Initial response from the “closest station” considered responses from the following neighbouring fire stations:

- full-time staffed station in Richmond Hill (Station 8-2 located at 13067 Yonge Street);



- volunteer station in King City (Station 3-4 located at 2045 King Road); and
- volunteer station in East Gwillimbury (Station 2-4 located at 19314 Yonge Street).

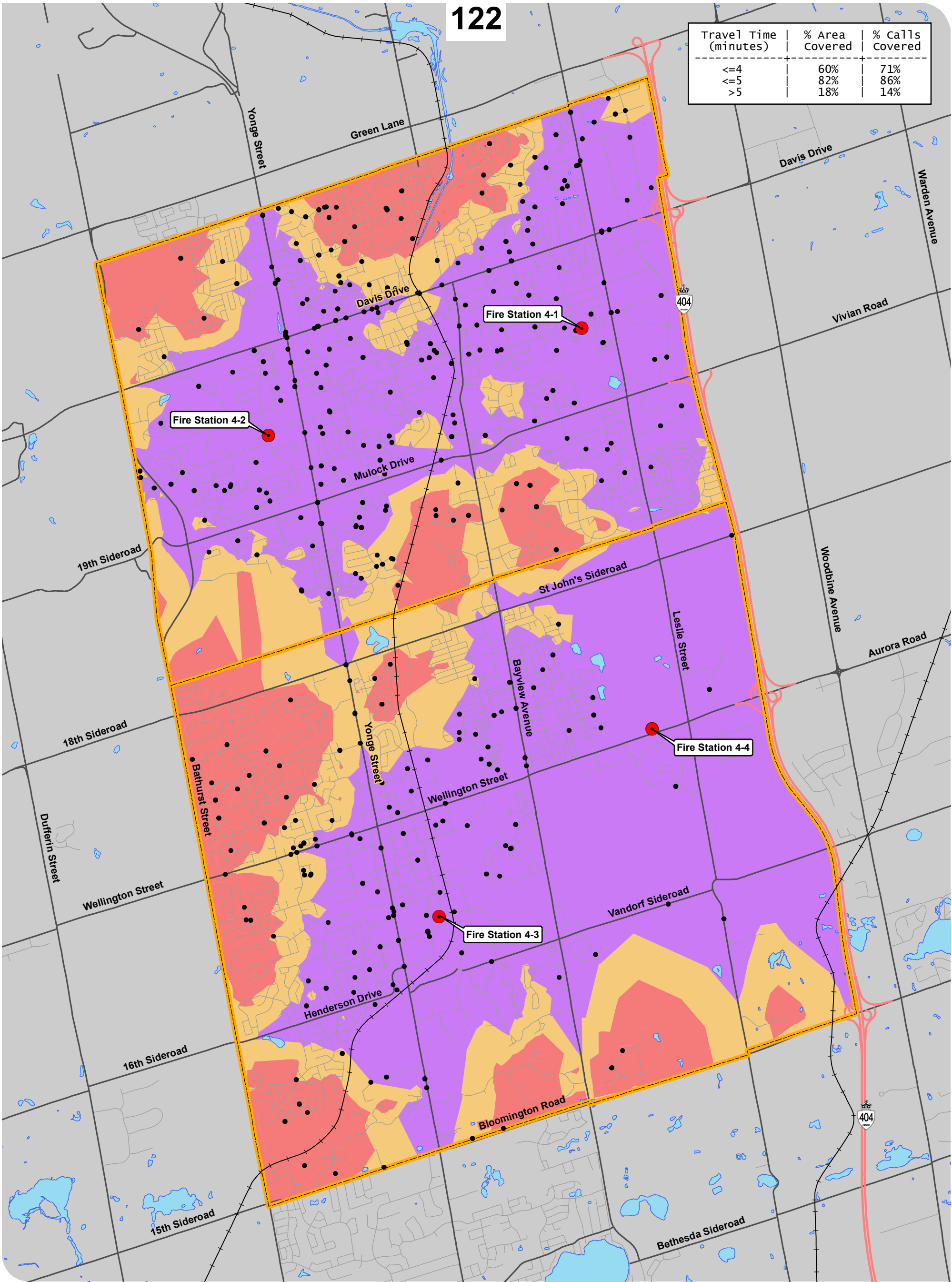
As the model is calibrated to the speeds of CYFS, distance-based buffers were applied to estimate responses from neighbouring fire stations. Applying an estimate, one kilometre of distance roughly equates to one minute of travel time, based on an assumed average road speed of 60 kilometres per hour.

Potential automatic aid responses were measured against the CYFS standard. For initial response, a six minute total response time was applied. The Richmond Hill Station, as a full-time service, was assumed to respond with four minutes of travel time (represented as a four kilometre buffer), assuming turnout times and dispatch times comparable to CYFS standards. The volunteer stations in King Township and in the Town of East Gwillimbury were assumed to have half a minute of travel time available for initial response as volunteer turnout times are typically between four to five minutes (assumed as four minutes 30 seconds). Dispatch times at the volunteer stations were assumed to be comparable to CYFS standards.

The results of the automatic aid considerations for initial response are shown in **Figure 20**. Primarily as a result of longer turnout times, the volunteer stations are not expected to provide initial response support to CYFS. Richmond Hill's crews, however, could reach the southwest corner of Aurora and provide assistance both for initial response and depth of response through the implementation of a fire protection agreement or alternatively an automatic aid agreement. The Fire Chief is fully aware of this strategy and has initiated discussions to pursue an agreement. We support the Fire Chief's efforts to pursue an agreement for this area.

From the figure, it is also evident that CYFS is able to provide initial response to the western boundary of the Town of Whitchurch-Stouffville. An existing fire protection services agreement is in place with the Whitchurch-Stouffville Fire Department, however, this agreement should be reviewed to ensure the response coverage provided meets the needs of the municipalities involved.

Travel Time (minutes)	% Area Covered	% Calls Covered
<=4	60%	71%
<=5	82%	86%
>5	18%	14%



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**CYFS Existing Initial  
Response Coverage**  
FIGURE 19



- Historical Fire Calls (2009-2013)
  - Fire Station
  - Highway
- Arterial
  - Local
  - Railway
- Waterbody
  - Municipal Boundary
- TRAVEL TIMES**

  - <= 4 Minutes @ Network Speed
  - <= 5 Minutes @ Network Speed
  - > 5 Minutes @ Network Speed

"CYFS current emergency response performance measure of 3 firefighters and 1 officer responding within 6 minutes of total response time to 90% of incidents. Reflecting a **4 minute travel time component**"



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DATA PROVIDED BY TOWN OF  
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MAP CREATED BY: JJA  
MAP CHECKED BY: SC  
MAP PROJECTION: NAD 1983 UTM Zone 17N  
FILE LOCATION: I:\GIS\138358 - Central York Fire  
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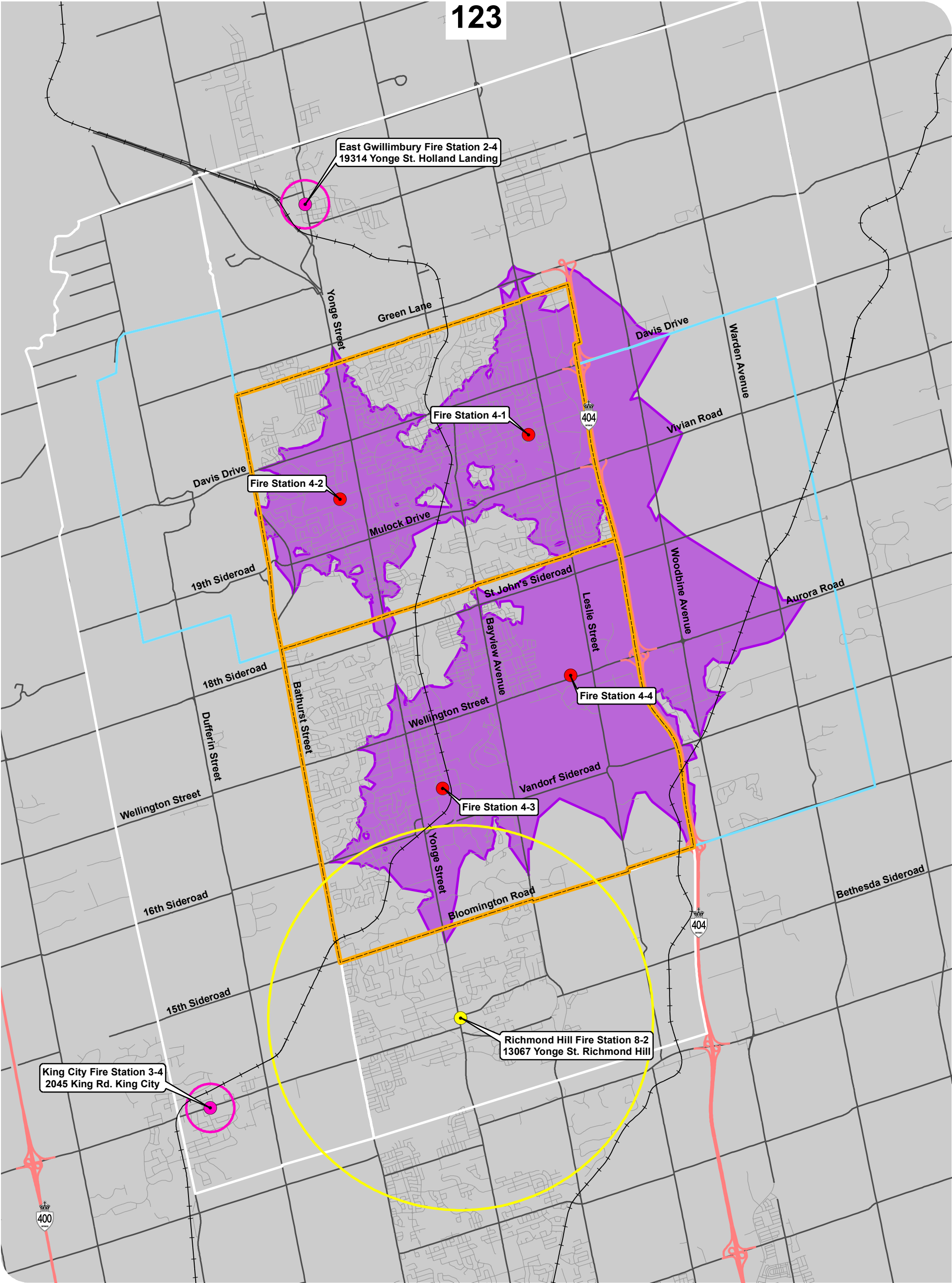
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SCALE 1:45,000

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**CENTRAL YORK  
FIRE SERVICES**  
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**Closest Station Initial Response  
(Automatic Aid Considerations)**  
FIGURE 20



- |                                     |                      |
|-------------------------------------|----------------------|
| ● Central York Fire Station         | — Local              |
| ● Potential Aid - Full Time Station | — Railway            |
| ● Potential Aid - Volunteer Station | ▭ Municipal Boundary |
| — Highway                           | ▭ 0.5 km Buffer      |
| — Arterial                          | ▭ 4 km Buffer        |

- TRAVEL TIMES**
- ▭ 4 Minutes @ Network Speed
- FIRE COVERAGE AREAS**
- ▭ Contracted
- ▭ Mutual Aid



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Current Initial Response - Closest Station Automatic Aid Considerations.MXD

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PROJECT: 13-8358 STATUS: FINAL DATE: 06/04/14



**Figures 19 and 20** provide an accurate visualization of the current initial response coverage capabilities of the CYFS, and the potential improvements that could be achieved through an agreement with Richmond Hill. In order to improve the initial response to the centre of the CYFS response area, (from Bathurst Street to just east of Bayview Avenue, directly north and south of the boundary between the Town of Aurora and the Town of Newmarket), considerations for a fifth station were tested.

For the other boundary areas of the municipality that are not within the current initial response coverage areas, or proposed coverage areas that could be achieved through an agreement with Richmond Hill we recommend that the CYFS continue to prioritize the Stay Fire Smart and Home Smoke Alarm Program in these areas. As the communities continue to grow, and particularly the northern part of Newmarket there may need to be consideration of a 6<sup>th</sup> fire station in the future.

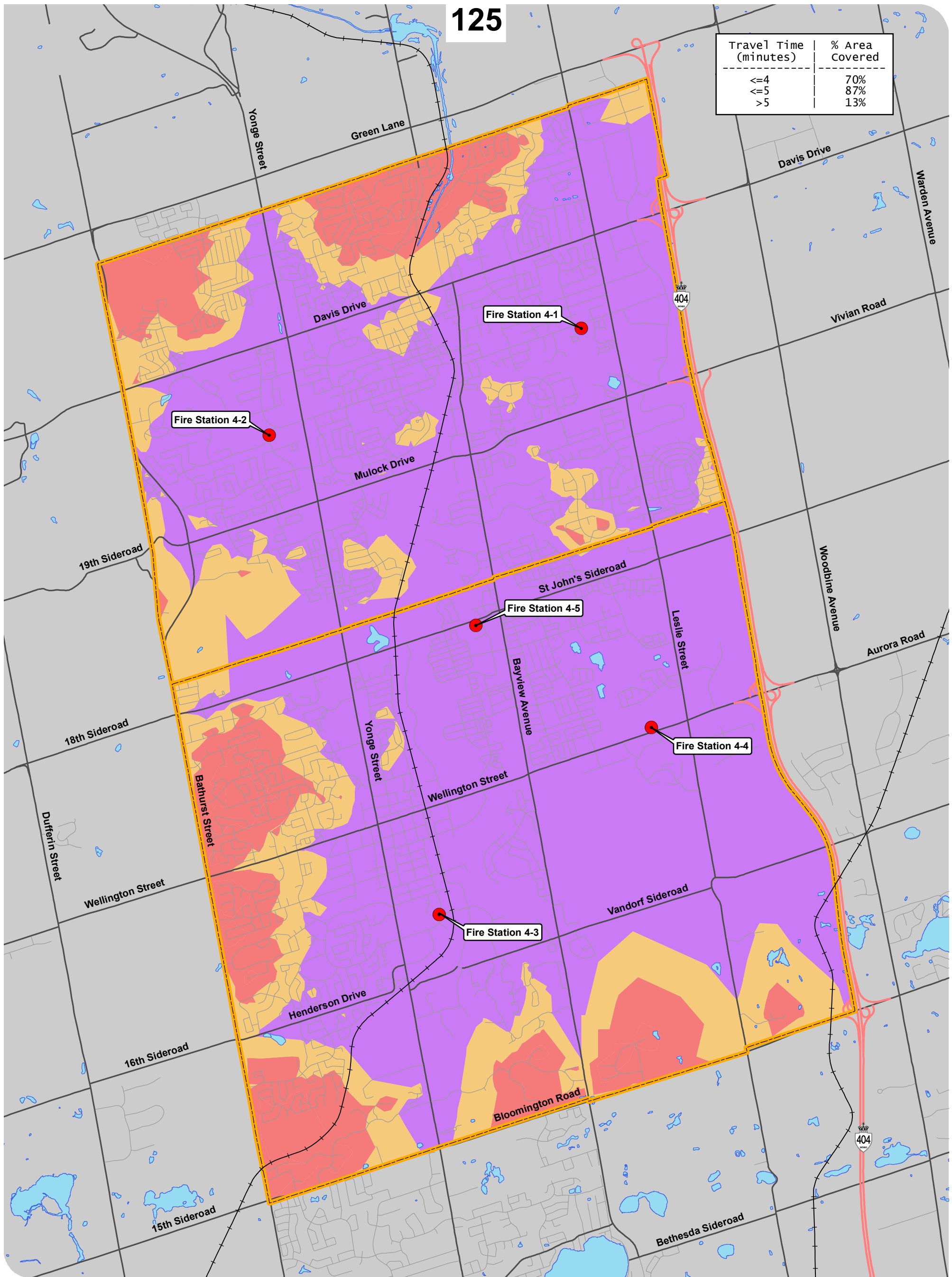
The following options for a fifth station are presented within this report:

- a. the intersection of St. John's Sideroad and Earl Stewart Drive (*Earl Stewart*)
- b. the intersection of St. John's Sideroad and Industrial Parkway (*Industrial*)

The initial response results of these potential future station locations within the proposed five station model are shown below in **Figures 21 & 22** respectively. For the five-station model, with Station 4-5 located at location (a) *Earl Stewart*, the initial response coverage of the first vehicle arriving on-scene within four minutes of travel time is 70% of the municipality's urban geography. For the model, with Station 4-5 located at location (b) *Industrial*, the initial response coverage of the first vehicle arriving on-scene within four minutes of travel time is 71% of the municipality's urban geography. There are location-specific trade-offs with geographic response coverage between these two options. Option (a) provides better coverage of the area north of St. John's Sideroad, east of Bayview Avenue. Option (b) provides better coverage to the area of east of Yonge Street, both north and south of St. John's Sideroad. It is expected that availability of property will be the primary constraint in selecting a location for Station 4-5. A location along St. John's Sideroad in the vicinity of or located between these two station locations would provide improved emergency response coverage to the CYFS service area. The summary of initial response results are presented in **Table 21**.

**Table 21: Summary of Initial Response Results**

Scenario	Initial Response % of Geographic Coverage			Initial Response % of Historic Call Coverage		
	<=4	<=5	> 5	<=4	<=5	> 5
Existing Four Station Model	60%	82%	18%	71%	86%	14%
Proposed Future Five Station Model (a-Earl Stewart)	70%	87%	13%	--	--	--
Proposed Future Five Station Model (b-Industrial)	71%	89%	11%	--	--	--






## FIRE MASTER PLAN UPDATE

FIGURE 21



105

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-  < = 4 Minutes @ Network Speed
-  < = 5 Minutes @ Network Speed
-  > 5 Minutes @ Network Speed

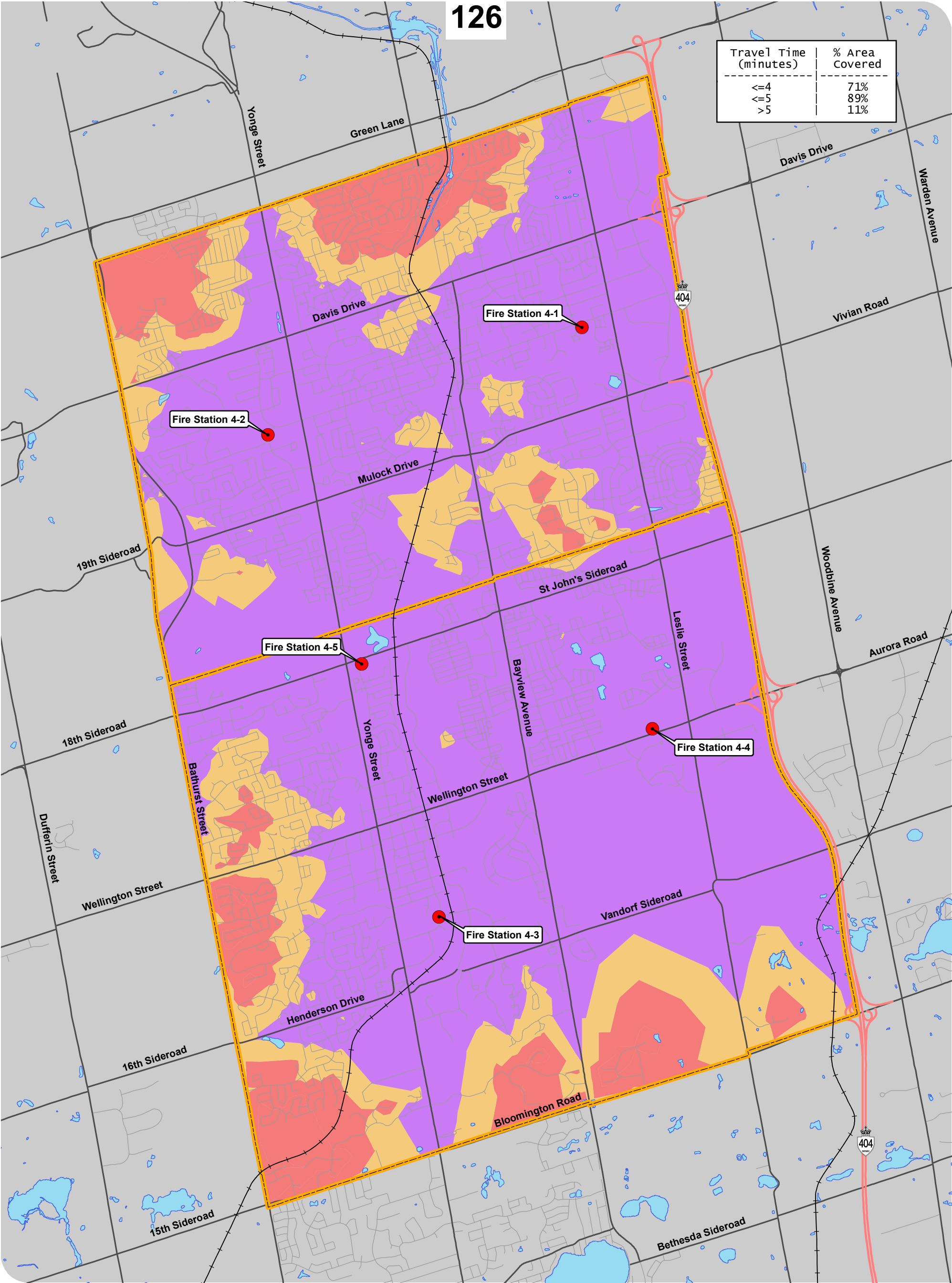
"CYFS current emergency response performance measure of 3 firefighters and 1 officer responding within 6 minutes of total response time to 90% of incidents. Reflecting a **4 minute travel time component**"

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FMP Update\Mapping\FutureFirstResponse-55stations.MXD

SCALE 1:45,000

STATUS: FINAL

DATE: 06/04/14



CENTRAL YORK  
FIRE SERVICES  
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Future Initial Response  
Proposed 5 Station Model  
(b-Industrial)  
FIGURE 6



- Fire Station

Highway

Arterial

Local

Railway

Waterbody

Municipal Boundary
- <= 4 Minutes @ Network Speed
- <= 5 Minutes @ Network Speed
- > 5 Minutes @ Network Speed

"CYFS current emergency response performance measure of 3 firefighters and 1 officer responding within 6 minutes of total response time to 90% of incidents. Reflecting a 4 minute travel time component"

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DATE: 06/09/14



### ***9.15 Existing and Future Depth of Response Conditions***

Depth of response performance was measured for existing conditions, assuming the operating staffing and minimum staffing levels as shown in **Table 13**. In this scenario the CYFS is at the operating staffing level of 25 firefighters on duty and a minimum of 6 crews. Platform 427 is at station 4-2 and Aerial 436 is at station 4-3. **Figure 23** presents the results of the analysis. This results in a depth of response of at least 12 firefighters to 81% of the response area geography and 88% of the historic fire call locations within eight minutes of travel time, as per the existing CYFS performance objective. In this scenario the results also indicate that at least 14 firefighters can assemble on-scene to 48% of the response area geography and 52% of the historic fire call locations within eight minutes of travel time, as per the recommended performance objective.

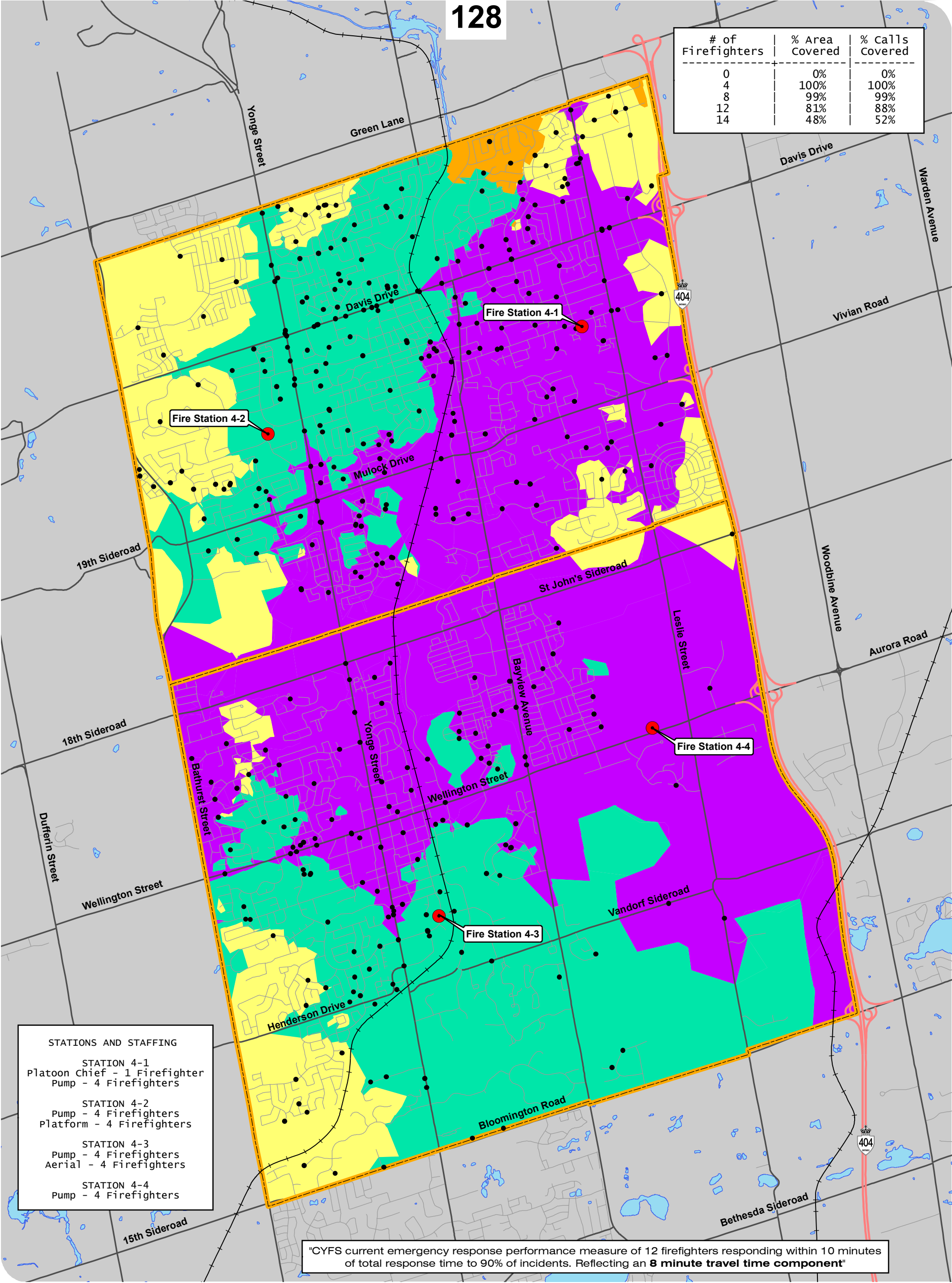
Under minimum staffing level of 21 firefighters on duty and a minimum of 5 crews, the staffing of either Platform 427 or Aerial 436 varies in location between Station 4-2 and Station 4-3. This strategy distributes the change in service level as a result of taking the 6<sup>th</sup> crew out of service across the entire response area of the CYFS consistently. Existing depth of response was assessed for both minimum staffing scenarios. **Figure 24** presents the depth of response results with the Platform 427 operating from Station 4-2. This results in a depth of response of at least 12 firefighters to 61% of the response area geography and 75% of the historic fire call locations within eight minutes of travel time, as per the existing CYFS performance objective. In this scenario the results also indicate that at least 14 firefighters can assemble on-scene to 30% of the response area geography and 46% of the historic fire call locations within eight minutes of travel time, as per the recommended performance objective.

**Figure 25** presents the depth of response results with Aerial 436 operating from Station 4-3. This results in a depth of response of at least 12 firefighters to 69% of the response area geography and 64% of the historic fire call locations within eight minutes of travel time, as per the existing CYFS performance objective. In this scenario the results also indicate that at least 14 firefighters can assemble on-scene to 32% of the response area geography and 26% of the historic fire call locations within eight minutes of travel time, as per the recommended performance objective.

Automatic aid considerations (Fire Protection Agreements) were also assessed for depth of response, considering the neighbouring fire departments and stations assessed for initial response and applying the same distance-based buffer methodology. Potential automatic aid responses were measured against the CYFS standard. For depth of response, a ten minute total response time was applied. The Richmond Hill Station, as a full-time service, was assumed to respond with eight minutes of travel time (represented as an eight kilometre buffer), assuming turnout times and dispatch times comparable to CYFS standards. The volunteer stations in King Township and in the Town of East Gwillimbury were assumed to have four and a half minutes of travel time available for initial response as volunteer turnout times are typically between four to five minutes (assumed as 4 minutes 30 seconds). Dispatch times at the volunteer stations were assumed to be comparable to CYFS standards.

The results of the automatic aid (Fire Protection Agreements) considerations for depth of response are shown in **Figure 26**. Primarily as a result of longer turnout times, the volunteer stations are not expected to provide significant depth of response support to CYFS. As indicated in the figure, there is a limited area in the north of Newmarket where the volunteer crews from East Gwillimbury Station 2-4 could add depth of response. Richmond Hill's crews, however, could reach a significant portion of the Aurora to provide depth of response support through use of either an automatic aid or fire protection agreement as previously recommended.

From the figure, it is also evident that CYFS is able to provide depth of response to the boundary areas of all of its neighbouring communities, including the Town of Whitchurch-Stouffville, Town of East Gwillimbury, Township of King and the City of Richmond Hill.



**CENTRAL YORK  
FIRE SERVICES**  
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Existing Depth of Response:  
Platform 427 at Station 4-2 and  
Aerial 436 at Station 4-3  
FIGURE 23



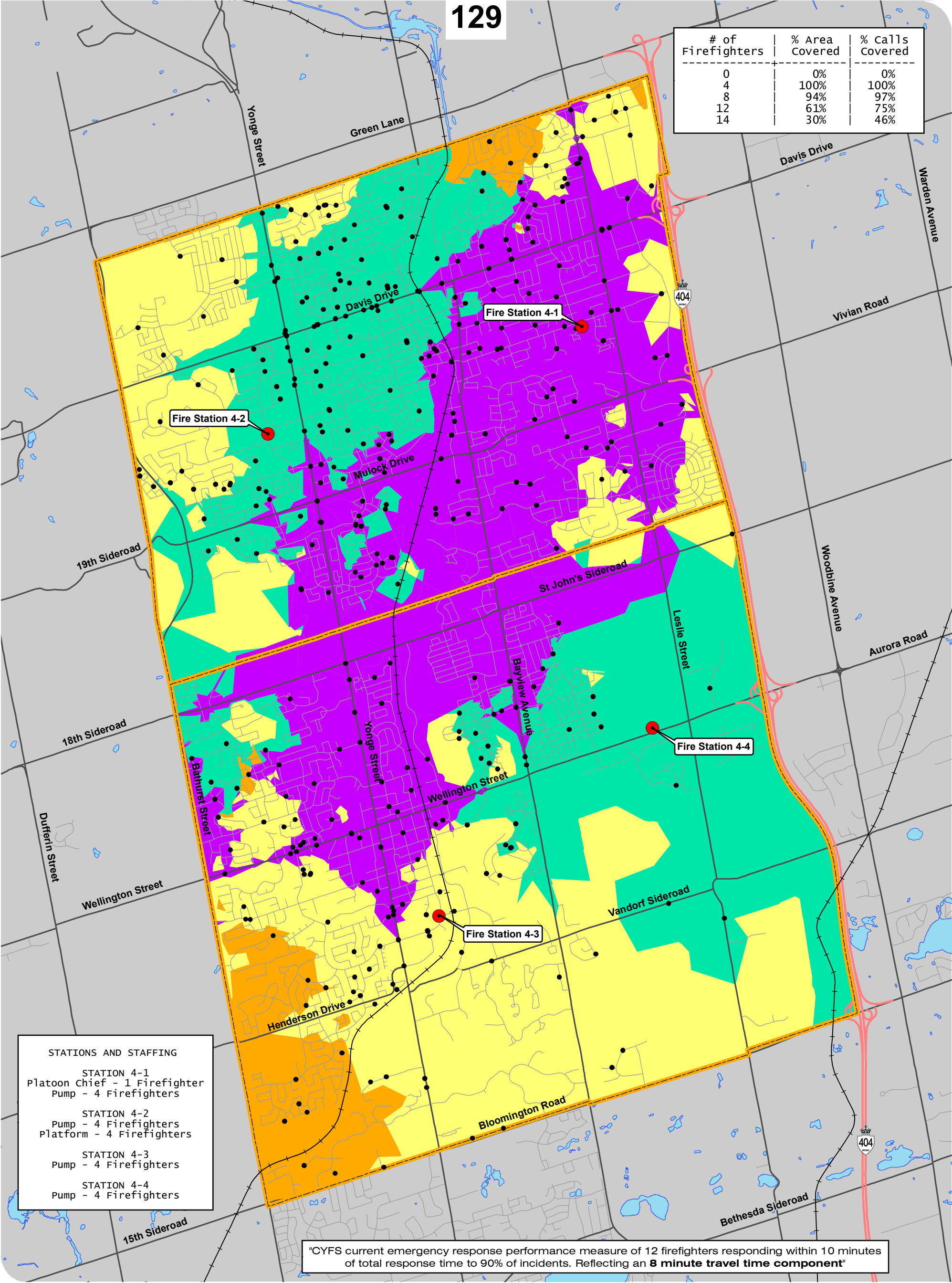
- Historical Fire Calls (2009-2013)
- Fire Station
- Highway
- Arterial
- Local
- Railway
- Waterbody
- Municipal Boundary

- DEPTH OF RESPONSE**  
TOTAL NUMBER OF FIREFIGHTERS REACHING  
AREA WITHIN 8 MINUTES OF TRAVEL TIME
- 0 Firefighters
  - 4 Firefighters
  - 8 Firefighters
  - 12 Firefighters
  - 14 Firefighters



MAP DRAWING INFORMATION:  
DATA PROVIDED BY TOWN OF  
AURORA & TOWN OF NEWMARKET  
MAP CREATED BY: JJA  
MAP CHECKED BY: SC  
MAP PROJECTION: NAD 1983 UTM Zone 17N  
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PROJECT: 13-8358 STATUS: FINAL DATE: 06/04/14



**CENTRAL YORK  
FIRE SERVICES**  
FIRE MASTER PLAN UPDATE

Existing Depth of Response  
Platform 427 at Station 4-2  
FIGURE 24



- Historical Fire Calls (2009-2013)
- Fire Station
- Highway
- Arterial
- Local
- Railway
- Waterbody
- Municipal Boundary

**DEPTH OF RESPONSE**

TOTAL NUMBER OF FIREFIGHTERS REACHING  
AREA WITHIN 8 MINUTES OF TRAVEL TIME

- 0 Firefighters
- 4 Firefighters
- 8 Firefighters
- 12 Firefighters
- 14 Firefighters



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DATA PROVIDED BY TOWN OF  
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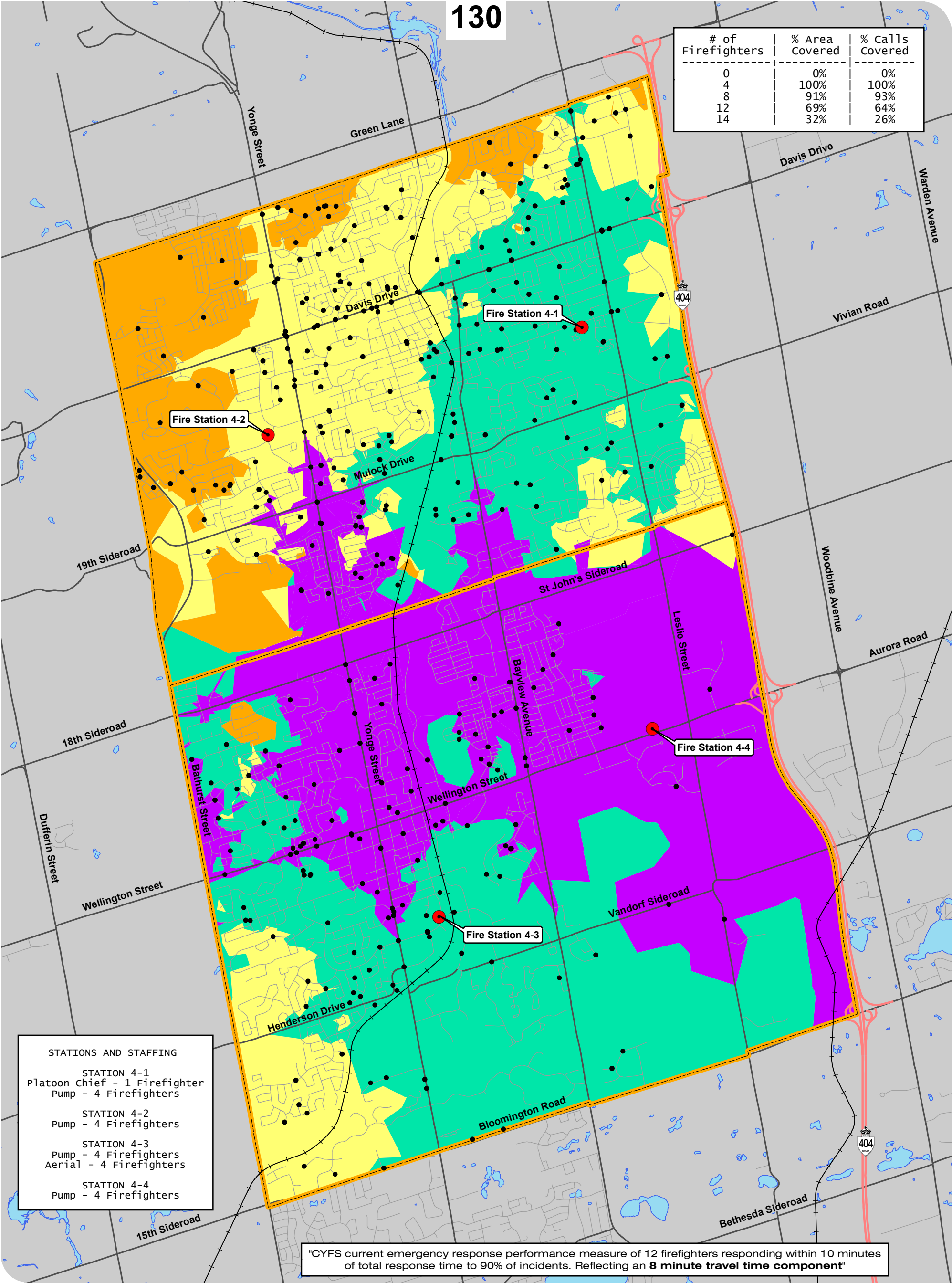
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STATUS: FINAL

DATE: 06/04/14



**CENTRAL YORK  
FIRE SERVICES**  
FIRE MASTER PLAN UPDATE

Existing Depth of Response  
Aerial at Station 4-3  
FIGURE 25

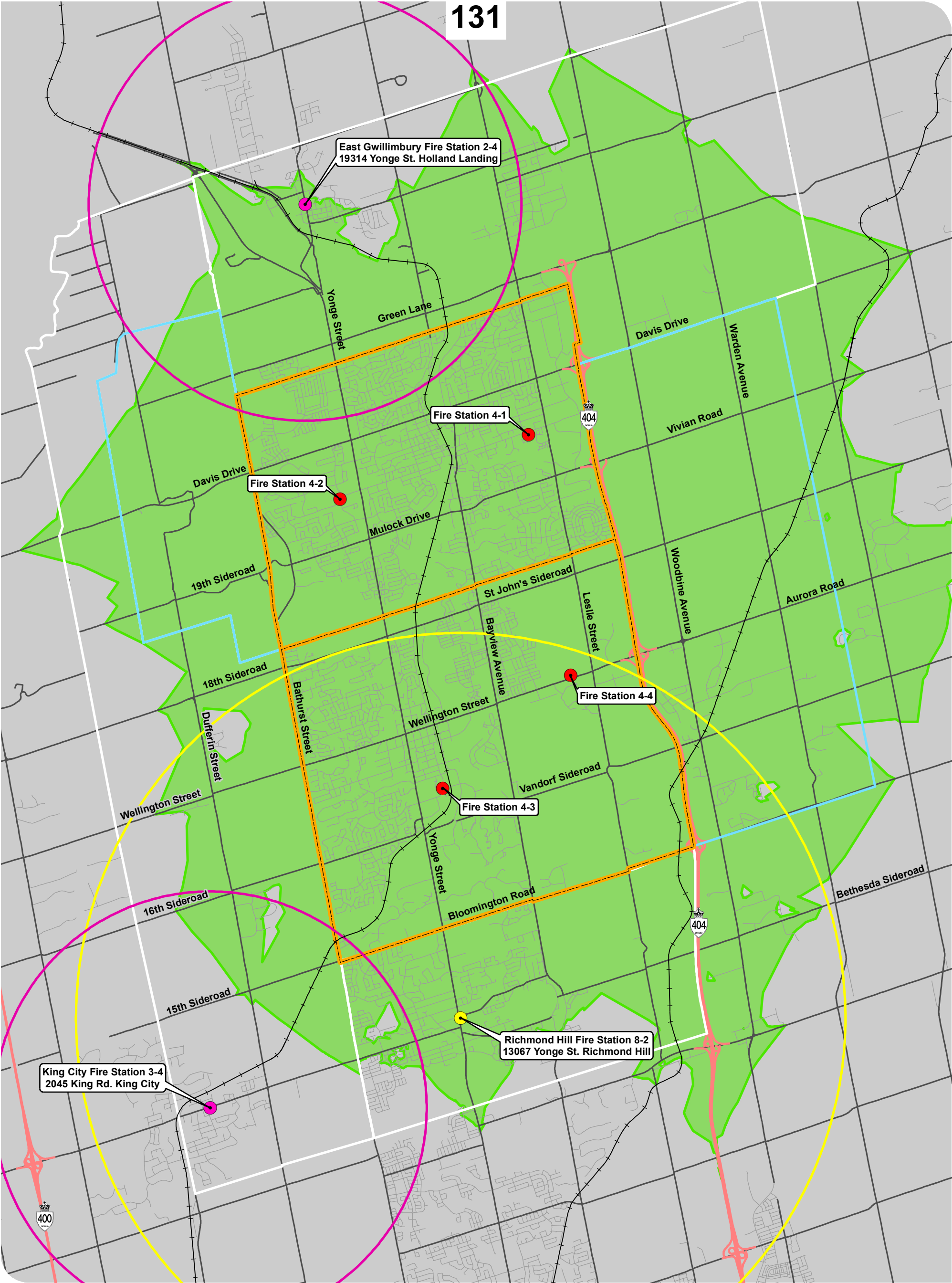


- Historical Fire Calls (2009-2013)
- Fire Station
- Highway
- Arterial
- Local
- Railway
- Waterbody
- Municipal Boundary

- DEPTH OF RESPONSE**  
TOTAL NUMBER OF FIREFIGHTERS REACHING AREA WITHIN 8 MINUTES OF TRAVEL TIME
- 0 Firefighters
  - 4 Firefighters
  - 8 Firefighters
  - 12 Firefighters
  - 14 Firefighters



MAP DRAWING INFORMATION:  
DATA PROVIDED BY TOWN OF  
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FIRE SERVICES**  
FIRE MASTER PLAN UPDATE

**Closest Station Depth of  
Response Automatic Aid  
Considerations**

FIGURE 26



Central York Fire Station	Local	<b>TRAVEL TIMES</b> 8 Minutes @ Network Speed
Potential Aid - Full Time Station	Railway	
Potential Aid - Volunteer Station	Municipal Boundary	<b>FIRE COVERAGE AREAS</b> Contracted Mutual Aid
Highway	4.5 km Buffer	
Arterial	8 km Buffer	



Depth of response performance was assessed for the potential future five station model under a number of staffing and apparatus scenarios. The first scenario, shown in **Figure 27**, represents the existing minimum staffing (21 firefighters) with a pumper located at each station representing the current minimum of 5 crew model plus the Platoon Chief. This results in a depth of response of at least 12 firefighters to 75% of the response area geography within eight minutes of travel time, as per the existing CYFS performance target. In this scenario the results also indicate that at least 14 firefighters can assemble on-scene to 43% of the response area geography within eight minutes of travel time, as per the recommended performance objective.

The second scenario, shown in **Figure 28**, represents the existing operating staffing (25 firefighters) with Platform 427 located at Station 4-2, in addition to a new pumper operating from Station 4-5 representing the current 6 crew model plus the Platoon Chief. This results in a depth of response of at least 12 firefighters to 85% of the response area geography within eight minutes of travel time, as per the existing CYFS performance target. In this scenario the results also indicate that at least 14 firefighters can assemble on-scene to 76% of the response area geography within eight minutes of travel time, as per the recommended performance objective.

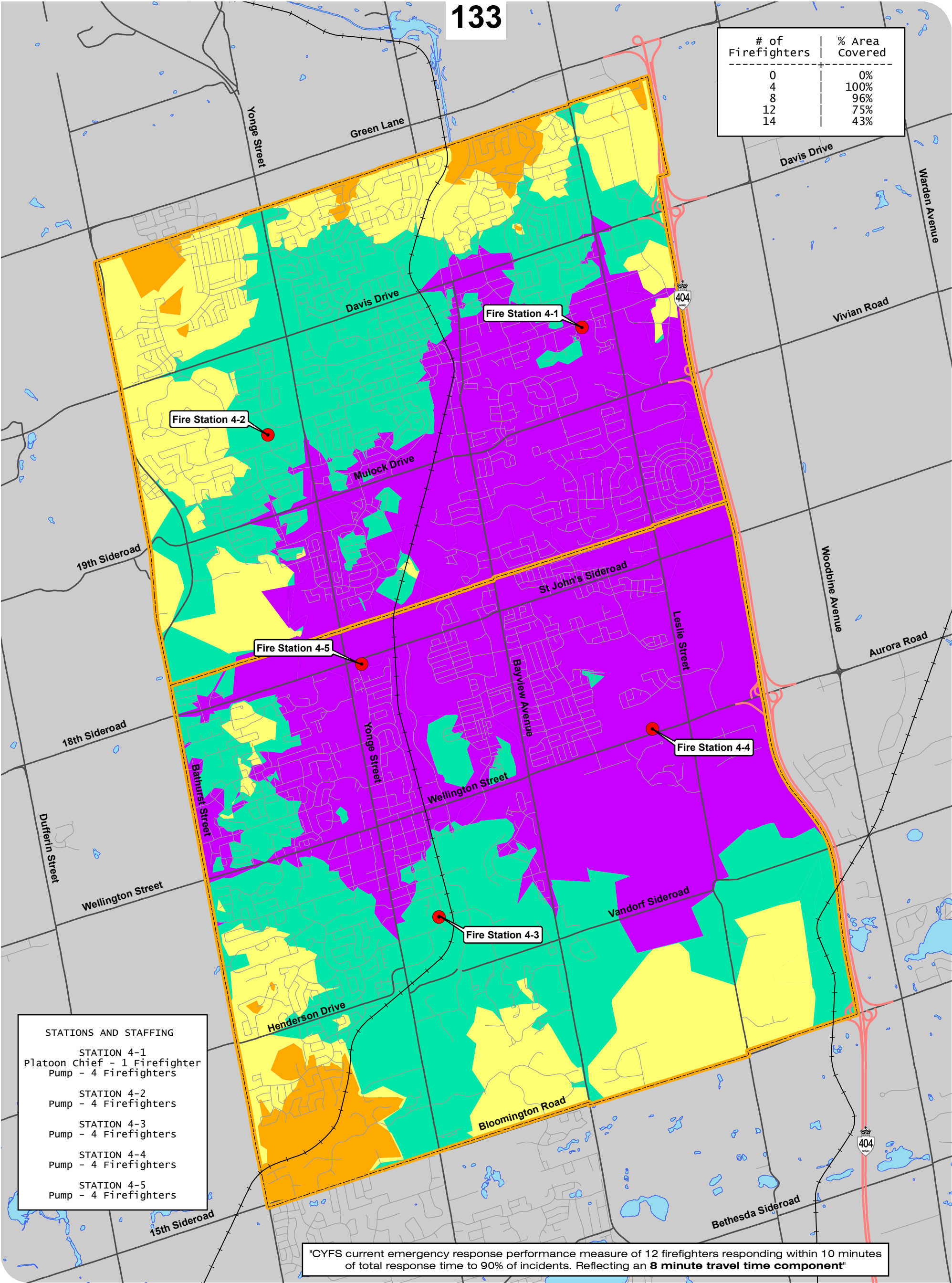
The third scenario, shown in **Figure 29**, represents the existing operating staffing (25 firefighters) with Aerial 436 located at Station 4-3, in addition to a new pumper operating from Station 4-5 representing the current 6 crew model plus the Platoon Chief. This results in a depth of response of at least 12 firefighters to 87% of the response area geography within eight minutes of travel time, as per the existing CYFS performance target. In this scenario the results also indicate that at least 14 firefighters can assemble on-scene to 62% of the response area geography within eight minutes of travel time, as per the recommended performance objective.

The fourth scenario, shown in **Figure 30**, represents the existing operating staffing (25 firefighters) with Aerial 436 relocated to the new Station 4-5 in addition to a new pumper operating from Station 4-5 representing a 6 crew model plus the Platoon Chief. This results in a depth of response of at least 12 firefighters to 86% of the response area geography within eight minutes of travel time, as per the existing CYFS performance objective. In this scenario the results also indicate that at least 14 firefighters can assemble on-scene to 70% of the response area geography within eight minutes of travel time, as per the recommended performance objective.

The fifth scenario, shown in **Figure 31**, represents a proposed staffing level of (29 firefighters) staffing Platform 427 at Station 4-2 and Aerial 436 at Station 4-3, in addition to a new pumper operating from Station 4-5 representing a 7 crew model. This results in a depth of response of at least 12 firefighters to 94% of the response area geography within eight minutes of travel time, as per the existing CYFS performance objective. In this scenario the results also indicate that at least 14 firefighters can assemble on-scene to 76% of the response area geography within eight minutes of travel time, as per the recommended performance objective.

A summary of the results of the depth of response analysis is presented in **Table 22**.

# of Firefighters	% Area Covered
0	0%
4	100%
8	96%
12	75%
14	43%



"CYFS current emergency response performance measure of 12 firefighters responding within 10 minutes of total response time to 90% of incidents. Reflecting an **8 minute travel time component**"

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FIRE SERVICES**

FIRE MASTER PLAN UPDATE

**Future Depth of Response, Five  
Station Model, Pump at  
Station 4-5 with 5 Crew Model**  
FIGURE 27



MAP DRAWING INFORMATION:  
DATA PROVIDED BY TOWN OF  
AURORA & TOWN OF NEWMARKET  
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MAP CHECKED BY: SC  
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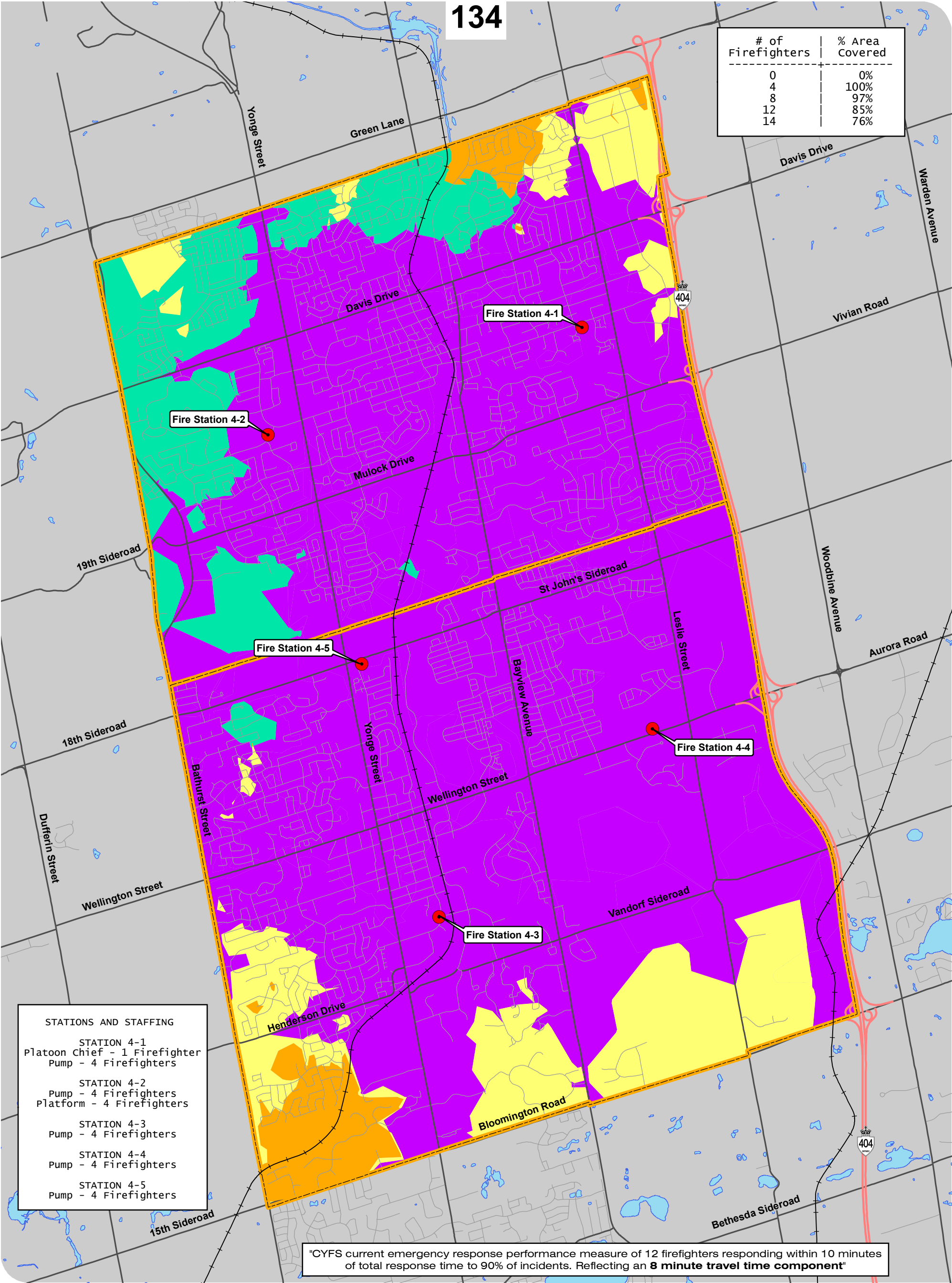


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# of Firefighters	% Area Covered
0	0%
4	100%
8	97%
12	85%
14	76%



STATIONS AND STAFFING
STATION 4-1 Platoon Chief - 1 Firefighter Pump - 4 Firefighters
STATION 4-2 Pump - 4 Firefighters Platform - 4 Firefighters
STATION 4-3 Pump - 4 Firefighters
STATION 4-4 Pump - 4 Firefighters
STATION 4-5 Pump - 4 Firefighters

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Future Depth of Response, Five  
Station Model, Platform 427 at  
Station 4-2 with 6 Crew Model  
FIGURE 28



- Fire Station
- Highway
- Arterial
- Local
- Railway
- Waterbody
- Municipal Boundary

DEPTH OF RESPONSE	
TOTAL NUMBER OF FIREFIGHTERS REACHING AREA WITHIN 8 MINUTES OF TRAVEL TIME	
0 Firefighters	12 Firefighters
4 Firefighters	14 Firefighters
8 Firefighters	



MAP DRAWING INFORMATION:  
DATA PROVIDED BY TOWN OF  
AURORA & TOWN OF NEWMARKET  
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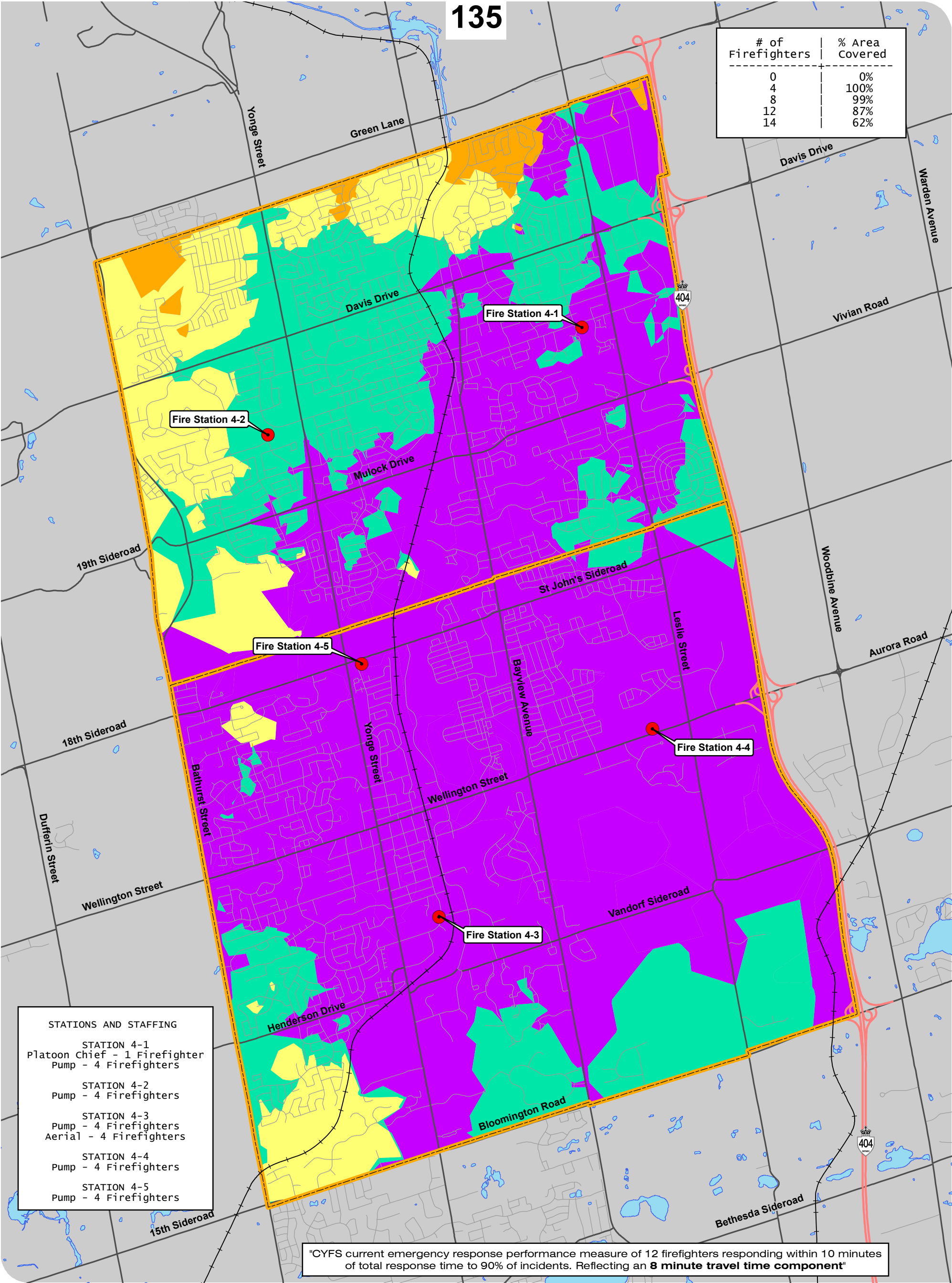


PROJECT: 13-8358

STATUS: FINAL

DATE: 06/09/14

# of Firefighters	% Area Covered
0	0%
4	100%
8	99%
12	87%
14	62%



STATIONS AND STAFFING	
STATION 4-1	Platoon Chief - 1 Firefighter Pump - 4 Firefighters
STATION 4-2	Pump - 4 Firefighters
STATION 4-3	Pump - 4 Firefighters Aerial - 4 Firefighters
STATION 4-4	Pump - 4 Firefighters
STATION 4-5	Pump - 4 Firefighters

"CYFS current emergency response performance measure of 12 firefighters responding within 10 minutes of total response time to 90% of incidents. Reflecting an **8 minute travel time component**"

**CENTRAL YORK  
FIRE SERVICES**

FIRE MASTER PLAN UPDATE

**Future Depth of Response, Five  
Station Model, Aerial 436 at  
Station 4-3 with 6 Crew Model**  
FIGURE 29



- Fire Station
- Highway
- Arterial
- Local
- Railway
- Waterbody
- Municipal Boundary

**DEPTH OF RESPONSE**

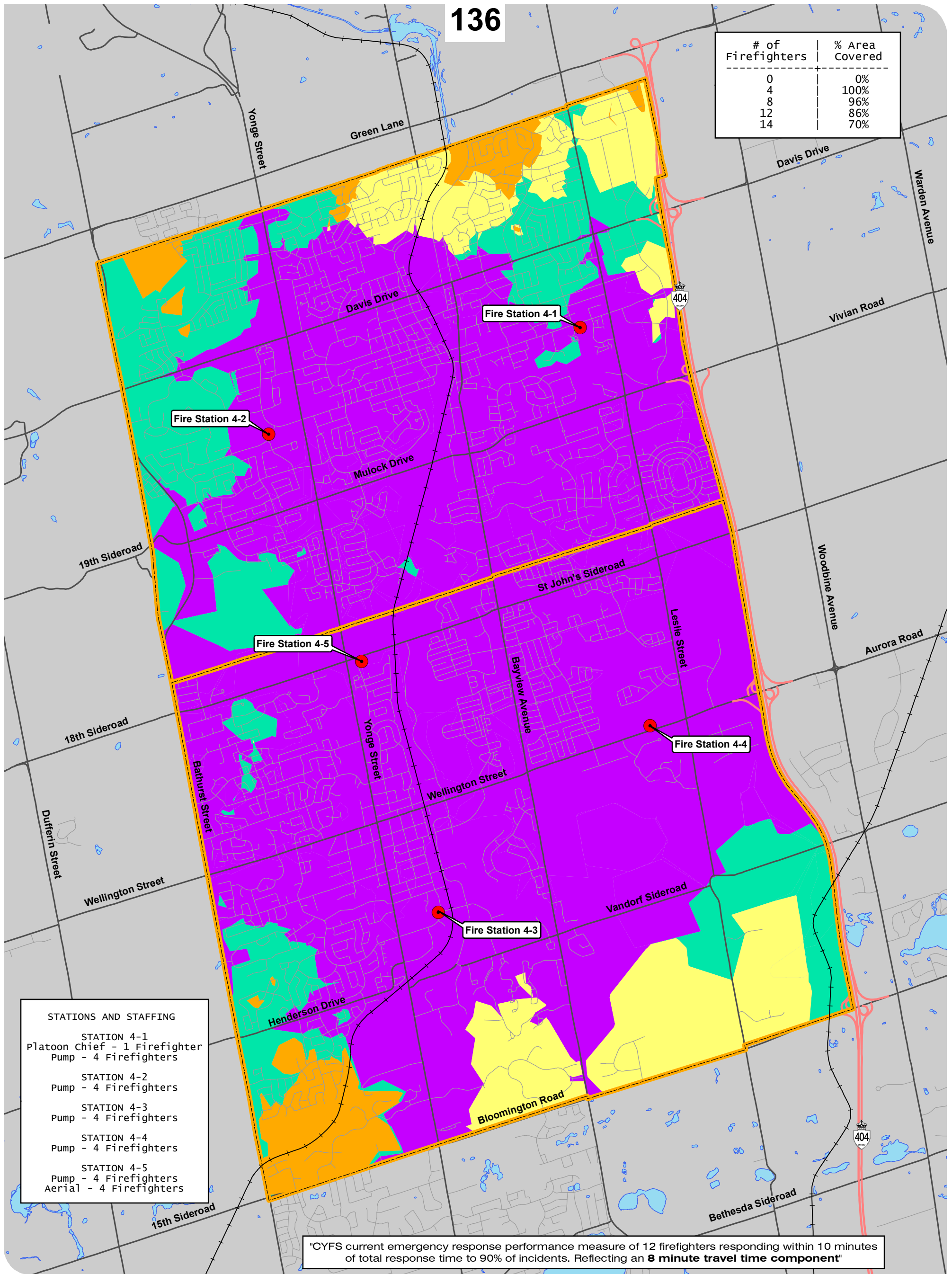
TOTAL NUMBER OF FIREFIGHTERS REACHING  
AREA WITHIN 8 MINUTES OF TRAVEL TIME

- 0 Firefighters
- 4 Firefighters
- 8 Firefighters
- 12 Firefighters
- 14 Firefighters



MAP DRAWING INFORMATION:  
DATA PROVIDED BY TOWN OF  
AURORA & TOWN OF NEWMARKET  
MAP CREATED BY: JJA  
MAP CHECKED BY: SC  
MAP PROJECTION: NAD 1983 UTM Zone 17N  
FILE LOCATION: I:\GIS\138358 - Central York Fire Services  
FMP Update\Mapping\FutureDepthOfResponse43.MXD

0 200 400 600 800 m  
SCALE 1:45,000  
PROJECT: 13-8358 STATUS: FINAL DATE: 06/09/14



**DILLON**  
CONSULTING

MAP DRAWING INFORMATION:  
DATA PROVIDED BY TOWN OF  
AURORA & TOWN OF NEWMARKET  
MAP CREATED BY: JJA  
MAP CHECKED BY: SC  
MAP PROJECTION: NAD 1983 UTM Zone 17N  
FILE LOCATION: I:\GIS\138358 - Central York Fire Services  
FMP Update\Mapping\FutureDepthOfResponse45.MXD



SCALE 1:45,000

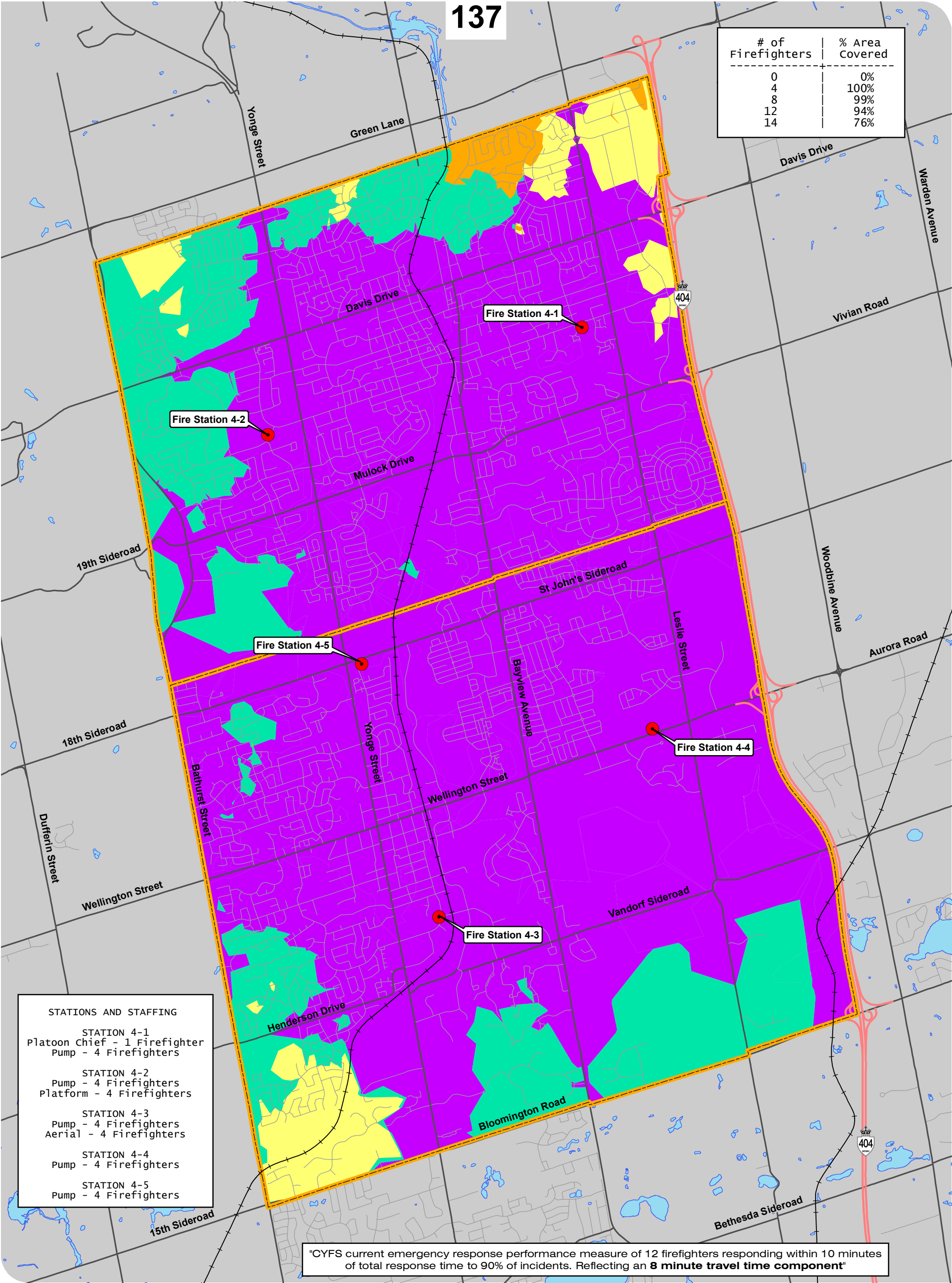


PROJECT: 13-8358

STATUS: FINAL

DATE: 06/09/14

# of Firefighters	% Area Covered
0	0%
4	100%
8	99%
12	94%
14	76%



**CENTRAL YORK  
FIRE SERVICES**

FIRE MASTER PLAN UPDATE

**Future Depth of Response, Five  
Station Model, Platform 427 at  
Station 4-2, Aerial 436 at  
Station 4-3 with 7 Crew Model**  
FIGURE 31



● Fire Station

— Railway

— Highway

— Waterbody

— Arterial

— Municipal Boundary

— Local

**DEPTH OF RESPONSE**

TOTAL NUMBER OF FIREFIGHTERS REACHING  
AREA WITHIN 8 MINUTES OF TRAVEL TIME

0 Firefighters

12 Firefighters

4 Firefighters

14 Firefighters

8 Firefighters

**DILLON  
CONSULTING**

MAP DRAWING INFORMATION:  
DATA PROVIDED BY TOWN OF  
AURORA & TOWN OF NEWMARKET  
MAP CREATED BY: JJA  
MAP CHECKED BY: SC  
MAP PROJECTION: NAD 1983 UTM Zone 17N  
FILE LOCATION: I:\GIS\138358 - Central York Fire Services  
FMP Update\Mapping\FutureDepthOfResponse4243.MXD

0 200 400 600 800 m

SCALE 1:45,000



PROJECT: 13-8358

STATUS: FINAL

DATE: 06/09/14



**Table 22: Summary of Depth of Response Analysis**

Option	Scenario	Depth of Response % of Geographic Coverage		Depth of Response % of Historic Call Coverage	
		>=12	> = 14	>=12	> = 14
1	Existing Four Station Model Operating Staffing Level (25 firefighters) = 6 Crews Platform 427 at 4-2, Aerial 436 at 4-3	81%	48%	88%	52%
2	Existing Four Station Model Minimum Staffing Level (21 firefighters) = 5 Crews Platform 427 at 4-2	61%	30%	75%	46%
3	Existing Four Station Model Minimum Staffing Level (21 firefighters) = 5 crews Aerial 436 at 4-3	69%	32%	64%	26%
4	Proposed Future Five Station Model – B Industrial Minimum Staffing Level (21 firefighters) = 5 crews No Platform or Aerial in service, five pumps	75%	43%	--	--
5	Proposed Future Five Station Model – B Industrial Minimum Staffing Level (25 firefighters) = 6 crews Platform 427 at 4-2	85%	76%	--	--
6	Proposed Future Five Station Model – B Industrial Minimum Staffing Level (25 firefighters) = 6 crews Aerial 436 at 4-3	87%	62%	--	--
7	Proposed Future Five Station Model – B Industrial Minimum Staffing Level (25 firefighters) = 6 crews Aerial 436 at 4-5	86%	70%	--	--
8	Proposed Future Five Station Model – B Industrial Proposed Staffing Level (29 firefighters) = 7 crews Platform 427 at 4-2, Aerial 436 at 4-3	94%	76%	--	--



As shown above in **Table 22**, the current Option 1 model of utilizing 6 crews provides a depth of response coverage of 81% when measured against the CYFS existing performance objective of 12 firefighters. In comparison to Options 2 & 3 when the department reduces the on duty staffing to 5 crews this shows the increased depth of response capability the 6<sup>th</sup> crew provides. In our view the analyses of Option 1 further supports the importance of the additional 6<sup>th</sup> crew to assist the Fire Chief in managing overtime costs, as well as supporting the depth of response capabilities of the CYFS.

Option 4 provides an example of how the CYFS could open the proposed 5<sup>th</sup> fire station without hiring any additional staff and sustaining the minimum on duty staffing of 21 firefighters. One of the major disadvantages of this option is that Platform 427 and Aerial 436 would only be staffed when more than 21 firefighters were on duty.

Options 5, 6, and 7 provide examples of how the deployment of either Platform 427 or alternatively Aerial 436 within a five station model including 6 crew's impacts the depth of response of the CYFS. There is a slight range between 85% and 87% when measured against the CYFS existing performance objective of 12 firefighters. There is a larger range of 62% to 76% when compared to the proposed objective of 14 firefighters. In this comparison Option 5 presents the optimal model in comparison to geographic coverage as well as historical call coverage. As the location of historical calls is a variable that will be impacted by future community growth our preference is Option 7 that centrally locates Aerial 436 at the proposed 5<sup>th</sup> station.

Option 7 requires sustaining the 6<sup>th</sup> crew at all times and as a result requires the addition of 20 firefighters. This is based on the ratio of 1.25 firefighters to sustain a minimum staffing of four firefighters on an apparatus. This represents  $1.25 \times 4 \text{ firefighters} \times 4 \text{ platoons} = 20 \text{ firefighters}$ .

Option 8 including the proposed 5<sup>th</sup> station and a 7 Crew model provides the highest depth of response based on the CYFS existing performance objective of 12 firefighters. This option could be achieved with the addition of the 20 firefighters identified in Option 7 for a high percentage of the time depending on the utilization of vacation time, sick time, banked time, bereavement leave, and extended illnesses affecting the CYFS.

### ***9.17 Proposed Station and Staffing Model***

The analyses within this report reflects the need for a 5<sup>th</sup> fire station within the short-term horizon (1-2) year time frame of this five year plan. The analyses reflect that the intersection of St. John's Sideroad and Industrial Parkway is the most optimal location for this station. However, the difference between the two 5<sup>th</sup> station options modelled is less than 2%. The addition of the fifth station will improve the current initial response coverage from 52% of the geographic coverage to 71% in a four minute or less travel time. Based on the historical call volumes of the CYFS it would improve initial response from 67% to 77%.

#### ***Recommendation 24:***

***That the CYFS develop a fifth fire station (Station 4-5) including space for administration, fire prevention/public education, and training, including a new training centre in the area of the intersection of St. John's Sideroad and Industrial Parkway within the short-term (1-2 year) horizon of this five year plan.***



**Recommendation 25:**

*That in considering the recommendation for a fifth fire station (Station 4-5) with administrative and training functions (as proposed within the 2014 FDMPU) the CYFS also consider the current use of fire Station 4-1 as a headquarters facility and the identified infrastructure improvements in considering the sustainability of this station, reuse or alternative use, or the relocation of Station 4-1 in close proximity to its current location in a similar building to that of Station 4-4.*

The analyses within this review identifies that the most optimal staffing model for the CYFS to strive towards the proposed fire suppression performance targets (14 firefighters on-scene within eight minutes of travel time) is Option 8 the five station model with 7 crews including Platform 427 at Station 4-2 and Aerial 436 at Station 4-3.

In our view the CYFS can transition to Option 8 through implementing Option 7 in the short-term in conjunction with the design/construction and opening of the proposed 5<sup>th</sup> station and hiring an additional 20 firefighters. During this time the CYFS will be able to monitor the emergency response performance objectives and provide further analyses to assess future staffing or station needs.

**Table 23** presents the proposed staffing model for the total staffing, operating and minimum staffing model.

**Table 23: Proposed Apparatus and Staffing Assignments**

Station #	Address	Apparatus	Total Staffing (36)	Operating Staffing (29)	Minimum Staffing (25)
4-1	984 Gorham Street	Platoon Chief 44	1	1	1
		Fire Apparatus			
4-1	984 Gorham Street	Pumper 411	5	4	4
4-2	125 McCaffrey Road	Pumper 421	5	4	4
		Platform 427	5	4	0
4-3	220 Edward Street	Pumper 431	5	4	4
4-4	1344 Wellington Street East	Pumper 441	5	4	4
4-5	St. Johns Sideroad and Industrial Parkway	Pumper 451	5	4	4
		Aerial 436	5	4	4
Platoon Staffing			36	29	25

(Source: CYFS)

The proposed staffing model would sustain the flexibility of seven front line crews and the Platoon Chief (36) with the ability to staff a minimum of six front line crews and the Platoon Chief (25). This staffing model would require hiring an additional 20 firefighters. This could be implemented through a phased implementation plan that would be coordinated with the construction of the proposed fifth fire station (Station 4-5), anticipated for completion in late 2016.



In our experience phased implementation plans for new staff, particularly firefighters provide the benefits of spreading the financial impact over an extended period, decreasing the pressures related to training a large group of recruit firefighters at one time, and supporting the succession plan of the department by recognising that hiring smaller groups of firefighters typically results in the retirement of firefighters in similar smaller groups rather than a larger group that can significantly impact the experience of the department at any one time.

**Recommendation 26:**

*That the CYFS implement a phased recruitment process for 20 additional firefighters to be coordinated with the development and construction of the fifth fire station (estimated completion late 2016) proposed within the FDMPU.*

## **9.18 Emergency Response Protocols**

### **9.18.1 Road Network**

The 2008 plan references the impacts of road network planning on emergency response travel times and protocols. Ensuring that the CYFS collaborates in the planning process should be a component of the ongoing transportation planning of the Town of Aurora and the Town of Newmarket. This is particularly important in the areas of traffic calming, road network design and construction, and more recently as traffic congestion is being recognized as having potentially significant impacts on emergency response times.

The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation C.3.4:**

The Towns of Newmarket and Aurora should consider emergency response considerations when planning and developing new roadways.

**Recommendation 27:**

*That the Town of Newmarket and Town of Aurora should include the CYFS in the ongoing planning and development of the road network where emergency response travel times may be impacted as the result of traffic calming measures, road network design and development, and traffic congestion.*

### **9.18.2 Wildland/Grass Firefighting**

The 2008 plan identified that the CYFS does not have a current SOG for response to wildland and grass fires within the CYFS response area. As indicated in the 2008 plan there is some inconsistency in the department's current emergency response protocols.

The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation C.8.1:**

CYFS should develop an SOG for wildland/grass fires that identifies staff roles and responsibilities and identifies the operation of Utility 410.

No action has been taken on this recommendation that in our view remains an important outstanding emergency response protocol.



**Recommendation 28:**

***That the CYFS develop an SOG for wildland/grass fires that identifies staff roles and responsibilities and identifies the operation of Utility 410.***

### **9.18.3 Water Supplies**

The 2008 plan identified two areas related to providing water for firefighting. The first relates to the participation of the CYFS in the “Superior Tanker Shuttle Accreditation” process offered by the insurance industry within Ontario. This accreditation provides the potential of reduced insurance premiums for primarily residential homeowners living in an area of the community that does not have hydrant service protection.

The CYFS will require the support of neighbouring communities and the Automatic Aid Program to achieve this accreditation process.

The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation C.16.1:**

CYFS should continue to develop tanker operations and achieve a certified tanker shuttle accreditation.

**Recommendation 29:**

***That the CYFS should continue to develop tanker operations and achieve a certified tanker shuttle accreditation.***

The 2008-2017 Master Fire Plan Update also included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation C.16.2:**

CYFS should identify all hydrants that are not provided with 100mm “Stortz” connections and notify the Public Works and Environmental Services Departments for potential action.

In response to this recommendation the Fire Chief prepared Fire Services Report 2013-06 “Fire Hydrant Compatibility Plan”. This report identified two recommendations including:

***“That Fire Services Report 2013-06 Fire Hydrant Compatibility Plan, dated August 21, 2013 be received for information purposes”.***

***“And that JCC request Public Works staff develop a strategic time frame to implement the Fire Hydrant Compatibility Plan to update flow rates and fire hydrant conspicuity”.***

The Fire Chief has initiated discussion with Public Works staff from both Towns to respond to this recommendation. However, our review indicates that a coordinated implementation plan to address the hydrant concerns has not yet been completed and presented to the JCC in response to the recommendation.

**Recommendation 30:**

***That the JCC request an update from Public Works staff of both Towns to develop a strategic time frame to implement the Fire Hydrant Compatibility Plan referenced in Fire Services Report 2013-06 to update flow rates and fire hydrant conspicuity.***



### **9.19 Fire Suppression Division Summary and Recommendations**

Through the process of consolidation the CYFS has done well to develop an effective and efficient model for the delivery of fire suppression (emergency response) services to both of the Towns it services. The current model is fully integrated and seamless in the delivery of these fire protection services.

Community growth is challenging the CYFS to sustain its current level of fire suppression services. Revisions to industry best practices for firefighter deployment including those by the OFMEM and the NFPA since the 2008 plan was developed are further challenging the CYFS abilities to provide an effective firefighter deployment.

The analyses within this review supports revisions to the current performance objectives for emergency response as well as the addition of a 5<sup>th</sup> fire station to address community growth. The recommendations within this review support the strategic priorities of:

- *The utilization of a Comprehensive Community Risk Assessment(Appendix J) to determine the level of existing and projected fire safety risks within the municipality as the basis for assessing the current and future fire protection services; and*
- *Emphasis on strategies that support the sustainability of fire protection services that provide the most cost effective and efficient level of fire protection services resulting in the best value for the community.*

The following are the Fire Suppression Division recommendations of this review:

- 22. That the CYFS emergency response dispatch protocols be revised to reflect the proposed minimum staffing deployments for low, moderate and high risk occupancies (Table 16) and the proposed revised performance objectives for emergency response (Table 19).**
- 23. That the CYFS continue to prioritise pre-incident planning and work towards the development of Quick Action Plans for all buildings within the CYFS response area with priority assigned to high risk buildings.**
- 24. That the CYFS develop a fifth fire station (Station 4-5) including space for administration, fire prevention/public education, and training, including a new training centre in the area of the intersection of St. John's Sideroad and Industrial Parkway within the short-term (1-2 year) horizon of this five year plan.**
- 25. That in considering the recommendation for a fifth fire station (Station 4-5) with administrative and training functions (as proposed within the 2014 FDMPU) the CYFS also consider the current use of fire Station 4-1 as a headquarters facility and the identified infrastructure improvements in considering the sustainability of this station, reuse or alternative use, or the relocation of Station 4-1 in close proximity to its current location in a similar building to that of Station 4-4.**
- 26. That the CYFS implement a phased recruitment process for 20 additional firefighters to be coordinated with the development and construction of the fifth fire station (estimated completion late 2016) proposed within the FDMPU.**
- 27. That the Town of Newmarket and Town of Aurora should include the CYFS in the ongoing planning and development of the road network where emergency response travel times may be impacted as the result of traffic calming measures, road network design and development, and traffic congestion.**
- 28. That the CYFS develop an SOG for wildland/grass fires that identifies staff roles and responsibilities and identifies the operation of Utility 410.**



- 29. That the CYFS should continue to develop tanker operations and achieve a certified tanker shuttle accreditation.***
- 30. That the JCC request an update from Public Works staff of both Towns to develop a strategic time frame to implement the Fire Hydrant Compatibility Plan referenced in Fire Services Report 2013-06 to update flow rates and fire hydrant conspicuity.***



## 10.0 TRAINING DIVISION

Based on our experience and knowledge of the Ontario fire service, firefighter training is an area that has come under a high level of scrutiny over the past decade. The results of numerous inquests and investigations have concluded that firefighter training must be considered a strategic priority for municipalities in their role as employer and fire service leaders as supervisors. The Ministry of Labour has committed significant resources to audit and support this strategic priority.

The Training Division coordinates the delivery of training programs such as recruit training, officer development, emergency care, vehicle driver/operator training, fire suppression, technical training so that the continuity of training is maintained and fire service training goals and objectives are attained. The Central York Fire Services Training Division is overseen by the Deputy Chief of Operations.

The Training Division is responsible for ensuring that all CYFS personnel receive the training necessary to meet the legislative requirements of the Ontario *Fire Prevention and Protection Act, 1997* (FPPA) and the *Occupational Health and Safety Act* of Ontario (OHSa).

### 10.1 Key Functions

The key functions of the training division include:

- Research, develop, monitor, and evaluate training programs including fire service specialty programs, maintenance training, and annual training;
- Transition to the new OFMEM pro Qualification Standards;
- Building and maintaining training props and materials;
- Evaluating and ensure that training programs meet recognized standards;
- Update and maintain standard operating guidelines as needed;
- Document and record all training activities;
- Legislated training;
- Carry out recruit programs and promotional testing; and
- Provide support to firefighters at major incidents.

### 10.2 2008 – 2017 Master Fire Plan Update – Sub-Report on Staff Development

Within the existing 2008-2017 Master Fire Plan Update, the sub-report completed for Staff Development (training) had 27 recommendations under staff and training delivery, records management, training requirements, driver training, and emergency medical training among others. As part of the completed recommendations, SOGs regarding vehicle operation and driver training were developed. Reviews of training programs, and developing employee orientation packages were also completed.



### 10.3 Staffing

The training division is comprised of two training officers. The training division currently faces a number of staffing challenges. The CYFS Fire Chief provided a report to JCC in September 2013 regarding 'Training Division Status Report' (Fire Services Report 2013-07) which addressed the Training Division roles, resources and staffing.

The administrative support is currently split between the training and administrative divisions. There is currently not sufficient time to satisfy all of the needs and requirements of the training division. The demands for administrative support continue to increase as the number of suppression staff is increased.

Both training officer positions are dedicated to training. A third secondment position from the fire suppression division was introduced in 2011 as part of firefighter recruit training process. The secondment process worked well for the department, however the current person within the position has recently returned to the suppression division.

The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation D.1.1:**

CYFS should convert one of the Training Officers to a Chief Training Officer and monitor the workload pressures on the division staff as a result of any increased department staffing, technological changes affecting training or changes in provincial regulations and consider any corresponding need for increased staffing in three to five years.

The current staffing model of two Training Officers has worked well through the process of consolidating the training needs of the CYFS. The efforts of staff within this division to lead and develop the current Training Centre into an extremely valuable learning tool is a credit to the dedication and commitment of staff within this division.

In our view the 2008 recommendation to enhance the level of leadership and management of this division through the conversion of one of the Training Officers positions to a Chief Training Officer continues to require consideration. Leadership will be a very important component for this Division as it faces current and future challenges such as:

- Transition to the new NFPA Professional Qualifications Standards;
- Developing a Comprehensive Training program to respond to the new NFPA standards;
- Development of further Standard Operating Guidelines for this Division;
- Assisting in developing a Succession Plan for the CYFS;
- Oversight of appropriate levels of Specialized Services Training; and
- The proposed increased staffing within the Suppression Division.

In our view there is an alternative strategy for the CYFS to consider that would include the development of a new position that would have oversight of the training division and the roles and responsibilities typically assigned to a Chief Training Officer. In our view the CYFS should consider a new non-union position of Assistant Deputy Fire Chief-Training & Emergency Management.



This position would be outside of the bargaining unit and therefore add a valuable additional non-union resource to the department management team. This strategy is particularly important given the complexities and overall functions of the Training Division in the areas of personal development and performance measurement proposed within this review while in the presence of a Collective Agreement. This position also adds to the senior succession planning opportunities within the CYFS and dedicated leadership to the Corporate Emergency Planning Process.

As a member of the department management team this additional non-union position would report to the Deputy Chief of Operations and be assigned the roles and responsibilities for oversight of the Training Division. In our view this position would also provide an added resource for administering and managing the emergency planning program, and assisting the department management team in managing the overall operations of the CYFS.

In our view one of the short-term roles of this new position would be to further monitor the workload pressures on the division staff as a result of the increased fire suppression staffing proposed, technological changes affecting training, changes in provincial regulations, administrative support and corresponding need for increased staffing in three to five years as recommended by the 2008 plan.

***Recommendation 31:***

***That the CYFS implement the position of Assistant Deputy Chief- Training and Emergency Management within the short-term (1-2 year) horizon of this five year plan.***

***Recommendation 32:***

***That the proposed Assistant Deputy Chief- Training & Emergency Management be tasked to monitor the workload pressures on the training division as a result of the increased fire suppression staffing proposed, technological changes affecting training, changes in provincial regulations, administrative support and corresponding need for increased staffing in three to five years as recommended by the 2008 plan.***

## ***10.4 Training Standards***

In partnership with the Ontario Association of Fire Chiefs, the Office of the Fire Marshal and Emergency Management and other fire service stakeholders developed the Ontario Fire Services Standards (OFSS). Together these competency-based standards were utilized in developing a comprehensive provincial fire service training program that included a firefighter curriculum, Fire Prevention Officer Diploma program, Company Officer Diploma program, and a Training Officer Diploma program.

The OFMEM announced in April of 2013 that the Ontario fire service would be adopting the National Fire Protection Association Professional Qualifications (NFPA Pro-Qual) Standards. **Table 24** below reflects the results of the comparative analyses between the previous Ontario Standards and the representative NFPA Standards.



**Table 24: Comparison of Ontario and NFPA Standards**

Previous Ontario Standard	New NFPA Standard
Ontario Firefighter Standard	NFPA 1001 – Standard for Fire Fighter Professional Qualifications
Ontario Company Officer Standard	NFPA 1021 – Standard for Fire Officer Professional Qualifications
Ontario Fire Prevention Officer Standard	NFPA 1031 – Standard for Professional Qualifications for Fire Inspector and Plan Examiner
Ontario Training Officer Standard	NFPA 1041 Standard for Fire Service Instructor Professional Qualifications

In January of 2014 the newly created Office of the Fire Marshal and Emergency Management distributed *Communique 2014 – 04* to the Ontario fire service reflecting the grandfathering and transition process to the use of the NFPA Professional Qualifications Standards. Within this documentation further analysis is confirmed with regard to the concordance between the Ontario programs and the NFPA Professional Qualifications Standards.

**Table 25** reflects the OFMEM’s determination of concordance between the previous Ontario Standards and the representative NFPA Standards.

**Table 25: Concordance of Ontario and NFPA Standards**

Previous Ontario Standard	New NFPA Standard
Ontario Firefighter Curriculum	NFPA 1001 Standard – Level I and Level II
Company Officer Diploma Program	NFPA 1021 Standard – Level II
Fire Prevention Officer Diploma Program	NFPA 1031 Standard – Fire Inspector Level I
Training Officer Diploma Program	NFPA 1041 Standard – Fire Instructor Level II

*Communique 2014 – 04* indicates that “Members of the fire service who wish to take advantage of the grandfathering policy and obtain a Letter of Compliance with NFPA Standards must submit an application through their fire department, approved and signed by their fire chief, before December 31, 2015”. This is an opportunity that should be considered for those members of the CYFS that could comply with the grandfathering requirements.



### ***10.5 Train the Trainer (Shift Trainers)***

The CYFS currently utilizes a model that optimizes the use of fire suppression staff to assist in the delivery of training programs. In our experience this model is very effective in area of specialized training such as vehicle extrication, hazardous materials, water/ice rescue and medical. Utilizing a committee framework fire suppression staff who have a strong interest in these specialized training areas typically provide added value in developing and delivering training in these areas.

One of the most significant challenges in utilizing this model is providing clarity in the roles and responsibilities and expectations of the fire suppression shift trainers and training officers.

The 2008-2017 Master Fire Plan Update included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation D.1.2:**

The role of the Training Officers should be clarified in a Standard Operating Guideline. Their responsibilities should be noted as:

- Researching and developing appropriate training programs for all CYFS staff;
- Developing and delivering (or assisting with the delivery) of new training initiatives;
- Reviewing records and assessing progress.

This recommendations has not been acted upon, and within the 2008 plan implementation was linked to the role of the proposed Chief Training Officer. In addition the responsibilities identified within this recommendation, in our experience in working with the “train the trainer” model there are added responsibilities on the Training Division. This includes the need to ensure that all training programs are being delivered consistently and that there is a quality assurance strategy. Training Division staff should be actively involved in monitoring training records, certification, and compliance with legislative and regulatory requirements.

The 2008-2017 Master Fire Plan Update also included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation D.1.3:**

Standard operating guidelines should be developed to provide clear direction to staff as to their roles and responsibilities relative to department training and staff development.

Both of these recommendations relate to clarifying the roles and responsibilities of all staff in developing and delivering training programs across the department. In our view responding to these recommendations should be a priority for the CYFS. In our view action has not be taken due to other competing priorities of both the department management team and the Training Officers. These are functions that we agree should be assigned to a more senior position such as the proposed Assistant Deputy Chief.



**Recommendation 33:**

*That the role of the Training Officers should be clarified in a Standard Operating Guideline. Their responsibilities should be noted as:*

- *Researching and developing appropriate training programs for all CYFS staff;*
- *Developing and delivering (or assisting with the delivery) of new training initiatives;*
- *Ongoing review of training records and assessing individual progress;*
- *Overseeing a quality assurance program for the delivery of all training programs; and*
- *Monitoring the CYFS requirements for certification, and compliance with legislative and regulatory requirements for staff training.*

**Recommendation 34:**

*That Standard Operating Guidelines be developed to provide clear direction to all staff as to their roles and responsibilities relative to department training and staff development.*

## **10.6 Specialized Training Services**

In addition to basic firefighter training, the department must also consider the training needs associated with specialized services. Specialized services (technical rescues) are services that require a higher level of technical training and equipment in order to safely mitigate the emergency.

Examples of the specialized services currently being provided by the CYFS include:

- Ice/water rescue;
- Hazardous materials response;
- Aerial and Platform Operations;
- Rural water supply (tanker shuttle);
- Auto extrication;
- Rope rescue;
- Firefighter survival (RIT Training);
- Medical Program.

In addition to these programs the department as an ongoing process to evaluate the need for additional training programs such as “confined space training” and enhancing current programs such as “Rope Rescue.” Each of these programs requires the training officers or shift trainers to be certified or receive the appropriate qualifications to deliver the training program.

The 2008-2017 Master Fire Plan Update also included the following recommendation:

**2008 – 2017 Master Fire Plan Update – Recommendation D.11.2:**

CYFS should develop a rope operations training program that will provide operations level capability for the Suppression Division as a basis for all rescue operations.

The Water/Ice Committee has been assigned this task and is in the progress of developing this program. In our view no further actions or recommendations are required to complete this recommendation.



## ***10.7 Training Facilities***

The Training Division currently resides in the old Newmarket Operations Centre at 623 Timothy Street. The facility is large and services a number of functions. It contains office space for two training officers, administration staff, and other staff assigned to duties in the Training Division. Learning materials and training records are stored in a room while firefighting equipment and supplies are stored in a space in the basement. The training facility also contains a small board room, two classrooms, a full kitchen, and full men's and women's washroom facilities.

The warehouse area of the training facility has a total of 8,600 square feet. Training Division vehicles (including a fire engine) and other large equipment are stored in a 3,200 square foot garage portion. A 1,600 square foot maze used for training and practicing firefighter skills in search and rescue, survival, and firefighting scenarios is also found in the warehouse space. The remaining space includes a 3,800 square foot area used for a variety of firefighting training evolutions including: firefighter survival, firefighter rescue techniques, search and rescue scenarios, forcible entry training, ladder training and incident command training. This includes a 2,000 square foot mock-up home used for training. There is great benefit to this indoor facility as it allows CYFS to safely provide training in all-seasons and allows for the creation of black-out conditions which make for realistic training environments.<sup>4</sup>

In addition to this indoor space, a large outdoor training area is essential for a number of training evolutions conducted by the Training Division. These functions include but are not limited to:

- Pumping Evolutions
- Vehicle Rescue Training
- Driver Training
- Ventilation Techniques
- Forcible Entry<sup>5</sup>

Crews from each station come to the training centre for monthly maintenance training and speciality training topics.

### ***10.7.1 Facility Needs***

While the existing training facility satisfies a number of essential requirements, the facility is out-dated and in need of renovations. Due to the uncertainty of the permanency of this location, investment into upgrades has been limited. Required upgrades include general renovations to address drafts and roof leaks. Telecommunication upgrades are also required and the current limitations hinder the capacity and potential of the Training Division. The current system does not allow for teleconferences or web-conferences for joint training or a simple sharing of resources.

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<sup>4</sup> Source: CYFS Training Centre Facilities and Activities Outline provided by CYFS

<sup>5</sup> Source: CYFS Training Centre Facilities and Activities Outline provided by CYFS



This review recommends a proposed 5<sup>th</sup> fire station that would also serve as the new Headquarters for the CYFS. Including a new Training Centre as part of designing and developing this 5<sup>th</sup> station would be the most optimal strategy to bringing all of the non-suppression resources, administration, prevention/public education and training activities under one roof, and located at one centralized location.

**Recommendation 35:**

***That the CYFS conduct a comprehensive training facilities assessment as part of the design and development of the proposed 5<sup>th</sup> fire station.***

## **10.8 Records Management**

Training records are managed by FireHouse database software. In addition to recording training activity, this software is used for incident reporting, EMS/search and rescue reporting, staff scheduling, equipment management, inventory records, and occupancy pre-plans, inspections, and permits. Upon completion, the staff hours and classes are to be logged in FireHouse by crew Captains. However, this is sometimes done inconsistently or incorrectly which affects training reports. Further, there is some debate as to whether or not the Training Division should be responsible for entering training records.

In our view this analysis reflects the importance of the recommendation within this review “*That Standard Operating Guidelines be developed to provide clear direction to all staff as to their roles and responsibilities relative to department training and staff development*”.

## **10.9 Comprehensive Annual Training Program**

Developing and delivering a comprehensive training program for the Fire Suppression Division is the primary role of the Training Division.

The content of the training program should be dictated by the department’s service levels as approved by both Councils and contained within the Establishing and Regulating By-laws of both Towns. The recent transition to the NFPA Professional Qualifications Standards will require some revisions to the current CYFS training program.

Addressing an employer’s responsibilities as defined by the *Occupational Health and Safety Act* and specifically the *Section 21 Guidance Notes for Firefighters* is a mandatory component that should be included within a comprehensive annual training program.

In our view, in addition to responding to the relevant standards, curriculum and health and safety requirements, a comprehensive annual training program should include the following core functions:

- Identification of training needs in relation to services provided;
- Coordination / scheduling of theoretical and practical training;
- Monitoring and evaluation in relation to outcomes achieved;
- Ongoing evaluation in relation to industry best practices and legislative requirements;
- Oversight of program objectives and records management; and
- Ongoing assessment of program delivery for efficiency and effectiveness.



Developing and sustaining a comprehensive annual training program that includes all of the core functions and addresses the health and safety responsibilities of the municipality is consistent with the strategic priority that fire services across Ontario are initiating. We recommend that within the transition to utilizing the NFPA Professional Qualifications Standards adopted by the OFMEM that the CYFS develop a Comprehensive Annual Training Program for all firefighters.

In addition to firefighting training, this program should recognise the roles and responsibilities of Company Officers (Incident Command) as defined by the OHSA.

***Recommendation 36:***

***That the CYFS develop an enhanced Comprehensive Annual Training Program to facilitate the transition of the CYFS to the NFPA Professional Qualifications Standards adopted by the OFMEM.***

### ***10.10 Succession Planning & Promotional Process***

Fire departments and municipalities are recognizing the importance and value that succession planning has within the municipal fire service. Succession planning has not traditionally been an area of concern or priority within the fire service in Ontario. An effective success plan requires the implementation of strategies to ensure that opportunities, encouragement and additional training are available for those staff that may be considering further advancement within an organization. A comprehensive succession plan also supports the concepts of coaching and mentoring in support of staff considering future career opportunities.

At this time there is no specific succession planning process in place within CYFS. Succession plans can provide a framework of skills and experience that are required for each position within the department. For candidates seeking promotion or further responsibilities the succession plan can provide a career path to the position of their choosing.

This review includes a recommendation for developing a succession planning process.

### ***10.11 Training Division Summary and Recommendations***

The training division of the CYFS is being challenged to sustain an appropriate level of firefighter training. The transition to the newly adopted NFPA Professional Qualifications Standards, and the proposed increase in the number of firefighters will further challenge the resources of this Division.

In our view the strategic priority for this Division should be the implementation of the proposed Assistant Deputy Chief to provide the necessary leadership of this Division as it moves forward.

The following are the Training Division recommendations of this review:

- 31. That the CYFS implement the position of Assistant Deputy Chief within the short-term (1-2 year) horizon of this five year plan.***
- 32. That the proposed Assistant Deputy Chief- Training & Emergency Management be tasked to monitor the workload pressures on the training division as a result of the increased fire suppression staffing proposed, technological changes affecting training, changes in provincial regulations, administrative support and corresponding need for increased staffing in three to five years as recommended by the 2008 plan.***



***33. That the role of the Training Officers should be clarified in a Standard Operating Guideline. Their responsibilities should be noted as:***

- ***Researching and developing appropriate training programs for all CYFS staff;***
- ***Developing and delivering (or assisting with the delivery) of new training initiatives;***
- ***Ongoing review of training records and assessing individual progress;***
- ***Overseeing a quality assurance program for the delivery of all training programs; and***
- ***Monitoring the CYFS requirements for certification, and compliance with legislative and regulatory requirements for staff training.***

***34. That Standard Operating Guidelines be developed to provide clear direction to all staff as to their roles and responsibilities relative to department training and staff development.***

***35. That the CYFS conduct a comprehensive training facilities assessment as part of the design and development of the proposed fifth fire station.***

***36. That the CYFS develop an enhanced Comprehensive Annual Training Program to facilitate the transition of the CYFS to the NFPA Professional Qualifications Standards adopted by the OFMEM.***



## 11.0 STUDY CONSULTATION

The Fire Department Master Plan Update study commenced with a project initiation meeting held October 16<sup>th</sup>, 2013. As the study progressed, various forms of consultation activities were employed to gather feedback from stakeholders. Effective communication and consultation with stakeholders is essential to ensure that those responsible for implementing this Fire Department Master Plan Update and those with a vested interest, understand the basis on which certain decisions are made and why particular actions are required.

### 11.1 Steering Committee

Information and feedback was collected from members of the Steering Committee and key stakeholders via informal interviews held following the Project Initiation Meeting. This was an opportunity to gather background information and input on the strengths, opportunities, challenges and threats from the point of view of these key stakeholders.

The Steering Committee members included:

- Chief Administrative Officers (Town of Aurora and Town of Newmarket)
- Representatives from Aurora Town Council and Newmarket Town Council
- Fire Chief
- Deputy Fire Chiefs (Operations and Support Services)
- Chief Fire Prevention Officer & Fire Prevention Officer
- Training Officers
- Platoon Chief
- Members of the Association Executive
- Representative from Human Resources

### 11.2 Stakeholder Consultation

#### 11.2.1 Stakeholders

Stakeholders can provide valuable input at each step of the process, providing information about context and background from different perspectives. This helps to identify issues and needs associated with the fire services. As well it provides information that is used for study analysis and recommendation phases. Engaging stakeholders helps ensure that multiple perspectives can be brought to the fire master planning process.

#### 11.2.2 Additional Key Stakeholder Interviews and Consultation

All members of the Steering Committee, including the CFPO, FPO, both Training Officers and a Platoon Chief were consulted with as a key stakeholder in the Fire Department Master Plan Update process.

Representatives from the Firefighters Association Executive were also interviewed during the project initiation process as an opportunity to receive feedback and input into the study from the key stakeholder group that the firefighters comprise.



### ***11.2.3 Joint Council Committee Workshop Education and Training Session***

The engagement of the Joint Council Committee in the Fire Department Master Plan Update process is paramount in ensuring overall municipal goals are met within the study recommendations and the JCC feel that they have ownership of the study. A workshop session was held with the JCC on November 5<sup>th</sup>, 2013. The consultant team delivered a formal presentation to the JCC to introduce the purpose and background behind the FDMPU process and gather feedback regarding key issues, concerns or interests. The opportunity for questions and discussion followed the presentation.

### ***11.2.4 Senior Staff Consultation***

Throughout the process to develop this plan ongoing consultation with the Fire Chief was maintained through regular contact including telephone calls, teleconferences, e-mails and meetings. Where required additional information and data was provided by the Fire Chief and the Administration Coordinator to support the analyses within this plan.

## ***11.3 Summary of Study Consultation***

Consultation was conducted with key stakeholders, Town staff (Aurora and Newmarket), Town Council (Aurora and Newmarket), and CYFS staff throughout the course of the Fire Department Master Plan Update. Interviews with key stakeholders and staff members were an essential component of the data collection and project initiation processes. It provided insight into the strengths, weaknesses, opportunities and constraints facing the fire services and the issues to be considered within the FDMPU. Consultation included Steering Committee Meetings, Project Meetings and a JCC Workshop Session.

Study consultation allows for input into the FDMPU by stakeholders and also provides an opportunity to inform stakeholders about the FDMPU purpose, goals and recommendations. Support from Town staff (Aurora and Newmarket), and Council (Aurora and Newmarket), is essential to the success of the FDMPU, therefore, including these key stakeholders throughout the planning process is essential and highly beneficial.



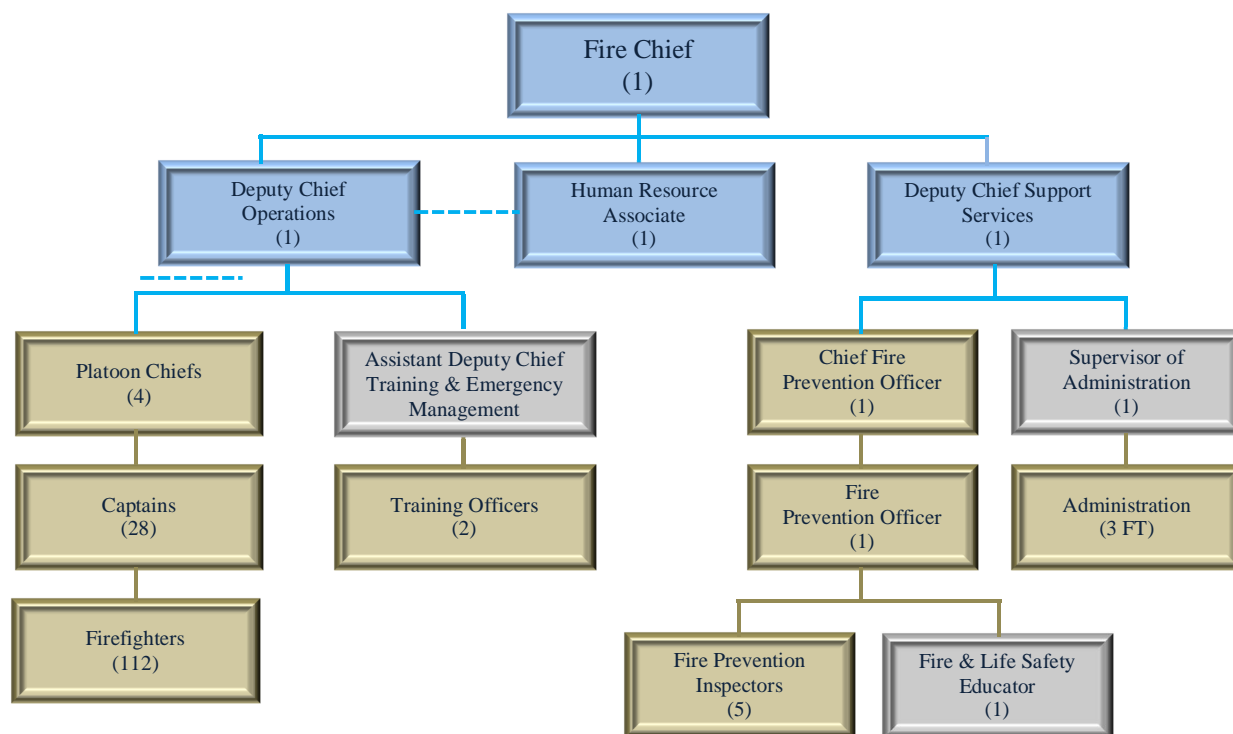
## 12.0 PROPOSED ORGANIZATIONAL MODEL & IMPLEMENTATION PLAN

The recommendations of this Fire Department Master Plan Update support the goal of optimizing the first two lines of defence through the strategic priorities identified. Many of the recommendations require no additional financial commitment. **Figure 32** reflects the full application of the new positions and additional staff proposed within this plan. This includes the following new full-time complement positions of:

- *Assistant Deputy Chief – Training and Emergency Management (1);*
- *0.6 Administrative Assistant to 1.0 Administrative Assistant (0.4);*
- *AA for Training;*
- *Additional Training Officer;*
- *Fire and Life Safety Educator (1);*
- *Fire Inspector (1);*
- *Fire Suppression Captains (4);*
- *Fire Suppression Firefighters (16);*



**Figure 32: Proposed Organizational Model**



### ***12.1 2014 FDMPU Implementation Plan***

This review includes recommendations where no additional financial support is required, and recommendations impacting either the capital or operating budget. Where recommendations impact either the current capital or operating budget of the CYFS they are identified within **Table 26**. The implementation plan presented includes a phase-in strategy that includes immediate (0-1 year), short-term (1-3 year), medium (3-5 year), and long-term (5-10 year) planning horizons.

Where possible the financial impacts assume the cost of wages and benefits for operating budget impacts, and estimated capital budget requirements.



**Table 26: 2014 FDMPU Implementation Plan**

<b>Planning Horizon</b>	<b>Recommendation</b>	<b>Capital Budget</b>	<b>Operating Budget</b>
Immediate	Hire the proposed Assistant Deputy Chief – Training & Emergency Management		\$125,000
Immediate	Initiate a process to select a site for the proposed fifth fire station including site plan design.	\$100,000	
Immediate	Transition part-time Administrative Assistant to full-time (0.6 to 1.0)		\$20,000
Immediate	Begin the transition of reinstating the Human Resources Consultant to full-time representing 0.5 in the next 12 months.		<i>Human Resources Department</i>
2015	Phase 1 - hiring of additional full-time firefighters through a 2 year phased process of hiring 10 firefighters per year (2015 – 10 firefighters)		\$1,150,000
2015	Capital equipment requirements (bunker gear) for 10 firefighters.	\$40,000	
Short-term	Hire proposed position of Fire and Life Safety Educator.		\$85,000
Short-term	Implement proposed Network and Communications Coordinator position.		<i>Information Technology Department</i>
Short-term	Purchase property and initiate design for the proposed fifth fire station and training centre.	\$2,500,000	
Short-term	Initiate construction of proposed fifth fire station and training centre.	\$5,500,000	
2016 (timed with opening Station 4-5)	Phase 2 - hiring of additional full-time firefighters through a 2 year phased process of hiring 10 firefighters per year. (2016 – 10 firefighters, timed with opening of fifth station)		\$1,150,000



<b>Planning Horizon</b>	<b>Recommendation</b>	<b>Capital Budget</b>	<b>Operating Budget</b>
2016 (timed with opening Station 4-5)	Capital equipment requirements (bunker gear) for 4 firefighters.	\$40,000	
Short-term	Complete the transition of the Human Resources Associate to full-time representing 1.0 FTE.		<i>Human Resources Department</i>
2016 (timed with opening Station 4-5)	Purchase additional Pumper for proposed fifth fire station.	\$750,000	
Medium-term	Hire proposed additional Fire Inspector to coincide with opening of fifth fire station.		\$100,000

APPENDIX A

2008 – 2017 Master Fire Plan Update Recommendations  
Operational Task Tracking Matrix



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
Recommendation 1 - The department should continue to serve both municipalities and the two Towns should commit to a permanent consolidation. Appropriate changes to the agreement would need to be made that includes means of resolving disputes and, if necessary, mechanism for dissolution or expansion and include a regular master fire planning process every five years to ensure continuous improvement and strategic direction.		Fire Chief	Preliminary discussions with Newmarket Legal Services to investigate issues.	2010-06 2013-12	In progress
Recommendation 3 A vision statement should be developed for Central York Fire Services and subsequently a mission statement and values should be developed by CYFS.		Deputy Chief Leslie	Proposal developed for a consultant to conduct the exercise, awaiting consultant selection.	2010-06 2013-12	In progress
Recommendation 4 Finances – financial principles stated in original plan do not need to be revisited with the exception that Joint Council Committee revisit the issue of surpluses and uncommitted reserves. Revenue opportunities need to be investigated. Develop an ongoing five year financial plan.		Fire Chief			Not started
Recommendation 8 The Fire Chief shall report to JCC at each meeting on the status of the implementation of Master Fire Plan tasks and recommendations with more comprehensive		Fire Chief			In progress



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
reports twice a year or as set by JCC. Business plans are to be developed for the department on an annual basis and shared with JCC.					
RECOMMENDATION 11 That the fire chief is to assess the risks to the communities and review response capabilities and all other fire protection matters and report to Joint Council Committee on an annual basis.		Fire Chief	Ongoing		In progress
Recommendation 13 Concerns about delaying dispatch of CYFS by the MOH CACC should continue to be voiced to the province at every opportunity. Until such time as improvements are made, alternative actions that can reduce the delay should be explored.		Fire Chief	Coordinated actions being taken by York Region Fire Chiefs, York Regional Police and York EMS to improve dispatch of fire services.		In progress
A.1.1 – CYFS develop, with consultation with staff, a mission statement, a vision for the department and a set of department values.	1	Deputy Chief, Ops	Consultant to be retained	2010-06	In progress
A.2.1 – Each of the four divisions should set annual goals and objectives, tied to the forecast budget and linked to a performance management system.	2	Deputy Chief, SS	Completed for Fire Prevention, Training and Suppression Performance management is a labour management issue		In progress



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
A.4.2 – CYFS should continue to monitor the workload of Administration support staff, identify efficiencies and evaluate the need for any additional staff.	2	Deputy Chief, SS	Tasks identified, work load being assessed. Note overall reduction in staff available since approval of Plan.	2013-12	In progress
A.5.2 – A comprehensive inventory management system, consistent with the Town of Newmarket system, be developed and implemented. This system should include date of purchase, life expectancy and location. Note that its intended that records management software will be implemented in 2008 and this will incorporate inventory controls.	2	Deputy Chief, SS	IT Committee is developing using Firehouse software for inventory control.	2010-09	In Progress
A.8.1 – CYFS should develop job descriptions for each position within the department.	1	Deputy Chief, SS	CYPFFA has noted they have a vested interest in this task.	2009-10	In progress.
A.8.2 – CYFS should develop a performance development program, consistent with the Town of Newmarket program, for all department staff.	1	Deputy Chief, SS	CYPFFA has noted they have a vested interest in this task.	2009-10	In progress
A.8.3 – Succession planning and professional development for the department should be established in a more formal process with educational opportunities, including mentoring, secondments, job shadowing, cross training, incorporated.	1	Deputy Chief, SS	CYPFFA has noted they have a vested interest in this task.	2009-09	Not started
B.1.1 – CYFS should monitor the productivity	3	Chief Fire		2009-12	In progress



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
of the Fire Prevention Division and the implementation of this report's recommendations and evaluate the need for any additional staffing in three to five years.		Prevention Officer (CFPO)		2015 Budget	
B.6.1 – CYFS should research and identify program goals and achievable outcomes for all public education programs on an annual basis.	2	CFPO	CFPO developing goals for 2010.	2009-11	In progress
B.7.1 – CYFS should develop SOG's for all significant Fire Prevention Division activities and tasks.	3	CFPO		2009-09	In progress
B.10.1 – CYFS should work with the two towns to review the by-laws regulating fireworks sales and displays and make necessary revisions.	3	CFPO			Not started
C.3.4 – The Towns of Newmarket and Aurora should consider emergency response considerations when planning and developing new roadways.	3	CFPO	Currently done to a degree with site planning		In progress
C.5.1 – Concerns about delaying dispatch of CYFS by the MOH CACC should continue to be voiced to the province at every opportunity. Until such time as improvements are made, alternative actions that can reduce the delay should be explored.	1	Fire Chief	EMS calls are being monitored by P/C's and reported to Chief for further investigation. Ongoing actions by the YRFCA, OAFC and OMFPOA	2008-08	In progress
C.8.1 – CYFS should develop an SOG for wildland/grass fires that identifies staff roles	3	Deputy Chief, Ops			Not started



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
and responsibilities and identifies the operation of Utility 410.					
C.13.1 – CYFS should develop an SOG for providing assistance to York Regional Police	3	Deputy Chief, Ops			Not started
C.15.1 – CYFS should review and revise the SOG for pre-incident planning.	3	Mapping and Pre-Planning Committee		2008-12	In progress
C.15.3 – CYFS should develop a computer based system to store and use pre-incident planning information and make it available in each front line apparatus. Note that the anticipated computer records management system implementation in 2008 will facilitate this effort.	2	Mapping and Pre-planning Committee/IT Committee		2009-03	In progress
C.16.1 – CYFS should continue to develop tanker operations and achieve a certified tanker shuttle designation.	2	Deputy Chief, Ops			Not started
C.16.2 – CYFS should identify all hydrants that are not provided with 100mm “Stortz” connections and notify the Public Works and Environmental Services Departments for potential action.	3	Mapping and Pre-planning Committee	Chief met with Aurora and Newmarket Public Works Depts and plan in place, 2013-07.		In progress
C.17.1 – CYFS should attend to the following facilities issues in a timely manner. <ul style="list-style-type: none"> <li>Investigate replacement of the generator for Station 4-1.</li> <li>Replace the air compressors, as scheduled and if needed.</li> </ul>	1	Deputy Chief, Ops	Air compressor at 4-1 replaced. 2009-08 Fitness room at 4-2 completed. 2008-10. Stn 4-3 completed 2011-11.		In progress



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
<ul style="list-style-type: none"> <li>Finish the fitness room walls and ceilings and utilize the front area of the annex at Station 4-2 for storage.</li> <li>Refurbish the washrooms at Station 4-3 and investigate replacing the garage doors with insulated ones.</li> </ul>					
D.1.1 – CYFS should convert one of the Training Officers to a Chief Training Officer and monitor the workload pressures on the division staff as a result of any increased department staffing, technological changes affecting training or changes in provincial regulations and consider any corresponding need for increased staffing in three to five years.	2	Deputy Chief, Ops	Discussions required with CYPFFA	2009-03	In progress
D.1.2 – The role of the Training Officers should be clarified in a Standard Operating Guideline. Their responsibilities should be noted as: <ul style="list-style-type: none"> <li>Researching and developing appropriate training programs for all CYFS staff</li> <li>Developing and delivering (or assisting with the delivery) of new training initiatives</li> <li>Reviewing records and assessing progress</li> </ul>	3	Training Division	To be assigned to Chief Training Officer		Not started
D.1.3. – Standard Operating Guidelines should	3	Training		2013-12	Not started



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
be developed to provide clear direction to staff as to their roles and responsibilities relative to department training and staff development.		Division			
D.5.4 – Staff development should be encouraged for those staff wishing to prepare for advancement. Opportunities for courses, secondments and mentoring should be incorporated into an annual performance development program.	1	Training Division	To be done in conjunction with A.8.3.	2009-03	Not started
D.11.2 – CYFS should develop a rope operations training program that will provide operation level capability for the Suppression Division as a basis for all rescue operations.	3	Training Division	Assigned to Water/Ice Rescue Committee	2010-10	In progress
<b>COMPLETED LIST</b>					
Recommendation 2 - Joint Council Committee (JCC) shall continue to provide direction and be responsible for the operation of CYFS.					Completed 2008-11
Recommendation 5 Develop a comprehensive communications strategy in coordination with the two Communications Departments including overall department issues as well as public safety education issues.		Deputy Chief Leslie	Discussions with both Communications Departments were initiated. This has become a routine and ongoing process	2010-01	Completed
Recommendation 6 JCC and CYFS need to review agreements with neighbouring		Fire Chief	Agreements for both neighbour municipalities	2010-06	Completed 2011-01



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
municipalities on an ongoing basis and ensure community and CYFS staff safety and cost recovery and that service levels are not affected.			have been reviewed. They are being updated as they come up for renewal. Service levels have not been affected.		
Recommendation 7 Develop a comprehensive accommodations and facilities plan and examine the feasibility for consolidating management, including ownership, of all properties by CYFS.		Deputy Chief Leslie	Study completed by consultant and presented to JCC.	2010-04	Completed 2010-08
<p>Recommendation 9 The following levels of service shall be established:</p> <ul style="list-style-type: none"> <li>a) CYFS strive to achieve a goal of first arriving crew consisting of at least three firefighters and an officer responding to emergencies within six minutes of receiving a call, 90% of the time.</li> <li>b) CYFS should strive to achieve a goal of responding to reported structure fires with twelve firefighters within ten minutes, 90% of the time.</li> <li>c) CYFS should strive to achieve goal of 60 seconds or less for turnout of firefighters.</li> <li>d) CYFS should research options for improving the response to reported fires by reviewing call handling times and</li> </ul>					Completed 2008-11



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
striving to achieve a goal of 60 seconds or less.					
Recommendation 10 Public education and fire prevention programs should be pro-active and involve community support. Areas that do not achieve the levels of service goals should be subject to enhanced public education and inspection activities.		CFPO	Smoke alarm program targeted areas of Aurora and Newmarket.		Completed 2010-09
Recommendation 12 CYFS review response protocols with King Township to ensure that tanker trucks are immediately dispatched to reported fires and CYFS should monitor responses to this coverage area.		Fire Chief	Discussions with King Township have resulted in an updated Fire Protection Agreement. Monitoring responses at this time.		Completed 2012-10
Recommendation 14 CYFS should consult with other region fire services and emergency service providers and develop a plan for delivering hazardous materials responses on a regional basis.		Fire Chief	Discussed amongst York Region Fire Chiefs and confirmed levels of services provided by each department and availability of assistance through Mutual Aid as needed.		Completed 2010-03
A.4.1 – CYFS should convert the part time position into a full time position and re-structure the support staff so that they are provided with direct supervision and that back-	2	Deputy Chief, SS	Recruited additional part time administrative assistant 2010-08. However, Human	2009-10	Completed 2013-06



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
up of tasks is incorporated in to the structure.			Resources Consultant position has been reduced to .2 FTE leaving significant gap in staffing of Administration Division. Supervisory role not addressed yet.		
A.5.1 – A structured process should be established to solicit input where appropriate from each of the divisions. Committees should be part of this process, especially for the Suppression Division, with committees established for Vehicles and Equipment, Auto Extrication, Water/Ice Rescue, Hazardous Materials, Rural Water Supply, Medical, Information Technology, Pre-incident Planning.	1	Deputy Chief, SS			Completed 2008-09
A.5.3 – Standard Operating Guidelines (SOG's) should be developed and consistently applied for vehicle, equipment and building maintenance.	1	Deputy Chief, Ops.	Equipment Committee is working on this task. Incorporating into Firehouse.	2010-09	Completed 2012-05
A.6.1 – CYFS should explore the possibility of electronic file storage in lieu of paper storage, where possible.	3	Deputy Chief, SS	Applies to records with retention requirements of less than 10 years.		Completed 2009-02
A.6.2 - CYFS should review the current electronic filing system and ensure appropriate security is provided to protect electronic records and that the records are easily accessible.	1	Deputy Chief, SS	In conjunction with A.6.3.	2008-11	Completed 2009-02
A.6.3 – A records retention policy should be	1	Deputy Chief,	In conjunction with	2008-11	Completed



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
developed for CYFS, in coordination with the one being developed for the Town of Newmarket.		SS	A.6.2.		2009-02
A.7.4 – CYFS should research feasibility of a telephone system that operates consistently for all stations and provides optimum user and customer service while still being compatible with the Town of Newmarket system.	1	IT Committee	Discussed needs with IT Department. No cost effective solutions are available at this time.	2009-12	Completed 2010-10
A.11.1 – Standard Operating Guidelines should be developed to clarify roles and expectations relative to media and public relations. Staff should then be trained on their roles and responsibilities.	3		Draft SOG circulated to Towns' Communications Departments	2010-03	Completed 2012-10
A.12.1 - The expectations for completing and filing exposure reports should be clarified and communicated to all staff including developing an SOG.	1	HR Consultant	Training has been conducted. Monitored regularly by JH&S Committee	2010-01	Completed 2010-01
A.12.2 – The role of the Fitness and Wellness Committee and its operation should be clarified and its available finances clearly noted. The scope of the program should include all CYFS divisions and the awareness of the program should be promoted, particularly for newer staff.	2	Fire Chief	Need to consider wording from arbitrated award. Wellness Committee re-established. Staff advised of role of committee.	2008-12	Completed 2009-08
B.2.1 – CYFS develop a more comprehensive process for reporting all fire prevention activities, routinely reporting on progress	2	CFPO	Firehouse software system being implemented	2009-10	Completed 2010-01



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
toward established inspection and public education goals and evaluating and analyzing available data.					
B.3.1 – CYFS implement an electronic records management system that effectively manages all fire prevention division needs for recording, analysis and reporting.	2	CFPO	Implementing Firehouse software	2009-09	Completed 2010-02
B.3.2 – CYFS should research and review the increased use of information technology for the Fire Prevention Division in coordination with the annual budget process.	2	CFPO	Implementing Firehouse software	2009-07	Completed 2010-02
B.3.3 – CYFS should develop a separate website with timely information posted regarding the department and other fire safety information that improves the resident's awareness of CYFS and assists residents to ensure improved fire safety.	2	Deputy chief, SS	Domain secured. Working with IT Dept to develop site. CYFS content developed. Consultant hired by IT. Delayed until November.	2009-11	Completed 2010-04
B.4.1 – CYFS should complete the development of an open air burning approval process that is consistent for both towns.	1	Deputy Chief, SS		2009-06	Completed 2009-07
B.4.2 – CYFS should delegate Chief Fire Official authority, as needed and with appropriate restrictions, to all staff in the Fire Prevention Division.	2	Deputy Chief, SS			Completed 2008-08
B.5.1 – CYFS should develop a Standard Operating Guideline, including consultation with both Building Departments, that defines roles, responsibilities and process for Building	1	Deputy Chief, SS		2009-05	Completed 2009-06



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
Code permit plan review, approval, inspection and enforcement.					
B.5.2 – CYFS should continue the development of an SOG, including consultation with both Planning Departments that defines roles, responsibilities and process for review of site plans.	2	Deputy Chief, SS			Completed 2008-09
B.6.1.A – CYFS should develop focused public education programs with identified goals and expectations to increase involvement of the Suppression Division.	2	CFPO		2009-01	Completed 2013-06
B.6.2 – CYFS should review and improve the recording and reporting of public education activities taking advantage of the electronic records management software being implemented in 2008.	2	CFPO	Firehouse being developed to include this purpose	2009-03	Completed 2010-02
B.6.3 – CYFS should develop a media program to regularly promote fire safety messages in the local media.	3	CFPO	Consulting with Communications Depts. This has become a routine and regular planning with both Communications Departments	2009-10	Completed 2010-01



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
B.7.2 – CYFS should establish frequency of inspections for all occupancy types in both towns. Annual records should be reviewed and reported on to determine success of achieving these frequencies.	2	CFPO	CFPO developing an inspection frequency for risk properties.	2009-03	Completed 2010-12
B.8.1 – CYFS should develop an SOG for Fire Safety Plan review and approval that identifies the approximate total number of buildings requiring plans and a frequency of review, consistent with the frequency of inspection established under Subsection B.7 and incorporates a simple Fire Safety Plan for simple buildings.	3	CFPO		2009-09	Completed 2009-10
B.8.2 – The SOG's for Fire Safety Plans should incorporate the review of the Suppression Division prior to approval to facilitate the timely implementation of pre-incident plans.	3	CFPO			Completed 2009-10
B.9.1 – CYFS should clarify the expectations for Fire Prevention Division staff to be available for responding to calls outside of normal business hours.	1	CFPO	CFPO and FPO will rotate on call duties.	2009-07	Completed 2009-10
B.9.2 – CYFS should enhance the training to Suppression Division officers and staff to improve their investigation skills for minor incidents and to ensure protection of evidence for major incidents.	3	CFPO and Training Division	CFPO developing training.	2009-12	Completed 2010-02



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
B.11.1 – CYFS should develop an annual training plan for the Fire Prevention Division, in coordination with individual performance development plans and incorporating succession planning.	1	CFPO and Deputy Chief, SS	Training plan for each staff member developed by CFPO and approved by Deputy Chief, SS	2009-01	Completed 2009-02
B.14.1 – CYFS should research the bunker gear used for investigations to ensure adequate fit and durability or consider alternate clothing.	1	CFPO	Appropriate gear selected and initial order received.	2008-12	Completed 2009-05
C.2.1 – CYFS should review the reserve/spare system and strive to fully equip and maintain at least two apparatus to be used as reserve. Note that vehicles that are not fully equipped shall not be used as the sole first responder unless it has the equipment needed for the specific emergency.	2	Vehicles and Equip Committee	Committee tasked with reviewing and reporting back on an annual basis. Note that MDT in only one reserve truck.	2009-03	Completed 2011-06
C.2.3 – Response protocols should be revised to ensure that closest vehicles are responding, such as having 421 and 427 respond to calls in the northwest Aurora area. Platoon Chiefs shall review the coverage and make any necessary decisions to move vehicles or alter the response.	1	Deputy Chief, Ops	Being addressed during implementation of new CAD system.	2008-10	Completed 2009-05
C.3.1 – CYFS should develop an SOG that makes clear the expectations for off-duty staff for provision and carrying of pagers, response to call-backs and methods for ensuring accurate and consistent payment for	3	Deputy Chief, Ops	Deputy Chief Ops testing use of cell phones for call back. Reporting forms for call back revised.		Completed 2011-09



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
responses. This should also include means for ensuring that the off-duty staff were in fact paged. The results of call back need to be analyzed.			Text messaging implemented. SOG revised.		
C.3.2 – An SOG should be developed to identify the expectations for Senior Officers to be notified of emergencies and for their response.	3	Deputy Chief, Ops	On call rotation implemented 2009-02. Covered in SOG S-009, 2012.		Completed 2012-05
C.3.3 - The response protocols for the various types of emergency responses that CYFS responds to should be evaluated annually to ensure that appropriate resources are dispatched.	2	Deputy Chief, Ops	CAD dispatch protocols reviewed and modified where necessary.	2009-03	Completed 2011-01
C.4.1 – CYFS should review response protocols with King Township to ensure that tanker trucks are immediately dispatched to reported fires and CYFS should monitor responses to this coverage area.	1	Fire Chief	King Twshp Fire Chief has agreed to implement. Being monitored.	2008-08	Completed 2012-10
C.4.2 – CYFS should review the retainers charged and the hourly rate for vehicles to ensure that appropriate compensation is provided for services rendered.	2	Fire Chief	Fees have been revised in agreements.	2010-06	Completed 2010-02
C.6.1 – CYFS implement a trial response protocol for MVC's, having 411 respond whenever possible. At the end of the trial, the effectiveness of this practice should be evaluated with expectation being that heavy hydraulics are available in a timely manner at all MVC's.	1	Deputy Chief Ops and A/P/C Patrick	Pilot project initiated 2009-05 for 6 months	2009-11	Completed 2010-02



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
C.15.2 – CYFS should expand the Pre-Incident Planning Committee to incorporate a representative from each platoon and preferably each station.	1	Deputy Chief, SS	5 members with representation from Prevention, Administration and three platoons.		Completed 2008-09
C.16.3 – CYFS should review dispatch protocols for the agreement protected areas in Whitchurch-Stouffville and King to ensure that tankers are routinely dispatched to reported structure fires simultaneously with CYFS dispatch.	1	Deputy Chief, Ops			Completed 2011-10
C.17.2 – CYFS should establish direct delivery of building supplies and inventory control from suppliers to reduce the use of senior officers in the delivery role. The use of couriers should be considered for some of the mail pick up and delivery that is currently being done by the Platoon Chiefs.	2	Deputy Chief, SS	Courier has been established. Supply delivery being investigated.	2009-01	Completed 2009-05
C.17.3 – CYFS should develop an SOG that clearly defines roles and responsibilities for cleaning and maintenance of the four fire stations.	2	Deputy Chief, Ops	P/C assigned to develop a draft	2008-10	Completed 2009-02
C.18.1 – CYFS should develop and implement an information technology plan to implement advanced computer technology available at emergency scenes and that provides fire officers and firefighters access to computer technology to improve communications, efficiency and effectiveness of operations.	1	IT Committee	Mobile computers for vehicles purchased and installed. 2009-11.	2010-09	Completed 2010-12



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
C.18.2 – CYFS should include in the information technology plan means to provide easy access for all Suppression Division staff to emails and departmental electronic files.	2	Deputy Chief, SS	Costs have been researched for email access.	2008-10	Completed 2010-09
C.18.3 – CYFS should work with the Information Systems staff from the Town of Newmarket to develop a means of providing round the clock technological support.	2	IT Committee	16 hours/day is now provided and working satisfactorily.	2008-12	Completed 2008-12
C.20.1 – The Auto Extrication Committee should be tasked with providing recommendations for equipment purchase, including vehicle stabilization kits, and that any reasonable additional equipment identified be budgeted for and purchased.	1	Auto Extrication Committee	Committee has been expanded. Short term needs identified and equipment purchased. Order being placed for major purchase for 2009	2008-11	Completed 2009-05
C.20.2 – The gas detection equipment should be divided and placed on Engine 411 (or 421) and Engine 431. Additional detection equipment should be researched and purchased, as necessary, to provide two complete gas detection kits.	1	Platoon Chief Comeau	Need a 2 <sup>nd</sup> PID.	2008-10	Completed 2010-02
C.20.3 – The existing Truck Committee should be re-invigorated and enhanced to have representation from each platoon and station and be tasked with researching and developing an annual proposal for equipment needs for review and consideration of senior management. The committee should be renamed the Apparatus and Equipment Committee.	1	Deputy Chief, SS			Completed 2008-06



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
C.21.1 – CYFS should develop a Standard Operating Guideline for vehicle and equipment checks and maintenance.	2	Deputy Chief, Ops	Vehicle and Equipment Committee tasked with this. Incorporated into Firehouse.	2008-10	Completed 2010-02
C.22.1 – CYFS should research, purchase and install suitable drying facilities for personal protective equipment.	2	Vehicles and Equipmt Committee	Researched and concluded not cost effective.		Completed 2010-10
C.23.1 – CYFS should develop one Standard Operating Guideline to incorporate all respiratory matters and that would then constitute a respiratory protection program document.	1	Deputy Chief, SS	Respiratory Protection Committee expanded and tasked with this.	2008-09	Completed 2011-01
D.2.1 – All training materials (curriculum and trainer packages) should be reviewed to ensure they are complete, consistent and user friendly and have an appropriate teaching plan. These materials should be stored electronically to facilitate easy access by trainers.	3	Training Division	This is done on an ongoing basis as part of the Maintenance Training Program. Completion will take as much as two years.50%+ completed 2012-05.		Completed 2012-10
D.2.2 – A more comprehensive reporting system should be developed to incorporate all training received by all CYFS staff and department staff trained in using the system properly	1	Training Division	Firehouse and Administration records are recording all needed training.	2009-01	Completed 2009-04
D.2.3. – A training outline report should be developed for all specialized training delivered	3	Training Division	This will need to be coordinated with all the		Completed 2010-02



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
by platoon instructors that provides the necessary details of the training so that the company officers can report properly on training received by their crews.			CYFS Standing Committees		
D.2.4 – All training reports should be reviewed by the respective Platoon Chief or Division Chief prior to filing and subsequent analysis by the Training Division.	1	Deputy Chief, Ops	Implemented. Needs to be monitored.	2008-09	Completed 2013-03
D.3.1 – All training materials, drill sheets and trainer packages should be reviewed to include any specific safety considerations appropriate for the exercise, including noting the appropriate Personal Protective Equipment (PPE) to be worn and any suggested warm-ups and stretches that should be done.	3	Training Division	Done in conjunction with D.2.1.		Completed 2012-03
D.5.1 - The maintenance training program for the Suppression Division should be reviewed and more detailed expectations for time spent, scheduling and learning outcomes established. Needed references should be identified and a variety of training aids should be incorporated and specific practical exercises should form a significant part. Evaluation of the progress of individuals needs to be incorporated.	3	Training Division	Done in conjunction with D.2.1.		Completed 2010-02
D.5.2 – Training requirements should be established for the Fire Prevention Division, Training Division and Administration Division.	1	Training Division	Collaboration required with Senior Officers and professional development.	2010-09	Completed 2012-10
D.5.3 – A maintenance training program	1	Training	Collaboration required	2010-09	Completed



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
should be established for the Training Division, Fire Prevention Division and Administration Division. Note that this should be incorporated into an annual performance development process.		Division	with Senior Officers		2011-12
D.6.1 – An orientation package should be developed for new employees.	1	HR Consultant	Initial package has been created.	2008-10	Completed 2009-05
D.6.2 – Delivery of recruit training for firefighters without experience should be done in coordination with neighbouring departments, where possible, dependant on the number of recruits.	3	Training Division	Recruitment is being managed by CYFS with assistance from Richmond Hill for live fire training.		Completed 2011-02
D.7.1 – The Standard Operating Guidelines relating to vehicle operation should be reviewed and revised to identify core skills. An SOG for driver training should be developed.	3	Training Division	Note that Drive Wise training simulations have been implemented.		Completed 2013-04
D.7.2 – The use of driver simulators should continue and be expanded to include the Training Division, Fire Prevention Division and Administration Division.	2	Training Division	Training booked for these Divisions for 2009	2009-11	Completed 2009-12
D.8.1 – Provision of specialized training to Central York Fire Services should be reviewed in detail. Programs should be developed for each subject area that identifies the curriculum, training delivery and evaluation methods.	3	Training Division	In conjunction with D.2.3.		Completed 2013-03
D.9.1 – Company officers and platoon instructors should improve the reporting of	1	Platoon Chiefs	To be reviewed by Training Division. In		Completed 2013-02



## Master Fire Plan – Recommendations and Operational Task Tracking

Task	Priority	Assigned to	Comments/Resources Required	Target Date	Status
medical training.			conjunction with D.2.1. Use of Firehouse is improving.		
D.9.2 – The medical training program should be reviewed annually by the Medical Committee and the results of the evaluation reported. The program should then be revised as necessary.	1	Medical Committee	This is already done, but should be made more formal.		Completed 2009-02
D.9.3 – Methods should be developed to ensure that there are a sufficient number of platoon educators/instructors and that these people are supported and developed.	1	Medical Committee	Staff have been encouraged to participate. Training provided to new members.		Completed 2009-04
D.10.1 – The Auto Extrication Committee should be expanded to provide platoon instructors from all platoons.	1	Auto Extrication Committee	Potential shift instructors have been identified. Implemented 2009-08.		Completed 2009-08
D.11.1 – All Central York Fire Services Suppression Division staff should be trained to an awareness level of all identifiable, specialized services that could potentially be needed in the Towns of Aurora and Newmarket, including how to access assistance for those services that are not provided by CYFS.	3	Training Division	Need to review reports and records to develop plan of action.		Completed 2011-06



## Master Fire Plan – Recommendations and Operational Task Tracking

### SUMMARY

Group	Not Started	In Progress	Completed	Total
<b>Recommendations</b>	1	5	8	14
<b>Operational Tasks Group A</b>	1	6	10	17
<b>Operational Tasks Group B</b>	1	3	18	22
<b>Operational Tasks Group C</b>	3	6	21	30
<b>Operational Tasks Group D</b>	3	2	18	23
<b>Total</b>	9	22	75	106

APPENDIX B

PFSG 00-00-01 "Framework for Setting Guidelines  
within a Provincial-Municipal Relationship"

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Framework For Setting Guidelines Within A Provincial-Municipal Relationship

### Public Fire Safety Guidelines

Subject Coding  
**PFSG 00-00-01**

Section

Date

**General**

**January  
1998**

### Framework For Setting Guidelines Within A Provincial-Municipal Relationship

Page

### Purpose

To assist municipalities in making informed choices for providing public fire protection through objective and innovative approaches. Guidelines will be developed for municipal councilors and senior officials as well as municipal fire departments.

### Background

The Fire Protection and Prevention Act places new responsibilities on municipalities. The Office of the Fire Marshal has a mandate to assist municipalities to fulfill these responsibilities by providing information which will enable municipalities to make informed choices based on an objective analysis. Municipalities are compelled to establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention. The act also states that municipalities are responsible for arranging such other fire protection services as they determine may be necessary according to their own needs and circumstances. The relationship between the province and municipalities is based on the principle that municipalities are responsible for arranging fire protection services according to their own needs and circumstances. The primary roles of the province are to provide leadership and support to municipalities in the exercise of this responsibility, and to ensure public safety is not compromised. Guidelines, developed by the Office of the Fire Marshal in consultation with municipalities, the fire service and others, will be a key vehicle for fulfilling the provincial role to support municipalities. This consultation process will continue on an ongoing basis to ensure the guidelines change and evolve to reflect trends, changing circumstances and new technology. To be useful, the guidelines must remain current, and must have the support and acceptance of municipalities. The province will retain an interest in the development of guidelines and monitoring of their application. However, day-to-day management and delivery will be municipal responsibilities.

### Principles

The key principles which will be used to develop the guidelines are as follows:

- Municipal councils are directly accountable to their constituents and municipalities are also accountable to the province.
- There will be opportunities for appropriate stakeholder involvement and consultation during the development stages.
- Local needs and circumstances vary widely across the province. Therefore, the measures required to address these needs and conditions will also vary.

- There are many ways in which individual needs and circumstances can be addressed. Therefore, municipalities require flexibility to employ different strategies to achieve similar objectives.
- Local council, in consultation with the fire chief, will determine the extent to which their needs and circumstances will be addressed. Some may choose to address specific risks more comprehensively than others. Provided serious threats to public safety are addressed, this is a reasonable and legitimate exercise of municipal responsibility.

## **Content and Implementation**

The guidelines will provide:

- The key concepts of risk assessment and risk management
- The factors that affect the level of fire protection in any community
- The options municipalities may wish pursue in addressing risks
- The information required to evaluate those options

Municipalities will be able to use the guidelines in a variety of ways:

- They can assign knowledgeable local officials to gather the necessary data and conduct appropriate cost/benefit analysis internally.
- They can commission independent reviews of their fire protection activities and use the guidelines to monitor the consultant's activities and evaluate its conclusions.
- Staff of the OFM will continue to be available to assist municipalities in the use of the guidelines.

In addition, the OFM will be re-focusing its training and education services to provide municipal and fire department officials with the skills needed to utilize the guidelines effectively.

## **Basis of Development**

The guidelines will be based on the Comprehensive Fire Protection Effectiveness Model. Fire protection in any community is determined by:

1. The risk of a fire occurring
2. The impact a fire may have on the community
3. Public attitude toward fire
4. The effectiveness of its fire prevention activities
5. The deployment of automatic fire detection systems
6. The deployment of automatic fire suppression systems
7. The effectiveness of its fire department's suppression activities
8. The time period between when the fire starts and when the fire department begins suppression activity

The level of fire protection in a given community will reflect an appropriate balance of all of these factors. Changes in any one factor will affect the overall level of protection.

For example, if the general public is complacent about the risk of fire, there will be a greater risk of a fire occurring in the community. A municipality may choose to address the risk by enhancing its fire suppression capability, by deploying more automatic detection and suppression systems, or a combination of any or all of the other factors affecting fire protection. It may also choose to address the issue head on - by raising awareness of public fire safety through effective public education. In short, there are many valid ways of addressing a problem of poor public attitude toward fire. The guidelines will not make value judgments on which course of action is the best, but they will help municipalities evaluate the efficiency and effectiveness of each option, and choose a course of action that suits its needs.

The guidelines will also serve as a tool for improving the overall efficiency and effectiveness of a municipality's fire protection system. If a municipality is generally satisfied with the overall level of protection it provides, the model can help it improve efficiency by demonstrating that there are alternatives which may cost less, while achieving a similar level of protection. For example, it may find that through effective public education, it can reduce the number of fire code violations that persist throughout the community. This may lead to a reduction in the cost of inspecting properties and prosecuting offenders.

The guidelines will also help municipalities to make adjustments to existing services to improve effectiveness and reduce costs. By thoroughly analyzing costs and benefits, municipalities can initiate new work assignments with confidence. For example, fire departments with full-time fire suppression staff can reduce the workload of the fire prevention division by conducting in-service fire safety inspections. Without objective tools for analyzing such innovations, those opposed can prevent change by appealing to public fears and misapprehensions.

The guidelines will also facilitate fire department reorganization and restructuring on a much broader scale. Many smaller municipalities focus almost exclusively on fire suppression. This is often based on limited availability of volunteers' time to carry out prevention activities. The guidelines will help municipalities to see areas where resources can be shared and services can be provided over broader geographic areas. Inter-municipal co-operation will ensure that effective fire prevention and public education are both viable and affordable.

Collectively, these measures can improve public fire safety while, at the same time, stabilizing or reducing costs.

The guidelines are designed to provide municipalities with a new way of thinking about public fire protection. It will encourage them to consider all aspects of fire safety and not just fire stations, fire trucks and firefighters. Each guideline will assist municipalities to apply the Comprehensive Model by expanding further on each concept, outlining decision-points and indicating the information they will require to analyze their options.

Municipalities will have the means to make objective choices about public fire protection, and implement significant changes with confidence.

## **Overall Strategy**

The guidelines represent one component of the strategy the Ministry is proposing for public fire protection in Ontario. This strategy includes:

- Clarifying municipal responsibility for local fire protection, while protecting the provincial interest in public fire safety.
- Removing remaining legislative barriers which forestall the restructuring and reorganization of municipal fire services.
- Facilitating a shift in focus which places priority on fire prevention and public education as opposed to fire suppression.
- Providing municipalities with decision-making tools to help them provide services according to their own needs and circumstances.
- Facilitating more active involvement of the private sector and other community groups in fire prevention and public education through the Fire Marshals Public Safety Council.

This strategy recognizes that municipalities, with the aid of appropriate tools and support, are fully capable of ensuring adequate fire protection for their communities.

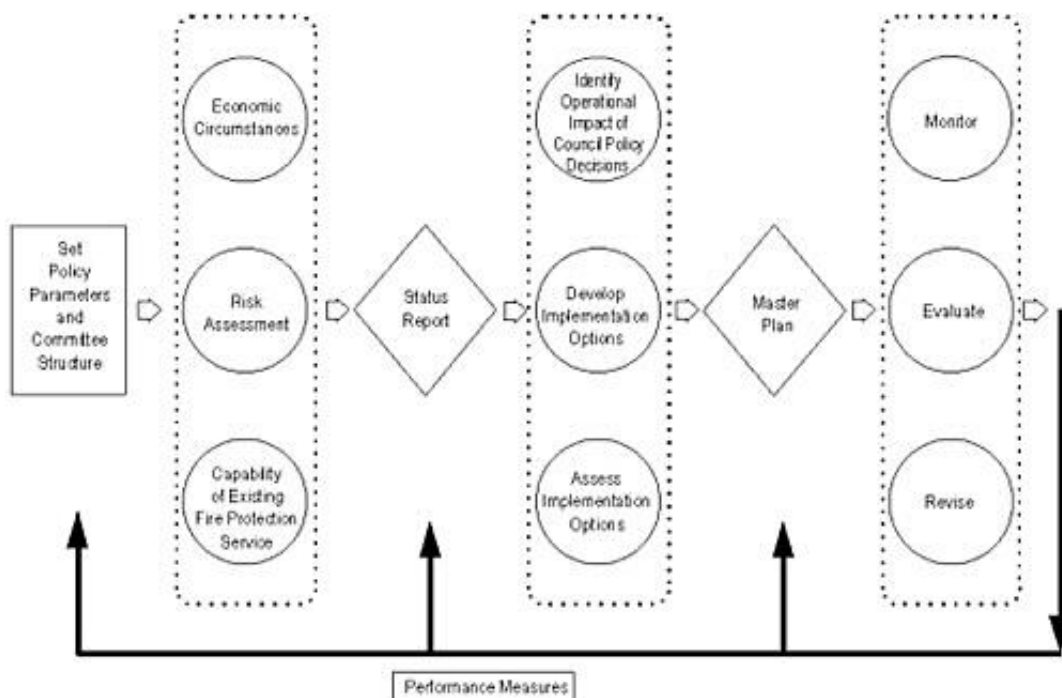
At the same time, this strategy recognizes that the provincial interest would not be met if the level of service provided by a municipality jeopardized public fire safety.

- The guidelines will provide the means for municipalities to make informed choices about public fire protection - responsible choices that will not compromise public safety.
- They are the foundation for measuring and determining adequate fire protection.
- Provincial regulatory authority would be exercised only where there was a clear and identifiable threat to public safety that a municipality or municipalities fail to address.
- Good guidelines, and responsible local government, will ensure that this authority need not be exercised.

## Application Options

The model - "Optimizing Public Fire Safety" is intended to be a companion to the guidelines. Its intended use is to provide consistency in application and to ensure all aspects are considered when applying the guidelines.

### *Optimizing Public Fire Safety*



APPENDIX C

PFSG 04-40-03 "Selection of Appropriate Fire  
Prevention Programs"

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Selection of Appropriate Fire Prevention Programs

### Public Fire Safety Guidelines

Subject Coding

**PFSG 04-40-03**

Section

Date

### Fire Prevention and Public Fire Safety Education

**March 2001**

Subject

Page

### Selection of Appropriate Fire Prevention Programs

#### Purpose:

To assist in developing or selecting programs to meet the four minimum fire prevention and public education requirements of the Fire Protection and Prevention Act.

#### Introduction:

Municipalities must develop a fire prevention and fire safety education program that addresses their needs and circumstances, as determined by the application of sound risk management principles.

#### Minimum Required Services:

Section 2. (1) of the Fire Protection and Prevention Act states:

(1) Every municipality shall,

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

Therefore, as a minimum acceptable model municipalities must provide the services listed below. The simplified risk assessment should identify the extent to which additional services may be required to meet the local needs and circumstances of specific municipalities.

Municipalities may develop a different model for fire prevention and public education services provided they are able to demonstrate that their model meets the mandated requirements of the community's local needs.

3. Simplified risk assessment
4. A smoke alarm program
5. Fire safety education material distributed to residents/occupants
6. Inspections upon complaint or when requested to assist with code compliance

#### Simplified Risk Assessment:

A simplified risk assessment must be done for the community to determine the needs and circumstances of the municipality and to establish the level of fire prevention and public fire safety education required. Any significant risks identified through the analysis should be addressed. For

example; if the risk assessment indicates a significant life or fire loss in multi-unit residential buildings, a program that will adequately improve their fire safety - such as routine inspections - would be appropriate to address the specific need of the community.

The scope and extent of the remaining three required programs can be determined by the results of the simplified risk assessment.

### **Smoke Alarm Program:**

The objective of a smoke alarm program is the provision and maintenance of working smoke alarms and home escape planning activities for all residential occupancies in the municipality. The activities associated with the program may include any combination of the following:

- community surveys
- distribution of pamphlets or other education material
- instruction to residents regarding smoke alarms
- providing smoke alarms at reduced or no cost
- installation of smoke alarms
- inspecting premises to determine compliance with the smoke alarm provisions of the Fire Code.

### **Fire Safety Material:**

Fire safety education material may be distributed to residents and/or occupants consistent with the community's needs and circumstances by any combination of the following activities:

- distribution of pamphlets or other education material
- public service announcements utilizing the available media
- instruction to residents/occupants on fire safety matters
- presentations to resident groups
- attendance at public events

Fire safety education material addresses such issues as preventing fire occurrence, the value of smoke alarms, planning escape from fire, and being prepared to deal with a fire incident. The OFM Regional Office can provide assistance with fire safety education material for the public. Fire safety education material may also be found on the OFM website.

### **Public Fire Safety Education:**

For public fire safety education, the following should be established:

- the audience to be targeted
- the message that needs to be delivered to improve the fire safety situation must be determined.
- an inventory of the available or required resources and programming.
- the most appropriate method of delivering the message.
- the duration or frequency of the message delivery.

### **Inspections:**

Inspections of properties must be done, or arranged for, by the municipality when:

- a complaint is received regarding the fire safety of a property
- a request is made to assist a property owner or occupant to comply with the Fire Code and the involvement of the Chief Fire Official is required by the Ontario Fire Code

Any inspection conducted must include notification of the property owner or responsible person and

appropriate follow-up with enforcement, if necessary.

### **Inspection Program Considerations:**

For inspections, the following factors should be considered:

- The type of inspections to be conducted and the buildings to be inspected. For example: routine inspections of all multi-unit residential buildings, new construction inspections of all buildings, smoke alarm checks of single family residential buildings.
- The methods of inspection appropriate for the circumstance. This will have implications for the amount of time required to inspect, as more comprehensive inspections require more time.
- The category of buildings being inspected and the skills and knowledge required to inspect them. The more complicated the building, the more skill and knowledge required.
- The frequency that the properties will be subject to inspection

### **Program Selection:**

In addition to the minimum services outlined above, programs need to be selected, developed and implemented that address any risks identified through needs analysis. Programs being considered need to be effective for the type of concerns identified. For example; a routine inspection program would be effective to address concerns for the fire safety of a group of buildings that demonstrate poor performance during fire incidents. Similarly, a public fire safety education program such as Older and Wiser would be effective where there is a lack of knowledge of fire safety behaviour by the elderly and this lack causes them to suffer significant fire losses.

Each area of program activity has a number of factors which need to be considered.

### **Service Delivery Options:**

The Fire Prevention Effectiveness Model may also assist with informed decision making about fire prevention and public education programs. Once the needs analysis component of the model has been completed, fire department managers can decide what programs are appropriate to address their identified local risks.

There are a number of options for delivery of selected fire prevention programs. They can be provided by fire department staff - personnel dedicated to fire prevention and/or fire suppression staff. Other persons in the community may be used. Agreements with other communities may be made for provision of services. The OFM provides assistance in delivery of fire prevention programs through the Assist Program.

### **Policy Requirements and Other Relevant Issues:**

Any selected/mandated programs must have sufficient resources, human and others, to be effectively delivered.

Persons assigned responsibility for delivering programs must be adequately trained.

Policy decisions must be made with appropriate authority and records made of the level of service decreed.

Appropriate program guidelines must be established for each program to be delivered.

Any fees for services should be discussed and decided upon at the policy level.

Legal counsel should be consulted regarding any changes to the delivery of services to the community.

### **Codes, Standards, and Best Practices:**

Codes, Standards and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at <http://www.mcscs.jus.gov.on.ca/>.  
[<http://www.mcscs.jus.gov.on.ca/>](http://www.mcscs.jus.gov.on.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.

See also PFSG

[01-02-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/01-02-01.html>](#) Comprehensive Fire Safety Effectiveness Model

[04-12-13](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-12-13.html>](#) Core Services

[04-40A-03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40a-03.html>](#) Simplified Risk Assessments

[04-40B-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40b-12.html>](#) Smoke Alarm Programs

[04-40C-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40c-12.html>](#) Public Education Programs

[04-40D-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40d-12.html>](#) Inspection Programs

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Selection of Appropriate Fire Prevention Programs

### Public Fire Safety Guidelines

Subject Coding

**PFSG 04-40-12**

Section

Date

### Fire Prevention and Public Fire Safety Education

**March 2001**

Subject

Page

### Selection of Appropriate Fire Prevention Programs

#### Purpose:

To assist fire service managers in identifying the minimum fire prevention and public education activities required to comply with the Fire Protection and Prevention Act

#### Introduction:

Municipalities must develop a fire prevention and fire safety education program that addresses their needs and circumstances.

#### Minimum Required Services:

Section 2. (1) of the Fire Protection and Prevention Act states:

(1) Every municipality shall,

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

Therefore, as a minimum acceptable model municipalities must provide the services listed below. The simplified risk assessment should identify the extent to which additional services may be required to meet the local needs and circumstances of specific municipalities.

Municipalities may develop a different model for fire prevention and public education services provided they are able to demonstrate that their model meets the mandated requirements of the community's local needs.

1. Simplified risk assessment
2. A smoke alarm program
3. Fire safety education material distributed to residents/occupants
4. Inspections upon complaint or when requested to assist with code compliance

#### Simplified Risk Assessment:

A simplified risk assessment must be done for the comm

unity to determine the needs and circumstances of the municipality and to establish the level of fire prevention and public fire safety education required. Any significant risks identified through the analysis should be addressed. For example; if the risk assessment indicates a significant life or fire loss in multi-unit residential buildings, a program that will adequately improve their fire safety - such as routine inspections - would be appropriate to address the specific need of the community .

The scope and extent of the remaining three required programs can be determined by the results of the simplified risk assessment.

#### **Smoke Alarm Program:**

The objective of a smoke alarm program is the provision and maintenance of working smoke alarms and home escape planning activities for all residential occupancies in the municipality. The activities associated with the program may include any combination of the following:

- community surveys
- distribution of pamphlets or other education material
- instruction to residents regarding smoke alarms
- providing smoke alarms at reduced or no cost
- installation of smoke alarms
- inspecting premises to determine compliance with the smoke alarm provisions of the Fire Code.

#### **Fire Safety Material:**

Fire safety education material may be distributed to residents and/or occupants consistent with the community's needs and circumstances by any combination of the following activities:

- distribution of pamphlets or other education material
- public service announcements utilizing the available media
- instruction to residents/occupants on fire safety matters
- presentations to resident groups
- attendance at public events

Fire safety education material addresses such issues as preventing fire occurrence, the value of smoke alarms, planning escape from fire, and being prepared to deal with a fire incident. The OFM Regional Office can provide assistance with fire safety education material for the public. Fire safety education material may also be found on the OFM website.

#### **Inspections:**

Inspections of properties must be done, or arranged for, by the municipality when:

- a complaint is received regarding the fire safety of a property
- a request is made to assist a property owner or occupant to comply with the Fire Code and the involvement of the Chief Fire Official is required by the Ontario Fire Code

Any inspection conducted must include notification of the property owner or responsible person and appropriate follow-up with enforcement, if necessary.

#### **Codes, Standards, and Best Practices:**

Codes, Standards and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at <http://www.mcscs.jus.gov.on.ca/>.

[<http://www.mcscs.jus.gov.on.ca/>](http://www.mcscs.jus.gov.on.ca/) Please ree rree 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.

See also PFSG

01-02-01 Comprehensive Fire Safety Effectiveness Model

[04-12-13](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-12-13.html>](#) Core Services

[04-40A-03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40a-03.html>](#) Simplified Risk Assessments

[04-40B-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40b-12.html>](#) Smoke Alarm Programs

[04-40C-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40c-12.html>](#) Public Fire Safety Education Materials

[04-40D-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40d-12.html>](#) Inspections Upon Request or Complaint

APPENDIX D

PFSG 04-08-10 "Operational Planning: An Official Guide  
to Matching Resource Deployment and Risk"

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Operational Planning: An Official Guide to Matching Resource Deployment and Risk

### Public Fire Safety Guidelines

Subject Coding

**PFSG 04-  
08-10**

Section

Date

### Emergency Response

**January  
2011**

## Operational Planning: An Official Guide to Matching Resource Deployment and Risk

### 1.0 Purpose

1.1 Municipalities are responsible for the funding and delivery of fire protection services in accordance with Section 2 of the *Fire Protection and Prevention Act, 1997* (FPPA).

In order to meet the intent of Section 2 of the FPPA, municipalities are expected to implement a risk management program.

The evaluation tool ***Operational Planning: An Official Guide to Matching Resource Deployment and Risk***, found in the Appendix, is to be used as part of a risk management program. The purpose of this guideline is to encourage municipalities and fire departments to use this tool so that they can make informed decisions regarding the delivery of fire suppression services.

### 2.0 Scope

2.1 This guideline applies to all municipalities.

### 3.0 Risk Management

3.1 In order to be in compliance with clause 2.(1)(a) of the FPPA, a fire department must have completed a simplified risk assessment, one of the four key minimum requirements for fire protection services. It is expected that this assessment be reviewed and updated periodically to support informed decision making and evaluation of program delivery.

### 4.0 Legislation

4.1 This guideline is issued under the authority of clause 9.(1)(d) of the FPPA.

4.2 Municipal Council, obligated by the FPPA to provide fire protection services, must

- establish levels of service commensurate with needs and circumstances; and

- provide fiscal resources for staffing, apparatus and equipment to support the established level of service.

#### 4.3 Fire Chief

Person appointed by the council of a municipality, responsible for the delivery of fire protection services, and accountable to the council.

#### 4.4 Fire Department

The fire department delivers the services as approved by municipal council and at the direction of the fire chief.

*Operational Planning: An Official Guide to Matching Resource Deployment and Risk* can help fire departments to

- assess and analyze fire risk;
- determine current capabilities: staffing, apparatus, equipment, etc.;
- find gaps; and
- work out options, develop recommendations and present them to municipal council using a standardized format.

#### 4.5 Clause 2.(1)(b)

Every municipality shall provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances

#### 4.6 Subsection 2.(7)

The Fire Marshal may monitor and review the fire protection services provided by municipalities to ensure that municipalities have met their responsibilities under this section and, if the Fire Marshal is of the opinion that, as a result of a municipality failing to comply with its responsibilities under subsection (1), a serious threat to public safety exists in the municipality, he or she may make recommendations to the council of the municipality with respect to possible measures the municipality may take to remedy or reduce the threat to public safety

#### 4.7 Subsection 5.(1)

A fire department shall provide fire suppression services and may provide other fire protection services in a municipality, group of municipalities or in territory without municipal organization.

#### 4.8 Clause 9.(1)(a)

The Fire Marshal has the power to monitor, review and advise municipalities respecting the provision of fire protection services and to make recommendations to municipal councils for improving the efficiency and effectiveness of those services.

#### 4.9 Clause 9.(2)(b)

It is the duty of the Fire Marshal to advise municipalities in the interpretation and enforcement of this Act and the regulations.

#### 4.10 Clause 9.(2)(d)

It is the duty of the Fire Marshal to develop training programs and evaluation systems for persons involved in the provision of fire protection services and to provide programs to improve practices

relating to fire protection services.

## 5.0 References

OFM documents, programs and courses

- Comprehensive Fire Safety Effectiveness Model
- Public Fire Safety Guidelines
- Shaping Fire Safe Communities – Phases 1 and 2
- Essentials for Municipal Decision Makers [course]
- Essentials for Fire Service Leaders [course]

National Fire Protection Association standards

- NFPA 1710 and NFPA 1720

## 6.0 Appendix

Evaluation tool:

*Operational Planning: An Official Guide to Matching Resource Deployment and Risk.*

### Workbook

[PDF version](#)

[<../../../../stellent/groups/public/@mcscs/@www/@ofm/documents/webasset/ecofm001395.pdf>](file:///C:/stellent/groups/public/@mcscs/@www/@ofm/documents/webasset/ecofm001395.pdf)

[HTML version](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-08-10at1.html>](file:///C:/english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-08-10at1.html)

APPENDIX E

PFSG 01-02-01 "Comprehensive Fire Safety Effectiveness  
Model (CFSEM)"

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Comprehensive Fire Safety Effectiveness Model Considerations

### Public Fire Safety Guidelines

Subject Coding

**PFSG 01-02-01**

Section

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**General**

**January 1998**

Subject

Page

### Comprehensive Fire Safety Effectiveness Model Considerations

### Comprehensive Fire Safety Effectiveness Model Considerations For Fire Protection & Prevention In Your Community



### Fire Protection & Prevention In Your Community

Every day, local elected leaders, managers and fire chiefs are faced with decisions relating to the provision of fire and other related emergency services for their community. Now, more than ever there are constant pressures of doing "more with less". Many government officials are hard-pressed to justify any increase in expenditures unless they can be attributed directly to improved or expanded service delivery in the community. This effort has often been hampered by the lack of criteria by which a community can determine the level and quality of fire and other related emergency services it provides to its residents. The *Comprehensive Fire Safety Effectiveness Model* is a document which can assist communities in evaluating their level of fire safety.

The provision of fire protection in Ontario is a municipal responsibility. The level and amount of fire protection provided is determined by the residents of the community through decisions made by and support provided by the local municipal council. Due to a wide variety of factors, the Ontario fire service finds itself in a period of change. Increased community expectations coupled with

reduced financial resources are forcing all communities to critically assess their fire protection needs and to develop new and innovative ways of providing the most cost effective level of service. A refocus on fire protection priorities is providing progressive fire departments and communities throughout Ontario with an exciting opportunity to enhance community fire safety. There is more to providing fire protection than trucks, stations, firefighters and equipment.

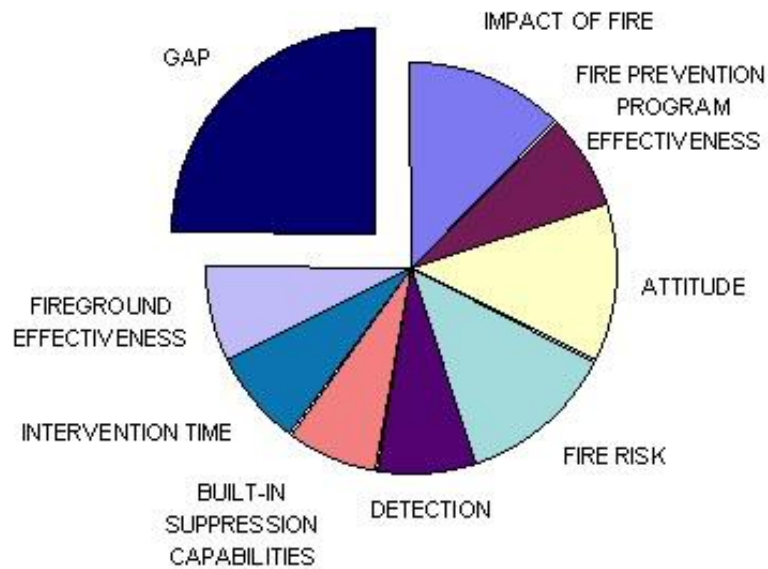
The Office of the Fire Marshal has developed the *Comprehensive Fire Safety Effectiveness Model* which can be used as a basis for evaluating fire safety effectiveness in your community. This model looks at community fire protection as the sum of eight key components, all of which impact on the fire safety of the community. Deficiencies in one of the components can be offset by enhancements in another component or components.

### Community Master Fire Protection Plan

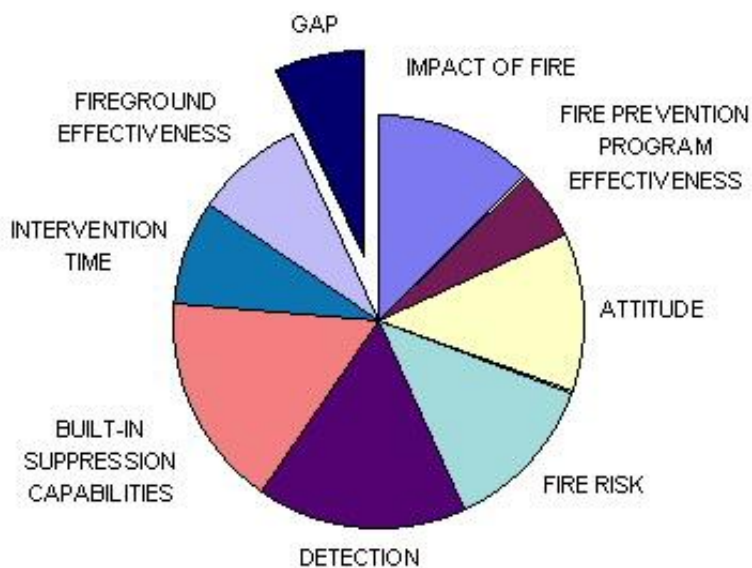
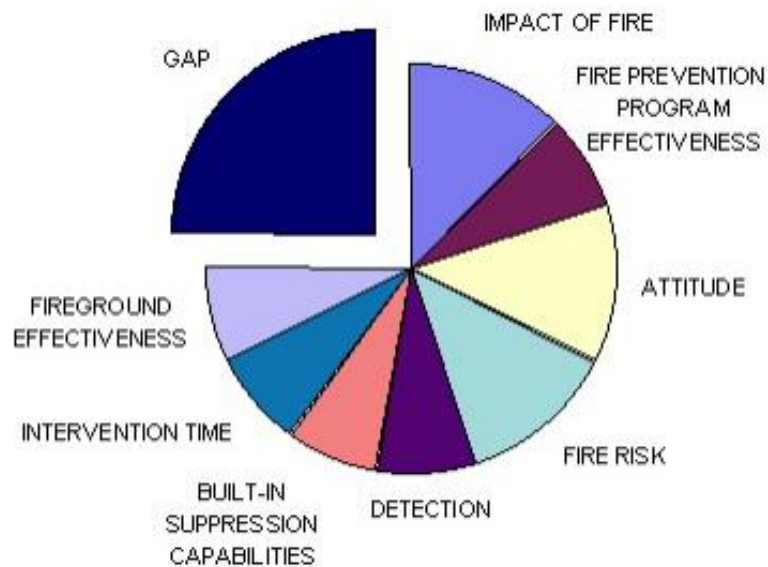
Every fire department should be guided by a master or strategic plan. This *Community Master Fire Protection Plan* traditionally focused on the identification of fire hazards and planning an appropriate suppression force response. Today, hazard or risk assessment has expanded well beyond the fire problem in the community to include emergency medical incidents, hazardous materials incidents and many other emergency situations. Paradigms are being shifted to emphasize the concept of fire prevention and control systems as communities attempt to effectively reduce losses experienced. This document should include plans for human resources and program financial support as well as the many external influences that impact on the fire service. The information contained with the *Community Master Fire Protection Plan* should provide a clear and concise overview of the most recently adopted organizational goals and objectives, budgetary commitments, mission statements and assessments of organizational activity. The document should cover a long range planning period of five to ten years.



This chart shows each of the factors which make up the comprehensive model. Although the chart is divided equally, each factor will in reality contribute differently to the total level of protection provided to a community.



This chart shows how the comprehensive model can be applied to a typical fire department. The "gap" depicts the difference between the existing level of protection and the ideal.



This chart shows how the "gap" can be reduced by

strengthening a number of factors in order to increase the overall level of protection provided to the community.

It is critical that the fire department be guided by a written philosophy, general goals and specific objectives which are consistent with the legal mission of the department and are appropriate for the community it serves. These should all be integral components of the Community Master Fire Protection Plan.

Application of the Comprehensive Fire Safety Effectiveness Model will enable municipalities to make informed choices by providing an objective and innovative approach to public fire protection - a new way of thinking. Communities are able to determine if the level of service provided matches the risk in the community.

### **1. Impact Of Fire:**

The impact of fire in any community can be significant with far reaching consequences. Not only do fires result in deaths and personal injuries but they also cause substantial property and environmental loss. Often overlooked are factors such as the historical value of unique local properties as well as the potential for lost tax assessment. There are many communities in Ontario where the loss of a particular occupancy will have a serious impact on the local economy. Involvement in fire often has a negative psychological impact on those affected.

Every community should carefully assess the total impact of fire. This assessment should be used as a basis for a Community Master Fire Protection Plan that addresses all areas of community fire safety including fire prevention and life safety as well as the delivery of suppression and rescue services.

- Does your community have a property whose loss would result in a significant financial burden to the community?
- Does your community have a property whose loss would result in a significant impact of local employment?
- Does your community have a property which if involved in fire would pose a significant environment risk?
- Does the master fire protection plan adequately consider the impact of a major fire?

### **2. Fire Prevention Program Effectiveness:**

- Perhaps the most important component of and community's fire protection services is the effectiveness of it's fire prevention program. Legislation, regulations and standards pertaining to fire safety focus primarily on fire prevention. Enforcement of these codes is one of the most effective ways of reducing the loss of life and property due to fire. In addition, public fire safety education programs have the potential to substantially reduce the loss of life and property due to fire.

Every community should strive to provide an adequate, effective and efficient program directed toward fire prevention, life safety, risk reduction of hazards, the detection, reporting of fire and other emergencies, the provision of occupant safety and exiting and the provisions for first aid firefighting equipment.

- Does your community have a fire prevention and public education policy that adequately

addresses:

- inspections?
  - public education?
  - code enforcement?
  - investigation?
- 
- Does your community provide inspections upon request?
  - Does the fire department respond to complaints?
  - Does your community's fire prevention program address public life safety in structures from pre-construction planning until demolition through application of the Building Code and Fire Code?

### 3. **Public Attitude:**

North Americans tend to be more complacent about fires and the resulting losses than other parts of the industrialized world. Communities often accept the consequences of fire and provide community support. Comprehensive insurance packages are available to mitigate damages.

Communities need to assess the resident's attitudes toward fire to determine what role it plays in determining the extent of fire losses. Properly designed public fire safety education programs will significantly improve public attitudes toward the prevention of fire. This will result in lower fire losses.

Every community should assess public attitudes toward fire and life safety issues. This assessment should be used to develop and deliver public fire safety education programs to enhance community fire safety.

- Do the residents of your community demonstrate an interest in public fire safety?
- Is there a general awareness of fire safety in your community?
- Is there a sense of personal responsibility for one's own safety within the community?

### 4. **Fire Risk:**

The characteristics of your community affect the level of fire risk that needs to be protected against. Older buildings pose a different set of problems than newer buildings constructed to current construction codes. High rise, commercial and industrial occupancies each present unique factors which must be considered. Construction, occupancy type, water supply, exposure risks, furnishings and the risk which the combination of these factors pose to the occupants must be assessed. The presence of effective built-in suppression and/or protection measures can reduce the fire risk.

36% of all structural fire alarms and 46% of all structural fire deaths in Ontario during the period 1990-1994 occurred in single family, detached, residential occupancies.

Every community should carefully assess its fire risk. The results of this risk assessment should be used as a basis for determining the level, type and amount of fire protection provided and should be a critical factor in the development of the community master fire protection plan.

- Has your community assessed the fire risk?
- Does your community have a master fire protection plan which takes into account the results of your fire risk analysis?
- Has the fire department identified all the possible actions it could take to reduce the number of fire incidents that occur in the community?
- Does your community planning process consider the impact of new developments and industries

on the fire department?

## 5. **Detection Capabilities:**

The presence of early warning detection capabilities notifies occupants and allows them sufficient time to escape. It also allows for earlier notification of the fire department. Communities who encourage the widespread use of early warning detection systems have the potential of significantly reducing notification time, which, when coupled with effective fire department suppression, results in a corresponding reduction of loss of life, injuries and damage to property from fire.

Every community should develop and implement programs that promote the use of early warning detection systems in all occupancies. These programs should be a fire protection priority.

- Does your community have a program to ensure that all occupancies are provided with adequate early warning detection devices?
- Does your community have a program to ensure that residents are familiar with the importance and proper maintenance of early warning detection devices?
- Does your community promote the use of direct connect early warning detection devices in residential as well as commercial, industrial and assembly occupancies.

## 6. **Built-In Suppression Capabilities:**

Traditionally, the use of built-in suppression has been limited to fixed fire protection systems associated with assembly, commercial, industrial and manufacturing occupancies. Application of this concept has been limited in the residential environment. These systems, particularly the use of automatic sprinkler systems play an important role in minimizing the effects of fire by controlling its spread and growth. This enables the fire department to extinguish the fire more quickly and easily.

Although effective in newer buildings, it is often difficult if not impossible to provide for built-in suppression systems that effectively control fires in wall cavities and concealed spaces associated with certain older types of construction or reconstruction.

The use of built-in suppression systems should be a fire safety priority in all communities. Programs should be developed and delivered that promote the advantages of built-in suppression systems for residential, commercial, industrial and assembly occupancies.

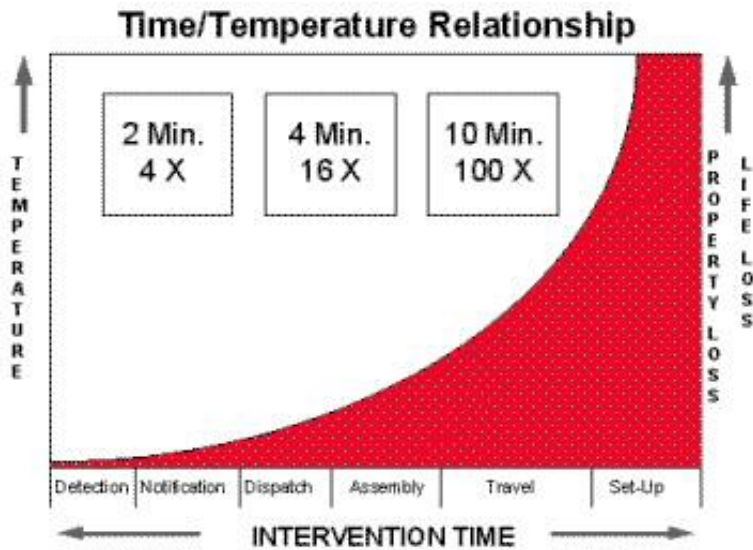
- Does your community promote the use of built-in suppression devices in all types of occupancies
  - residential?
  - commercial?
  - industrial?
  - assembly?
  - institutional?
- Does your community consider built-in suppression devices and early warning detection as an alternative to traditional concepts of fire protection?

## 7. **Intervention Time:**

This is the time from ignition until effective firefighting streams can be applied to the fire. There are many factors influencing this component of the model:

- the time required to detect the fire
- notification time from the public
- notification time to the firefighters
- preparation time for the firefighters to leave the station
- the distance between the fire station and the response location
- the layout of the community
- impediments such as weather, construction, traffic jams, lack of roads, etc.
- set-up time

Fire department intervention time is crucial in determining the consequences of a fire in terms of deaths, injuries and loss of property and damage to the environment. Effective fire prevention and public education programs can reduce intervention time which will result in increased fire department effectiveness.



Every community should develop and implement a range of programs and initiatives that reduce intervention time. These programs and initiatives should address all aspects of intervention time from the time required to detect the fire to the set-up time of the fire department.

- Are all occupancies in your community equipped with suitable smoke alarms and provided with fire emergency escape plans?
- Do all residents in your community know how to report a fire or other emergency?
- Does your community have a common fire emergency reporting number?
- Is the fire department dispatched by an appropriate dispatch facility?
- Does the community's master fire protection plan consider the different turn-out times for volunteer and/or full-time firefighters?
- Has the department instituted an appropriate fire department training and education program?
- Are all structures within the community clearly identified using an accepted numbering system?
- Has the department instituted a policy of having the closest fire department respond even though that fire department may be from another municipality?

## **8. Fireground Effectiveness:**

The fireground effectiveness of the fire department has a wide range of benefits for your community. Not only does the fire department's performance affect the degree of damage to the environment and property, it also has a direct relationship to personal injury and death from fire. Many factors influence the effectiveness of any fire department. Included in these factors are:

- fire department organization
- community support of fire department
- firefighter availability
- firefighter and fire officer training
- adequate resources which are properly maintained
- time effective response to emergency incidents

The fire department should strive to provide an adequate, effective and efficient fire suppression program designed to control/extinguish fires for the purpose of protecting people from injury, death or property loss.

- Does your fire department have a comprehensive training program and evaluation system for all positions?
- Does the fire department have a system to ensure that an adequate number of trained personnel respond to all emergencies within a reasonable time period?
- Is your fire department provided with adequate resources to safely and effectively handle the risks it will be called upon to mitigate?
- Does the fire department use standard operating guidelines to define expected fire department actions for the wide variety of situations it might encounter?
- Does your fire department have automatic response agreements to guarantee an adequate level of personnel at all times?

The answers to the questions in this document will provide you with some indication of the level of fire safety in your community, however this is only the start. Application of the OFM Comprehensive Fire Safety Effectiveness Model will permit you to develop a plan for the safe, effective and economical delivery of fire protection services in your community.

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Further assistance is available from your local OFM representative

APPENDIX F

PFSG 01-01-01 "Fire Protection Review Process"

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Fire Protection Review Process

### Public Fire Safety Guidelines

Subject Coding

**PFSG 01-01-01**

Section

Date

**General**

**January 1998**

Subject

Page

### Fire Protection Review Process

#### Purpose

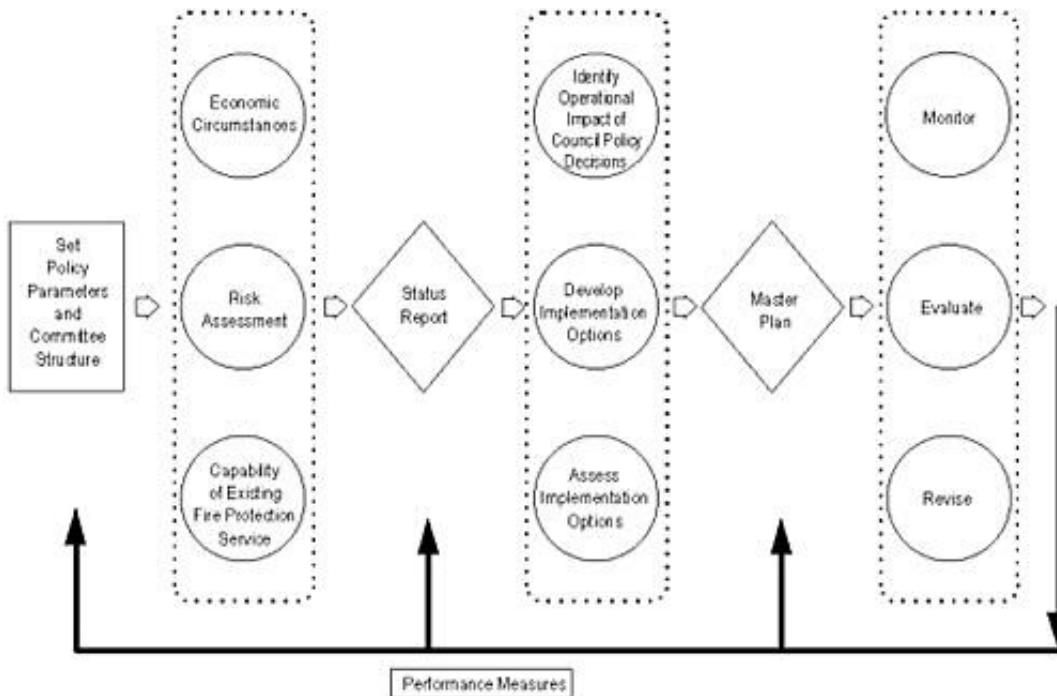
To provide a description of a simple and practicable system to enable decision makers to make informed choices.

It ensures formal interaction between council with its policy setting responsibilities, the municipality with its corporate management objectives, and the fire department with its operational expertise.

#### Introduction

- The overall objective of any fire protection program is to provide the optimum level of protection to the community, in keeping with local needs and circumstances.
- Extensive research has demonstrated that there are a variety of factors that will have an impact on the fire department's capacity to fulfil this objective.
- Conversely, there are many different options that a municipality may pursue to improve the efficiency and effectiveness of its fire protection system.
- Local circumstances will have a profound effect on which factors are most important for any one municipality, and what options are available for its fire protection system.
- Selecting among these options is an extremely complex task.
- Success will require a combination of specialized expertise in fire protection, and a thorough appreciation of your municipality's economic, social and political circumstances.

# Optimizing Public Fire Safety



## Overview

Stage 1: Set Policy Parameters

Stage 2: Determine Local Circumstances

Stage 3: Status Report

Stage 4: Determine Fire Protection Strategy

Stage 5: Develop Master Fire Plan

Stage 6: Monitor, Evaluate and Revise

Stage 7: Performance Measures

- Every municipality operates under a specific set of policy parameters -- basic tenets that define the role of the municipal government in the community.
- In essence, it is the political philosophy of the municipality.
- These parameters reflect the culture of the local community and will have a profound impact on the fire protection strategy that you develop.
- Policy parameters include, for example:
  - *Public Expectations* -- does the public expect the municipality to address its needs or is there a fairly high level of personal self reliance?
  - *Service Delivery Strategy* -- how open is your community to alternate forms of service delivery and financing such as out-sourcing or fee-for-service?
  - *Level of Satisfaction* -- are you satisfied with the level of fire protection in your community, and the efficiency and effectiveness of the fire protection system?
  - *Funding Policies* -- what impacts do your funding policies and practices have on the services you deliver? How do you account for capital expenditures? Are you prepared to issue debentures?

- *Competing Priorities* -- what priority does public fire safety have in your community in comparison to the other services that you provide?
- *Receptiveness to Change* -- does the public recognize the need for change, and would they accept the implications of such change?
- It is extremely important that you work through these questions from a fire protection perspective, and that you include all of the key participants in the process.
- It need not be an excessively formal process, but everyone involved in the review should have an opportunity to discuss the broader context within which the fire department must operate.
- The results of this discussion should be reflected in the "terms of reference" for the review.
- It will help to ensure that the review remains focused.

It will also encourage participants to be open to innovations, and conversely, it will help to ensure that staff involved in the review do not spend unnecessary time and resources analyzing options that are not viable.

## **Stage 2:**

### **Analyse Local Circumstances**

Separate guidelines are available that address each of the three main issues that define the local circumstances of a municipality:

- Assessing Economic Circumstances from a Fire Protection Perspective (PFSG 02-03-01)
- Assessing Fire Risk (PFSG 02-02-12)
- Assessing the Existing Fire Protection Services (PFSG 02-04-01)

The following is an overview of the issues that these three guidelines address.

#### **Economic Circumstances**

- What are your expectations for economic growth?
- How much development do you expect to occur?
- What type of development do you expect?
- How is your population changing? (Demographics)
- If the fire department receives the bulk of its financing from the tax base;
  - is the tax base increasing, shrinking, or relatively steady?
  - is the tax base shifting?
- Describe the assessment
- A review of your economic circumstances should involve more than just an assessment of future demand and available resources:
- A growing community creates new demand for emergency services, but the type of growth you are experiencing may require a very different kind of response. For example, growth resulting from an in-migration of newly retired residents will create very different demands than growth resulting from the recovery of the local resource industry.
- There are many more ways in which your fire protection system can address new residential development than there are for older neighbourhoods. An initial investment in sprinkler and/or detection systems when new developments are being planned can reduce the need for new fire stations in the future.

- Economic development and expansion may have a significant impact on the availability of resources for fire protection. It tends to be easier to attract volunteers in a self-contained community than in a similar-sized area that serves as a bedroom community for a large city. Is the make-up of your community changing?
- This stage of the review is the first opportunity for you to co-ordinate your planning strategy with your fire protection strategy. Accordingly, it is very important for both fire and planning officials to work closely together on this aspect of the review, perhaps by way of a sub-committee

## Fire Risk

The Fire Risk in your community is a function of:

- *Potential for Loss*, which depends on the extent to which buildings comply with relevant fire and building codes, how buildings are used, the public's attitude toward fire, and the use of special measures such as automatic detection and/or suppression systems.
- *Consequences of Fire*, such as the effect of a fire at a major industry on local employment, assessment and economic activity. This also includes social impacts resulting from the loss of an historic or recreational facility, or the impact of fire on a sensitive environmental area.
- *Local Infrastructure*, such as water supply, communications, the quality of roads, and physical barriers such as rivers or railroads.
- *Building Stock*, including the age of buildings, the density and type of construction, their height, and the mix of commercial, industrial and residential uses.
- Since there are so many factors that affect fire risk, it tends to vary considerably from location to location. In fact, fire risk in one part of a municipality will often be very different from in another, particularly in rural areas. Accordingly, there is no need for the fire department to provide a uniform level of service throughout the municipality. The service you provide should be tailored to the risks faced.

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 good risk assessment will ensure that such comparisons are valid. By providing a valid basis for comparison, a good risk assessment can also provide confidence that innovations introduced elsewhere can be successfully applied in your municipality.

## Existing Fire Protection System

- Examining the existing fire protection system is perhaps the most time consuming component of the assessment process. The objective is to obtain a clear picture of the nature of the fire protection system as it exists today. The following broad areas should be examined:

*Role and Mandate* -- What range and scope of services is the department expected to provide (fire suppression, rescue, hazmat, etc)? How does it relate to neighbouring fire departments (mutual-aid, automatic aid)? How does it relate to other sections of the municipality?

*Structure and Organization* -- What type of department is it (full-time, composite, volunteer)? What is its total staff, facilities, apparatus and equipment? How many layers of management?

*Services and Support* -- Briefly describe the services provided by the various functional sections of the fire department and describe the support mechanisms for these services.

*Emergency Operations* -- Describe the types and extent of emergency operations conducted by the

fire department and include such things as incident command systems and operational support.

Financial & Resource Analysis -- Describe in detail the funding, budgeting and resource allocation of the fire department, including the individual functional divisions.

Fire Protection and Prevention Act - indicate whether or not the department/municipality is in compliance with this Act.

### **Stage 3:**

#### **Status Report**

- The purpose of this stage is to assist in the preparation of a report to council outlining the findings of the analysis of the following:
  - economic circumstances
  - risk assessment
  - capabilities of existing fire protection service
- The report will include details of the existing circumstances
- The report will also include and identify strengths, limitations, threats and opportunities respecting the existing fire protection services.
- The purpose of the report is also to elicit the expectations of the decision makers, and confirm their commitment to proceeding to the master planning process.

### **Stage 4:**

#### **Determine Fire Protection Strategy**

- This stage of the process involves a review team assisting council in making a determination of the future fire protection strategy.
- The procedure involves analyzing economic circumstances, risk assessment and the capabilities of the existing fire protection service (including core services). This is accomplished in three levels, as follows:
  - council considerations
  - administrative considerations
  - fire department considerations
- Your review should consider, and perhaps emphasize the need for residents, industry and others to accept increased responsibility for the improvement of public safety.
- The review must look beyond the fire department's fire fighting capability in fulfilling its responsibility to provide for public safety.
- Today's economic conditions - evidenced by reduced budgets, revenues, hiring freezes, reductions in staffing levels through attrition or otherwise, delayed apparatus and equipment purchases - forces the making of hard decisions about the resources required for local fire protection.
- Options and alternatives are therefore essential. For example, it may be considered appropriate to re-focus on developing fire prevention and public education programs rather than expanding fire fighting forces, or consider resources in surrounding communities and how those resources might be utilized to meet your needs.
- Determining the future fire protection strategy of your municipality is accomplished by way of

providing options for the consideration of council.

- For this process to be successful, it is imperative that there be full and open consultation with all of the stakeholders.
- Stakeholders are the people and organizations with an interest in the fire service, including:
  - fire department staff and management
  - municipal staff and management
  - municipal administrators
  - council
  - residents
  - business
  - industry
  - planning and co-ordinating agencies and organizations
  - provincial government ministries
  - county/district/regional organizations
  - other municipalities
- Schematic diagram of the model: Optimizing Public Fire Safety highlighting Stage 3.
  - police
  - ambulance
- other umbrella organizations:
  - firefighter associations (full time and volunteer)
  - AMO
  - OAFB
  - CAFC
- Consultation with stakeholders during the development, assessment and operational impact of various options is necessary for three reasons.
- First the review team will obtain expert advice on key elements of the various options.

Obtaining expert advice from all stakeholders ensures that all parties to the process:

- fully appreciate why the process is being carried out
- clearly understand the strategy, initiative or option that will be evaluated
- participate in identifying potential evaluation questions or issues, and
- help shape the options
- Second, it will help ensure a surprise-free environment for all parties to the review process.

Ensuring a surprise-free environment is necessary for the review team facilitator(s) to create a receptive, productive environment for the option evaluation process. Except in extremely rare cases, stakeholders should be aware of the option evaluation process. Nothing is more damaging to such a process than to spring it on stakeholders. They will usually react suspiciously and defensively, see the process as an intrusion, find fault with it, and actively lobby to circumvent its recommendations.

- Finally, the stakeholders will use the consultation as an opportunity to market the various options.

Marketing the various options and their potential is essential if it is expected that they will lead to program or service changes, particularly significant ones. Change is not an event, but a process, and usually a slow process, and conditions generally need to be cultivated. Like a building, the

foundation for change needs to be laid well in advance of its construction. Stakeholders must accept the need to change before it can occur. For the review team and its facilitator(s), creating this comfort level is an essential ingredient of success.

- The review team and facilitator(s) usually consult with the stakeholders through established committees. Primary discussions between the facilitators and the stakeholders are usually conducted on an individual basis, with the committee acting as a clearinghouse. Facilitators, who almost always shun formal committees and attempt to consult by **only** using individual or team interviews, enjoy limited success. While individual consultation may provide a more direct and confidential input into the process, this practice has drawbacks. It often results in stakeholders seeing the process as the product and possession of the facilitator. Stakeholders often feel that they have not participated fully and equally in planning the study. And, there is the chance they can complain that the facilitators have filtered their concerns
- This review process will result in alternatives for your existing fire protection services, and options and considerations for council's vision of the future of the fire service.
- All options will be prioritized, assessed, costed where appropriate and clearly indicate the operational impact.
- Then council will be in a position to make better informed decisions for creation of your master fire plan.

## Stage 5:

### Develop Master Fire Protection Plan

- Master fire plans, properly introduced, are a valuable tool in identifying management options for providing desired fire protection levels to a community. Ultimately, a good plan will lead to a more fire safe community.
- A master plan, pared to its essentials, presents the programs or projects, the costs, and the schedules for developing and maintaining the fire protection system that has been accepted and approved by council on behalf of the community, based on a price which the public can afford.
- Master planning itself is not a new concept. Many municipalities are involved in the process with varying degrees of success.
- Master planning for fire protection allows each community to determine the best allocation of resources to achieve an acceptable level of fire protection.
- An appropriate plan can only be developed under the following conditions.
- Schematic diagram of the model: Optimizing Public Fire Safety highlighting Stage 5.
- The plan forms the basis for the fire protection budget, through identification and description of time-phased programs and projects to be implemented throughout the planning period.
- The plan considers the following factors.
  - The current and future fire protection environment by establishing and maintaining a comprehensive data base.
  - The acceptable life and property risks by setting goals and objectives.
  - The fire protection system that provides the level of service commensurate with the level of accepted risk.
  - The funding required to implement the plan.

- The assignment of authority and responsibility.
- The procedures for carrying out and updating the plan.
- The master fire plan defines the community fire problem and provides the future direction of the delivery of fire protection services.
- The plan will require continuous updating to provide a current picture of the needs of the community.
- There are several benefits to developing a master fire plan.
- Supports the risk management program by identifying programs and levels of service.
- Improves public relations and promotes interest and direct involvement within the community.
- Sets standards of service the fire department is capable of providing.
- Potentially decreases costs, for fire protection and/or insurance coverage.
- Contributes to a reduction in the number of fires, fire deaths, fire injuries and property loss.
- Makes best use of available resources.

Defines by policy of council the types, level and quality of fire protection services to be provided to the community.

## Stage 6:

### Monitor, Evaluate & Revise

#### Introduction:

This stage of the municipal fire protection review process involves three parts:

- Monitor
- Evaluate
- Revise
- Just as the type and level of fire services provided are a municipal responsibility, so are the evaluation, monitoring and revision of such services a municipal responsibility.
- They **may**, however, be subject to outside scrutiny.

#### Objectives:

- The objectives of the municipality, as mirrored in the fire department master plan, are the starting point for any evaluation.
- These objectives should be consistent with the review process mission statement and express what the process is to accomplish.
- The objectives should be both specific and measurable.

#### Activities:

- The activities are the operational aspects of the identified objectives.
- Activities should be logically related to objectives.
- **Immediate Outcomes** are the effects that are expected to occur as a direct result of activities. These outcomes may include changes that affect people or processes. For example, an immediate outcome might be the improved delivery of a specific service.
- **Ultimate Outcomes** include the larger societal level changes that are expected from the activities. An example would be an expected improvement in compliance with the Fire Code.

Ultimate outcomes are often dependant on immediate outcomes. In this example, success might be dependent on providing an appropriate public education program.

### Monitor:

- Notwithstanding it is considered prudent for municipalities to monitor programs, services and activities, the Fire Protection and Prevention Act includes the following:
- **PART II (7)** "The Fire Marshal may monitor and review the fire protection services provided by municipalities to ensure that municipalities have met their responsibilities under this section and, if the Fire Marshal is of the opinion that, as a result of a municipality failing to comply with its responsibilities under subsection (1), a serious threat to public safety exists in the municipality, he or she may make recommendations to the council of the municipality with respect to possible measures the municipality may take to remedy or reduce the threat to public safety." and,
- **PART III FIRE MARSHAL 9.** (1) The Fire Marshal has the power, (a) to monitor, review and advise municipalities respecting the provision of fire protection services and to make recommendations to municipal councils for improving the efficiency and effectiveness of the services."
- Program monitoring is a systematic attempt to measure both of the following:
  - a. program effectiveness -- are the programs and services reaching their intended marks?, and
    - Program delivery -- does the service being provided match what was intended to be delivered? Program monitoring need not always be complicated and complex, as it often can be as simple as keeping track of the activities involved
    - Program monitoring concentrates on program service outputs rather than program outcomes

### Evaluate:

- Programs adopted and implemented through the master fire plan should have built-in evaluation procedures
- Evaluations are not simply the responsibility of municipal politicians and or administrators, but additionally, is an administrative function of the fire department.

### Internal Evaluators

- as employees of the fire department, internal evaluators have intimate knowledge of the department's policies, procedures, politics and people
- they know both the formal and informal channels for communicating and accomplishing tasks.
- this knowledge permits them to select methods that fit the unique situation of the department
- internal evaluators long term commitment to the fire department can lend credibility to their efforts and help forge positive working relationships with managers and staff
- they can build trust over time that helps reduce the anxiety normally associated with evaluation activities
- because they are employees, internal evaluators are available as an on going corporate resource
- this puts internal evaluators in an excellent position to communicate relevant information in a timely fashion
- it also permits internal evaluators to participate actively in long-range planning by making crucial evaluative information available for strategic planning and policy decisions
- it affords internal evaluators the opportunity to consult with and provide information to various

management levels within the organization, enabling them to enhance the utilization of evaluation information

- internal evaluators are often responsible for correcting problems and advocating change rather than only identifying difficulties and making recommendations
- the focus of internal evaluation often includes not only program outcomes and processes, but also the factors that influence program performance, such as structure, operations and management
- the use of internal evaluators, some of whom could conceivably be part of the problem, then can become part of the solution

## External Evaluators

- are usually perceived as being more objective because they are not fire department employees and are therefore not subject to all of the pressures of organizational life
- Internal evaluators now often work in partnership with external evaluators to obtain the external evaluators' specialized skill and objectivity while retaining the internal evaluators' knowledge of the department
- All evaluators, whether internal or external, have their biases.

## Revise:

- Consider the benefits and results of the foregoing monitoring and evaluation processes to assist in determining if any revisions are necessary.
- Some of the principal benefits are:
  - any gap between goals and performance
  - cost effectiveness and efficiency of the program/service
  - how is the program operating/functioning?
  - issues that could jeopardize the program/service
  - program/services strengths
  - program/services weaknesses
  - to what extent are the citizens being served
  - whether desired and/or undesired outcomes have taken place
- This information is useful for:
  - clarifying the mission, purpose and goals
  - describing the programs and services
  - facilitating the refinement and modification of program or service activities
  - fulfilling accountability requirements
  - guiding allocation of resources and personnel
  - maintaining quality of services and programs
  - program decision making, such as continue, cancel, cut back, change, expand
  - setting priorities
  - weighing costs and benefits of alternatives

## Stage 7:

### Performance Measures

#### Purpose

- The purpose of this section of the guideline is to assist in developing and using performance measures.
- The guide answers the following questions:
  - What are performance measures?
  - How can they be used
  - What is the best way of doing this?
  - Where does one start?

#### Introduction

- Data and information collected and used by managers in the public sector usually pertain to inputs, outputs and processes.
- Examples of these measures are as follows:

##### INPUTS :

Amount of money spent on training  
 Number of staff assigned to fire prevention  
 Number of staff assigned to training

##### PROCESS

Number of firefighters at O.F.C.  
 Number of days to complete a project  
 Length of time to conduct an inspection

##### OUTPUTS

Number of training manuals produced  
 Number of inspections completed  
 Number of plans reviewed  
 Number of emergency responses

- Many managers judge their effectiveness by counting and tabulating these inputs, processes and outputs.
- These are measurements of the **process** rather than the measurement of **performance**
- They measure what was done, rather than the impact of the action.

Without meaningful performance measures that directly link the impact of your actions to clear goals and objectives, it may be difficult, if not impossible, to provide a sound and supportable justification for the continued existence of your program or service

#### Goals and Objectives:

- It is imperative that there is a clearly stated goal and objective for every program, service, and activity.
- Once the goals are clarified in a meaningful way, specific objectives can then be made to operationalize the program.
- For example, the vague goal of improved fire safety can be made more meaningful and specific as follows:

- ***"Increased number of working smoke alarms in the home"***

- With the goal specifically defined, it provides direction and guidance as to what objectives must be achieved in order to reach this goal. For example:

## Goal

Increased number of working smoke alarms in the home

## Objectives

Public awareness of the value of smoke alarms through media advertising

Promotional campaign as part of Fire Prevention Week

Provide quality smoke alarms to the public at a reduced price

## Measuring Performance

- There is merit in linking the results of programs, services and activities to clearly defined objectives.
- It is not sufficient that the goal be achieved; it is necessary to show that the activities of the program were responsible for the achievement of the goal by establishing cause and effect.
- The key questions to determine the **impact** of actions are:

Do you have the resources to achieve the goal?

Why are you doing this?

Are you achieving what you are supposed to be doing?

How do you know? "

- Managers must develop meaningful performance measures and report on their success by measuring performance.
- Decisions on program direction can then be made based on this information

## What are Performance Measures?

- The quantitative and qualitative measures which assess the effectiveness and efficiency of a product, service or process
- They are the key indicators of success.
- Performance measures generally fall into six primary categories:
  - Time
  - Effectiveness
  - Quality
  - Efficiency
  - Costs and
  - Productivity Safety

To clarify these six categories of performance measures, each is defined on the following page.

Time :

- Time it takes to complete a process (cycle time) or deliver a service or product
- Effectiveness: Doing the right things, meeting corporate objectives and strategic directions
- Quality: A measure of the extent to which a thing or experience (service) meets a need, solves a problem or adds value for someone (client, stakeholder, taxpayer)
- Efficiency: Outputs relative to inputs; doing things right every time
- Costs & Productivity: Cost to provide a product or service; the relationships among costs, inputs and outputs
- Safety: The extent to which important assets (personnel, property, records) are safeguarded so that the organization is protected from danger of losses that could threaten its success, credibility, continuity, etc.

## Why

Why do you use performance measures?

- To demonstrate success
- To identify problems
- To evaluate goal achievement
- To determine whether or not there is performance improvement

## Codes, Standards and Best Practices

Codes, Standards and Best Practices available to assist in establishing local policy on the delivery of this service are listed below. All are available at <http://www.mcscs.jus.gov.on.ca/> **<<http://www.mcscs.jus.gov.on.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.

See also

[02-04-01](#)

**[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html/>](#)** & [23](#)

**[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html/>](#)** Capabilities of Existing Fire Protection Services

[02-03-01](#)

**[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html/>](#)** Economic Circumstances

[02-02-12](#)

**[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html/>](#)** & [03](#)

**[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html/>](#)** Fire Risk Assessment

[03-01-13](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/03-01-13.html>](#) Preparation of Draft Report

[04-39-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html>](#) Fire Prevention Effectiveness Model

APPENDIX G

PFSG 02-03-01 "Economic Circumstances"

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Economic Circumstances

### Public Fire Safety Guidelines

Subject Coding

**PFSG 02-03-01**

Section

Date

**General**

**January 1998**

Subject

Page

**Economic Circumstances**

### Purpose

To identify considerations for analyzing municipal economic circumstances.

### Introduction

Elected officials are responsible for the economic well-being of the community, and measure this in a number of ways. One such way would be with a balanced budget containing no tax increases. This does not necessarily give a complete or clear picture of the community's economic circumstances. For many years various budgetary systems, approaches, and formats have been developed in the continuing quest for political objectivity by elected officials. By the very nature of democracy, which is based on representative elections and the "politics" associated with them, mitigates against objectivity in the usual sense. Such budgeting and/or financial planning could be therefore defined as a rational decision making system working within a less than rational political process.

It is therefore essential that the economic circumstances of a community be thoroughly and objectively analyzed, in addition to the assessment of the existing fire protection system, and risk assessment, if an accurate representation is to be made of the community.

### Economic Considerations

Factors to be considered in assessing the local economic circumstances, include the following:

- assessment:
  - residential/farm
  - industrial
  - institutional
  - business/commercial
  - increases (decreases) in past 5 and 10 years
- tax rates :
  - show local and regional/county purposes
  - 5 and 10 year history of increases (decreases)
  - urban and rural service areas, if any
  - municipal debt
  - revenues

- reserve funds
- other monetary assets  
such as development charge accounts
- total fire protection system costs
- per capita basis
- assessment basis
- per household
- employment, unemployment conditions
- relationship of all of the above in the general area of the local community
- affect on the ability of the municipal tax base to fund appropriate fire protection services
- relationship of all of the above with similar communities
- past and present political philosophy respecting
- budget increases/decreases
- pay as you go
- debenturing/borrowing  
service (budget reductions) necessitated by reduced revenues
- loss impact of single employer, major industry, institution
- barriers to rebuilding, such as zoning and environmental requirements

#### **Related Functions:**

- [Fire Risk Assessment](#)  
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html)
- [Capabilities of Existing Fire Protection Services](#)  
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html)

#### **Codes, Standards, Best Practices:**

Codes, Standards, and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at [www.ontario.ca/firemarshal](http://www.ontario.ca/firemarshal)  
[<http://www.ontario.ca/firemarshal>](http://www.ontario.ca/firemarshal). 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.

See also PFSG

[02-04-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html) & [23](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html) Capabilities of existing Fire Protection Services

[02-02-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html) & [03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html) Risk Assessment



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## G1. APPENDIX G: ECONOMIC CIRCUMSTANCES

### G1.1 Introduction

Assessing a municipality's economic circumstances is a core component of the fire protection review process prescribed by the OFMEM.

This review looks at the costs and revenue of both Towns and its fire service and compares some key indicators with a peer group of municipalities to illustrate the economic circumstances of the Town of Aurora and the Town of Newmarket. It also utilizes the review process identified within PFSG 02-03-01 "Economic Circumstances" as the template for assessing the current economic circumstances of the Town of Aurora and the Town of Newmarket. This review is important to understanding the context of any changes proposed for the fire service provider.

## G2. TOWN OF AURORA

### G2.1 Growth and Assessment

In 1998 the Province of Ontario adopted Current Value Assessment (CVA). Value-based assessment systems, such as CVA, are the assessment standard used by most assessment jurisdictions in North America. The CVA process utilizes three to five years of open market arm's length sales in market areas to determine the current assessed value of a particular property within a community.

The Town of Aurora assessment comparison for the period 2008 to 2012 is provided in **Table G1** below. The increase in assessment values during this period has primarily been a result of increases in land market values and housing costs across the GTA.

Table G1: Town of Aurora 2008 – 2012 Current Value Assessment Comparison

Year	Assessed Value (\$)	Change over previous year (\$)	Change over previous year (%)
2008	\$6,385,298,343	\$165,067,750	2.7%
2009	\$6,914,148,511	\$528,850,168	8.3%
2010	\$7,460,371,451	\$546,222,940	7.9%
2011	\$8,042,174,317	\$581,802,866	7.8%
2012	\$8,602,374,419	\$560,200,102	7.0%

(Information provided by Town of Aurora Finance Department)

York Region projected in 2009 that the Town of Aurora would continue to experience significant population growth, totalling approximately 32.3% growth between 2011 and 2031. These growth projections are summarized below in **Table G2**.



Table G2: Population Projections, 2011-2031

Year	Population Projection	% Growth (from previous year listed)
2011	53,203 <sup>1</sup>	-
2016	63,700	19.7%
2021	68,200	7.1%
2026	69,700	2.2%
2031	70,400	1.0%

<sup>1</sup>2011 Census

Source: York Region 2031 Population & Employment Forecasts (2009)

## G2.2 Municipal Revenues

Revenues to support the capital and operating requirements of the Town of Aurora are derived from a number of sources including property taxes, user fees, operating grants, licensing, payments in lieu (PIL) and other sources. In addition to following municipal financial best practices the Town utilizes municipal performance measures as part of their commitment to financial management.

**Table G3** below provides a summary of the Town of Aurora revenues for the period 2008 – 2012.

Table G3: Town of Aurora 2008 – 2012 Revenue Summary

Year	Property Tax	Payments-in-Lieu	OMPF Grant	Waste Diversion Grant	Other User Fees	Prior year surplus	Total
2008	\$25,598,354	\$230,970	\$-	\$171,191	\$16,544,915	\$-	\$42,545,430
2009	\$26,790,677	\$209,162	\$-	\$139,556	\$15,762,736	\$-	\$42,902,131
2010	\$28,633,781	\$213,358	\$-	\$146,111	\$14,958,108	\$-	\$43,951,358
2011	\$30,482,781	\$216,108	\$-	\$251,865	\$24,042,036	\$-	\$54,992,790
2012	\$32,122,068	\$275,568	\$-	\$227,600	\$25,032,000	\$-	\$57,657,236

(Information provided by Town of Aurora Finance Department)

Revenues from user fees grew notably over the period, with returns increasing by 51.3% between 2008 and 2012. Property taxation also resulted in revenue growth, increasing by 25.5%.

The CPI or inflation rate for the Province of Ontario for the period 2008 to 2012 is presented in **Table G4** below.

Table G4: Province of Ontario CPI 2008 - 2012

Year	2008	2009	2010	2011	2012
CPI Inflation Rate (Ontario)	2.26%	0.35%	2.46%	2.70%	1.41%

(Information provided by Statistics Canada)

As noted in the above table, consumer price inflation rates in Ontario have begun to decline after peaking in 2011.



**Table G5** presents a comparison to the Town of Aurora 2008 to 2012 Historical Tax Levy to that of the Province of Ontario CPI (Inflation Rate) for the same period.

Table G5: Comparison Town of Aurora Historical Tax Levy to  
Province of Ontario CPI

Year	CPI Inflation, Ontario (%)	Property Tax Levy, Aurora (%)
2008	2.3%	5.0%
2009	0.4%	1.9%
2010	2.5%	2.9%
2011	2.7%	3.9%
2012	1.4%	4.9%
<b>5-Year Average</b>	<b>1.8%</b>	<b>3.7%</b>

*(Information provided by Town of Aurora Finance Department)*

Compared to average price growth of 1.8% annually across the province between 2008 and 2012 (as measured by CPI), the Town of Aurora's property tax levy rates increased at an average of 3.7% per year. This reflects increasing pressure on local property owners relative to province-wide increases in the cost of living.

### G2.3 Household Income

Compared to growth of 9.8% in median household income values across the province as a whole between 2006 and 2011, household income values for the Town of Aurora experienced stronger growth rates of 14.3% over the same period. At the same time, household income values for those in Aurora remained well above the provincial median in both years. **Table G6** below presents the 2006 and 2011 census data.

Table G6: Median Total Household Income, Province of Ontario  
and Town of Aurora, 2006-2011

Year	Aurora	Ontario
2006	\$89,177	\$60,455
2011	\$101,923	\$66,358

*Source: Statistics Canada*

### G2.4 Fire Protection Costs as a Percentage of the Overall Municipal Operating Costs

**Table G7** provides a comparison between the Town of Aurora's overall annual municipal operating costs relative to the annual operating costs specific to the provision of fire services.



Table G7: Town of Aurora Annual Operating Budget  
in Comparison to Fire Protection Costs, 2008 - 2012

Year	Annual Municipal Operating Costs	Annual Fire Department Operating Costs	Fire Costs as % of Municipal Costs
2008	\$38,831,300	\$6,129,465	15.8%
2009	\$40,785,600	\$6,317,947	15.5%
2010	\$44,581,400	\$6,497,605	14.6%
2011	\$48,097,200	\$7,606,440	15.8%
2012	\$49,772,900	\$7,973,200	16.0%

(Information provided by Town of Aurora Finance Department)

Compared to an increase of 28.2% in the Town of Aurora's overall operating costs between 2008 and 2012, the Town's expenditures relating to fire protection services increased by a similar rate at 30.1% over the same period. Costs relating to fire services grew marginally in terms of their share of overall municipal operating expenditures, increasing from 15.8% of the Town's operating costs in 2008 to 16.0% in 2012.

## G2.5 Fire Protection Costs Per Capita Basis

Assessing the costs associated with providing fire protection services on a per capita basis (per person) provides one performance measurement tool for comparing fire protection costs of one municipality to those of comparable municipalities. Utilizing comparisons such as this are consistent with PFSG 02-03-01 "Economic Circumstances." Under the section "Factors to be considered in assessing the local economic circumstances" the document identifies a wide range of factors including "per capita basis, assessment basis and per household" and a further factor that states these are to be considered with regard to the "relationship of all of the above with similar municipalities."

The per capita cost for fire protection services for the period 2008 – 2012 are included within **Table G8** below.

Table G8: Town of Aurora per Capita Costs for  
Fire Protection Service for the Period 2008 -2012

Year	Population	Fire Department Operating Budget	Per Capita Cost
2008	51,925	\$6,129,465	\$118
2009	53,686	\$6,317,947	\$118
2010	55,024	\$6,497,605	\$118
2011	53,203 <sup>1</sup>	\$7,606,440	\$143
2012	55,973	\$7,973,200	\$142

<sup>1</sup> 2011 Census

Between 2008 and 2012, the population of the Town of Aurora increased by approximately 7.8%. Over the same period, the per capita cost of fire protection services increased by approximately 20.7%.



## G2.6 Fire Protection Costs Assessment Basis

Evaluating the costs for fire protection, based on an assessment basis, provides another consistent performance measurement tool for comparing the costs of fire protection services in relation to similar municipalities.

**Table G9** provides an evaluation of the assessment cost for fire protection services from 2008 to 2012.

Table G9: Town of Aurora Assessment Costs for Fire Protection Service for 2008 – 2012

Year	Total Assessed Value	Fire Department Operating Costs	Operating Cost per \$1,000 Assessed Value
2008	\$6,385,298,343	\$6,129,465	\$0.96
2009	\$6,914,148,511	\$6,317,947	\$0.91
2010	\$7,460,371,451	\$6,497,605	\$0.87
2011	\$8,042,174,317	\$7,606,440	\$0.95
2012	\$8,602,374,419	\$7,973,200	\$0.93

*Information provided by Town of Aurora Finance Department*

Over the period from 2008 to 2012 the cost to provide fire services per \$1,000 of assessed property value decreased by approximately 3.4%.

A similar measure is given by account for the cost to provide fire services per household. These values for the period 2008 – 2012 are shown in **Table G10**.

Table G10: Town of Aurora Costs per Household Fire Protection Service for the Period 2008 -2012

Year	Households	Fire Department Operating Budget	Cost per Household
2008	17,020	\$6,129,465	\$360
2009	17,020	\$6,317,947	\$371
2010	17,020	\$6,497,605	\$382
2011	17,020	\$7,606,440	\$447
2012	17,700	\$7,973,200	\$450

The number of households is derived from data provided by the municipality. Between 2008 and 2012, the Town of Aurora experienced 4.0% growth in the number of households, while the cost of fire protection services per household increased by approximately 25.1%. Household data is not measured and collected on an annual basis, so this information should be considered for approximation only.



## G2.7 Comparable Communities

To conduct the analysis of comparable communities, consideration was first given to developing a list of indicators that would reflect an accurate representation for comparison analysis. The indicators identified included the following:

- ✓ Population
- ✓ Number of Residential Dwellings
- ✓ Geographic Area of the Municipality
- ✓ Density Per Square Kilometre
- ✓ Simplified Risk Assessment

The OFMEM “*Summary of Key Facts and Fire Loss*” was the initial data source used to research these indicators in order to identify the list of comparable communities utilized within this report. Following this initial process contact was then made with each fire department to confirm the OFMEM information and seek further financial information.

In developing the list of comparable communities, priority was given to building a sample of municipalities in geographic proximity to the Town of Aurora and those of comparable population size. Variation within the sample set allows for consideration of a variety of possible long-term outcomes.

**Table G11** provides a summary of the comparable indicators, and the representative comparable communities that were identified.

Table G11: Summary of Similar Communities Analyses

Community	Population (2012)	Private Dwellings (2011)	Households (2012)	Land Area (km <sup>2</sup> )	Population Density (km <sup>2</sup> )
<b><i>Aurora (Central York Fire Services)</i></b>	<b><i>55,973</i></b>	<b><i>18,092</i></b>	<b><i>17,700</i></b>	<b><i>50</i></b>	<b><i>1119</i></b>
Barrie	143,000	52,185	52,244	77	1857
Cambridge	132,900	47,818	47,770	113	1176
Guelph	121,688	52,409	52,179	87	1399
Kitchener	234,100	89,603	88,540	137	1709
London	369,940	168,175	169,145	421	879
Markham	323,804	93,202	94,070	213	1520
Oshawa	152,513	61,306	59,913	146	1045
Richmond Hill	195,119	60,169	59,156	101	1932
St. Catharines	131,400	59,209	58,996	96	1369
Vaughan	311,218	88,282	88,504	274	1136
Waterloo	129,100	42,984	42,590	64	2017

(Sources: OFMEM Key facts & Census 2011, Statistics Canada)

The eleven communities selected represent a wide geographic sample of Ontario communities similar to the Town of Aurora, based on the comparable indicators selected.



## G2.8 Comparable Communities Fire Protection Model

The next step of analyses included an evaluation of the fire protection model (staffing) and operating costs based on three primary factors: cost per capita; cost per \$1,000 of assessed value; and cost per household. To ensure consistency this analysis was conducted using data from 2012. The results of this analysis are summarized in **Table G12**.

Table G12: Summary of Comparable Communities Analysis

Community	Full-time Staff	Volunteer Staff	Part-Time Staff	Cost Per Capita	Cost Per \$1,000 Assessment	Cost Per Household
<b>Aurora (Central York Fire Services)*</b>	<b>139</b>	<b>0</b>	<b>0</b>	<b>\$142</b>	<b>\$0.93</b>	<b>\$450</b>
Barrie	139	0	0	\$159	\$1.52	\$435
Cambridge	125	0	0	\$149	\$1.53	\$415
Guelph	138	0	0	\$182	\$1.60	\$423
Kitchener	208	0	0	\$134	\$1.51	\$354
London	389	0	0	\$157	\$1.73	\$344
Markham	241	0	0	\$114	\$0.74	\$392
Oshawa	179	0	0	\$188	\$2.03	\$479
Richmond Hill	143	0	0	\$109	\$0.67	\$358
St. Catharines	148	0	0	\$168	\$1.85	\$374
Vaughan	257	18	0	\$139	\$0.75	\$488
Waterloo	126	0	0	\$118	\$1.19	\$357
<b>Average</b>				<b>\$143</b>	<b>\$1.17</b>	<b>\$396</b>

*\*Note: caution must be applied in comparisons between Aurora and its peer municipalities, as these figures refer specifically to the financial contribution Aurora makes as part of its shared fire services – not the overall cost.*

The cost of Aurora's fire protection services relative to its peers is varied, and depends on the variable used to compare one department to another. This variation is particularly present within the population measures (costs per capita/household), such that while the per capita cost of fire services in Aurora is essentially at par with its peers, the per household cost is 13.7% higher than the average of the comparator group. When assessed using the economic measure (cost per \$1,000 assessed value), Aurora's fire services are ranked as less costly than the average of the comparison municipalities.

The cost per capita for the Town of Aurora's fire services increased by approximately 20.7% between 2008 and 2012, ranking as approximately 0.4% less costly than the average of the sample municipalities – a difference so marginal as to be negligible.

The cost per \$1,000 of assessed value for the Town of Aurora decreased marginally by 3.4% over the study period, but remained 20.6% lower than the average of the sample municipalities.

The cost per household increased by approximately 25.1% between 2008 and 2012, resulting in Aurora's fire services cost per household values ranking at 13.7% more than the average of the sample municipalities in 2012.



## **G2.9 Summary of Economic Circumstances – Town of Aurora**

The Town of Aurora Council has taken proactive and creative steps to introduce financial strategies targeted at sustainably managing property tax increases, while sustaining appropriate service levels in all areas to meet the community's needs.

York Region projected in 2009 that the Town of Aurora would continue to experience significant population growth, totalling approximately 32.3% growth between 2011 and 2031. Between 2008 and 2012, the property tax levy in the Town of Aurora increased by an average of 3.7% per year, exceeding the average annual rate of inflation across the province (1.84%). The median household income in the Town of Aurora increased by 14.3% between census years of 2006 to 2011, a larger increase than the 9.8% experienced province-wide.

The Town's overall municipal operating costs grew from \$38,831,300 in 2008 to \$49,772,900 in 2012, representing a 28.2% increase; in comparison, operating costs relating to fire services grew 30.1% over the period, from \$6,129,465 in 2008 to \$7,973,200 in 2012.

Over a similar period, the cost to deliver fire services per capita increased by 20.7%, from \$118 in 2008 to \$142 in 2012. Costs per \$1,000 of assessed property value decreased by 3.4% between 2008 and 2012, while costs per household increased by 25.1% between 2008 and 2012.

Relative to a sample of eleven comparable municipalities across Ontario using 2012 data, while the cost of fire protection services per capita in the Town of Aurora was at par with the sample average, costs per \$1,000 of assessed property value were 20.6% lower than the sample average. Costs per household were 13.7% higher than the average of sampled municipalities.

This analysis demonstrates that the absolute cost of fire protection services rendered by the Town of Aurora has increased in the past several years. Aurora's fire services are measured as more costly relative to household population levels in comparison to the average of the Ontario peer municipalities sampled in this review. However in the context of the local property market, Aurora's fire services remain less costly relative to property assessments in comparison to the average of the sample municipalities. In our view, given the current economic circumstances of the Town of Aurora, the costs of fire protection represent the levels of fire protection service delivered and are sustainable relative to municipal finances and the local property tax base.



## G3. TOWN OF NEWMARKET

### G3.1 Growth and Assessment

In 1998 the Province of Ontario adopted Current Value Assessment (CVA). Value-based assessment systems, such as CVA, are the assessment standard used by most assessment jurisdictions in North America. The CVA process utilizes three to five years of open market arm's length sales in market areas to determine the current assessed value of a particular property within a community.

The Town of Newmarket assessment comparison for the period 2008 to 2012 is provided in **Table G13** below. The increase in assessment values during this period has primarily been a result of increases in land market values and housing costs across the GTA.

Table G13: Town of Newmarket 2008 – 2012 Current Value Assessment Comparison

Year	Assessed Value (\$)	Change over previous year (\$)	Change over previous year (%)
<b>2008</b>	\$9,046,163,100	\$ 650,484,940	7.7%
<b>2009</b>	\$9,686,091,205	\$ 639,928,105	7.1%
<b>2010</b>	\$10,233,255,263	\$ 547,164,058	5.6%
<b>2011</b>	\$10,869,695,822	\$ 636,440,559	6.2%
<b>2012</b>	\$11,532,034,418	\$ 662,338,596	6.1%

(Information provided by Town of Newmarket Finance Department)

York Region projected in 2009 that the Town of Newmarket would continue to experience significant population growth, totalling approximately 21.7% growth between 2011 and 2031. These growth projections are summarized below in **Table G14**.

Table G14: Population Projections, 2011-2031

Year	Population Projection	% Growth (from previous year listed)
2011	79,978 <sup>1</sup>	-
2016	88,700	10.9%
2021	91,900	3.6%
2026	94,600	2.9%
2031	97,300	2.9%

<sup>1</sup>2011 Census

Source: York Region 2031 Population & Employment Forecasts (2009)

### G3.2 Municipal Revenues

Revenues to support the capital and operating requirements of the Town of Newmarket are derived from a number of sources including property taxes, user fees, operating grants, licensing, payments in lieu (PIL) and other sources. In addition to following municipal financial best practices the Town utilizes municipal performance measures as part of their commitment to financial management.

**Table G15** below provides a summary of the Town of Newmarket revenues for the period 2008 – 2012.



Table G15: Town of Newmarket 2008 – 2012 Revenue Summary

Year	Property Tax	Payments-in-Lieu	OMPF Grant	Waste Diversion Grant	Other User Fees	Prior year surplus	Total
2008	\$35,362,033	\$650,033	\$ -	\$236,015	\$28,517,102	\$0	\$94,052,056
2009	\$38,334,424	\$663,801	\$ -	\$196,558	\$29,600,465	\$0	\$85,614,126
2010	\$40,489,381	\$659,766	\$ -	\$216,613	\$29,900,259	\$0	\$97,595,137
2011	\$43,748,297	\$668,593	\$ -	\$307,223	\$31,698,804	\$0	\$97,511,171
2012	\$45,705,675	\$665,353	\$ -	\$318,568	\$35,841,348	\$0	\$102,587,732

(Information provided by Town of Newmarket Finance Department)

Revenues from property taxation grew notably over the period, with returns increasing by 29.2% between 2008 and 2012. User fees also saw similar revenue growth, increasing by 25.7% over the period.

The Consumer Price Index (CPI) or inflation rate for the Province of Ontario for the period 2008 to 2012 is presented in **Table G16** below.

Table G16: Province of Ontario CPI 2008 - 2012

Year	2008	2009	2010	2011	2012
CPI Inflation Rate (Ontario)	2.26%	0.35%	2.46%	2.70%	1.41%

(Information provided by Statistics Canada)

As noted in the above table, consumer price inflation rates in Ontario have begun to decline after peaking in 2011.

**Table G17** presents a comparison to the Town of Newmarket 2008 to 2012 Historical Tax Levy to that of the Province of Ontario CPI (Inflation Rate) for the same period.

Table G17: Comparison Town of Newmarket Historical Tax Levy to Province of Ontario CPI

Year	CPI Inflation, Ontario (%)	Property Tax Levy, Newmarket (%)
2008	2.3%	6.6%
2009	0.4%	4.2%
2010	2.5%	3.8%
2011	2.7%	5.9%
2012	1.4%	4.0%
5-Year Average	1.8%	4.9%

(Information provided by Town of Newmarket Finance Department)

Compared to average price growth of 1.8% annually across the province between 2008 and 2012 (as measured by CPI), the Town of Newmarket's property tax levy rates increased at an average of 4.9% per year. This reflects increasing pressure on local property owners relative to province-wide increases in the cost of living.



### G3.3 Household Income

Compared to growth of 9.8% in median household income values across the province as a whole between 2006 and 2011, household income values for the Town of Newmarket experienced slightly lesser growth of 7.9% over the same period. At the same time, household income values for those in Newmarket remained well above the provincial median in both years. **Table G18** below presents the 2006 and 2011 census data.

Table G18: Median Total Household Income, Province of Ontario  
and Town of Newmarket, 2006-2011

Year	Newmarket	Ontario
2006	\$81,640	\$60,455
2011	\$88,084	\$66,358

### G3.4 Fire Protection Costs as a Percentage of the Overall Municipal Operating Costs

**Table G19** provides a comparison between the Town of Newmarket's overall annual municipal operating costs relative to the annual operating costs specific to the provision of fire services.

Table G19: Town of Newmarket Annual Operating Budget  
in Comparison to Fire Protection Costs, 2008 - 2012

Year	Annual Municipal Operating Costs	Annual Fire Department Operating Costs	Fire Costs as % of Municipal Costs
2008	\$77,041,104	\$9,717,629	12.6%
2009	\$78,981,298	\$10,099,383	12.8%
2010	\$83,574,861	\$10,542,734	12.6%
2011	\$93,228,293	\$12,098,269	13.0%
2012	\$95,765,508	\$12,567,018	13.1%

(Information provided by Town of Newmarket Finance Department)

Compared to an increase of 24.3% in the Town of Newmarket's overall operating costs between 2008 and 2012, the Town's expenditures relating to fire protection services increased comparably by 29.3% over the same period. Costs relating to fire services grew marginally in terms of their share of overall municipal operating expenditures, increasing from 12.6% of the Town's operating costs in 2008 to 13.1% in 2012.

### G3.5 Fire Protection Costs Per Capita Basis

Assessing the costs associated with providing fire protection services on a per capita basis (per person) provides one performance measurement tool for comparing fire protection costs of one municipality to those of comparable municipalities. Utilizing comparisons such as this are consistent with PFSG 02-03-01 "Economic Circumstances." Under the section "Factors to be considered in assessing the local economic circumstances" the document identifies a wide range of factors including "per capita basis, assessment basis and per household" and a further factor that states these are to be considered with regard to the "relationship of all of the above with similar municipalities."

The per capita cost for fire protection services for the period 2008 – 2012 are included within **Table G20** below.



Table G20: Town of Newmarket per Capita Costs for  
Fire Protection Service for the Period 2008 -2012

Year	Population	Fire Department Operating Budget	Per Capita Cost
2008	82,127	\$9,717,629	\$118
2009	83,048	\$10,099,383	\$122
2010	84,351	\$10,542,734	\$125
2011	79,978 <sup>1</sup>	\$12,098,269	\$151
2012	86,304	\$12,567,018	\$146

<sup>1</sup> 2011 Census

Between 2008 and 2012, the population of the Town of Newmarket increased by approximately 5.1%. Over the same period, the per capita cost of fire protection services increased by approximately 23.7%.

### G3.6 Fire Protection Costs Assessment Basis

Evaluating the costs for fire protection, based on an assessment basis, provides another consistent performance measurement tool for comparing the costs of fire protection services in relation to similar municipalities.

**Table G21** provides an evaluation of the assessment cost for fire protection services from 2008 to 2012.

Table G21: Town of Newmarket Assessment Costs for Fire Protection Service for 2008 – 2012

Year	Total Assessed Value	Fire Department Operating Costs	Operating Cost per \$1,000 Assessed Value
<b>2008</b>	\$9,046,163,100	\$9,717,629	\$1.07
<b>2009</b>	\$9,686,091,205	\$10,099,383	\$1.04
<b>2010</b>	\$10,233,255,263	\$10,542,734	\$1.03
<b>2011</b>	\$10,869,695,822	\$12,098,269	\$1.11
<b>2012</b>	\$11,532,034,418	\$12,567,018	\$1.09

*Information provided by Town of Newmarket Finance Department*

Over the period from 2008 to 2012 the cost to provide fire services per \$1,000 of assessed property value increased by approximately 1.9%.

A similar measure is given by account for the cost to provide fire services per household. These values for the period 2008 – 2012 are shown in **Table G22**.



Table G22: Town of Newmarket Costs per Household Fire Protection Service  
for the Period 2008 -2012

Year	Households	Fire Department Operating Budget	Cost per Household
2008	25,832	\$9,717,629	\$376
2009	26,955	\$10,099,383	\$375
2010	27,350	\$10,542,734	\$385
2011	27,539	\$12,098,269	\$439
2012	27,918	\$12,567,018	\$450

The number of households is derived from data provided by the municipality. Between 2008 and 2012, the Town of Newmarket experienced 8.1% growth in the number of households, while the cost of fire protection services per household increased by approximately 19.7%.

### G3.7 Comparable Communities

To conduct the analysis of comparable communities, consideration was first given to developing a list of indicators that would reflect an accurate representation for comparison analysis. The indicators identified included the following:

- ✓ Population
- ✓ Number of Residential Dwellings
- ✓ Geographic Area of the Municipality
- ✓ Density Per Square Kilometre
- ✓ Simplified Risk Assessment

The OFMEM “*Summary of Key Facts and Fire Loss*” was the initial data source used to research these indicators in order to identify the list of comparable communities utilized within this report. Following this initial process contact was then made with each fire department to confirm the OFMEM information and seek further financial information.

In developing the list of comparable communities, priority was given to building a sample of municipalities in geographic proximity to the Town of Newmarket and those of comparable population size. Variation within the sample set allows for consideration of a variety of possible long-term outcomes.

**Table G23** provides a summary of the comparable indicators, and the representative comparable communities that were identified.



Table G23: Summary of Similar Communities Analyses

Community	Population (2012)	Private Dwellings (2011)	Households (2012)	Land Area	Population Density (km <sup>2</sup> )
<b>Newmarket (Central York Fire Services)</b>	<b>86,304</b>	<b>27,977</b>	<b>27,918</b>	<b>38</b>	<b>2271</b>
Barrie	143,000	52,185	52,244	77	1857
Cambridge	132,900	47,818	47,770	113	1176
Guelph	121,688	52,409	52,179	87	1399
Kitchener	234,100	89,603	88,540	137	1709
London	369,940	168,175	169,145	421	879
Markham	323,804	93,202	94,070	213	1520
Oshawa	152,513	61,306	59,913	146	1045
Richmond Hill	195,119	60,169	59,156	101	1932
St. Catharines	131,400	59,209	58,996	96	1369
Vaughan	311,218	88,282	88,504	274	1136
Waterloo	129,100	42,984	42,590	64	2017

(Sources: OFMEM Key facts & Census 2011, Statistics Canada)

The eleven communities selected represent a wide geographic sample of Ontario communities similar to the Town of Newmarket, based on the comparable indicators selected.

### G3.8 Comparable Communities Fire Protection Model

The next step of analyses included an evaluation of the fire protection model (staffing) and operating costs based on three primary factors: cost per capita; cost per \$1,000 of assessed value; and cost per household. To ensure consistency this analysis was conducted using data from 2012. The results of this analysis are summarized in **Table G24**.

In terms of the population measures (costs per capita/household), the Town of Newmarket's fire protection services are more costly than the sample average of comparison municipalities. When assessed using the economic measure (cost per \$1,000 assessed value), Newmarket's fire services are ranked as less costly than the average of the comparison municipalities.

The cost per capita for the Town of Newmarket's fire services increased by approximately 23.1% between 2008 and 2012, ranking as approximately 1.7% more costly than the average of the sample municipalities.

The cost per \$1,000 of assessed value for the Town of Newmarket increased marginally by 1.4% over the study period, but remained 7.0% lower than the average of the sample municipalities.

The cost per household increased by approximately 19.7% over the study period, resulting in Newmarket's fire services cost per household values ranking at 13.4 % more than the average of the sample municipalities in 2012.



Table G24: Summary of Comparable Communities Analysis

Community	Full-time Staff	Volunteer Staff	Part-Time Staff	Cost Per Capita	Cost Per \$1,000 Assessment	Cost Per Household
<b>Newmarket (Central York Fire Services)*</b>	<b>139</b>	<b>0</b>	<b>0</b>	<b>\$146</b>	<b>\$1.09</b>	<b>\$450</b>
Barrie	139	0	0	\$159	\$1.52	\$435
Cambridge	125	0	0	\$149	\$1.53	\$415
Guelph	138	0	0	\$182	\$1.60	\$423
Kitchener	208	0	0	\$134	\$1.51	\$354
London	389	0	0	\$157	\$1.73	\$344
Markham	241	0	0	\$114	\$0.74	\$392
Oshawa	179	0	0	\$188	\$2.03	\$479
Richmond Hill	143	0	0	\$109	\$0.67	\$358
St. Catharines	148	0	0	\$168	\$1.85	\$374
Vaughan	257	18	0	\$139	\$0.75	\$488
Waterloo	126	0	0	\$118	\$1.19	\$357
<b>Average</b>				<b>\$143</b>	<b>\$1.17</b>	<b>\$397</b>

*\*Note: caution must be applied in comparisons between Newmarket and its peer municipalities, as these figures refer specifically to the financial contribution Newmarket makes as part of its shared fire services – not the overall cost.*

### G3.9 Summary of Economic Circumstances – Town of Newmarket

The Town of Newmarket Council has taken proactive and creative steps to introduce financial strategies targeted at sustainably managing property tax increases, while sustaining appropriate service levels in all areas to meet the community's needs.

York Region projected in 2009 that the Town of Newmarket would continue to experience significant population growth, totalling approximately 21.7% growth between 2011 and 2031. Between 2008 and 2012, property tax levy in the Town of Newmarket increased by an average of 4.9% per year, exceeding the average annual rate of inflation across the province (1.8%). The Town's overall municipal operating costs grew from \$77,041,104 in 2008 to \$95,765,508 in 2012, representing a 24.3% increase; in comparison, operating costs relating to fire services grew 29.3% over the period, from \$9,717,629 in 2008 to \$12,567,018 in 2012.

Over the same period, the cost to deliver fire services per capita increased by 23.1%, from \$118 in 2008 to \$146 in 2012. Costs per \$1,000 of assessed property value increased by 1.4%, while costs per household increased by 19.7%.

Relative to a sample of eleven comparable municipalities across Ontario using 2012 data, while the cost of fire protection services per capita in the Town of Newmarket was only 1.7% higher than the sample average, costs per \$1,000 of assessed property value were 7.0% lower than the sample average. Costs per household were 13.4% higher than the average of sampled municipalities.



This analysis demonstrates that as the cost of fire protection services rendered by the Town of Newmarket has increased in the past several years, Newmarket's contributions to the cost of shared fire services have become slightly more costly relative to population levels in comparison to the average of peer municipalities in Ontario. In the context of the local property market, Newmarket's fire services remain marginally less costly relative to property assessments in comparison to the average of the sample municipalities. However, caution must be applied when comparing fire service costs for the Town of Newmarket to its peers given that the municipality engages in shared fire services through Central York Fire Services. Overall, in our view, given the current economic circumstances of the Town of Newmarket, the costs of fire protection represent the levels of service delivered relative to municipal finances and the local property tax base.

APPENDIX H

PFSG 02-02-03 "Fire Risk Assessment"

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Fire Risk Assessment

### Public Fire Safety Guidelines

Subject Coding

**PFSG 02-02-03**

Section

Date

**General**

**January 1998**

Subject

Page

### Fire Risk Assessment

#### **Purpose:**

To identify considerations for persons conducting municipal fire risk assessments.

#### **Ambient Factors of Risk Assessment:**

The following factors should be considered in assessing the local fire risk.

- the municipality:
  - urban
  - rural
  - metropolitan
  - other, such as a bedroom community, border community
  - predominantly dependent upon a single employer, business, or institutional operation or activity
  - describe its uniqueness
  - describe its geography
  - describe its demographics
    - outline current development and development trends
  - describe street network and traffic patterns
  - describe traffic barriers
  - consider applicable by-laws
  - labour relations climate and history
- historical
- indicate emergency call volume last year, last 5 years
- the number of fire casualties in the past year, past 5 years
- identify any trends respecting cause and location
- the fire loss for the past year, past 5 years
- indicate trends respecting call types for the past 5 years
- comparisons with other like municipalities should be considered for the following factors:
  - population (static/subject to seasonal or other fluctuations)
  - geographical area and size of municipality
  - type of municipality
  - number of residential dwellings

- assessment
- development trends
- growth history and trends
- demographics
- equalized assessment and tax base
  
- residential/farming vs industrial/commercial assessment
  
- building stock
  
- identify, as accurately as possible, the number and percentage of the following:
  - single family residences
  - multi-unit residences
  - high-rise buildings
  - large complexes
  - farms/agricultural buildings
  - commercial buildings
  - industrial buildings
  - institutional
  - business buildings
  - storage facilities
  - other special buildings
  - hospitals
  - nursing homes
  - with respect to building type, identify specific problems, such as access, density and age
  - with respect to building type, identify significant and associated outside storage areas
  
- building occupancies
  
- identify, as accurately as possible, the number and percentage of the following occupancies:
  - assembly
  - institutional
  - residential
  - commercial
  - industrial
  - business
  - storage
  - vacant
  - other
  
- prevention and public education
  
- if, for example, the municipality does not have a fire department, but purchases fire suppression services, describe what fire prevention and public education initiatives, if any, are undertaken by the community. Describe the significance and impact, or lack of same, of such initiatives.

- public and political resolve
- what is the perceived awareness of fire safety by the general public and the corporate sector?
- what are the expectations for fire protection by the general public, and the corporate sector?
- what is the general tone of press and media coverage of fire related matters?
- how are fire prevention, fire safety, and public education programs generally received and accepted by the community at large?
- what is the local political climate respecting:
  - cost cutting/no budget increases?
  - preserving the status quo?
  - maintaining/improving essential services such as the fire department?
- public and private protection systems
- independent of the assessment of (Analyzing Local Circumstances - Assessing Existing Fire Protection Services), identify and describe:
  - private fire brigades
  - industrial/commercial fire brigades
  - private water supplies and water supply systems

### **Related Functions:**

Click on the related function below to view that function:

- Economic Circumstances
- Capabilities of Existing Fire Protection Services

### **Codes, Standards, and Best Practices:**

Codes, Standards, and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at [www.ontario.ca/firemarshal](http://www.ontario.ca/firemarshal) **<<http://www.ontario.ca/firemarshal>>**. 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.

See also PFSG

[01-02-01](#)

**[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/01-02-01.html>](#)** Comprehensive Fire Safety Effectiveness Model Considerations

[02-04-01](#)

**[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html>](#)** & [23](#)

**[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html>](#)** Capabilities of Existing Fire Protection Services

[04-39-12](#)

**[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html>](#)** Fire Prevention Effectiveness Model

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Fire Risk Assessment

### Public Fire Safety Guidelines

Subject Coding

**PFSG 02-02-12**

Section

**General**

Date



**January 1998**

Subject

Page

### Fire Risk Assessment

#### Fire [Risk Assessment](#) [<#>](#)

- All municipalities should analyze the what, where, who, why, and when questions about its fires, casualties and losses. Some of the elements to consider are as follows:
- the type and nature of the local municipality
- the building stock and occupancy types
- fire prevention and public [education programs](#)  [<#>](#)
- public and private [fire protection](#)  [<#>](#) systems
- political resolve/commitment
- historical analysis and comparisons
- comparative analysis with others
- special hazards
- major rail lines/waterways

#### Assess data

Analytical judgement and an understanding of the local community are needed to meaningfully evaluate such data, and create an accurate picture of the community's fire risk.

#### Purpose

To identify considerations when assessing municipal fire risk


#### Related functions

Click on the related function [below](#)  [<#>](#) to view that function:

Analyzing Local Circumstances

- Economic Circumstances
- Assessment of Existing [Fire Protection](#)  [<#>](#) Services

#### Codes, Standards, and Best Practices

Codes, Standards, and Best Practices resources [available](#)  [<#>](#) to assist in establishing local policy on this assessment are listed below. All are available at [www.ontario.ca/firemarshal](http://www.ontario.ca/firemarshal) [<http://www.ontario.ca/firemarshal>](http://www.ontario.ca/firemarshal). Please feel free to copy and distribute this document.

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See also PFSG -

[04-39-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html/](#) Fire Prevention Effectiveness Model

[02-04-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html/](#) & [23](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html/](#) Capabilities of Existing [Fire Protection](#)  [<#>](#) Services

[02-03-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html/](#) Economic Circumstances

APPENDIX I

PFSG 02-04-01 "Capabilities of Existing Fire Protection  
Services"

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Capabilities of Existing Fire Protection Services

### Public Fire Safety Guidelines

Subject Coding

**PFSG 02-04-01**

Section

Date

### General

**January 1998**

Subject

Page

### Capabilities of Existing fire Protection Services

#### Purpose:

To identify methods to accurately assess existing capabilities of available fire protection services.

This section is a companion to Risk Assessment Analysis and Economic Circumstances Analysis, which are used to provide policy makers with a report on existing fire services. This is a fact finding exercise only and decisions, conclusions, judgments, recommendations, and options are not to be made at this stage, nor on the basis of this section only.

#### Fire Department:

Is the fire protection for the municipality provided by:

- a fire department organized for the municipality?
- an unorganized community?
- a fire department jointly managed and operated with other municipality(ies)?
- an agreement to purchase protection from another jurisdiction?
- a combination of the above ?

#### Factors Involved In Assessing The Fire Department:

Regardless of how the fire protection is organized and delivered, the following factors must be considered in assessing the protection services;

- mission statement and mandate
- goals and objectives
- organization
- administration
- by-laws and agreements
- fire prevention, public information, public education
- investigations
- communications
- emergency operations
- training and education
- vehicles and equipment
- financial management and budgeting
- automatic aid and "mutual aid"
- building and facilities
- pre-emergency planning
- disaster planning

- risk management planning
- human resources
- maintenance
- records, reports, data
- water supplies

#### Related Functions:

- [Fire Risk Assessment](#)  
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html)
- [Economic Circumstances](#)  
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html)

#### Codes, Standards, Best Practices:

Codes, Standards, and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at [www.ontario.ca/firemarshal](http://www.ontario.ca/firemarshal) [<http://www.ontario.ca/firemarshal>](http://www.ontario.ca/firemarshal). 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.

See also PFSG

[02-03-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html) [Economic Circumstances](#)

[02-02-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html) & [03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html) [Fire Risk Assessment](#)

[04-39-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html) [Fire Prevention Effectiveness Model](#)

[04-61-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-61-12.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-61-12.html) [Human Resources Practices](#)

[04-64-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-64-12.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-64-12.html) [Communications/Resource Centre](#)

## APPENDIX I

### Comprehensive Community Risk Assessment & IRM Web-Tool User Guide



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## J1.0 APPENDIX J: DETAILED COMMUNITY RISK ASSESSMENT

### J1.1 Introduction

The Office of the Fire Marshal and Emergency Management (OFMEM) provides a number of tools to assist municipalities, and ultimately municipal councils, in determining local needs and circumstances as required by the FPPA. These tools include the Comprehensive Fire Safety Effectiveness Model; the Fire Risk Sub-Model and Public Fire Safety Guideline 01-01-01 (**Appendix F**) “Fire Protection Review Process.”

PFSG 01-01-01 “Fire Protection Review Process” further identifies the three primary components of assessing community needs and circumstances including:

- ✓ *Assessing Economic Circumstances from a Fire Protection Perspective (PFSG 02-03-01, Appendix G)*
- ✓ *Assessing Fire Risk (PFSG 02-02-12 & 02-02-03, Appendix H)*
- ✓ *Assessing the Existing Fire Protection Services (PFSG 02-04-01, Appendix I)*

This section provides a detailed assessment of the current and future (planned growth) fire risk within the Town of Aurora and Town of Newmarket.

### J1.2 OFMEM Fire Risk Sub-Model

“Phase 1” of the Comprehensive Community Risk Assessment analyses within this report follows the OFMEM framework and specifically the OFMEM Fire Risk Sub-Model. The model identifies the importance of community risk in the following introductory paragraphs:

*“Assessing the fire risk within a community is one of the seven components that comprise the Comprehensive Fire Safety Effectiveness Model. It is the process of examining and analyzing the relevant factors that characterize the community and applying this information to identify potential fire risk scenarios that may be encountered. The assessment includes an analysis of the likelihood of these scenarios occurring and their subsequent consequences.”*

*“The types of fire risks that a community may be expected to encounter are influenced by its defining characteristics. For example, a “bedroom community” presents a different set of circumstances over one that is characterized as an “industrial town.” Communities that are distinguished by older buildings will pose a different set of concerns over those that are comprised of newer buildings constructed to modern building codes. Communities populated by a high percentage of senior citizens present a different challenge over ones with a younger population base.*

*Assessing fire risk should begin with a review of all available and relevant information that defines and characterizes your community. Eight key factors have been identified that contribute to the community’s inherent characteristics and circumstances. These factors influence events that shape potential fire scenarios along with the severity of their outcomes:*

- *Property Stock*
- *Building Height and Area*



- *Building Age and Construction*
- *Building Exposures*
- *Demographic Profile*
- *Geography/Topography/Road Infrastructure*
- *Past Fire Loss Statistics*
- *Fuel Load*

Using the framework provided within the OFMEM's Fire Risk Sub-model the potential fire risk scenarios present within the community can be assessed by creating a Comprehensive Community Fire Risk Assessment. The profile can then be applied to assess the current level of fire protection services provided, and identify where if any potential gaps exist, or identify areas that municipal Councils may want to consider in determining their own 'needs and circumstances', as defined by the Fire Protection and Prevention Act (FPPA).

The Fire Risk Sub-Model provides communities with the flexibility to determine how their municipality should be defined in terms of fire risk scenarios. Specifically, the model states that:

*"For analyses purposes, the community being assessed can be defined as the municipality in its entirety or as a particular segment of it that distinguishes it from other parts. For smaller municipalities, it may be sufficient to simply define the community based on town boundaries. For larger municipalities, it may be appropriate to subdivide it into separate and distinct components to permit more detailed analysis. For example, it may be convenient to subdivide a municipality based on residential subdivision, downtown sections, industrial park, and a rural area. Hence, the first step in conducting a fire risk analyses is to identify and define the community (s) being analyzed."*

**"Phase 1"** of assessing community fire risk within this FDMPU utilizes the major building occupancy classifications of the Ontario Building Code (OBC) to subdivide the Towns of Aurora and Newmarket. The major building occupancy classifications for each community are then evaluated against the eight key risk factors identified within the Fire Risk Sub-model. This analysis determines a level of fire risk for each of the major building classifications.

### J1.3 Integrated Risk Management (IRM) Web Tool

**"Phase 2"** of the community fire risk analyses within this report follows the application of the new OFMEM *"Integrated Risk Management (IRM) Web Tool"* that was released by the OFMEM on May 6, 2014. The OFMEM describes the purpose of the new IRM Web Tool as:



*“The purpose of the IRM Web Tool is to provide best practices to municipal and fire service decision makers when conducting individual building fire risk assessments. The IRM Web Tool is an evidence based risk management tool designed to assist Ontario’s municipalities to establish appropriate levels of service by integrating Public Fire Safety Education, Fire Safety Standards and Enforcement and Emergency Response (The Three Lines of Defence) to meet their legislative obligations in the Fire Prevention and Protection Act (FPPA), 1997. This will assist municipalities by providing for better informed decision making to determine levels of fire protection services with respect to the three Lines of Defence through utilization of the IRM Web Tool”.*

The OFMEM has indicated that the new IRM Web Tool will include a new PFSG that will replace the current PFSG *“04-08-10 Operational Planning: An Official Guide to Matching Resource Deployment and Risk”*. The OFMEM has indicated that this new PFSG is still in development and will be released upon completion.

**“Phase 2”** of the analyses process includes identifying a sample of building occupancies from **“Phase 1”** for each of the Towns. The IRM Web Tool is then applied to each of these sample buildings to identify the current CYFS fire protection plan conditions.

This phase of the process forms part of the analyses process within this FDMPU to assess the existing fire protection services provided by the CYFS.

#### J1.4 Analyses of Existing Fire Protection Services

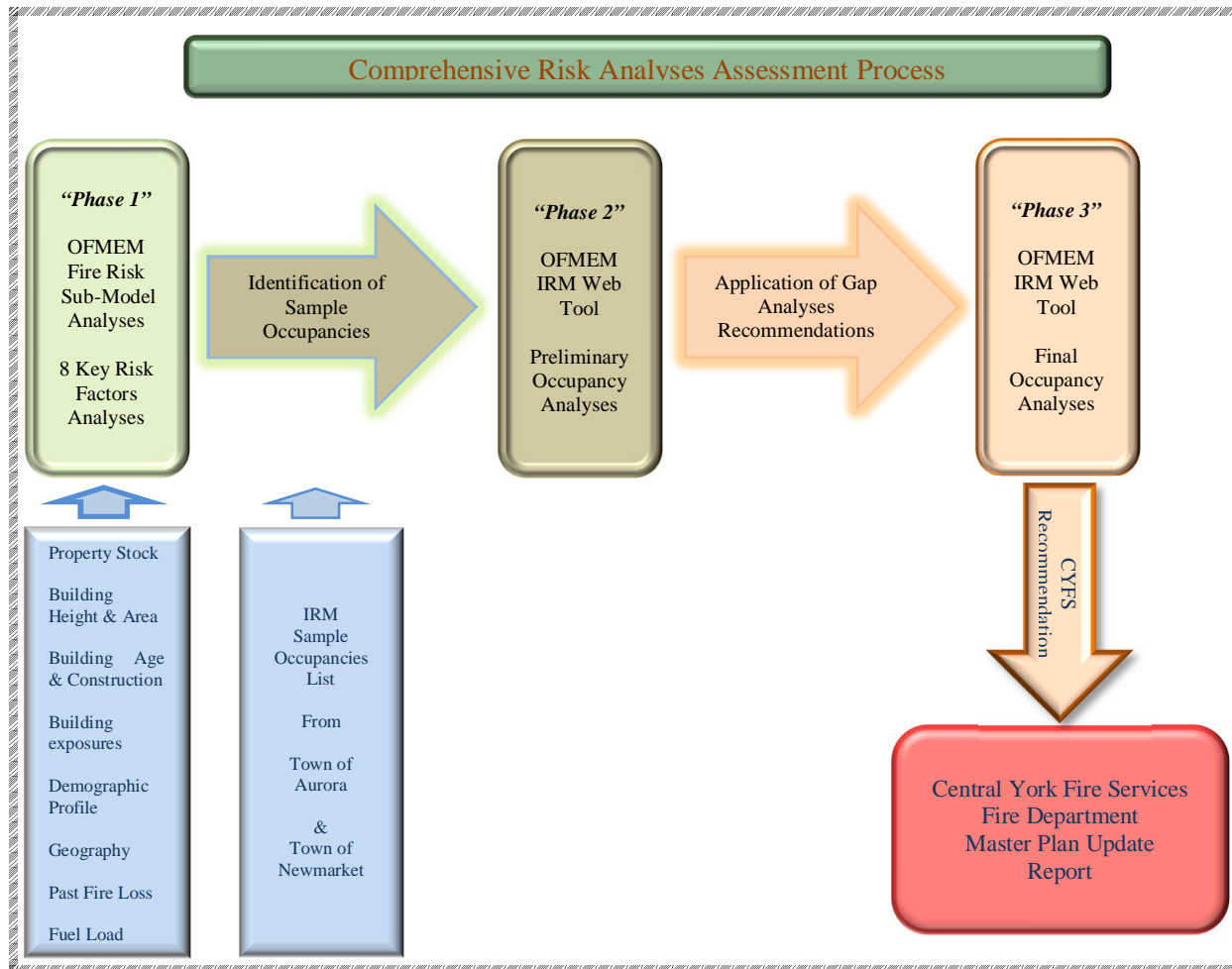
**“Phase 3”** of the community fire risk analyses process assesses the findings and recommendations reflected in the analyses of the existing fire protection services provided by the CYFS contained within this review. The recommendations of this FDMPU are again applied to each of the sample buildings within each Town.

The results of **“Phase 3”** provide valuable insight into confirming how the recommendations within this FDMPU provide opportunities for the CYFS to further optimize the use of the *“Three lines of Defence”* in meeting the Towns’ legislative obligations in the Fire Prevention and Protection Act (FPPA), 1997.

#### J1.5 Comprehensive Risk Analyses Assessment Process

**Figure J1** reflects the comprehensive risk analyses assessment process used in developing this FDMPU.

Figure J1: Comprehensive Risk Analyses Assessment Process



## J1.6 OFMEM Fire Risk Sub-Model

### J1.6.1 Property Stock

The OBC categorizes buildings by their major occupancy classifications. Each classification has inherent definitions that distinguish it from other occupancy classifications. Utilizing the OBC as the source for defining the occupancy classifications provides a recognized definition and baseline for developing the Comprehensive Community Risk Assessment.

The OBC major occupancy classifications are divided into six major building occupancy classifications (groups). Within each group the occupancies are further defined by division. The OBC major classification groups and divisions are presented in **Table J1**.



**Table J1: OBC Major Occupancy Classification**

Group	Division	Description of Major Occupancies
Group A Assembly	1	<i>Assembly occupancies intended for the production and viewing of the performing arts</i>
Group A	2	<i>Assembly occupancies not elsewhere classified in Group A</i>
Group A	3	<i>Assembly occupancies of the arena type</i>
Group A	4	<i>Assembly occupancies in which occupants are gathered in the open air</i>
Group B Assembly	1	<i>Detention occupancies</i>
Group B	2	<i>Care and treatment occupancies</i>
Group B	3	<i>Care occupancies</i>
Group C	---	<i>Residential occupancies</i>
Group D	---	<i>Business and personal services occupancies</i>
Group E Assembly	---	<i>Mercantile occupancies</i>
Group F	1	<i>High hazard industrial occupancies</i>
Group F	2	<i>Medium hazard industrial occupancies</i>
Group F	3	<i>Low hazard industrial occupancies</i>

### J1.6.2 Major Building Occupancy Classifications

The Fire Risk Sub-model developed by the OFMEM utilizes the major group classifications only (Group A, B, C, D, E, F). The Fire Risk Sub-model does not use the detailed “Division” classifications provided for the respective occupancy groups.

This strategy provides the ability to assess property stock within a community comparatively by major occupancy groups, thus providing a consistent and recognized definition for each major occupancy type. Where necessary this strategy provides the opportunity for further analysis of a specific occupancy group. For example a ‘Group F Industrial’ that is a ‘Division 1’ is a ‘High hazard industrial occupancy.’ Subject to any site specific hazards or concerns individual occupancies within this group can be assessed individually and then included where required within the scope of the broader community risk profile.

The following describes the major occupancy classifications used within the Fire Risk Sub-model.

#### J1.6.2.1 Assembly Occupancies (Group A)

Assembly occupancies are defined by the OBC as the “*occupancy or the use of a building or part of a building by a gathering of persons for civic, political, travel, religious, social, educational, recreational or similar purposes or for the consumption of food or drink.*”



Risks within these occupancies can include:

- overcrowding by patrons
- lack of patron familiarity with emergency exit locations and procedures
- staff training in emergency procedures
- large quantities of combustible furnishings and decorations

Proactive measures for reducing risks can include:

- ✓ regular fire prevention inspection cycles
- ✓ automatic fire detection and monitoring systems
- ✓ approved Fire Safety Plan and staff training
- ✓ pre-planning by fire suppression staff

#### **J1.6.2.2 Care and Detention Occupancies (Group B)**

*A care or detention occupancy means the occupancy or use of a building or part thereof by persons who;*

- *are dependent on others to release security devices to permit exit;*
- *receive special care and treatment; or*
- *receive supervisory care.*

Risks within these occupancies can include:

- *inability to evacuate or relocate patients*
- *presence of flammable/combustible gases*
- *vulnerable occupants*
- *combustible furnishings*

Proactive measures for reducing risks can include:

- ✓ regular fire prevention inspection cycles
- ✓ automatic fire detection and monitoring systems
- ✓ approved Fire Safety Plan and staff training
- ✓ pre-planning by fire suppression staff

#### **J1.6.2.3 Residential Occupancies (Group C)**

*A residential occupancy is defined as one that is used by persons for whom sleeping accommodation is provided but who are not harboured or detained there to receive medical care or treatment or who are not involuntarily detained there.*

*Within this occupancy classification both the Ontario Fire Code (OFC) and the Ontario Building Code classify residential low-rise buildings as up to and including six storeys in building height. Buildings in excess of six storeys are considered as high-rise buildings. Comparatively Statistics Canada defines low-rise buildings as being less than five storeys in building height and high-rise as five storeys and greater.*

*Another example of a use within this occupancy group would be mobile homes or travel trailers. The common factor is overnight accommodation (sleeping) when an occupant can be at the highest risk.*

*As the primary source for data regarding community risk factors is provided by Statistics Canada this analysis utilizes the Statistics Canada definitions for residential occupancies.*



Risks within these occupancies can include:

- *overnight accommodation (sleeping)*
- *combustible furnishings*
- *secondary units (basement apartments)*
- *high density*
- *human behaviour (cooking, use of candles, etc.)*

Proactive measures for reducing risks can include:

- ✓ *Smoke Alarm Program*
- ✓ *Public Education Programming including Home Escape Planning*
- ✓ *Retro-fit and compliance inspection cycles for OBC and OFC compliance*
- ✓ *Pre-planning by fire suppression staff*

#### ***J1.6.2.4 Business and Personal Services Occupancies (Group D)***

Business and personal services occupancies are defined as those that are used for the transaction of business or the provision of professional or personal services.

These occupancies can be located within remodelled single family dwellings, low-rise and high-rise buildings. Each of these building types can present different risks including egress for firefighting operations and evacuation by occupants.

Risks within these occupancies can include:

- *high volume of occupants*
- *high combustible loading*
- *specialized equipment utilizing high risk substances such as radiation*
- *consumers unfamiliar with emergency exits and procedures*

Proactive measures for reducing risks can include:

- ✓ *regular fire prevention inspection cycles to sustain OFC compliance*
- ✓ *targeted fire prevention inspections for OFC retro-fit compliance*
- ✓ *staff training in fire prevention and evacuation procedures*
- ✓ *public education*
- ✓ *pre-planning by fire suppression staff*

#### ***J1.6.2.5 Mercantile Occupancies (Group E)***

This occupancy is defined as one that is used for the displaying or selling of retail goods, wares, and merchandise.

These occupancies range in size and potential risk from smaller neighbourhood corner stores to the large “big box” industrial style buildings that survive on the sale of large volume. Large volumes of combustibles are typically present in all applications.



Risks within these occupancies can include:

- high volume of occupants/staff
- high volume of combustible loading/high rack storage
- lack of occupant familiarity with emergency exit locations and procedures
- size of building

Proactive measures for reducing risks can include:

- ✓ *regular fire prevention inspection cycles*
- ✓ *automatic fire detection and monitoring systems*
- ✓ *approved Fire Safety Plan and staff training*
- ✓ *pre-planning by fire suppression staff*

#### ***J1.6.2.6 High/Medium/Low Hazard Industrial Occupancies (Group F)***

Industrial occupancies are defined as those used for the assembly, fabrication, manufacturing, processing, repairing or storing of goods and materials. This category is divided into low hazard (F3), medium hazard (F2) and high hazard (F1) based on its combustible content and potential for rapid fire growth.

The potential for major fires within this occupancy type is related to the high levels of combustibles that are present in storage and utilized in the manufacturing process. This can include highly flammable and corrosive products.

Risks within these occupancies can include:

- large dollar loss as a result of a major fire
- economic loss in the event of plant shut downs and job loss
- environmental impacts
- presence of ignition sources related to processing activities

Proactive measures for reducing risks can include:

- ✓ *regular fire prevention inspection cycles*
- ✓ *staff training in fire prevention and evacuation*
- ✓ *public education*
- ✓ *pre-planning by fire suppression staff*
- ✓ *installation of early detection systems (smoke alarms, heat detectors)*
- ✓ *installation of automatic sprinkler systems*

#### ***J1.6.2.7 Other Occupancies/Uses not listed within the OBC (Not Classified)***

There are other occupancies and uses not included within the OBC major building occupancy classifications that should be considered as part of developing the Comprehensive Community Risk Assessment. These include occupancies that may be regulated under other legislation such as federally or provincially owned facilities.



Examples of these include:

- major railway lines
- major highways and transportation corridors
- outdoor tire storage facilities
- farm / agricultural buildings

### J1.6.3 Property Stock Analysis

Applying the property stock classifications contained within the Fire Risk Sub-model, **Table J2** provides a summary of the property stock within the CYFS response area (Town of Aurora / Town of Newmarket).

Table J2: Property Stock Profile for Central York Response Area (2013)<sup>1</sup>

<b>Occupancy Classification (OBC)</b>	<b>Occupancy Definition Fire Risk Sub-model (OFM)</b>	<b>Number of Occupancies</b>	<b>% Total</b>
Group A – Assembly	<i>Assembly occupancies</i>	172	0.4%
Group B - Institutional	<i>Care or Detention occupancies</i>	19	0.0%
Group C - Residential	<i>Residential occupancies</i>	40,204	95.6%
Group D/E - Commercial	<i>Business and Personal Services Occupancies</i>	543	1.3%
Group F - Industrial	<i>Industrial occupancies</i>	1,116	2.7%
Other occupancies	<i>Not classified within the Ontario Building Code (i.e. farm buildings)</i>	N/A	N/A
<b>Total</b>		<b>42,054</b>	<b>100%</b>

(Source: Provided by CYFS)

Of the overall property stock, approximately 60% is situated in Newmarket.<sup>2</sup> The overwhelming majority of property stock within CYFS response area (95.6%) is residential occupancies which includes commercial/residential units, multi-unit apartment buildings, hotels/motels, seniors-oriented complexes, and extended care facilities. The remaining classifications are primarily industrial (2.7%) and commercial (1.3%). Some of these non-residential properties include major industrial uses that employ a large number of people but only count as single occupancies (e.g. State Farm Insurance and Magna International).

<sup>1</sup> Source: Data provided by Central York Fire Services. [It is acknowledged that these numbers are not consistent with Statistics Canada data found in Table J 4].

<sup>2</sup> Source: From CYFS, Complete Master Fire Plan Update 2008-2017, pages 23 and 27 of PDF.



### J1.6.4 Property Stock Profile Observations

The analysis of the Property Stock Profiles for CYFS response area confirms that the largest percentage of major occupancies (95.6%) is Group C - residential. Significant priority should be given to developing a Fire Department Master Plan Update that reflects the risks associated with this occupancy category. A key element in mitigating residential risks is maximizing the use of all three lines of defence.

The priority of addressing the residential fire risk is supported by the historic data<sup>3</sup> provided by the OFMEM that reports for the period from 2008 to 2012 residential fires accounted for 72% of all structure fire losses and for the period from 2003 to 2012 residential fires accounted for 85% of all fire fatalities.

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<sup>3</sup>Sources, OFMEM website:

[http://www.mcscs.jus.gov.on.ca/english/FireMarshal/MediaRelationsandResources/FireStatistics/OntarioFatalities/FatalFiresSummary/stats\\_fatal\\_summary.html](http://www.mcscs.jus.gov.on.ca/english/FireMarshal/MediaRelationsandResources/FireStatistics/OntarioFatalities/FatalFiresSummary/stats_fatal_summary.html)

[http://www.mcscs.jus.gov.on.ca/english/FireMarshal/MediaRelationsandResources/FireStatistics/OntarioFires/FireLossesCausesTrendsIssues/stats\\_causes.html](http://www.mcscs.jus.gov.on.ca/english/FireMarshal/MediaRelationsandResources/FireStatistics/OntarioFires/FireLossesCausesTrendsIssues/stats_causes.html)



## J2.0 BUILDING HEIGHT AND AREA

Buildings that are taller in height, or contain a large amount of square footage (footprint) can have a greater fire loss risk and life safety concern.

### J2.1 Building Height

One of the unique characteristics and risks of tall / multi-storey buildings is known as the “stack effect.” This is characterized as vertical air movement occurring throughout the building, caused by air flowing into and out of the building typically through open doors and windows. The resulting buoyancy caused by the differences between the indoor/outdoor temperature and elevation differences causes smoke and heat to rise within the building. This can have a dramatic effect on smoke permeation throughout the common areas and individual units within the building. This can be directly related to the high percentage of deaths that occur in high-rise buildings as a result of smoke inhalation.

The nature of taller buildings also brings the presence of higher occupant loads and higher fuel loads due to the quantity of furnishings and building materials. Efficient evacuation can also be a challenging process due to a lack of direction / signage and knowledge / familiarity of the occupants which may result in overcrowding of stairways and exit routes.

There are a few high rise buildings in both Towns, with 695 high-rise residential units within the Town of Aurora and 1,385 high-rise residential units within the Town of Newmarket. Ensuring all required life safety systems are in place and functioning is a priority for these occupancies. Taller buildings can experience extended rescue / suppression response times for firefighters to ascend to the upper levels. Options such as “shelter-in-place” whereby occupants are directed by the fire department to stay within their units can be an effective strategy. However, ensuring internal building communications systems are in place and functioning is critical to the success of this strategy.

### J2.2 Building Area

Building area can cause comparable challenges to those present in taller buildings. Horizontal travel distances rather than vertical distances can result in extended response times by firefighters attempting rescue or fire suppression activities.

Large buildings, such as industrial plants and warehouses, department stores, and the new “big box” stores, can contain large volumes of combustible materials. In many of these occupancies the use of high rack storage is also present. Fires within this type of storage system can be difficult to access and cause additional risk to firefighter safety, due to collapse risks.

Both Aurora and Newmarket have a small number of large industrial, commercial, and mixed-use buildings. Some commercial examples include Upper Canada Mall and Leon’s Furniture in Newmarket and Canadian Tire Plaza and Aurora Centre in Aurora. Other examples of buildings with large areas and potential fire loss risk include:

- Manufacturing Plants such as Magna International, Terradyne Amored Vehicles Inc., Torcan Chemicals, GenPac LP – large buildings areas, high occupancies;
- Regional Healthcare Centre – large area, immobile occupants, unfamiliarity with emergency procedures;
- Large office industrial buildings such as State Farm Insurance and Region of York – large, multi-storey buildings with high employment numbers.



The CYFS response area overall has 134 mixed use buildings. Mixed use buildings are typically situated in downtown cores. The historic downtown cores are along Yonge Street in Aurora and Main Street in Newmarket. These developments have buildings that are in close proximity to one other and cover a large area.

### J2.2.1 Building Height and Area Observations

The analysis of the buildings within CYFS response area in regards to height and area represent a minimal risk. This includes all occupancy classifications. There are also a limited number of large area (by square footage) industrial buildings.

The observations of this section are consistent with the need to prioritize a pro-active fire inspection and compliance program. These strategies should be aligned with optimization of the first two lines of defence with the FDMPU.

### J2.3 Building Age and Construction

Both Aurora and Newmarket have a rich heritage with a mix of old and new buildings in their downtowns. In recent years, most growth took place outside of the downtown centres being primarily low-density residential development, resulting in a young housing stock.

#### J2.3.1 Building/Fire Code Application

The Ontario Building Code (OBC) was adopted in 1975. The Ontario Fire Code (OFC) was similarly adopted in 1981. Together these two documents have provided the foundation for eliminating many of the inconsistencies in building construction and maintenance that were present before their adoption.

The OBC and the OFC were developed to ensure uniform building construction and maintenance standards are applied for all new building construction. The codes also provide for specific fire safety measures depending on the use of the building. Examples of the fire safety issues that are addressed include:

- *occupancy*
- *exits/means of egress including signs and lighting*
- *fire alarm and detection equipment*
- *fire department access*
- *inspection, testing, and maintenance*

In 1983 the OFC was further expanded to include retrofit requirements for many of the building constructed prior to adoption of the code. Retrofit requirements were established to ensure a minimum acceptable level of life safety is present. A number of occupancy types are included within the retrofit requirements including assembly, boarding, lodging and rooming houses, health care facilities, multi-unit residential, two-unit residential, and hotels.

#### J2.3.2 Residential Buildings

As mentioned, addressing residential fire risk is a major priority based on historic data from 2008 to 2012, whereby 72% of fire losses took place in Group C residential occupancies. This is especially pertinent for CYFS response area since over 95% of the property stock is residential. This makes understanding the age and construction of a community's residential building stock an important component of developing a Comprehensive Community Risk Assessment.



The Town of Aurora and the Town of Newmarket's residential building structural dwelling types are summarized in **Table J3**.

Table J3: Stock Profile for Central York Response Area (2013) Residential Structural Dwelling Type for Aurora and Newmarket (2011)

Structural Dwelling Type	Town of Aurora		Town of Newmarket		Ontario	
	Number of Units <sup>4</sup>	% of Units	Number of Units <sup>5</sup>	% of Units	Number of Units <sup>6</sup>	% of Units
Single-Detached House	10,885	61.5%	16,190	59.1%	2,718,880	55.6%
Semi-Detached House	1,420	8.0%	2,225	8.1%	279,470	5.7%
Row House	2,950	16.7%	3,420	12.5%	415,225	8.5%
Apartment-Duplex	615	3.5%	1,585	5.8%	160,460	3.3%
Apartment-more than 5 Storeys	695	3.9%	1,385	5.1%	789,970	16.2%
Apartment-less than 5 Storeys	1,115	6.3%	2,515	9.2%	498,160	10.2%
Other single-attached House	5	0.0%	90	0.3%	9,540	0.2%
Movable Dwelling	5	0.0%	5	0.0%	15,800	0.3%
<b>Total</b>	<b>17,690</b>	<b>100%</b>	<b>27,410</b>	<b>100%</b>	<b>4,887,510</b>	<b>100%</b>

Historical data provided by the OFMEM indicates that fires in single-detached dwellings are responsible for nearly two thirds of all residential fires. The data further indicates that detached homes generally account for 80% of all single-family dwelling fires, with semi-detached and attached homes evenly contributing the remaining 20%. The majority of residential dwellings in CYFS response area are single-detached (approximately 60%) which are the most likely to suffer from a fire loss out of all residential dwelling types.

The ages of the housing stock in the Town of Aurora and the Town of Newmarket are summarized in **Table J4**.

<sup>4</sup> Source: Statistics Canada - 2011 Census Data

<sup>5</sup> Source: Statistics Canada - 2011 Census Data

<sup>6</sup> Source: Statistics Canada - 2011 Census Data



Table J4: Age of Residential Construction for Aurora and Newmarket (2006)

Period of Construction	Town of Aurora <sup>7</sup>	% of Units	Town of Newmarket <sup>8</sup>	% of Units	Ontario <sup>9</sup>	% of Units
Prior to 1946	815	3.2%	1,500	6.0%	677,875	14.9%
1946 to 1960	1,430	5.7%	1,970	7.9%	690,155	15.2%
1961 to 1970	1,040	4.1%	2,303	8.1%	640,660	14.0%
1971 to 1980	1,700	6.8%	3,285	14.3%	776,745	17.0%
1981 to 1985	1,475	5.9%	2,230	8.9%	338,575	7.4%
1986 to 1990	2,775	11.1%	3,285	13.1%	410,160	9.0%
1991 to 1995	1,705	6.8%	3,280	13.1%	291,480	6.4%
1996 to 2000	2,155	8.6%	3,300	13.2%	312,215	6.9%
2001 to 2006	2,555	10.2%	3,885	15.5%	417,165	9.2%
<b>Total</b>	<b>15,655</b>	<b>100%</b>	<b>25,090</b>	<b>100%</b>	<b>4,554,255</b>	<b>100%</b>

An important component of this analysis is the percentage of residential buildings built prior to the adoption of the Ontario Fire Code in 1981. **Table J4** indicates that 32% of residential buildings in Aurora and 36% of those in Newmarket were built prior to 1981 in comparison to 61% of those in Ontario. Compared to the province, CYFS response area has a fairly young housing stock, meaning that 66% of its residential structures are built to the standards of the Ontario Fire Code.

### J2.3.3 Non-Residential Buildings

During the late 19<sup>th</sup> century and early 20<sup>th</sup> century, balloon frame construction was a common framing technique used in both residential and small commercial construction. This technique permitted the spread of fire and smoke to move rapidly from the lower floors to upper floors and the roof level. Understanding the age of construction of dwellings can assist in determining if balloon framing may have been utilized.

Modern construction techniques have introduced the use of platform construction whereby each level is built as a component of the overall structure. This technique in addition to the use of fire stops has reduced the extension of fire and smoke by creating horizontal barriers.

<sup>7</sup> Source: Statistics Canada - 2006 Census Data

<sup>8</sup> Source: Statistics Canada - 2006 Census Data

<sup>9</sup> Source: Statistics Canada - 2006 Census Data



Specific information such as age data is not available for non-residential buildings; however the experience of community planning and development provides a relative comparison when assessing the age and construction of a community. Given the fairly young age of the residential building stock in CYFS response area it is anticipated that the non-residential building stock would be comparable and therefore a lower percentage of buildings would pre-date the OFC adoption in 1981, compared to the provincial average.

### J2.3.4 Building Age and Construction Observations

As a community, the current building stock of Aurora and Newmarket combined is representative of an urban centre that has suburbanized considerably in the past few decades. The downtown areas are composed of building stock that is a mix of old and new buildings. Surrounding the downtown areas are residential development.

Residential single-detached housing units represent approximately 60% of the 45,100 residential dwelling structures. Approximately 34% of the residential building stock was built prior to the adoption of the Ontario Fire Code in 1981. The majority of the residential building stock is of newer construction technology including flame retardant materials and construction techniques. Buildings within the downtown core represent the highest fire loss risk due to age and construction. However, there have been upgrades to these buildings to increase the fire separations and notification with regards to the alarm systems and smoke detectors, to meet the retrofit sections of the OFC.

## J2.4 Building Exposures

Closely spaced buildings, typical of historic downtown core areas and newer infill construction, have a higher risk of a fire propagating (fire spreading to an adjacent exposed building). A fire originating in one building could easily be transferred to neighbouring structures due to the close proximity. The close proximity of buildings can also impede firefighting operations due to the limited access for firefighters and equipment.

Adoption of the OBC and the OFC has required spatial separations and the use of fire retardant materials and constructions methods to reduce the fire risks. In addition to the construction and planning requirements within the respective codes, basic firefighting practices consider the protection of exposures as a primary function and consideration in the event of a response by the fire department.

### J2.4.1 Building Exposures Observations

The risk of exposures as a result of a fire can occur in incidents involving buildings that are in compliance with current OBC and OFC requirements as well as those that may have been constructed prior to these public safety initiatives.

A relatively small percentage of the building stock in CYFS response area was constructed prior to current OFC, the probability of a fire spreading to involve other exposures is of limited concern. The age and construction of the buildings within the downtown core present the most significant risk for fire spread both internally and to adjacent buildings due to the close proximity and combustible construction of many of these buildings.



## J3.0 DEMOGRAPHIC PROFILE

In developing a Comprehensive Community Risk Assessment, it is important to understand a number of key factors related to residents of the community. Assessing these factors in relation to provincial statistics is an effective tool in understanding where there may be vulnerable groups in terms of fire or life risk, or barriers such as language that could affect communication of public education programs. The key factors within the demographic profile include:

- Population Distribution by Age Group
- Population Shifts
- Vulnerable Individuals or Occupancies
- Language Barriers to Public Education
- Income Level

### J3.1 Population Distribution by Age Group

Within Canada our aging population has been recognized as one of the most significant demographic trends. Based on current data it is predicted that by the year 2026, one in every five Canadians will have reached the age 65. Seniors, those 65 and above, represent one of the highest fire risk target groups in Ontario.

Information provided by the OFMEM indicates that *“between 2000 and 2004 the leading cause of senior (aged 65 and over) fire deaths were attributed to “open flame tools/smoker’s articles” and “cooking equipment.” These ignition sources were responsible for 35% and 10% respectfully of fire deaths for this age category during this period. It is believed that the decline in cognitive and physical abilities contributes to the frequency of fire incidents relating to careless use of these ignition sources.”*

Identifying a community’s population by age category is a core component of developing the Comprehensive Community Risk Assessment and identifying specific measures that may be required to mitigate risks associated with a specific age group, such as seniors.

**Table J5** provides a comparison by age group of the Towns’ populations to that of the provincial statistics according to the 2011 Census from Statistics Canada.



Table J5: Age Distribution in Aurora and Newmarket (2011)<sup>10</sup>

Age Characteristics of the Population	Town of Aurora		Town of Newmarket		Ontario	
	Total	Total	% Total	Total	Total	% Total
0 to 4 years	2,970	5.58%	4,380	5.48%	704,260	5.5%
5 to 9 years	3,440	6.47%	4,870	6.09%	712,755	5.5%
10 to 14 years	4,000	7.52%	5,650	7.06%	763,755	5.9%
15 to 19 years	4,480	8.42%	6,700	8.38%	863,635	6.7%
20 to 24 years	3,540	6.65%	5,275	6.60%	852,910	6.6%
25 to 44 years	12,995	24.42%	20,380	25.48%	3,383,890	26.3%
45 to 54 years	10,000	18.80%	14,505	18.14%	2,062,020	16.0%
55 to 64 years	6,150	11.56%	9,330	11.67%	1,630,275	12.7%
65 to 74 years	2,900	5.45%	4,710	5.89%	1,004,265	7.8%
75 to 84 years	1,860	3.50%	2,930	3.66%	627,660	4.9%
85 years and over	885	1.66%	1,255	1.57%	246,400	1.9%
<b>Total:</b>	<b>53,205</b>	<b>-</b>	<b>79,980</b>	<b>-</b>	<b>12,851,820</b>	<b>-</b>
Median age of the population	40	-	39	-	40.0	-
% of the population aged 14 and under	10,410	19.57%	14,900	18.63%	2,180,770	17.0%
% of the population aged 65 and over	5,645	10.61%	8,895	11.12%	1,878,325	14.6%

The age comparison reflects that the seniors population (over age 65) represents 11% of the combined population of the Towns of Aurora and Newmarket (133,185). In comparison to the provincial statistics for the same age group, seniors across the province represent 15% of the population. The age characteristics of the population within CYFS response area are relatively consistent with the province. The demographics in teenage years are slightly higher in Newmarket and Aurora than for the province.

**Table J6** was prepared using information from the OFMEM's review of Ontario Fatal Fires during the ten year period from 2001 to 2010 (*revised October 2011*). Although no particular age group stands out as a significantly higher risk, when the number of fatalities per million population is calculated, the seniors' age group are at the greatest risk of fire death compared to other age groups.

<sup>10</sup> Source: Statistics Canada - 2011 Census Data



Table J6: Provincial % of Fire Fatalities by Age Group<sup>11</sup>

Age Characteristics of the Population	% of Age Group
0 to 10 years	8%
10 to 19 years	6%
20 to 29 years	6%
30 to 39 years	10%
40 to 49 years	19%
50 to 59 years	14%
60 to 69 years	12%
70 to 79 years	13%
80+ years	12%

While the CYFS response area senior population is a slightly lower proportion than that of the province, **Table J5** and **Table J6** reveal that the senior cohort is still a key population for public education and enforcing fire safety standards.

### J3.2 Population Shifts

The population within a community can shift at various times during the day or week and throughout the year. This can be as a result of residents that are required to leave the community to seek employment as opposed to those having employment opportunities within the community. Other examples can include tourist and vacation destinations within a community. Large population shifts can occur during summer months as a direct result of the seasonal availability of these activities or tourism draws within a community.

Communities that are home to educational institutions such as colleges and universities can have a different population shift during the fall and winter months when students are attending school and residing in the community (e.g. student residences). In both instances the increased risk due to overnight accommodation (sleeping) either in a trailer/hotel/or school residence can be a major factor which can impact the demand for fire protection services.

The CYFS response area experiences limited population shift throughout the year. As both Newmarket and Aurora have very abundant local community programming, the limited population shift takes place in the spring and summer months when various events (e.g. Aurora Chamber Street Festival, Aurora Music Festival, Fairy Lake Artisans Festival, and the Newmarket Jazz Festival) attract a number of people to the area. The communities both experience time of day shifts as commuting residents travel to and from work and as the large employers (e.g. Magna) attract commuters from other communities.

<sup>11</sup> Source: *OFMEM review of Ontario Fatal Fires*



### J3.3 Vulnerable Individuals or Occupancies

Identifying the location and number of vulnerable individuals, or occupancies within the community will provide insight into the magnitude of this particular demographic within a community. This demographic is typically defined as requiring some type of assistance due to physical/cognitive limitations, disabilities, drug or alcohol use and others that may require assistance to evacuate in the event of a fire.

Occupancies that should be considered when assessing this demographic include hospitals, seniors' apartments, group homes, rooming houses, residential care facilities, daycare centres and long-term care facilities. **Table J7** lists these occupancies in the Town of Aurora and the Town of Newmarket.

Table J7: Vulnerable Occupancies in the Town of Aurora and the Town of Newmarket<sup>12</sup>

Town of Aurora	
Complex Name	Address
Sunrise Assisted Living	3 Golf Links Drive
Aurora Resthaven	32 Mill Street
Willows Nursing Home	13837 Yonge Street
Park Place Manor	15055 Yonge Street
Kingsway Arms Retirement	145 Murray Drive
Cobblestone Lodge Retirement	15029 Yonge Street
Hollandview Trail Retirement	200 John West Way
Safe Haven	175 Aurora Heights Drive

Town of Newmarket	
Complex Name	Address
Eagle Terrance	329 Eagle Street
MacKenzie Place	52 George Street
Newmarket Health Centre	194 Eagle Street
Southlake Residential Care Village	640 Grace Street
Alexander Muir Retirement	197 Prospect Street
Amica Retirement Residence	275 Doak Lane
Barton Retirement Residence	17290 Leslie Street
Clock Tower Inn	180 Main Street
The Roxborough	1 Roxborough Road
Community Living NAD	438 Queen Street
Community Living NAD	460 Oak Street
Kerry's Place	733 College Manor Drive

<sup>12</sup> Source: CYFS, 2013



Town of Newmarket	
Complex Name	Address
Brigittas Residential Home	128 Arden Avenue
Brookside Lodge	542 Wellington Street
Community Living	1008 Bray Circle
Heritage Lodge	508 College Street
Hillcrest Residence	208 Prospect Street
Parkview Manor	683 Gorham Street
Prospect House	137 Prospect Street
Brown's Residential	399 Queen Street
Botsford Residential Home	445 Botsford Street

### J3.4 Language Barriers to Public Education

Cultural diversity and ethnic background can be a factor that fire departments must consider in developing and delivering programs related to fire prevention and public education. Communication barriers in terms of language and the ability to read written material can have an impact of the success of these programs. **Table J8** provides a breakdown of the mother tongue of residents within the two Towns based on the 2011 Statistics Canada census information.

Table J8: Mother Tongue of Town of Aurora and Town of Newmarket Residents (2011)<sup>13</sup>

Language	Town of Aurora		Town of Newmarket		Ontario	
	Total	% Total	Total	% Total	Total	% Total
Total population	52,790	-	79,215	-	12,722,060	-
English	39,725	75%	62,530	79%	8,896,465	70%
French	790	1%	1,130	1%	506,945	4%
English and French	170	0%	225	0%	54,220	0%
Other	12,100	23%	15,330	19%	3,264,435	26%

English is the primary language for both the Towns of Aurora and Newmarket (75% and 79%). Non-official languages are the mother tongue of 23% and 19% of the population of Aurora and Newmarket. **Table J9** shows the top five non-official and non-aboriginal languages spoken as mother tongues in Aurora and Newmarket. Common top languages are Italian, Russian, Spanish, and Chinese. There is an extensive mix of other languages less commonly indicated as a mother tongue including Portuguese, Mandarin, and Greek. These facts should be considered when designing and implementing public education programs on fire safety, especially when working with specific community groups.

<sup>13</sup> Source: Statistics Canada - 2011 Census Data



Table J9: Top 5 Non-Official and Non-Aboriginal Languages Spoken as Mother Tongues in Aurora and Newmarket (2011)<sup>14</sup>

Town of Aurora			Town of Newmarket		
Mother Tongue	Number of People	% Total	Mother Tongue	Number of People	% Total
Italian	1,270	11%	Italian	1,435	9%
Russian	1,215	10%	Russian	1,030	7%
Persian	895	7%	Spanish	1,020	7%
Chinese	835	7%	German	760	5%
Spanish	750	6%	Chinese	740	5%
<b>Total</b>	<b>12,015</b>	<b>-</b>	<b>-</b>	<b>15,220</b>	<b>-</b>

### J3.5 Income Levels & Population Density

The Town of Aurora has a considerably lower population density (people per square kilometre) than Newmarket. There is more agricultural land in Aurora though both Towns have significant environmental features being a part of the Oak Ridges Moraine. Compared to Newmarket, Aurora also has a higher median income, higher value of owned dwelling, and higher rates of home ownership. However, Newmarket's rates for these Census characteristics are higher than the overall Provincial average, as seen in **Table J10**.

<sup>14</sup> Source: Statistics Canada - 2011 Census Data



Table J 10: 2006 Statistics Canada Household Data

Census Characteristic	Town of Aurora	Town of Newmarket	Ontario
Population Density (per square kilometre)	959.9	1,951.0	13.4
Median Income (all private households)	\$89,177	\$81,640	\$60,455
Average Value of Owned Dwelling	\$421,051	\$349,378	\$297,479
<b>Total # of Dwellings</b>	<b>15,655</b>	<b>25,090</b>	<b>3,235,495</b>
% Owned Dwellings	86%	82%	71%
% Rented Dwellings	14%	18%	28%

### J3.6 Demographic Profile Observations

The demographic analysis of Town of Aurora and the Town of Newmarket indicates that the Towns' populations are more or less representative of provincial statistics. However, relating to the noTable J fire risk of seniors as a vulnerable population, both Towns have a lower proportion of those ages 65 and over (about 3.5% fewer). There are a number of buildings identified where the most vulnerable demographic of the community reside. These buildings should be considered as high risk with regard to developing a pro-active fire prevention and protection program. Optimizing the first two lines of defence should be considered a priority for these facilities as part of the FDMPU.

English is the primary language of 77% of both populations combined, while 21% speak a language other than an official language. Some of the most common mother tongues of non-official and non-Aboriginal language speakers include Italian, Russian, Spanish and Chinese. This indicates that there may be a language barrier that should be addressed in the delivery of fire prevention and public education programs.

Based on median income, home value, and percentage of dwellings owned, both Aurora and Newmarket are well above the provincial averages.



## J4.0 GEOGRAPHY / TOPOGRAPHY / ROAD INFRASTRUCTURE

Aurora and Newmarket are centrally located in York Region which extends north from Toronto to Lake Simcoe. North of Newmarket is the Town of East Gwillimbury while the City of Toronto borders Aurora to the south. Aurora shares its northerly border with Newmarket and both municipalities have similar east-west extents containing primarily suburban neighbourhoods. Both municipalities neighbour the Town of Whitchurch-Stouffville to the east and the Township of King to the west.

An extensive transportation network services the populations of these Towns. There is a mix of local, collector, and arterial roads plus major freeways. Listed by location from west to east, the primary north-south routes servicing both Towns include Bathurst Street (Highway 38), Yonge Street (Highway 1), Bayview Avenue (Highway 34), Leslie Street (Highway 12), and Highway 404 to the east. Bathurst Street and Highway 404 form rough municipal boundaries. Though not within municipal borders, Highway 400 is a major north-south freeway within York Region. Major east-west transportation routes in Aurora include St. John's Sideroad (Highway 26), Wellington Street East (Highway 15), and Bloomington Road (Highway 40). In Newmarket, primary east-west roads are Davis Drive (Highway 9/31), and Mulock Drive (Highway 74).

Both Towns are extensively developed with primarily established residential areas. They also have a mix of commercial, industrial, institutional, and public and private open space uses. In the north-east of Aurora there is some land that is currently rural/agricultural. According to Aurora's Official Plan, a portion of this area is to be a part of the Greenlands System. Aurora's Official Plan's Schedule A Structure Plan map (**Figure J 2**) shows that this area is also slated for growth in both residential and employment development. Proposed transportation infrastructure to support this growth includes an on/off ramp to Highway 404. Approximately seven development proposals for this area have been submitted and circulated by the Town and are at various states of approval. The proposals include primarily low- to medium-density residential uses (single-family and townhouses) combined with some commercial and park uses. Some applications also include apartments for seniors.

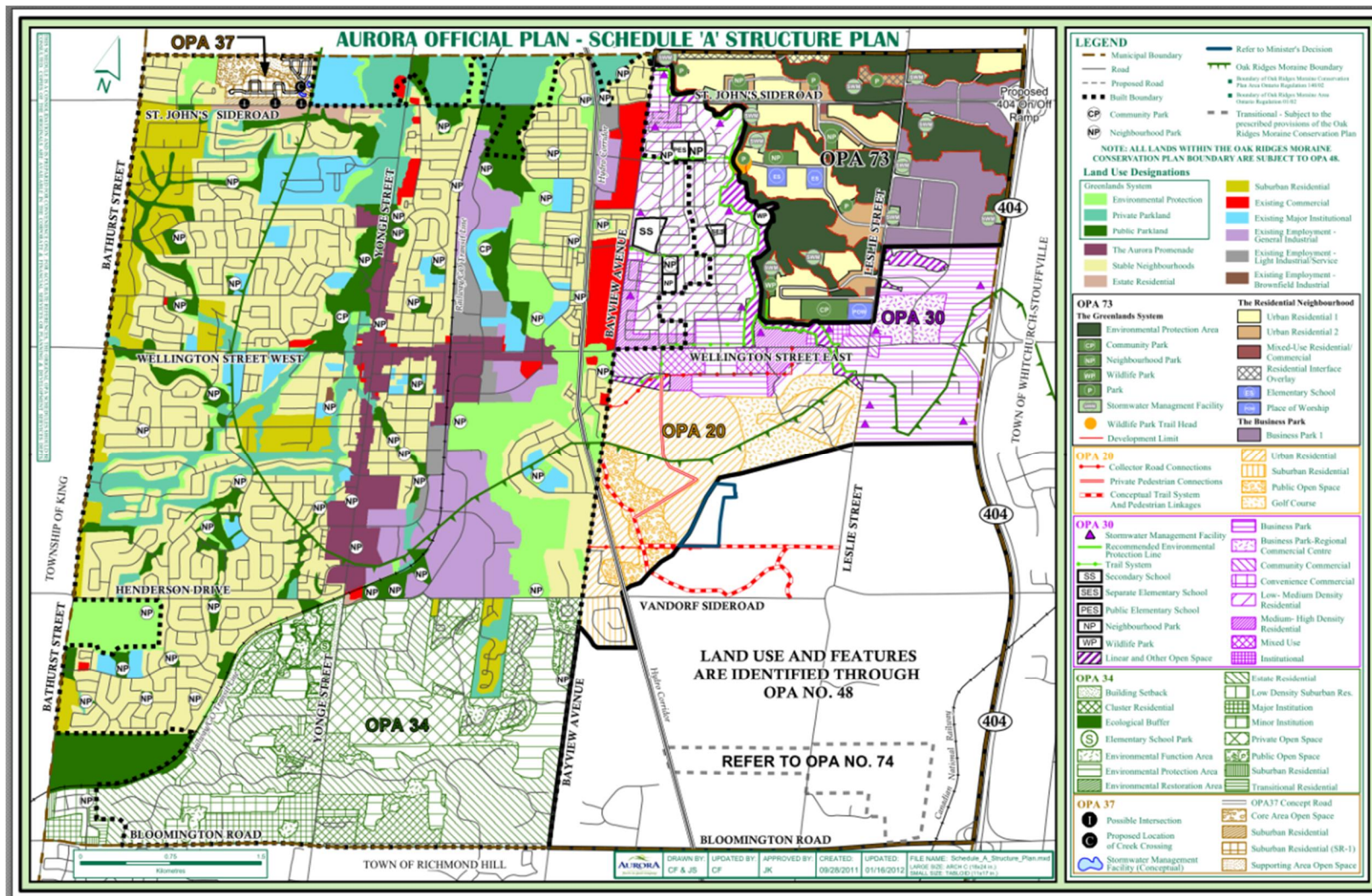
Targets for future growth in Newmarket focus on the intensification of the four urban centres which extend north-south along Yonge Street and from Yonge Street, east along Davis Drive (**Figure J 3**) as well as south along Main Street into the Historic Downtown Centre. A 700 unit development is planned for west of Yonge Street and Davis Drive West on the former Glenway Country Club lands. Further, the parks and open space designated west of the urban centre south of Davis Drive has recently seen approval for residential development through the Ontario Municipal Board. As a result, CYFS needs to be prepared for significant amounts of growth in the short term.

Within the municipal boundaries of both Towns, there are significant natural areas largely oriented around the Oak Ridges Moraine, which covers a substantial amount of Aurora and a portion in the south-west of Newmarket. Natural areas are classified as Oak Ridges Moraine Natural Linkages, Countryside Areas, or Core Areas. Wetlands, woodlands, natural heritage, and key hydrological features including those classified as Areas of Natural and Scientific Interest or Environmentally Significant Areas exist within the Towns. Bisecting Newmarket is the East Holland River and its tributaries. These areas consist of major parks, conservation areas, trail systems, and river corridors in Newmarket.

Also bisecting the Towns is a railway line that serves GO Transit and the Canada National Railway. The rail line passes through all types of land uses including residential, industrial, and natural heritage systems.



Figure J 2: Schedule A - Structure Plan, September 27, 2010, Source: Town of Aurora Official Plan



**Figure J 3: Aurora Promenade, Schedule B1, Secondary Plan Area, Source: Town of Aurora Official Plan**

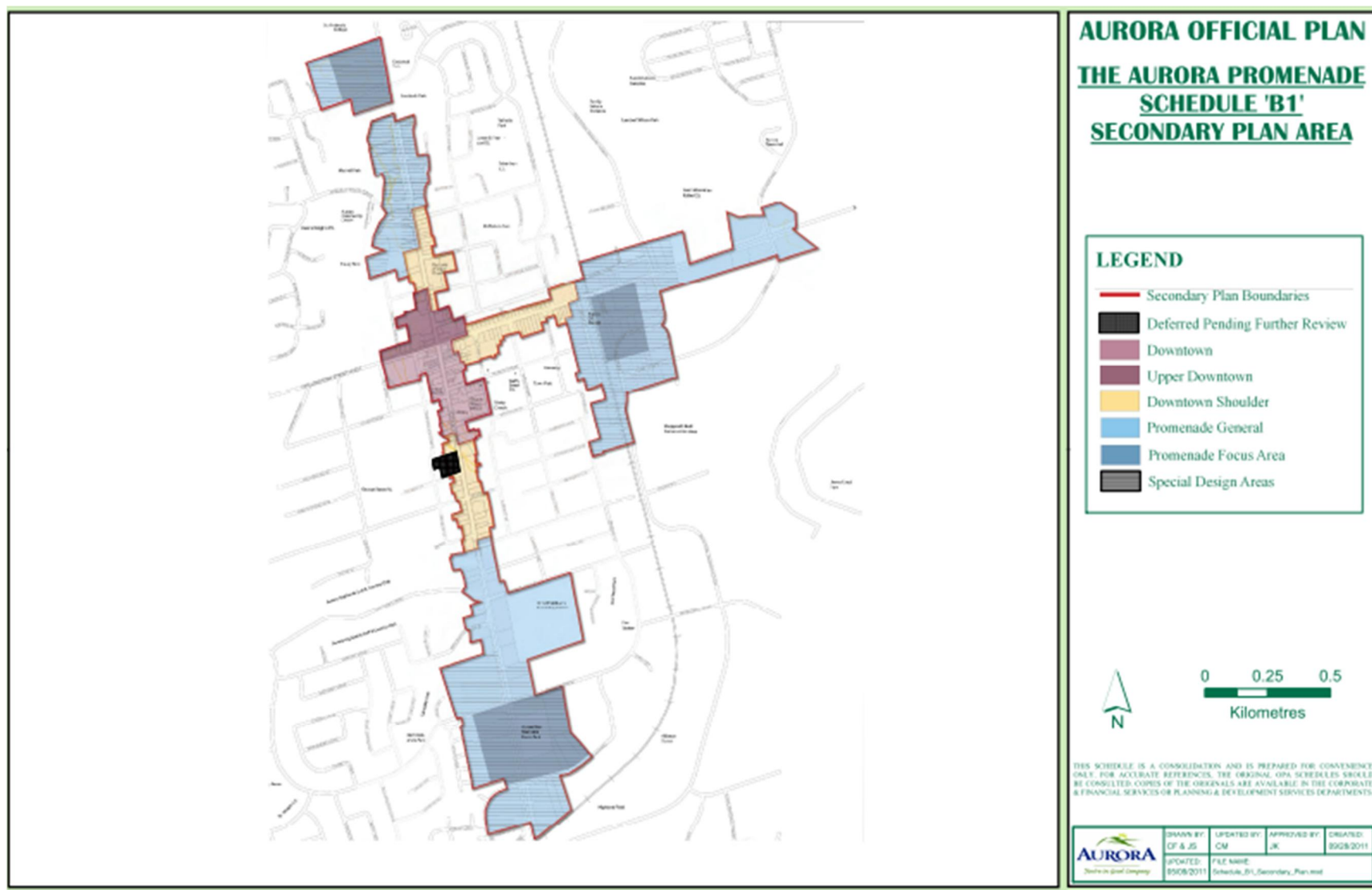
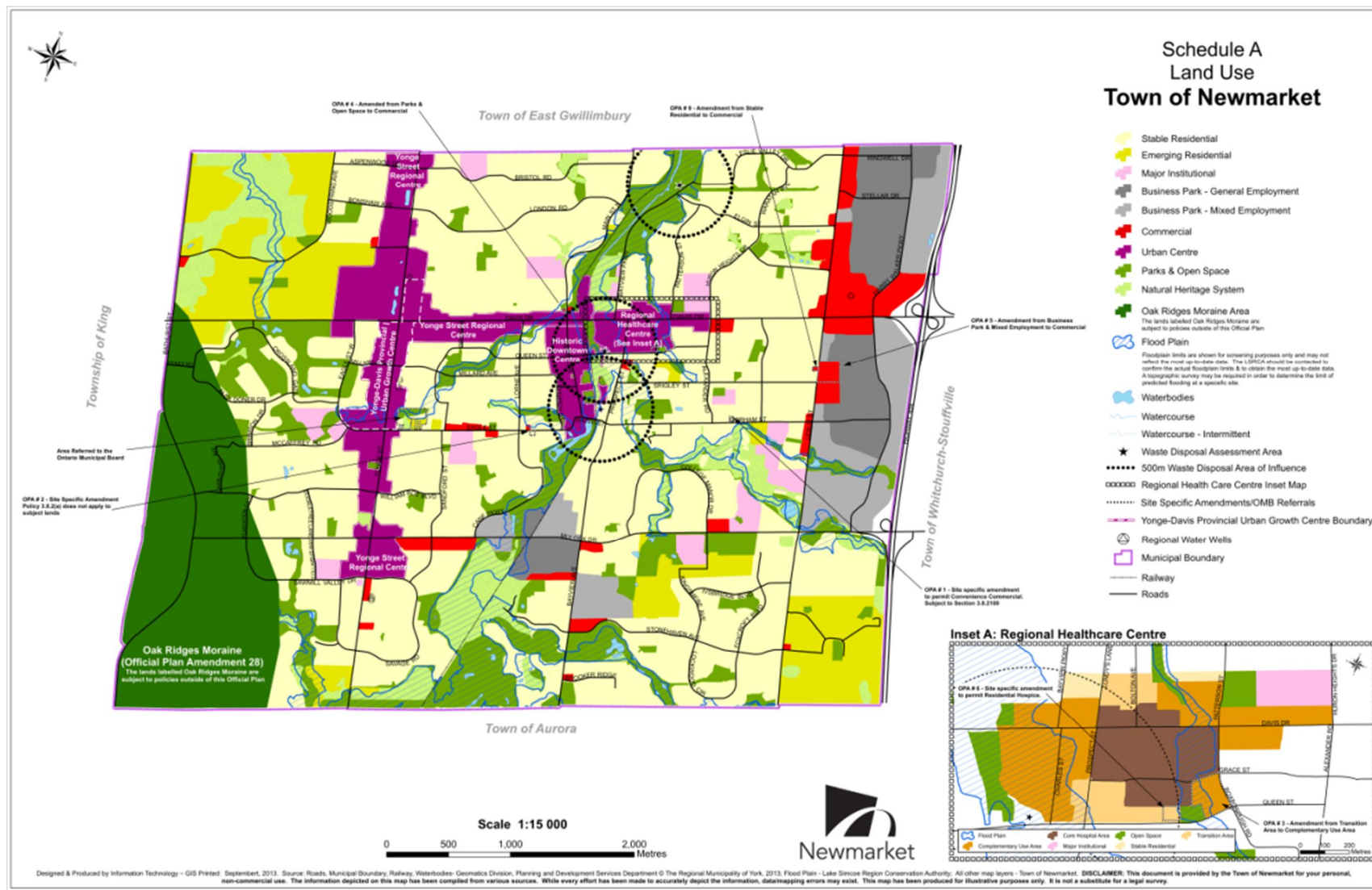
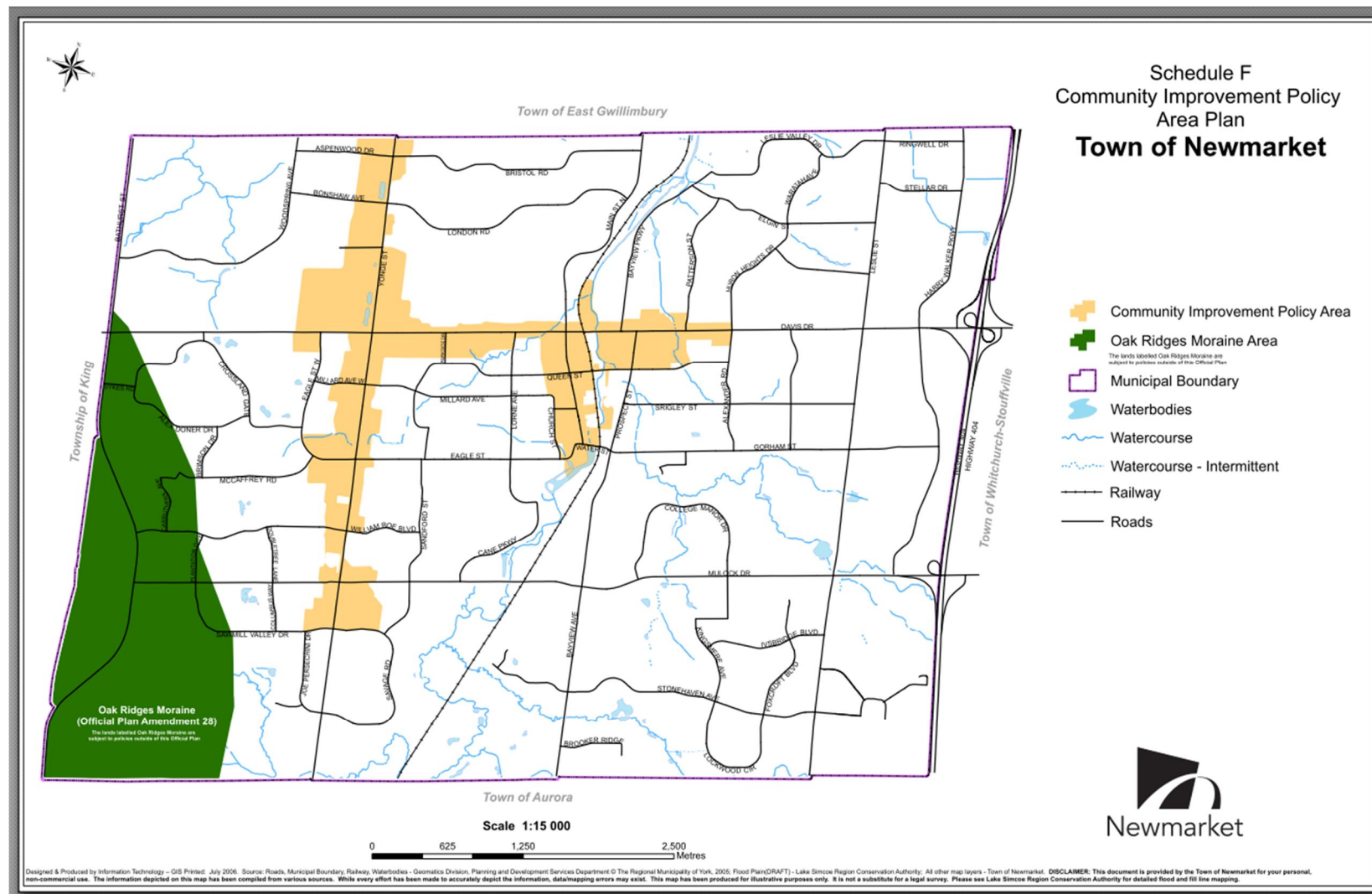


Figure J 4: Schedule A, Land Use, October 2006, Source: Town of Newmarket Official Plan





**Figure J 5: Schedule F, Community Improvement Policy Area Plan, Source: Town of Newmarket Official Plan**





## J4.1 Geography/Topography/Road Infrastructure Profile Observations

The risks associated with the geography, topography and road infrastructure within the two municipalities are predominantly those associated with the large overall size of the CYFS response area. The road network layout is primarily a grid pattern of arterial roads with a mix of local curvilinear roads providing access to residential locations. As such, the population centres including the downtown core and surrounding neighbourhoods are generally well served and connected by the road network.

## J4.2 Past Fire Loss Statistics

Identifying and understanding trends through the analysis of historical data provides valuable insight into a community's specific trends. Assessing the key factors of life safety risk and fire risk in relation to provincial statistics provides a foundation for evaluating where specific programs or services may be necessary.

### J4.2.1 Fire Loss by Occupancy Classification

For the period from 2008 to 2012 there were 61,742 fires within Ontario with a loss reported to the OFM. During this period, 64% or 39,440 of these involved a structure and 27% or 16,929 of these fires involved a vehicle.

**Table J11** indicates the provincial fire loss by property classification for the period 2008 to 2012.

Table J 11: Provincial Fire Loss by Occupancy Classification

Occupancy Classification (OBC)	Occupancy Definition Fire Risk Sub-model (OFM)	Ontario Fire Loss by Occupancy Classification
Group A – Assembly	<i>Assembly occupancies</i>	5%
Group B - Institutional	<i>Care or Detention occupancies</i>	1%
Group C - Residential	<i>Residential occupancies</i>	72%
Group D - Business	<i>Business and Personal Services Occupancies</i>	3%
Group E - Mercantile	<i>Mercantile occupancies</i>	4%
Group F - Industrial	<i>Industrial occupancies</i>	7%
Other occupancies	<i>Not classified within the Ontario Building Code (e.g. farm buildings)</i>	8%
Reported fires	<i>Reported structure fires</i>	39,440

(Source: OFMEM data for Ontario)

For this period, 72% of the fires with a loss occurred within a Group C - residential occupancies.

The property loss experienced by the Towns of Aurora and Newmarket as a result of fires, in comparison to the provincial results is presented in **Table J 12** (OFMEM data for Newmarket and Aurora). For the period from 2008 to 2012 Aurora has a very similar distribution of fire loss by occupancy, compared to Ontario as a whole. Comparing the general trend between the Province and Newmarket, the proportion of fires within Group B – Institutional (1% versus 4%) and Other Occupancies (1% versus 6%) is notably greater.



Table J 12: Central York Fire Loss by Property Classification Period 2008 to 2012

Occupancy Classification (OBC)	Occupancy Definition Fire Risk Sub-model (OFM)	Town of Aurora Fire Loss by Occupancy Classification	Town of Newmarket Fire Loss by Occupancy Classification
Group A – Assembly	<i>Assembly occupancies</i>	6%	6%
Group B – Institutional	<i>Care or Detention occupancies</i>	1%	4%
Group C – Residential	<i>Residential occupancies</i>	75%	68%
Group D - Business	<i>Business and Personal Services Occupancies</i>	4%	2%
Group E - Mercantile	<i>Mercantile occupancies</i>	5%	7%
Group F - Industrial	<i>Industrial occupancies</i>	8%	8%
Other occupancies	<i>Not classified within the Ontario Building Code (e.g. farm buildings)</i>	1%	6%
Reported fires	<i>excluding buildings under National Farm Building code</i>	80	162

(Source: OFMEM data for Aurora and Newmarket)

#### J4.2.2 Property Fire Loss

Property fire loss is another valuable performance measurement tool in assessing the cumulative impact of the “three lines of defence” utilized by a fire and emergency service.

**Table J 13** provides the Towns’ historical property fire loss for the period from 2008 to 2012. An important consideration in evaluating this data is to look at the impact of a major fire with a large dollar loss and/or a series of larger fires with a combined significant large dollar loss. Overall, CYFS response area has experienced a relatively variable loss of property over the five year period. From 2008 to 2010, there was a decrease in fire losses, but 2012 saw a 68% increase (\$1,343,490) in the fire loss from the previous year. Anywhere from 50% to 70% of the total fire loss from 2008 to 2012 took place in Newmarket which is consistent with its larger population and property stock.



Table J 13: Property Fire Loss for Aurora and Newmarket 2008 to 2012

Year	Aurora Fire Loss (\$)	Newmarket Fire Loss (\$)	Central York (Total) Fire Loss (\$)
2008	1,296,300	2,110,750	<b>3,407,050</b>
2009	833,600	1,877,850	<b>2,711,450</b>
2010	997,600	1,547,800	<b>2,545,400</b>
2011	986,200	992,410	<b>1,978,610</b>
2012	1,003,550	2,318,550	<b>3,322,100</b>

(Source: OFMEM historic fire loss data for Aurora and Newmarket)

#### J4.2.3 Reported Fire Cause

Assessing the possible cause of the fires reported is an important factor in identifying any potential trends, or areas that may be considered for introducing additional public education of fire prevention initiatives as part of the community fire protection plan.

**Table J14** provides a summary of the reported possible cause of the 242 fires reported during the period 2008 to 2012 for the CYFS response area (OFMEM data for Aurora and Newmarket).

Table J 14: Aurora and Newmarket 2008 to 2012 Reported Fire Cause

Nature	Fire Cause	Town of Aurora		Town of Newmarket	
		Number of Fires	% of Cause	Number of Fires	% of Cause
Intentional	Arson	5	6%	7	4%
Intentional	Vandalism	0	0%	7	4%
Unintentional	Children Playing	-	-	1	1%
Unintentional	Design/Construction/Maintenance deficiency	7	9%	10	6%
Unintentional	Mechanical /Electrical failure	6	8%	26	16%
Unintentional	Misuse of ignition source	31	39%	56	35%
Unintentional	Other unintentional	7	9%	11	7%
Unintentional	Undetermined	11	14%	8	5%
Other	Other	-	-	3	2%
Undetermined	Undetermined	13	16%	33	20%
<b>Total:</b>		<b>80</b>	<b>100%</b>	<b>162</b>	<b>100%</b>

(Source: OFMEM data for Aurora and Newmarket)

There are four categories of cause utilized to classify the cause of a fire. These include intentional, unintentional, other, and undetermined.



The “intentional” category recognizes the cause of a fire to be started for a specific reason. These are typically classified as arson fires, and can be related to acts of vandalism, or to achieve personal gain through insurance payment. For the CYFS response area, there were a total of 12 arson fires and 7 acts of vandalism reported fires for this period. These intentional fires accounted for a total of 8% of the fire causes in Central York.

The “unintentional” category recognizes a number of the common causes of a fire that represent both human behavioural causes such as playing with matches, and equipment failures such as a mechanical failure. Misuse of ignition source was the leading cause of fires in both Aurora and Newmarket (39% and 35% respectively). Unintentional mechanical/electrical failure represents 13% of the cause for the 32 fires in Central York during this period. It is notable that 26 of these fires were located in Newmarket.

A cumulative percentage of 69% of Aurora and 78% of Newmarket fires were unintentional. For the CYFS response area, 19% of the fire causes were undetermined (16% in Aurora and 20% in Newmarket).

#### J4.2.4 Reported Ignition Source

**Table J15** similarly provides the reported ignition source for the 242 fires that occurred during the period 2008 to 2012.

Table J15: Aurora and Newmarket 2008 to 2012 Ignition Source Class

Reported Ignition Source	Town of Aurora		Town of Newmarket	
	Number of Fires	% of Cause	Number of Fires	% of Cause
Appliances	7	9%	6	4%
Cooking equipment	15	19%	33	20%
Electrical distribution	3	4%	22	14%
Heating equipment chimney etc.	8	10%	9	6%
Lighting equipment	4	5%	11	7%
Open flame tools/smokers articles	17	21%	25	15%
Other electrical/mechanical	4	5%	6	4%
Processing equipment	1	1%	5	3%
Miscellaneous	5	6%	13	8%
Exposure	2	3%	4	2%
Undetermined	14	18%	28	17%
Unknown, not reported	-	-	-	-
<b>Total</b>	<b>80</b>	<b>100%</b>	<b>162</b>	<b>100</b>

(Source: OFMEM data for Aurora and Newmarket)

Overall for the CYFS response area, the primary ignition source is cooking equipment at 20%, followed by open flames at 17%. Between the two municipalities open flame ignition sources count for a larger proportion in Aurora (21%) than Newmarket (15%). The greatest discrepancy between the Towns occurs under the electrical distribution ignition source which accounted for 4% of the fires in Aurora and 14% in Newmarket.



### J4.2.5 Reported Civilian Injuries and Fatalities

**Table J16** indicates the number of fire related civilian injuries and fatalities that occurred within Aurora and Newmarket during the period 2008 to 2012.

Table J16: Aurora and Newmarket 2008 to 2012 Reported Civilian Injuries and Fire Deaths

Occupancy Classification (OBC)	Occupancy Definition Fire Risk Sub-model (OFM)	Town of Aurora		Town of Newmarket	
		Injuries	Fatalities	Injuries	Fatalities
Group A – Assembly	<i>Assembly occupancies</i>	0	0	0	0
Group B - Institutional	<i>Care or Detention occupancies</i>	0	0	1	0
Group C - Residential	<i>Residential occupancies</i>	5	1	6	0
Group D - Business	<i>Business and Personal Services Occupancies</i>	0	0	0	0
Group E - Mercantile	<i>Mercantile occupancies</i>	0	0	0	0
Group F - Industrial	<i>Industrial occupancies</i>	0	0	0	0
Other occupancies	<i>Not classified within the Ontario Building Code (i.e. farm buildings)</i>	0	0	0	0

(Source: OFMEM data for Aurora and Newmarket)

During this period there were a total of 12 reported injuries in CYFS response area of which 11 was a result of fires in Group C residential occupancies. There was one reported fatality also in a Group C residential occupancy.

### J4.3 Past Fire Loss Profile Observations

Based on the historical data for the period 2008 to 2012, the CYFs response area experienced the highest rates of fires within Group C residential occupancies which is consistent with the Provincial profile.

Unintentional misuse of ignition source was the leading cause of fires in both Aurora (39%) and Newmarket (35%), followed by unintentional undetermined in Aurora (14%) and mechanical/electrical failure in Newmarket (16%). The percentage of fire causes that were undetermined represents 16% and 20% of the fires in Aurora and Newmarket, a total of 46 fires.

Cooking equipment and open flames were leading sources of ignition in the CYFS response area. Open flames are typically related to the improper disposal of cigarettes or misuse of candles. A total of 17% of the fires (42) had undetermined ignition sources. In the Town of Newmarket, electrical distribution was a noTable J source of ignition within the two Towns (14% or 22 fires).

There were 11 reported injuries and 1 fatality where all but one incident (an injury in Newmarket) occurred in a Group C residential occupancy. This analysis of the five year period from 2008 to 2012 further emphasises that Group C residential occupancies represent the highest level of risk within a community. Enhancing the first line of defence, including pro-active prevention and education programs, targeted at the areas identified within this Comprehensive Community Risk Assessment, should be considered a priority within the FDMPU.



## J4.4 Fuel Load Profile

Fuel load typically refers to the amount and nature of combustible content and materials within a building. This can include combustible contents, interior finishes as well as structural materials. Combustible content tends to create the greatest potential fire loss risk. This can include industrial materials, commercial materials or typical office furnishings. Higher fuel loads results in increased fire loss risk due to increased opportunity for ignition and increased fire severity.

In many communities large amounts of fuel load can be contained within a single occupancy such as a building supply business, or alternatively within a large multi-occupancy building such a historical downtown core.

As presented previously within this report, age and construction of a building can also have an impact on fuel load given that older buildings likely have a larger volume of combustible construction such as wood framing rather than newer construction utilizing concrete and steel products.

Our analysis of fuel load within the CYFS response area indicates that there are a small number of buildings or occupancies where significant fuel loads are present. The connected multi-occupancy structures within the downtown core present the highest amount of fuel load concentration. There are also notable industrial sites including Clear Chem (25 Allaura Boulevard, Aurora) and Piramel Healthcare (110 Industrial Parkway North, Aurora). Methanol is one of the materials stored at the latter site for use in drug manufacturing.

Regular fire prevention inspection cycles and strategies to enforce continued compliance with the OFC are considered as best practices to achieving the legislative responsibilities of the municipalities and providing an effective fire protection program to address fuel load risks.

### J4.4.1 Fuel Load Profile Observations

In comparison to the number of buildings within the CYFS response area there are a small number of buildings having a site specific fuel load concern. In addition to ensuring compliance to the requirements of the OBC and the OFC there are operational strategies that a fire department can implement to address fuel load concerns. These include regular fire inspection cycles and pre-planning of buildings of this nature to provide an operational advantage in the event of fire.



## J5.0 COMMUNITY GROWTH & DEVELOPMENT

### J5.1 Historic Growth

**Table J17** indicates the historic populations within the CYFS response area, as provided by Statistics Canada, Census Profiles. The historic number of households is also included, where available.

Table J17: Historic Growth in Population and Households for Central York<sup>15</sup>

Year	Central York Population	% Change in Population	Central York Number of Households	% Change in Households
1996	74,928	-	N/A	-
2001	91,982	22.8%	29,290	-
2006	121,924	15.1%	40,745	18.79%
2011	132,181	8.4%	45,105	10.70%

(Source: Statistics Canada Community Profiles – 1996, 2006, and 2011)

From 1996 to 2011, the CYFS response area saw an increase in population of 76% or about 3.8% per year. The rate of change for the number of households added to the property stock saw an average annual growth rate of 3.6%, commensurate with the population growth.

### J5.2 Growth Projections

**Table J18** summarizes the growth projections for the CYFS response area from 2006 to 2031.

Table J18: Population and Employment Growth Projections

Year	2006	2011	2016	2021	2026	2031
Population	127,300	143,000	152,400	160,000	164,100	167,300
Employment	62,400	63,000	76,600	81,100	82,500	83,600

(Source: Central York Fire Services)

The CYFS response area population and employment projections predict that over the next 20 years (2011 to 2031), the municipalities will experience a 17% growth in population and a 33% growth in employment, averaging out to an annual growth rate of 0.8% and 1.6% respectively. The major increases in population and employment are expected to take place by 2016. The employment projections are greater than population projections because both communities currently function primarily as suburban communities outside of a major urban centre. Newmarket's Official Plan 2006 states a focus on employment growth for the purpose of a more balanced tax base. The Newmarket Official Plan also notes that municipal boundary adjustments may need to take place in order to grow the land base for employment.

<sup>15</sup> Source: Statistics Canada, Census Community Profiles, Aurora and Newmarket, 1996, 2006, and 2011



Aurora's Official Plan 2010 states that 34% of residential development will occur through intensification and 66% through greenfield development. Greenfield development will mostly take place in the north-east area of Aurora which is currently rural. The two types of residential uses slated for this area are low-density dwellings (single-detached, or semi-detached) with a maximum height of 3.5 storeys or 11.0 m. Medium-density dwellings (townhouse, multiple unit buildings, or small scale/low-rise apartments) with a maximum height of 6 storeys or 20.0 m are also permitted in certain areas. The remainder of this area is classified as either Business Park 1 or as part of a Greenlands System. Business Park 1 allows for prestige industrial uses (e.g. research and development, communication facilities), professional offices, institutional uses, and hotels with a stated maximum height of 7 storeys or 28 metres for all uses.<sup>16</sup> To support this development through transportation network upgrades, on/off ramp for the 404 at St. John's Sideroad is proposed in the Official Plan. Of all employment growth projected for Aurora, 53% will take place in this greenfield area.<sup>17</sup> The Aurora Promenade will absorb 92% (or 4,120 people) of the 34% of residential growth that is to occur through intensification.

Newmarket's growth is focused on intensification along the Yonge-Davis Provincial Urban Growth Centre and the Yonge Regional Centre. These areas are the primary target for both employment and residential growth. It is anticipated that the majority of intensification will occur in the Yonge Street Regional Centre, with an objective of 1 job for every two residents. The Yonge-Davis Provincial Urban Growth Centre has a stated objective of 1:1 ratio of jobs to residents in this corridor resulting in a minimum net density of 200 residents and jobs per gross hectare by 2031. At the time of writing, a Draft Secondary Plan for the Urban Centre is being reviewed, revised, and finalized. It is the intention of the Secondary Plan to ensure that the approach to population and employment intensification is appropriately phased so that infrastructure can meet related demands.

### J5.3 Growth Projections Profile Observations

From 1996 to 2011, the CYFS response area had substantial population growth averaging at about 3.8% annually. From 2011 to 2031 the population is expected to grow by a modest 0.8% as an annual average over the 20 year period. Employment is expected to grow at a greater rate, (1.6% on average annually), as currently the CYFS response area functions as a typical suburban community outside of a major urban centre. To provide a more balanced tax-base, Newmarket seeks to encourage employment growth stating the potential need to expand municipal boundaries. Growth in Newmarket is planned primarily as employment and residential intensification in the four main Urban Centres. In Aurora, growth in employment and population will mostly be through greenfield development which will take place in the north-east portion (currently rural) area of the municipalities.

<sup>16</sup> Source: *Town of Aurora – OPA 73, Aurora 2C Secondary Plan Area, p 35*

<sup>17</sup> Source: *Town of Aurora – OPA 73, Aurora 2C Secondary Plan Area, p 24 to 26*



## J6.0 "PHASE 1" FIRE RISK SUB-MODEL ANALYSES

The OFMEM Fire Risk Sub-model defines risk *"as a measure of the probability and consequence of an adverse effect to health, property, organization, environment, or community as a result of an event, activity or operation. For the purposes of the Fire Risk Sub-model, such an event refers to a fire incident along with the effects of heat, smoke and toxicity threats generated from an incident."*

The OFMEM model develops an overall risk assessment *"by assigning probability and consequence levels to potential adverse events or scenarios due to fire and combining the two to arrive at an overall risk level."* The OFMEM Fire Risk Sub-model provides a matrix as one option in arriving at the level of risk for a range of scenarios.

Alternatively the model provides the opportunity *"for analysis purposes, the community being assessed can be defined as the municipality in its entirety or as a particular segment of it that distinguishes it from other parts."* The model further provides that *"it may be convenient to subdivide a municipality based on residential subdivision, downtown sections, industrial park, and a rural area."*

For analytical purposes, the methodology within this study uses the OFMEM Fire Risk Sub-model major occupancy classifications as the basis for segmenting the community by primary building use. Each major occupancy classification is assigned a probability level based on the OFMEM Fire Risk Sub-model definitions. A consequence level also using the OFMEM Fire Risk Sub-model definition is then assigned for each major occupancy classification.

The methodology within this report includes a further process of assigning 'weighting factor' to each of the eight risk factor categories identified by the OFMEM Fire Risk Sub-model. Utilizing a range from 1 (lowest) to 3 (highest) each of the factors is assigned a weight factor, to calculate a weighted average. The weight factor assigns more or less priority to each of the given factors. For example, the demographic profile that identifies the number of vulnerable residents has been assigned the highest factor weight of 3. This process results in the most relevant categories having more impact on the risk priority level calculated.

The level of risk (Priority Level) for each major occupancy classification is determined by multiplying ***"probability x consequence = risk level (priority)."*** This provides the ability to determine an overall risk level for each major occupancy classification within the community.

This methodology then coordinates the assigned risk level for each major occupancy classification with the Council approved zoning by-law information and mapping. This process provides the opportunity to create a visual model (map) of the Comprehensive Community Risk Assessment. This provides the opportunity to view both the current and projected level of risk within the community based on Council approved Official Plans.

Creating the Comprehensive Community Risk Assessment Model provides the opportunity to evaluate the current level of fire protection services provided. The model can further identify where risk levels may increase or change based on growth and long-term planning of the community.

### J6.1 Probability Levels

The probability of a fire occurring can be estimated in part based on historical experience of the community. The experience of other similar communities and that of the province as a whole can also provide valuable insight into the probability of a fire occurring. The experience of the evaluator and the local fire service staff in collaborating on determining probability is also a key factor.

The OFMEM Fire Risk Sub-model categorizes the probability of an event occurring into five levels of likelihood. **Table J19** identifies the OFMEM Fire Risk Sub-model categories.



Table J19: OFMEM Fire Risk Sub-Model Likelihood Levels (Probability)

Likelihood Levels (Probability)		
Description	Level	Specifics
<i>Rare</i>	1	- may occur in exceptional circumstances - no incidents in the past 15 years
<i>Unlikely</i>	2	- could occur at some time, especially if circumstances change - 5 to 15 years since last incident
<i>Possible</i>	3	- might occur under current circumstances - 1 incident in the past 5 years
<i>Likely</i>	4	- will probably occur at some time under current circumstances - multiple or reoccurring incidents in the past 5 years
<i>Almost Certain</i>	5	- expected to occur in most circumstances unless circumstances change - multiple or reoccurring incidents in the past year

## J6.2 Consequence Levels

The consequences as a result of a fire relate to the potential losses or negative outcomes associated should an incident occur. The Fire Risk Sub-model identifies four components that should be evaluated in terms of assessing consequence. These include:

- **Life Safety:** Injuries or loss of life due to occupant and firefighter exposure to life threatening fire or other situations.
- **Property Loss:** Monetary losses relating to private and public buildings, property content, irreplaceable assets, significant historic/symbolic landmarks and critical infrastructure due to fire.
- **Economic Impact:** Monetary losses associated with property income, business closures, downturn in tourism, tax assessment value and employment layoffs due to fire.
- **Environmental Impact:** Harm to human and non-human (i.e. wildlife, fish and vegetation) species of life and general decline in quality of life within the community due to air/water/soil contamination as a result of fire or fire suppression activities.

The OFMEM Fire Risk Sub-model evaluates the consequences of an event based on five levels of severity. **Table J20** identifies the OFMEM Fire Risk Sub-model categories.



Table J20: OFMEM Fire Risk Sub-model Consequence Levels

Description	Level	Specifics
<i>Insignificant</i>	1	<ul style="list-style-type: none"> <li>- no life safety issue</li> <li>- limited valued or no property loss</li> <li>- no impact to local economy and/or</li> <li>- no effect on general living conditions</li> </ul>
<i>Minor</i>	2	<ul style="list-style-type: none"> <li>- potential risk to life safety of occupants</li> <li>- minor property loss</li> <li>- minimal disruption to business activity and/or</li> <li>- minimal impact on general living conditions</li> </ul>
<i>Moderate</i>	3	<ul style="list-style-type: none"> <li>- threat to life safety of occupants</li> <li>- moderate property loss</li> <li>- poses threat to small local businesses and/or</li> <li>- could pose threat to quality of the environment</li> </ul>
<i>Major</i>	4	<ul style="list-style-type: none"> <li>- potential for a large loss of life</li> <li>- would result in significant property damage</li> <li>- significant threat to businesses, local economy and tourism and/or</li> <li>- impact to the environment would result in a short term, partial evacuation of local residents and businesses</li> </ul>
<i>Catastrophic</i>	5	<ul style="list-style-type: none"> <li>- significant loss of life</li> <li>- multiple property damage to significant portion of the municipality</li> <li>- long term disruption of businesses, local employment, and tourism and/or</li> <li>- environmental damage that would result in long-term evacuation of local residents and businesses</li> </ul>

### J6.3 Risk Levels

Once probability and consequence are determined for each major occupancy classification the level of risk is calculated by multiplying “***probability x consequence = risk level (priority)***.” **Table J 21** identifies the four levels of risk identified within the OFMEM Fire Risk Sub-model including the lower and upper range of each risk classification and the relative definition of each.

Table J21: OFMEM Fire Risk Sub-model Risk Levels

Risk Level	Priority Level	Lower – Upper Range	Definition
<i>Low Risk</i>	L1	0 to 6.3	- manage by routine programs and procedures, maintain risk monitoring
<i>Moderate Risk</i>	L2	6.4 to 12.5	- requires specific allocation of management responsibility including monitoring and response procedures
<i>High Risk</i>	L3	12.6 to 18.7	- community threat, senior management attention needed
<i>Extreme Risk</i>	L4	18.8 to 25.0	- serious threat, detailed research and management planning required at senior levels



## J6.4 Ontario Fire Code Compliance

A major determinate in assessing risk within a community and the major building classifications is compliance with the Ontario Fire Code. The Ontario Fire Code which was adopted in 1981 and the Ontario Building Code were developed to ensure uniform building construction and maintenance standards are applied for all new building construction. The codes also provide for specific fire safety measures depending on the use of the building. Examples of the fire safety issues that are addressed include:

- *occupancy*
- *exits/means of egress including signs and lighting*
- *fire alarm and detection equipment*
- *fire department access*
- *inspection, testing, and maintenance*

In 1983 the OFC was further expanded to include retrofit requirements for many of the building constructed prior to 1981. Retrofit requirements were established to ensure a minimum acceptable level of life safety is present. A number of occupancy types are included within the retrofit requirements including assembly, boarding, lodging and rooming houses, health care facilities, multi-unit residential, two-unit residential, and hotels.

Determining the status of compliance or non-compliance including the status of retrofit requirements particularly for major building occupancies is an important component of developing the Comprehensive Community Risk Assessment. This is particularly important within the major occupancies classifications where there is a documented history of property loss as a result of fire, and/or injuries and fatalities as a result of fire. Group A – Assembly and Group B – Institutional occupancies are the two primary occupancies types where more detailed analysis of compliance and non-compliance should be considered.

Where compliance has been achieved and documented these occupancy classifications can be considered as part of the standard risk identification methodology within this report. Where compliance has not been achieved including retrofit requirements these occupancies should be evaluated independently adding a further assessment of OFC compliance.

Completing the independent evaluation provides the opportunity to assess these buildings on a case by case basis and as such does not impact the overall risk level for the occupancy classification. In the event an individual property is assigned a higher level of risk as a result of non-compliance this methodology provides the opportunity for re-evaluating the risk level for that specific property once compliance is achieved.

### ***Group A – Assembly Occupancies***

All Group A – information provided the CYFS indicates that all Assembly occupancies are currently in compliance with the OFC.

### ***Group B – Institutional Occupancies***

Information provided by the CYFS indicates that all Group B – Institutional Occupancies are currently in compliance with the OFC. The care and detention centers classified within this occupancy classification can present unique challenges in the event of a fire. Utilizing the “first line of defence” including proactive fire prevention and public education programming in addition to a regular fire inspection program to sustain compliance with the OFC is an effective strategy in managing this risk.



### ***Group C – Residential Occupancies***

There are a number of properties where vulnerable occupants reside in either residential or institutional occupancies (e.g. Sunrise Assisted Living, Barton Retirement Residence). Although these buildings are currently compliant with the OFC the profile recognizes that this demographic of the population is by experience at higher risk in the event of a fire. Utilizing the “first line of defence” including pro-active fire prevention and public education programming in addition to a regular fire inspection program to sustain compliance with the OFC is an effective strategy in managing this risk.

### ***Group D – Commercial Occupancies***

Information provided by the CYFS indicates that Group D - Commercial Occupancies have not all been inspected for compliance with the OFC.

### ***Group E – Mercantile Occupancies***

Information provided by the CYFS indicates that Group E - Mercantile Occupancies have not all been inspected for compliance with the OFC.

### ***Group F – Industrial Occupancies***

Information provided by the CYFS indicates that all Group F - Industrial Occupancies have not been inspected for compliance with the OFC.

## **J6.5 Town of Aurora / Town of Newmarket Risk Evaluation**

**Table J 22** presents the completed risk evaluation for CYFS response area. The evaluation utilizes the methodology described above following the framework of the OFMEM Fire Risk Sub-model.

The risk evaluation summary incorporates all community risk factors within Central York for each major occupancy classification. The summary identifies that the CYFS response area has no extreme risk occupancies.

Institutional occupancies were assigned high risk. This should be reflected in the CYFS fire prevention and public education program planning. Assembly and residential occupancies are identified as moderate level risks. If, however, any buildings under this occupancy are non-compliant, they may be considered high risk. This would apply specifically to higher density residential units or assembly occupancies. Another consideration would be residential buildings which specifically house higher risk age-groups (e.g. seniors or vulnerable persons), which should be given a higher priority for programming based on increased risk. Business and mercantile occupancies in the CYFS response area represent a moderate risk.



Table J22: Risk Evaluation Summary

Community Risk Assessment Factors		Property Stock	Building Height	Building Age	Building Exposures	Demographic Profile	Geography Topography	Past Fire Loss	Fuel Load	Prob. Level	Cons. Level	Priority Level	Risk Level
Weight Factor		1	2	3	1	3	1	3	2				
OBC Major Occupancy Classification		Risk Level Assessment											
Group A	Assembly	3	2	3	2	4	2	1	2	2.4	3	7.2	RL-2
Group B	Institutional	4	3	4	3	5	3	1	3	3.2	4	12.8	RL-3
Group C	Residential	4	2	3	3	5	2	3	2	3.1	3	9.3	RL-2
Group D	Business	3	3	3	4	2	2	2	3	2.6	3	7.8	RL-2
Group E	Mercantile	3	3	3	4	2	2	2	3	2.6	3	7.8	RL-2
Group F	Industrial	3	2	2	2	2	2	2	4	2.3	3	6.9	RL-2
Mobile Homes & Trailers		2	1	1	1	2	2	1	1	1.3	2	2.6	RL-1

<b><u>Probability:</u></b> 1 – Rare 2 – Unlikely 3 – Possible 4 – Likely 5 – Almost Certain	<b>X</b>	<b><u>Consequence Level:</u></b> 1 – Insignificant 2 – Minor 3 – Moderate 4 – Major 5 – Catastrophic	<b>=</b>	<b><u>Priority Level</u></b> 0 to 6.2 = Low 6.3 to 12.5 = Moderate 12.6 to 18.7 = High 18.8 to 25.0 = Extreme	<b>=</b>	<b><u>Risk Level</u></b> RL-1 – Low Risk RL-2 – Moderate Risk RL-3 – High Risk RL-4 – Extreme Risk
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## J6.6 Fire Risk Modelling Methodology

This section provides a brief outline of the scope and methodology used in order to provide insight into the modeling procedures adopted to assess the CYFS response area risk. A Geographic Information Systems (GIS) model was developed to assess risk based on historic call locations, risk geography, land use, the department's existing and predicted emergency response travel times relate to these risks, and the Fire Risk Sub-Model (form 100).

The basis of the GIS risk model is to develop geographical risk zones that represent areas of low, moderate, high and extreme risk categories based on land use. The CYFS response area existing land use zoning was used to determine the boundaries and building occupancies associated with each zone. Subsequently, additional building located in agricultural and rural areas were identified using a buildings shapefile provided by the Ministry of Natural Resources. The shapefile displays the buildings as points, thus each point/building was given a 50 metre buffer in order to approximate the building along with its corresponding property. Next, building occupancies were assigned to their associated land use in order to determine the base risk category (assumes that all buildings are in compliance). The base risk zones associated with each occupancy category are listed in **Table J 23**. Finally, several occupancies had their risk levels up-graded or down-graded based on the Fire Risk Sub-Model (form 100).

Table J23: Base Risk Zone Category by Occupancy

Occupancy Classification (OBC)	Occupancy Definition Fire Risk Sub-model (OFM)	Base Risk Zone Category Assigned
Group A – Assembly Assembly	<i>Assembly occupancies</i>	<i>moderate</i>
Group B - Institutional Institutional	<i>Care or Detention occupancies</i>	<i>high</i>
Group C - Residential Residential	<i>Residential occupancies</i>	<i>moderate</i>
Group D - Business	<i>Business and Personal Services Occupancies</i>	<i>moderate</i>
Group E - Mercantile	<i>Mercantile occupancies</i>	<i>moderate</i>
Group F1 - Industrial	<i>Industrial occupancies</i>	<i>low</i>
Group F2 - Industrial		<i>moderate</i>
Group F3 - Industrial		<i>high</i>
Other occupancies	<i>Not classified within the Ontario Building Code (i.e. farm buildings)</i>	<i>low</i>



## J6.7 Existing Risk and Response (Geography)

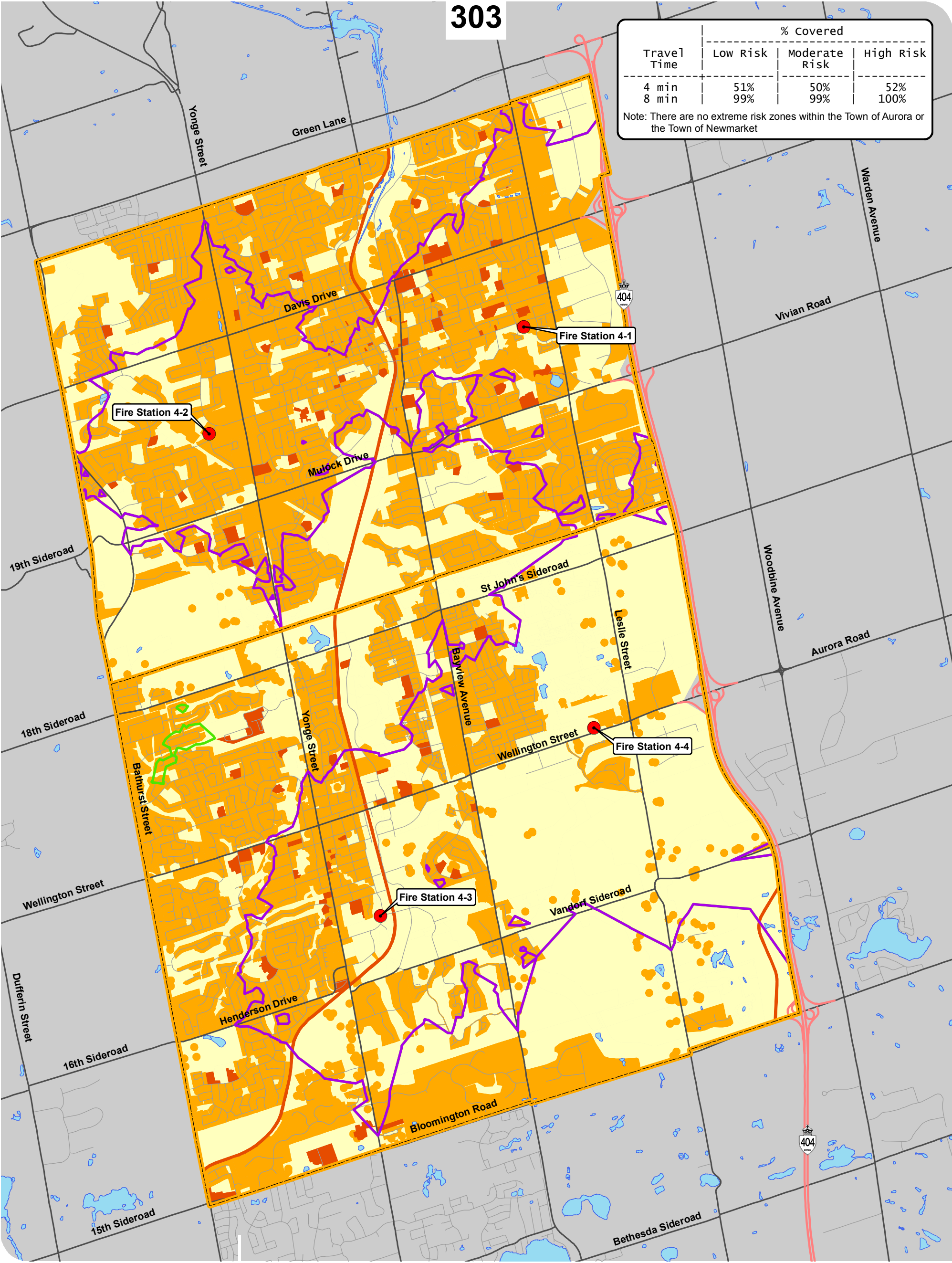
A GIS model was used to approximate existing geographic coverage of the existing risk zones with the town of Aurora and town of Newmarket. The locations of the existing fire stations were represented in this scenario, shown in **Figure J6**. The travel times of historical fire calls were used to calibrate travel speeds throughout the road network. The calibrated travel speeds took into account vehicle acceleration and deceleration at stop signs and traffic signals and are a close match to the actual travel times of the historical calls. These calibrated travel speeds were used to calculate travel time buffers, aligned with the travel time components from the CYFS performance measures, which radiate out from the fire stations. Area calculations identify the percentage of each risk zone category that can be responded to within a four minute and eight minute travel time (as per CYFS performance measures). The calculations indicate that 52% of the high risk geography, 50% of the moderate risk geography and 51% of the low risk geography is covered within four minutes of travel time. This scenario also indicates that 100% of the high risk zones, 99% of the moderate risk zones and 99% of the low risk zones are covered within an eight minute travel time.

## J6.8 Existing Risk and Response (Historical Call Locations)

**Figure J7** depicts the historic fire call locations from 2009 to 2013, which have been placed on top of the existing risk zones. Calculations were carried out to determine the number of calls that are located within each risk zone category and the associated travel time. Based on the calculation results, 67% of historic high risk calls, 67% of the historic moderate risk calls and 60% of the historic low risk calls were reached within a four minutes travel time. The Table J also indicates that within an eight minute travel time, 100% of historic high risk calls, 99% of the historic moderate risk calls and 100% of the historic low risk calls were reached within the town of Aurora and the town of Newmarket. These results indicate that the CYFS is able to respond to the majority of calls within the travel time components of the CYFS and NFPA 1710 standards for initial response.

Travel Time	% Covered		
	Low Risk	Moderate Risk	High Risk
4 min	51%	50%	52%
8 min	99%	99%	100%

Note: There are no extreme risk zones within the Town of Aurora or the Town of Newmarket



**CENTRAL YORK  
FIRE SERVICES**  
FIRE MASTER PLAN UPDATE

**EXISTING RISK AND  
RESPONSE - GEOGRAPHY**  
FIGURE J6



- Fire Station
- Highway
- Arterial
- Local
- Railway

- Waterbody
- Municipal Boundary

**TRAVEL TIMES**

- 4 Minutes @ Network Speed
- 8 Minutes @ Network Speed

**RISK**

- Low Risk
- Moderate Risk
- High Risk
- Extreme Risk

MAP DRAWING INFORMATION:  
DATA PROVIDED BY TOWN OF  
AURORA & TOWN OF NEWMARKET

MAP CREATED BY: JJA  
MAP CHECKED BY: SC  
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\138358 - Central York Fire Services  
FMP Update\Mapping\ExistingRiskandResponse-Geo.MXD

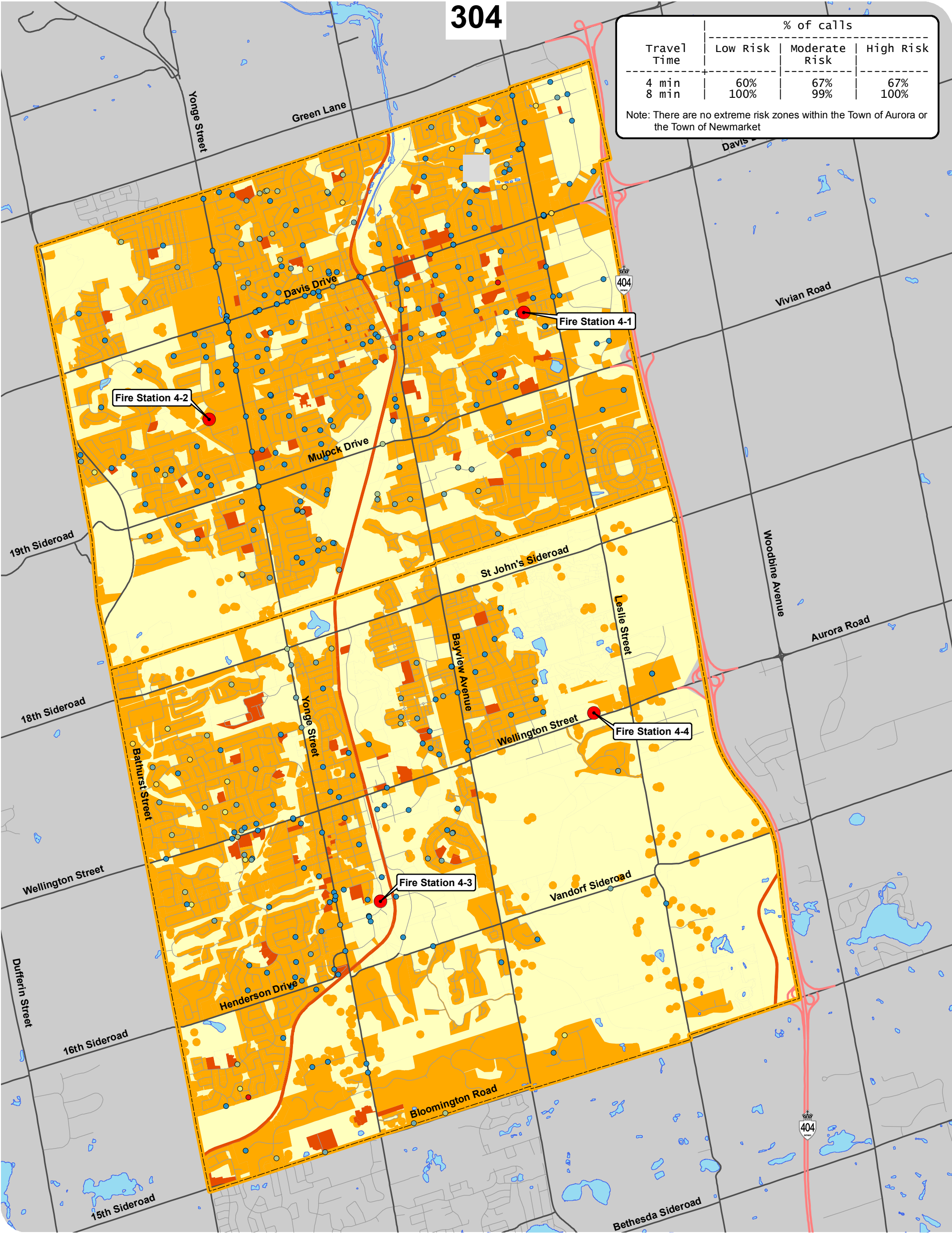
0 200 400 600 800 m

SCALE 1:45,000



PROJECT: 13-8358 STATUS: FINAL DATE: 06/04/14





**CENTRAL YORK  
FIRE SERVICES**  
FIRE MASTER PLAN UPDATE

**EXISTING RISK AND  
RESPONSE - HISTORICAL  
FIRE CALL LOACTIONS**  
FIGURE J7



● Fire Station

— Highway

— Arterial

— Local

— Railway

Waterbody

Municipal Boundary

**TRAVEL TIME TO FIRE CALLS (2009-2013)**

● ≤ 4 min

● ≤ 5 min

● ≤ 6 min

● ≤ 7 min

● ≤ 8 min

● ≤ 9 min

● ≤ 10 min

● > 10 min

**RISK**

Low Risk

Moderate Risk

High Risk

Extreme Risk

MAP DRAWING INFORMATION:  
DATA PROVIDED BY TOWN OF  
AURORA & TOWN OF NEWMARKET

MAP CREATED BY: JJA  
MAP CHECKED BY: SC  
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\138358 - Central York Fire Services  
FMP Update\Mapping\ExistingRiskandResponse-Calls.MXD

0 200 400 600 800 m

SCALE 1:45,000



PROJECT: 13-8358

STATUS: FINAL

DATE: 06/04/14





## J7.0 "PHASE 2" IRM WEB TOOL PRELIMINARY OCCUPANCY ANALYSES

The new IRM Web Tool is an evidence based risk management tool that has been designed for application on either an individual building, or for multiple assessments of an area, specific occupancies or similar/occupancies within a community.

### J7.1 Methodology

The OFMEM states that the risk methodology within IRM Web Tool is based on four categories: Building Factors and each of the 'Three Lines of Defence'. The probability within the IRM Web Tool is divided equally between building factors and the first two lines of defence (e.g. 33.33% for building Factors, 33.33% for the first line of defence and 33.33% for the second line of defence). Consequence is assigned an equal weighting for all four categories of building factors and each of the three lines of defence (25% weight assigned to each category).

While using the IRM Web Tool, the results are visually presented to the user as a ball marking a location on a risk graph. The risk graph, marked by the ball, represents the relative degree of risk based on probability of a fire occurring at the identified building and the potential consequences of that fire. As the questions within the web tool are answered the location of the ball on the risk map relocates to indicate the results and impact of each question as the user progresses through the categories and questions.

The results of the web tool provide relative "scores" for the probability and consequences for each of the four categories (building factors and each of the three lines of defence) to indicate the relative degree of risk based on the probability and consequence assumptions and the data input.

The higher the "score" in any of the four categories identifies gaps in current capabilities or practices of the fire service provider. The next step in the process to assess the web tool results is to go back and review the answers in the relatively higher scoring categories and begin developing options on how to mitigate the risk.

A user guide, as prepared and released by the OFMEM in May 2014, which outlines the tool and the input required is included for reference at the back of this appendix.

In addition to utilizing building risk factors similar to those utilized in the Fire Risk Sub-Model the IRM Web Tool also applies the probabilities and consequences of applying the "Three Lines of Defence."

'Probability' and 'Consequence' are defined as follows within the IRM Web Tool:

*Probability: is the likelihood of a fire occurring and ranges from 0 to 100.*

*Consequence: is the impact on injury, loss of life, property damage and/or environment from a fire and ranges from 0 to 100.*

**Table J24** reflects the risk factor categories and the assigned probability and consequences of each.



Table J24: Risk Factor Probability and Consequences

<b>Risk Factor Category</b>	<b>Probability</b>	<b>Consequence</b>
Building Factors	33.33%	25%
First Line of Defence – Public Fire Safety Education	33.33%	25%
Second Line of Defence – Fire Safety Standards and Enforcement	33.33%	25%
Third Line of Defence – Emergency Response	N/A	25%

The probability for emergency response is not included as it does not factor or contribute to the likelihood or probability of a fire occurring.

## J7.2 Application of IRM Web Tool

This analysis utilizes the IRM Web Tool to assess sample building occupancy classifications that are consistent with those applied by the Fire Risk Sub-Model. In collaboration with CYFS staff a list of sample buildings reflecting each of the major building classifications was developed for both the Town of Aurora and the Town of Newmarket. To maintain the confidentiality of each of the sample buildings a number (1 to 23) was assigned for presentation purposes within this review. A confidential master list of the sample building street addresses and corresponding number has been provided to the CYFS under separate cover.

**Table J25** represents the list of sample buildings assessed using the IRM Web Tool for the Town of Aurora and the Town of Newmarket.

Table J25: List of Sample Buildings

<b>Occupancy Classification</b>	<b>Town of Newmarket Sample Building Reference Numbers</b>	<b>Town of Aurora Sample Building Reference Numbers</b>
A-Assembly	1	13
B1-Detention	2	---
B2-Care and Treatment	3	14
B3-Care	4	15
C-Residential-hotel, motel, lodging	5	16
C-Residential-multi-unit (less than 7 storeys)	6	17
C-Residential-multi-unit (greater than 7 storeys)	7	18
C-Residential-rooming/boarding	8	19
D-Business/Personal services	9	20
E-Mercantile	10	21
F1- High hazard industrial	11	22
F2- Medium hazard industrial	12	23



### J7.3 Existing Conditions Analyses

Utilizing the list of sample buildings provided by the CYFS for each Town the IRM Web Tool was applied to identify the existing conditions for probability and consequence. **Table J26** presents a summary of the existing probability and consequence factors for each sample building in the Town of Newmarket. **Table J27** presents a summary of the existing probability and consequence factors for each sample building in the Town of Aurora.

Table J26: Existing Conditions IRM Web Tool - Newmarket

Newmarket	Occupancy Classification	Building Number	EXISTING PROBABILITY	EXISTING CONSEQUENCE
	A - Assembly	1	29.29	18.30
	B1 - Detention	2	59.51	41.41
	B2 - Care and Treatment	3	16.21	9.35
	B3 - Care	4	21.08	13.68
	C - Hotel	5	41.66	30.95
	C - Multi-Unit <7	6	45.34	33.35
	C - Multi-Unit >7	7	46.19	33.52
	C - Rooming	8	38.85	29.70
	D - Personal/Business	9	47.50	36.64
	E - Mercantile	10	47.36	34.97
	F1 - High Hazard	11	42.68	30.99
	F2 - Medium Hazard	12	39.93	28.92

Table J27: Existing Conditions IRM Web Tool - Aurora

Aurora	Occupancy Classification	Building Number	EXISTING PROBABILITY	EXISTING CONSEQUENCE
	A - Assembly	13	14.40	9.80
	B1 - Detention	N/A	N/A	N/A
	B2 - Care and Treatment	14	13.07	9.26
	B3 - Care	15	18.29	11.51
	C - Hotel	16	36.62	27.64
	C - Multi-Unit <7	17	36.89	28.70
	C - Multi-Unit >7	18	45.83	33.05
	C - Rooming	19	45.80	33.63
	D - Personal/Business	20	35.44	27.81
	E - Mercantile	21	44.61	34.14
	F1 - High Hazard	22	21.71	15.47
	F2 - Medium Hazard	23	31.91	22.50



## J8.0 "PHASE 3" IRM WEB TOOL FINAL OCCUPANCY ANALYSES

The IRM Web Tool includes a list of 69 questions related to the four risk factor categories that assist to evaluate the risk factors associated with each category. **Table J28** presents the four risk categories and the risk factors within each.

Table J28: IRM Web Tool Risk Factors

Risk Category	Risk Factors
Building Factors	Property Stock Building Height and Area Building Age and Construction Building Exposures Other Factors
Public Fire Safety Education (1 <sup>st</sup> Line of Defence)	Education Demographics Human Behavior
Fire Safety Standards and Enforcement (2 <sup>nd</sup> Line of Defence)	Fire Code Inspection/Compliance Enforcement Investigations
Emergency Response (3 <sup>rd</sup> Line of Defence)	Dispatch Pre-Incident Planning Emergency Response Deployment Times Tasks- Defensive Attack/Operations Defensive – Deployment and Resource Considerations Tasks – Offensive Attack/Operations Offensive – Deployment and Resource Considerations

In “**Phase 3**” of the analysis each of the recommendations of the 2014 Fire Department Master Plan Update were assessed in relation to their potential impact on the IRM Web Tool risk factor questions. Where the application of a recommendation impacted the initial answer (input) to one of the IRM Web Tool Risk factor questions for each of the sample buildings utilized in “**Phase 2**” the recommendation was applied and entered as input to the tool in “Phase 3.” **Table J29** below identifies the risk category and risk factor questions that were impacted by the recommendations of the 2014 FDMPU.



Table J29: 2014 FDMPU Recommendations Impacting IRM Web Tool Analyses

Risk Category	Risk Factor	Question	Recommendation
Public Fire Safety Education	Education	Is there a specific fire safety education/training program for the occupants/staff of this building?	That the position of Fire and Life Safety Educator be created to reflect CYFS continued commitment to optimizing the first two lines of defence and the delivery of public fire and life safety programs.
Public Fire Safety Education	Education	When was a fire safety education or training program last delivered to the occupants /staff in this building?	That subject to the consideration and approval of the Fire Department Master Plan Update by the Joint Council Committee, the Council of the Town of Newmarket, and the Council of the Town of Aurora that the proposed Fire Safety Program Delivery Cycles be included within the Fire Department Master Plan Update be included within the Establishing and Regulating By-Laws of both Towns.
Fire Safety Standards and Enforcement	Fire Code Inspection/Compliance	When was this building last inspected, including a review of the fire safety plan (2.8.2.1.(4) if applicable), for code compliance?	That subject to the consideration and approval of the Fire Department Master Plan Update by the Joint Council Committee, the Council of the Town of Newmarket, and the Council of the Town of Aurora that the proposed enhanced Fire Inspection Cycles be included within the Fire Department Master Plan Update be included within the Establishing and Regulating By-Laws of both Towns.
Emergency Response	Pre-Incident Planning	Has a Pre-Incident Plan been completed?	That the CYFS continue to prioritise pre-incident planning and the development of Quick Action Plans for all buildings within the CYFS response area with priority assigned to high risk buildings.
Emergency Response	Pre-Incident Planning	Has a Quick Action Plan been developed that is readily available to the responding crews?	That the CYFS continue to prioritise pre-incident planning and the development of Quick Action Plans for all buildings within the CYFS response area with priority assigned to high risk buildings.
Emergency Response	Emergency Response Deployment Times	What is the predicted response time for arrival of the first apparatus to this building, calculated from the initial call received by fire department to fire department time on scene?	That the CYFS performance objectives for emergency response be approved to include: <ul style="list-style-type: none"> <li>CYFS should strive to achieve a goal of first arriving crew consisting of at least three firefighters and an officer responding to emergencies within 6 minutes and 20 seconds of receiving</li> </ul>



Risk Category	Risk Factor	Question	Recommendation
			<p>an emergency call, 90% of the time.</p> <ul style="list-style-type: none"> <li>• CYFS should strive to achieve a goal of responding to reported structure fires with fourteen firefighters within ten minutes and 20 seconds, 90% of the time.</li> <li>• CYFS should strive to achieve a goal of 80 seconds or less for turnout time of firefighters, 90% of the time.</li> </ul>
Emergency Response	Emergency Response Deployment Times	What is the predicted response time for arrival of the first apparatus to this building, calculated from the initial call received by fire department to fire department time on scene?	That the Town of Newmarket and Town of Aurora should include the CYFS in the ongoing planning and development of the road network where emergency response travel times may be impacted as the result of traffic calming measures, road network design and development, and traffic congestion.
Emergency Response	Emergency Response Deployment Times	What is the predicted response time for arrival of the first apparatus to this building, calculated from the initial call received by fire department to fire department time on scene?	That the CYFS develop a fifth fire station including space for administration, fire prevention/public education, and training, including a new training centre in the area of the intersection of St. John's Sideroad and Industrial Parkway within the short-term (1-2 year) horizon of this five year plan.

## J8.1 Future Conditions Analyses

Utilizing the list of sample buildings provided by the CYFS for each Town the IRM Web Tool was again applied to identify the future conditions for probability and consequence. **Table J30** presents a summary of the future probability and consequence factors for each sample building in the Town of Newmarket. **Table J31** presents a summary of the future probability and consequence factors for each sample building in the Town of Aurora.



Table J30: Future Conditions IRM Web Tool – Newmarket

Newmarket	Occupancy Classification	Building Number	FUTURE PROBABILITY	FUTURE CONSEQUENCE
	A - Assembly	1	25.59	13.01
	B1 - Detention	2	36.55	21.70
	B2 - Care and Treatment	3	13.92	5.13
	B3 - Care	4	21.08	11.18
	C - Hotel	5	29.24	19.14
	C - Multi-Unit <7	6	30.09	19.41
	C - Multi-Unit >7	7	30.94	19.58
	C - Rooming	8	28.20	19.21
	D - Personal/Business	9	40.88	31.67
	E - Mercantile	10	45.06	33.24
	F1 - High Hazard	11	29.73	18.78
	F2 - Medium Hazard	12	35.36	22.99

Table J31: Future Conditions IRM Web Tool – Aurora

Aurora	Occupancy Classification	Building Number	FUTURE PROBABILITY	FUTURE CONSEQUENCE
	A - Assembly	13	12.11	5.58
	B1 - Detention	N/A	N/A	N/A
	B2 - Care and Treatment	14	13.07	6.76
	B3 - Care	15	18.29	9.01
	C - Hotel	16	28.79	19.27
	C - Multi-Unit <7	17	23.94	16.48
	C - Multi-Unit >7	18	32.88	20.83
	C - Rooming	19	28.26	17.97
	D - Personal/Business	20	40.03	31.25
	E - Mercantile	21	42.31	32.41
	F1 - High Hazard	22	16.13	8.78
	F2 - Medium Hazard	23	37.01	23.82

## J8.2 Comparison of Existing and Future Conditions

The comparative analyses of the existing conditions and future conditions provides the opportunity to assess the impacts of the 2014 – FDMPU recommendations. **Table J32** indicates that for all but one occupancy type (F2- Medium Hazard) the probability and consequences of a fire were reduced for all occupancy classifications.



In our view the implementation of the proposed new full-time position of Fire and Life Safety Educator to and the roles and responsibilities of this position to apply the proposed Fire Safety Program Delivery Cycles, in addition to the proposed enhanced Fire Inspection Cycles had the most significant impact on the Building Factors category.

Recommendations that impact the current prescribed emergency response service levels including the implementation of the proposed fifth fire station as well as awareness of the potential impacts of traffic congestion on emergency response times contributed to sustaining the current emergency response deployment times of the CYFS.

According to an analysis of 2008 to 2012 data from the OFMEM, residential occupancies have historically accounted for 72% of all structure fires and 94% of all fire-related deaths in the province. The Comprehensive Community Risk Assessment identified residential occupancies including B2 - Care and Treatment and B3 - Care facilities, and C - Residential as the most vulnerable occupancies.

Through applying the recommendations of the 2014 – FDMPU the probability of a fire occurring in a Class C – Residential (Multi-Unit <7 and >7 storeys) occupancy were reduced by 34.3% and 30.6%. The consequence of a fire occurring in these same occupancies was reduced by 42.2% and 39.3% respectfully.

Although the probability of a fire occurring was reduced only nominally in Class B – Care occupancies, the consequences of a fire related incident were reduced in a B2 – Care and Treatment Facility by 36.15 and for a B3 – Care Facility by 19.8%.



Table J32: Comparison of Existing and Future Conditions

	Occupancy Classification	Group Number	EXISTING	EXISTING	FUTURE	FUTURE	% CHANGE	
			PROBABILITY	CONSEQUENCE	PROBABILITY	CONSEQUENCE	PROBABILITY	CONSEQUENCE
Combined Aurora & Newmarket	A - Assembly	1	21.85	14.05	18.85	9.30	-13.7%	-33.8%
	B1 - Detention	2	59.51	41.41	36.55	21.70	-38.6%	-47.6%
	B2 - Care and Treatment	3	14.64	9.31	13.50	5.95	-7.8%	-36.1%
	B3 - Care	4	19.69	12.60	19.69	10.10	0.0%	-19.8%
	C - Hotel	5	39.14	29.30	29.02	19.21	-25.9%	-34.4%
	C - Multi-Unit <7	6	41.12	31.03	27.02	17.95	-34.3%	-42.2%
	C - Multi-Unit >7	7	46.01	33.29	31.91	20.21	-30.6%	-39.3%
	C - Rooming	8	42.33	31.67	28.23	18.59	-33.3%	-41.3%
	D - Personal/Business	9	41.47	32.23	40.46	31.46	-2.4%	-2.4%
	E - Mercantile	10	45.99	34.56	43.69	32.83	-5.0%	-5.0%
	F1 - High Hazard	11	32.20	23.23	22.93	13.78	-28.8%	-40.7%
	F2 - Medium Hazard	12	35.92	25.71	36.19	23.41	0.7%	-9.0%

**Note:** Analysis involved averaging the Initial and Future Probability and Consequence values that resulted from the IRM Web Tool for Newmarket and Aurora. The B1 Occupancy Classification only had one building taken into consideration (Newmarket).



## J9.0 SUMMARY OF COMPREHENSIVE COMMUNITY RISK ASSESSMENT

The Comprehensive Community Risk Assessment for the Town of Aurora and the Town of Newmarket represents similar levels of risk that would be expected in comparable municipalities within the Province of Ontario. These include municipalities with large residential populations and some employment land uses. The CYFS response area road network layout is typical of a suburban community that includes a grid network of major and minor arterials with a series of curvilinear (and some grid) residential streets. Residential areas are well served and connected by the road network.

Residential occupancies dominate the CYFS response area at 95.6% of the building stock, reflecting the profile of a typical suburban community outside of a major urban centre. The second largest percentage of property stock (2.7%) consists of Group F industrial uses. Some of the industrial uses count as a single occupancy though they employ a large number of people (e.g. State Farm Insurance, Magna International).

The CYFS response area experienced extensive population growth – an increase of 76% – over a short 15-year period (from 1996 to 2011). It is projected that growth will continue to take place (but at a slower rate) over the next 20 years. From 2011 to 2031, there is a projected population increase of 17% and a 33% growth in employment projected for the CYFS response area. Most of this growth is expected to take place by 2016.

In Newmarket, both population and employment growth is slated to occur primarily as intensification within the Yonge-Davis Provincial Urban Growth Centre and the Yonge Regional Centre. At the time of writing this report, a Draft Secondary Plan for the Urban Centre is being reviewed, revised, and finalized with the intention that infrastructure will meet related demand through appropriate phasing. However, the Newmarket Official Plan states that municipal boundary adjustments may be needed in order to grow the land base for employment.

In Aurora, 66% of the residential growth will be through greenfield development in the north-east area of the community which is currently rural. Of all the projected employment growth designated for Aurora, 53% will occur in this same north-east area. Employment uses will include prestige industrial businesses (e.g. research and development, communication facilities, etc.), professional offices, institutional uses, and hotels. Of the 34% of residential growth that is to occur through intensification in Aurora, 92% (or 4,120 people) will be absorbed by the Aurora Promenade.

At the time of writing, both Towns are experiencing extensive residential (and related commercial) development applications which are at varying states of approval. Seven major development applications have been submitted for the north-east area of Aurora. Similarly, Newmarket has approved development for a large subdivision within the Urban Centre area and the Ontario Municipal Board recently approved the conversion of Park and Open Space to residential uses. As a result, CYFS needs to be prepared for large amounts of growth in the short term.

According to an analysis of 2008 to 2012 data from the OFMEM, residential occupancies have historically accounted for 72% of all structure fires and 94% of all fire-related deaths in the province. For the same five-year period, the CYFS reported 242 fires (80 in Aurora and 162 in Newmarket). Of these fires, an average of 71.5% occurred in Group C - Residential occupancies.

However, looking at the municipalities individually, Newmarket had significantly more Group B – Institutional and Other Occupancy fires than Aurora. As a result, Newmarket only saw 68% of structural fires take place in residential occupancies. Misuse of ignition source represented the leading cause of fires in both municipalities (an average of 37%). The next leading cause of fire was undetermined, averaging to 18%.



Analysis of the buildings within the CYFS response area indicates that building height and area represent a typical level of risk found in newer suburban communities outside of a major urban centre. There are a limited number of large area (by square footage) buildings. These include big-box retail buildings and strip malls that are frequented by clientele that are unfamiliar with the emergency exits. There are also some industrial buildings that have large areas and employ a large number of people (e.g. Magna International, State Farm Insurance, Region of York, etc). In terms of height, there are 685 residential high-rise buildings in Aurora and 1,385 in Newmarket. Ensuring all required life safety systems are in place and functioning is a priority for these occupancies.

The demographic analysis of the CYFS response area reveals that by age category the municipalities have a slightly younger population. Although there is an average of 10.9% seniors versus 14.6% in the Province, the senior population is still considered a vulnerable component of the population. In relation, 19.1% of the CYFS response area population consists of children under the age of 14; this age group should also be considered a vulnerable component of the population. There were eight buildings in Aurora and twenty-one in Newmarket that were identified as vulnerable occupancies. These include seniors' residences and hospitals. These buildings should be considered as high risk with regard to developing a pro-active fire prevention and protection program. Public education programs should also be developed and delivered to target these demographics.

English is the predominate language within the CYFS response area representing 77% of the population. This indicates a very moderate probability for language barriers in the delivery of fire prevention and public education programs. Common non-official and non-Aboriginal languages spoken in Aurora and Newmarket include Italian, Russian, Spanish, and Chinese. This should be considered when working with specific community groups.

Income levels and value of housing in both municipalities is much higher than that of provincial averages. These factors also relate to a lower percentage of rental housing compared to the provincial average (16% for the CYFS response area versus 28% for the province).

A Geographic Information Systems (GIS) model was developed to assess risk based on historic call locations, risk geography, land use, and the department's existing and future predicted emergency response travel times as they relate to these risks. Using this risk model, calculations were carried out to estimate the number of historic calls that occurred within each risk zone category and the travel time associated. The model was also used to approximate geographic coverage of the existing and future risk zones. These calculations were completed on the basis of NFPA standards. **Section 6.0** of this report outlines in detail the performance objectives used to compare CYFS performance.

As indicated by the OFMEM, residential occupancies have historically accounted for 72% of all structure fires and 94% of all fire-related deaths in the province. The Comprehensive Community Risk Assessment identified B2 - Care and Treatment occupancies, B3 - Care occupancies, and C - Residential occupancies as the most vulnerable occupancies. In part this is due to the demographics associated with these occupancies, and the overnight (sleeping) associated.

Through applying the recommendations of the 2014 – FDMPU the probability of a fire occurring in a Class C – Residential (Multi-Unit <7 and >7 storeys) occupancy were reduced by 34.3% and 30.6%. The consequences of a fire occurring in these same occupancies was reduced by 42.2% and 39.3% respectively.

Although the probability of a fire occurring was reduced only nominally in Class B – Care occupancies, the consequences of a fire related incident were reduced in a B2 – Care and Treatment occupancy by 36.2% and for a B3 – Care occupancy by 19.8%.

The recommendations within this 2014-FDMPU support the three strategic priorities identified for the delivery of fire protection services within the Town of Aurora and the Town of Newmarket.



# **Office of the Fire Marshal & Emergency Management**

## **Integrated Risk Management (IRM) Web Tool User Guide**

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## Purpose

The user guide is to provide a visual reference for users on how to access and utilize the Ontario Fire Marshal and Emergency Management (OFMEM) Integrated Risk Management (IRM) Web Tool.

## Learning outcomes

Upon completion of this user guide, the learner will be able to:

- Understand how to access to the system
- Navigate throughout the system
- Complete the risk assessment
- Generate a PDF report

## Contact Us

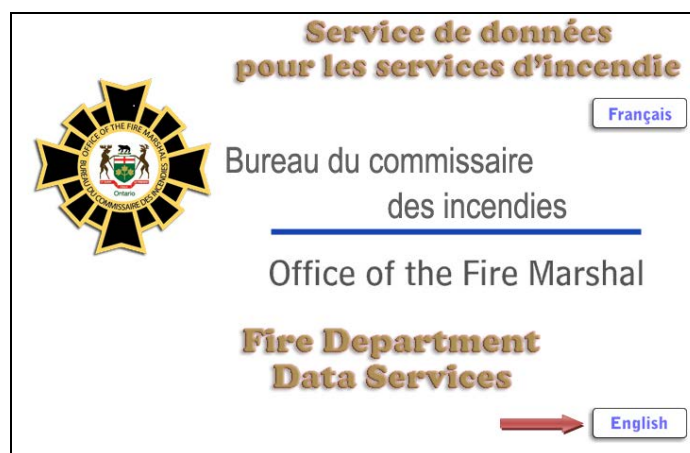
Enquiries regarding the IRM Web Tool should be directed to Field and Advisory Services, OFMEM; staff members can be reached by email at [FPSDAR@ontario.ca](mailto:FPSDAR@ontario.ca) or by telephone at (416) 325-3200 or 1-800-565-1842.

## Accessing the Web Tool

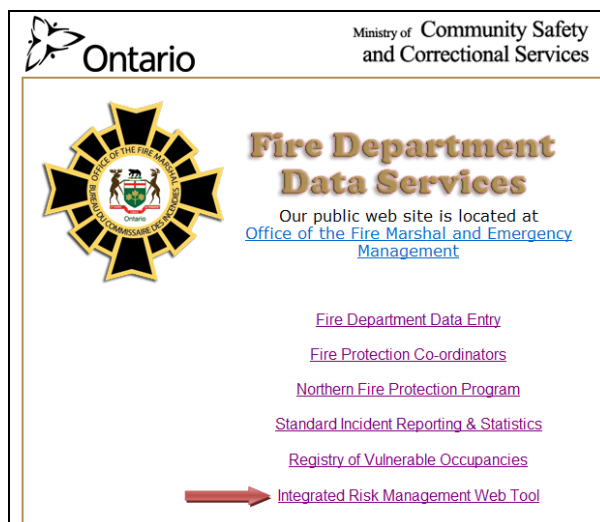
### *Link to IRM Web Tool*

To access the system please visit the OFMEM Fire Department Data Services site and click the *Integrated Risk Management Web Tool* link: <https://www.ofm.ca/>


#### 1) OFMEM Fire Department Data Services




#### 2) Click on the *Integrated Risk Management Web Tool* link.




- 3) Enter the password to access the IRM Web Tool, and click on Login.



Ministry of Community Safety  
and Correctional Services



### Integrated Risk Management Web Tool



→ Password:  (case sensitive)

→ [Login](#)

Click on the login button to proceed.

Enquiries regarding the IRM Web Tool should be directed to Field and Advisory Services, OFMEM; staff members can be reached by email at FPSDAR@ontario.ca or by telephone at (416) 325-3200 or 1-800-565-1842.

- 4) To open the Integrated Risk Management Web Tool click on the link *IRM Web Tool*.



Ministry of Community Safety  
and Correctional Services



### Integrated Risk Management Web Tool



→ [IRM Web Tool !\[\]\(04383d4c8d3e1756d172036da824a965\_img.jpg\)](#)

[IRM Communique !\[\]\(4fc17043350ef849448ce9f412457b86\_img.jpg\)](#)

[Qs and As !\[\]\(13cabb9e25c875156cb839c2209f575f\_img.jpg\)](#)

[IRM User Guide !\[\]\(a2adebfc6acf0eb412ffa6acf1b3763f\_img.jpg\)](#)

### ***Add an icon to your desktop***

To add an icon to your desktop:

- I. Right-click on your desktop
- II. Select “New”
- III. Select “Shortcut”
- IV. Type [www.ofm.ca](http://www.ofm.ca) in the “Type the location of the item”
- V. Click on “Next”
- VI. Type “IRM Web Tool” in the “Type a name for this shortcut”
- VII. Click on “Finish”

# Navigating the Integrated Risk Management Web Tool

**Integrated Risk Management Web Tool**  
Ontario Office of the Fire Marshal and  
Emergency Management

**1** OFMEM IRM Web Tool

**8** **SYSTEM NOTE:** After 20 minutes of inactivity the system will timeout.

**2** **Probability Consequence**

Building Factors:	0.00	0.00
Public Fire Safety Education:	0.00	0.00
Fire Safety Standards and Enforcement:	0.00	0.00
Emergency Response:	NA	0.00
<b>TOTAL:</b>	<b>0.00</b>	<b>0.00</b>

**3** Building Address: \_\_\_\_\_  
Building Occupants: \_\_\_\_\_  
Completion Date: \_\_\_\_\_  
Completed By: \_\_\_\_\_  
Notes: \_\_\_\_\_

**6** [Reset Form](#) [PDF](#) **5**

Risk Factor Category	Risk Factor	Question	Answer
Building Factors	1. Property Stock	a) What is the building's major occupancy classification?	Choose Answer
Building Factors	1. Property Stock	b) Is the building currently undergoing major renovations, alterations or under construction?	Choose Answer
Building Factors	2. Building Height and Area	a) What is the building height?	Choose Answer
Building Factors	2. Building Height and Area	b) What is the building area in m <sup>2</sup> ?	Choose Answer
Building Factors	3. Building Age and Construction	a) When was the building constructed?	Choose Answer
Building Factors	3. Building Age and Construction	b) What type of construction was used to construct the building?	Choose Answer
Building Factors	4. Building Exposures	a) Is the building at risk of an exposure fire from a fire in/on an adjacent property?	Choose Answer

## 1. Risk Graph

The risk graph is comprised of a probability axis and consequence axis, where the risk ball (coordinates of that point) represents the calculated building fire risk.

**Probability** is the likelihood of a fire occurring and ranges from 0 to 100.

**Consequence** is the impact on injury, loss of life, property damage and/or environment from a fire and ranges from 0 to 100.

The position of the risk ball will automatically be calculated based on the answers to the questions in the assessment.

## 2. Probability and Consequence Scores

The values in this section represent the numerical scores for each of the categories. The total probability and consequence values will correspond to the coordinates of the risk graph.

The weighting of probability and consequence in each category is the following:

<b>Risk Factory Category</b>	<b>Probability</b>	<b>Consequence</b>
Building Factors	33.33%	25%
Line One - Public Fire Safety Education	33.33%	25%
Line Two - Fire Safety Standards and Enforcement	33.33%	25%
Line Three - Emergency Response	NA*	25%

\*Please Note: The probability section under Emergency Response has been grayed-out as it does not have a factor or contribute to the likelihood or probability of a fire occurring.

### ***3. Building Details Section***

This section is used to enter building information such as address and description of building occupants. This section also includes Completion Date, Complete By and a Notes section to include other information pertaining to the building.

### ***4. Questions & Answers***

Each risk factor category consists of risk factors, questions and answers and drop down selections are provided to answer each question.

### ***5. PDF***

Once all the questions have been answered, the assessment is complete and the assessment can be viewed or saved in PDF. No reports or data is saved on the website. Please see the PDF Reports section for further details.

### ***6. Reset Button***

To start a new assessment, click on Reset button.

### ***7. Important System Note***

After 20 minutes of inactivity in the IRM Web Tool the session will time out.

### ***8. Logout***

Click on the Logout icon to exit the IRM Web Tool.

**System note: After 20 minutes of inactivity the session will time out.**

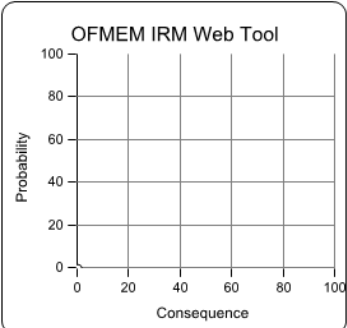
## PDF Reports

Results can be viewed and saved in PDF format.

**Note:** You must have answers selected in order to produce a PDF report.

### To create a PDF

Click on the 'PDF' button to view your report in PDF.



[Logout](#)

**SYSTEM NOTE: After 20 minutes of inactivity the system will timeout.**

	Probability	Consequence
Building Factors:	0.00	0.00
Public Fire Safety Education:	0.00	0.00
Fire Safety Standards and Enforcement:	0.00	0.00
Emergency Response:	NA	0.00
<b>TOTAL:</b>	<b>0.00</b>	<b>0.00</b>


Building Address: \_\_\_\_\_

Building Occupants: \_\_\_\_\_

Completion Date: \_\_\_\_\_

Completed By: \_\_\_\_\_

Notes: \_\_\_\_\_



### Example of PDF report

**OFMEM IIRM Web Tool**



**Integrated Risk Management Web Tool**  
Ontario Office of the Fire Marshal and  
Emergency Management

	Probability	Consequence
Building Factors:	31.68	19.96
Public Fire Safety Education:	30.55	22.92
Fire Safety Standards & Enforcement:	31.83	23.88
Emergency Response:	NA	8.81
<b>TOTAL:</b>	<b>94.06</b>	<b>75.57</b>

Building Address: 64 Unknown Lane

Building Occupants: 277

Completion Date: 1/30/2015

Completed By: M. XYZ

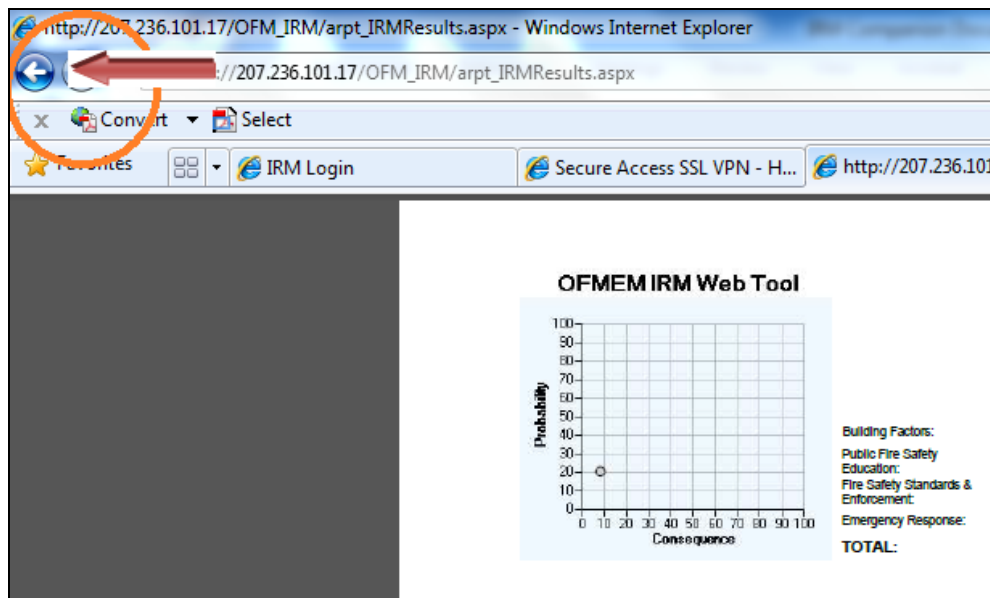
Notes: - Building is located next to a train station  
- Large number of non-english speaking residents  
- Orders have been issued, but no follow-ups have been completed.

Risk Category	Risk Factor	Question	Answer
1 Building Factors	1. Property Stock	a) What is the building's major occupancy classification?	C-Residential-Rooming/Boarding
2 Building Factors	1. Property Stock	b) Is the building currently undergoing major renovations, alterations or under construction?	Yes
3 Building Factors	2. Building Height and Area	a) What is the building height?	>12 storeys
4 Building Factors	2. Building Height and Area	b) What is the building area in m2?	> 600 m2
5 Building Factors	3. Building Age and Construction	a) When was the building constructed?	pre 1946
6 Building Factors	3. Building Age and Construction	b) What type of construction was used to construct the building?	Combustible-balloon frame
7 Building Factors	4. Building Exposures	a) Is the building at risk of an exposure fire from a fire in/on an adjacent property?	Possibly
8 Building Factors	4. Building Exposures	b) Would there be a risk of an environmental impact if a fire occurred?	Possibly

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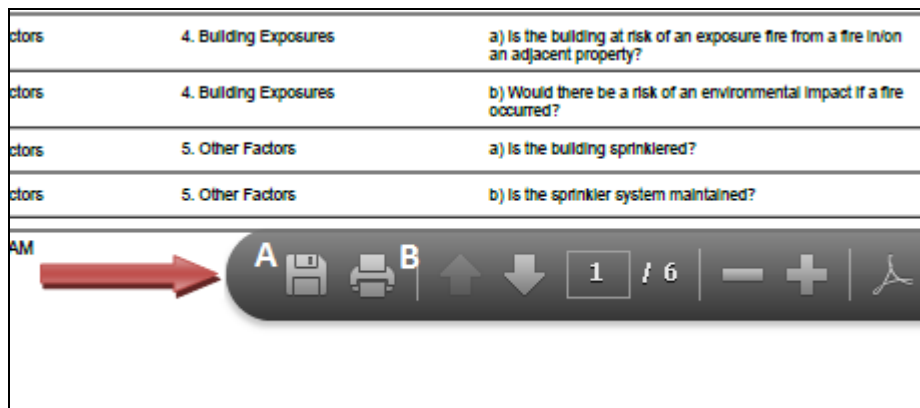
### ***To Return to the IRM Web Tool***

To return to the IRM Web Tool from the PDF report screen click on the 'left arrow' or 'back button'.



### ***Save & Print in PDF***

To save and print, click on the save (A) and print (B) icons on the Adobe Reader function bar.



# Instructions

To complete the IRM building assessment all questions must be answered.

## Building Details

Enter the details of the building into this section, which is located in the top right hand corner of your screen.

[Logout](#)

**Integrated Risk Management Web Tool**  
Ontario Office of the Fire Marshal and  
Emergency Management

**SYSTEM NOTE: After 20 minutes of inactivity the system will timeout.**

OFMEM IRM Web Tool

	Probability	Consequence
Building Factors:	33.33	23.75
Public Fire Safety	30.55	22.92
Education:	31.83	23.88
Fire Safety Standards and Enforcement:	NA	5.25
Emergency Response:		
<b>TOTAL:</b>	<b>95.71</b>	<b>75.80</b>

[Reset Form](#) [PDF](#)

Building Address: 999 Unknown Lane  
Building Occupants: 473  
Completion Date: 11/21/2014  
Completed By: Unknown

Notes: 3 storey formerly a hotel now used as a B&B. 3rd floor used as residence. 2nd floor as four rooms available and the six other rooms are filled.

Risk Factor Category	Risk Factor	Question	Answer
Building Factors	1. Property Stock	a) What is the building's major occupancy classification?	C-Residential-Rooming/Boarding
Building Factors	1. Property Stock	b) Is the building currently undergoing major renovations, alterations or under construction?	Yes
Building Factors	2. Building Height and Area	a) What is the building height?	>12 storeys
Building Factors	2. Building Height and Area	b) What is the building area in m2?	> 600 m2

The notes section may include the use or design of the building and any other pertinent information that may assist with the assessment of the building.

## Risk Factor Category - Building Factors

In this section, identify the building characteristics of the building.

### 1. Property Stock

- a) What is the building's major occupancy classification?

Answers
A-Assembly
B1-Detention
B2-Care and Treatment
B3-Care
C-Residential-hotel, motel, lodging
C-Residential-SFD
C-Residential-multi-unit
C-Residential-rooming/boarding
C-Residential-other
D-Business/Personal services
E-Mercantile
F1- High hazard industrial
F2- Medium hazard industrial
F3- Low hazard industrial
Farm Buildings

- b) Is the building currently undergoing major renovations, alterations or under construction?

Answers
Yes
No

## 2. Building Height and Area

a) What is the building's height?

Answers
>12 storeys
7 to 12 storeys
4 to 6 storeys
1 to 3 storeys

b) What is the building area in m2?

Answers
> 600 m2
0 to 600 m2

## 3. Building Age and Construction

a) When was the building constructed?

Answers
pre 1946
1946 to 1970
1971-2000
2001 to present

b) What type of construction was used to construct the building?

Answers
Combustible-balloon frame
Combustible-platform frame with lightweight joists
Combustible-platform frame with dimensional lumber joists
Heavy Timber
Combustible/Noncombustible mixed
Noncombustible-unprotected
Noncombustible-protected

#### **4. Building Exposures**

a) Is the building at risk of an exposure fire from a fire in/on an adjacent property?

Answers
Highly likely
Possibly
Unlikely
No

b) Would there be a risk of an environmental impact if a fire occurred?

Answers
Highly likely
Possibly

Unlikely
No

## 5. Other Factors

a) Is the building sprinklered?

Answers
Yes, sprinklered and required
Yes, fully sprinklered and not required
Yes, partially sprinklered but fully required
Yes, partially sprinklered and not required
No, sprinkler system required
No, sprinkler system not required

b) Is the sprinkler system maintained?

Answers
Yes
No
Not Applicable

c) Does the building have a fire alarm system?

Answers
Yes and required
Yes and not required
No and required

No and not required
---------------------

d) Is the fire alarm system maintained?

Answers
Yes
No
Not Applicable

e) Is the fire alarm system monitored?

Answers
Yes and required
Yes and not required
No and required
No and not required
Not Applicable

## Risk Factor Category - Line One – Public Fire Safety Education

In this section, questions will be assessing the current public fire safety education programs, activities and training, which could be targeted to the occupants and/or staff/supervisory staff at the specified building.

### 1. Education

- a) Is there a specific fire safety education/training program for the occupants/staff of this building?

Answers
Yes
No

- b) When was a fire safety education or training program last delivered to the occupants/staff in this building?

Answers
0 – 1 yrs ago
1 – 2 yrs ago
2 – 3 yrs ago
3 – 4 yrs ago
4 – 5 yrs ago
5 yrs + ago
Never or No Program

## 2. Demographic

- a) Do public fire safety education/training programs for this building consider the demographics of its occupants?

Answers
Yes
No

## 3. Human Behaviour & Fire Incidents

- a) Have there been behaviours/intentional acts that have resulted in fire safety concerns in this building?

Answers
Yes
No

- b) Have actions been taken to address these fire safety concerns?

Answers
Yes
No
No concern

## Risk Factor Category - Line Two – Fire Safety Standards & Enforcement

In this section, questions will be assessing the current fire prevention, compliance/enforcement options and investigation activities at the specified building.

### 1. *Fire Code Inspection/Compliance*

- a) When was this building last inspected, including a review of the fire safety plan (2.8.2.1.(4) if applicable), for code compliance?

Answers
0 – 1 yrs ago
1 – 2 yrs ago
2 – 3 yrs ago
3 – 4 yrs ago
4 – 5 yrs ago
5 yrs + ago
Never inspected

- b) Have there been any substantiated complaints since the last full inspection?

Answers
Yes
No

## 2. Enforcement

- a) Have Fire Code contraventions and/or fire hazards in this building been addressed in accordance with OFM-TG-01-2012 (Fire Safety Inspections and Enforcement Guideline)?

Answers
Yes
No
No violations

## 3. Investigations

- a) Has there been a fire(s) in this building in the last year.

Answers
Yes
No

- b) Have actions been taken to prevent similar fires from occurring?

Answers
Yes
No
No fires

- c) Have actions been taken to reduce the consequences of similar fires?

Answers
---------

Yes
No
No fires

## Risk Factor Category - Line Three – Emergency Response

In this section, questions will be assessing the current delivery of emergency response to the specific building.

### 1. Dispatch

- a) Are there approved call taking and dispatch protocols and procedures in place for this building?

Answers
Yes
No

- b) Will your dispatch support the incident command system throughout an incident at this building?

Answers
Yes
No

### 2. Pre-Incident Planning

- a) Has a Pre-Incident Plan\* been completed?

\*Reference: NFPA 1620

Answers
Yes

No
----

- b) Has a Quick Action Plan\* been developed that is readily available to the responding crews?

\*Reference: Ontario Fire College, Company Officer Program.

Answers
Yes
No

### ***3. Emergency Response Deployment Times***

- a) What is the predictable response time for the arrival of the first apparatus to this building, calculated from the initial call received by fire department to fire department time on scene?

Answers
Less than 6 minutes
6-10 minutes
10-14 minutes
14 minutes or more

- b) Are there significant variances in predictable response times to this building depending on the time of day or day of the week?

Answers
Yes, delay response times beyond what is considered normal

No, response times typically remain consistent
--

- c) What is the predicted minimum number of Firefighters that will arrive on or with the first responding apparatus to a fire at this building?

Answers
6 or more personnel
3-5 personnel
2 or less personnel
Unable to predict

#### ***4. Tasks – Defensive Attack/Operations***

For the purposes of answering tasks questions, resources obtained under a formal automatic aid agreement or formal fire protection agreement should be taken into consideration. However, mutual aid resources are not to be considered when answering tasks questions.

All tasks adhere to all applicable Occupational Health and Safety Act (OHSA) Section 21 Guidance Notes. For further information please visit Ministry of Labour: Fire Service or Section 21: Ontario Association of Fire Chiefs.

The available answers are the same for all task questions in this section.

Answers
Yes
No

- a) Is your fire department able to perform the roles and responsibilities of Incident Command?

- b) Is your fire department able to assign a competent Incident Safety Officer for the duration of operations at this building?
- c) Is your fire department able to implement an effective Personnel Accountability System?
- d) Is your fire department able to implement a safe and effective Respiratory Protection Program?
- e) Is your fire department able to perform the roles and functions of pump operator?
- f) Is your fire department able to provide attack lines that would meet the requirements for exterior suppression?
- g) Is your fire department able to deploy exposure control lines that are required for defensive attack/operations in this building?
- h) Is your fire department able to perform ventilation?
- i) Is your fire department able to secure a continuous reliable water supply that is required for defensive attack/operations?
- j) Is your fire department able to perform exposure control during fire fighting operations at this building?
- k) Is your fire department able to perform ground ladder operations?
- l) Is your fire department able to perform aerial operations?
- m) Is your fire department able to provide effective rehabilitation during fire suppression operations?
- n) Is your fire department able to perform salvage and overhaul operations?
- o) Is your fire department able to provide on scene lighting for effective night operations?

## ***5. Defensive – Deployment & Resource Considerations***

- a) Is your fire department able to concurrently perform all of the tasks for defensive attack during a working structural fire involving up to 25% of this building?

Answers
Yes
No

- b) Is your fire department able to concurrently perform all of the tasks for defensive attack during a working structural fire involving 25% to 50% of this building?

Answers
Yes
No

- c) Is your fire department able to concurrently perform all of the tasks for defensive attack during a working structural fire involving greater than 50% of this building?

Answers
Yes
No

## 6. Tasks – Offensive Attack/Operations

For the purposes of answering tasks questions, resources obtained under a formal automatic aid agreement or formal fire protection agreement should be taken into consideration. However, mutual aid resources are not to be considered when answering tasks questions.

All tasks adhere to all applicable Occupational Health and Safety Act (OHSA) Section 21 Guidance Notes. For further information please visit Ministry of Labour: Fire Service or Section 21: Ontario Association of Fire Chiefs.

The available answers are the same for all task questions in this section.

Answers
Yes

No

- a) Is your fire department able to perform the roles and responsibilities of Incident Command?
- b) Is your fire department able to assign a competent Incident Safety Officer for the duration of operations at this building?
- c) Is your fire department able to implement an effective Personnel Accountability System that includes Entry Control?
- d) Is your fire department able to implement a safe and effective Respiratory Protection Program?
- e) Is your fire department able to perform the roles and functions of pump operator?
- f) Is your fire department able to provide charged attack lines that would meet the requirements for offensive attack?
- g) Is your fire department able to deploy exposure control lines that are required for offensive attack in this building?
- h) Is your fire department able to provide search and rescue operations?
- i) Is your fire department able to dedicate a Rapid Intervention Team (RIT)?
- j) Is your fire department able to perform ventilation?
- k) Is your fire department able to secure a continuous reliable water supply that is required for offensive attack?
- l) Is your fire department able to perform exposure control during fire fighting operations at this building?
- m) Is your fire department able to perform ground ladder operations?
- n) Is your fire department able to perform aerial operations?
- o) Is your fire department able to provide effective rehabilitation during fire suppression operations?
- p) Is your fire department able to perform salvage and overhaul operations?
- q) Is your fire department able to provide on scene lighting for effective night operations?

## 7. Offensive – Deployment & Resource Considerations

- a) Is your fire department able to concurrently perform all of the tasks for offensive attack that are necessary to extinguish an incipient stage fire inside the building?

Answers
Yes
No

- b) Is your fire department able to concurrently perform all of the tasks for offensive attack during a working structural fire involving up to 25% of this building?

Answers
Yes
No

- c) Is your fire department able to concurrently perform all of the tasks for offensive attack during a working structural fire involving 25% to 50% of this building?

Answers
Yes
No

## APPENDIX K

### Definitions of OFMEM Response Types

## SUMMARY: REPORTING RESPONSE TYPE ON THE ONTARIO OFM STANDARD INCIDENT REPORT

**WAS IT AN UNCONTROLLED FIRE OR AN EXPLOSION?**Response type codes: **1 or 2**If there is a fire and an explosion at an incident, report as an Explosion – code 2  
OR**NO LOSS OUTDOOR FIRE**No loss: no fatality, injury and no \$ loss.  
Outdoor: open land, trash container, etc.  
And not resulting in an exposure fire  
Response type code: **3****DID THE CALL OCCUR IN ANOTHER MUNICIPALITY AND THE LOCAL F.D. WAS PRESENT?**Response type codes: **910 to 913****WAS IT A PRECONDITION TO AN UNCONTROLLED FIRE?**(smoke, steam, fireworks, etc. no evidence of uncontrolled burning or fire damage)  
Response type codes: **21 to 29****WAS IT A CONTROLLED FIRE?**The FD did not extinguish the fire.  
Response type codes: **23 or 36****DID THE CALL (non fire) OCCUR AT THE SITE OF AN ILLEGAL GROW OR DRUG OPERATION?**Response type codes: **921 or 922****WAS IT A FALSE FIRE ALARM?**Response type codes: **31 to 35 or 39**  
or**FALSE CO alarm (NO carbon monoxide present)?**Response type code: **37****Another type of FALSE ALARM?**Response type codes: **58, 699, 899****WAS IT A CO CALL, and CO WAS PRESENT?**Response type code: **53****NON FIRE SITUATIONS** (use where none of situations noted above are applicable)**What action did the fire department take? Rescue? Medical assistance?**

If no "action" codes are applicable:

**What was the type of emergency situation? (see shaded codes)****DID ANOTHER AGENCY ALREADY ON THE SCENE REQUEST ASSISTANCE?**Response type codes: **92 or 93**If **NO CODES** fit the emergency action or emergency incident use Code **99** Other response.  
Do not file a report for non emergency FD activities.**RESPONSE TYPE CODES****Property Fires/Explosions**

1	Fire
2	Explosion (exc. Codes 3, 11 to 13)
3	No loss outdoor fire (excluding arson, vandalism, children playing, recycling or dump fires)

**Overpressure rupture/explosion (no fire)**

11	Overpressure Rupture (no fire, e.g. steam boilers, hot water)
12	Munition Explosion - (no fire, e.g. bombs, dynamites)
13	Overpressure Rupture - gas pipe (no fire)

**Pre fire conditions/no fire**

21	Overheat (no fire, e.g. engines, mechanical devices)
22	Pot on Stove (no fire)
24	Other Cooking/toasting/smoke/steam (no fire)
25	Lightning (no fire)
26	Fireworks (no fire)
29	Other pre fire conditions (no fire)

**Burning (controlled)**

23	Open air burning/unauthorized controlled burning (no uncontrolled fire)
36	Authorized controlled burning - complaint

**False fire calls**

31	Alarm System Equipment - Malfunction
32	Alarm System Equipment - Accidental activation (exc. code 35)
33	Human - Malicious intent, prank
34	Human - Perceived Emergency
35	Human - Accidental (alarm accidentally activated by person)
39	Other False Fire Call

**CO False calls**

37	CO false alarm - perceived emergency (no CO present)
38	CO false alarm - equipment malfunction (no CO present)

**Public Hazard**

53	CO incident, CO present (NOT false alarm)
41	Gas Leak - Natural Gas
42	Gas Leak - Propane
43	Gas Leak - Refrigeration
44	Gas Leak - Miscellaneous
45	Spill - Gasoline or Fuel
46	Spill - Toxic Chemical
47	Spill - Miscellaneous
48	Radio-active Material Problem
49	Ruptured Water, Steam Pipe
50	Power Lines Down, Arcing
51	Bomb, Explosive Removal, Standby
54	Suspicious substance
57	Public Hazard no action required
58	Public Hazard call false alarm
59	Other public hazard

**Rescue**

61	Vehicle Extrication
62	Vehicle Collision
63	Building Collapse
64	Commercial/Industrial Accident
65	Home/Residential Accident
66	Persons Trapped in Elevator
67	Water Rescue
68	Water Ice Rescue
69	Other Rescue
601	Trench rescue (non fire)
602	Confined space rescue (non fire)
603	High angle rescue (non fire)
604	Low angle rescue (non fire)
605	Animal rescue
698	Rescue no action required
699	Rescue false alarm

**Medical/Resuscitator**

701	Oxygen administered
702	CPR administered
703	Defibrillator used
71	Asphyxia, Respiratory condition
73	Seizure
74	Electric shock
75	Traumatic shock
76	Chest pains or suspected heart attack
82	Burns
84	Medical Aid Not Required on Arrival
85	Vital signs absent, DOA
86	Alcohol or drug related
88	Accident or illness related – cuts, fractures, person fainted, etc.
89	Other Medical/resuscitator Call
898	Medical/resuscitator call no action required
899	Medical/resuscitator call false alarm

**Other response**

921	Illegal grow operation (no fire)
922	Illegal drug operation (no fire)
910	Assisting other FD: Mutual Aid
911	Assisting other FD: Automatic Aid
912	Assisting other FD: Fire Protection Agreement
913	Assisting other FD: Other
92	Assisting Police (exc 921, 922)
93	Assisting Other Agencies (exc 921, 922)
94	Other Public Service
96	Call cancelled on route
97	Incident not found
98	Assistance not required by other agency
99	Other Response

**WAS THE CALL CANCELLED OR THE INCIDENT LOCATION INVALID?**  
Response type codes: **96 or 97**

APPENDIX L

PFSG 04-45-12 "Fire Prevention Policy"

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Fire Prevention Policy

### Public Fire Safety Guidelines

Subject Coding

**PFSG 04-45-03**

Section

Date

**Fire Prevention and Public Education**

**September 2004**

Subject

Page

**Fire Prevention Policy**

### **Purpose:**

To assist municipalities in developing strategies for the development of a municipal fire prevention policy in accordance with the minimum acceptable model for the provision of fire prevention and fire safety education under section 2 (1)(a) of the Fire Protection and Prevention Act, 1997.

### **Introduction**

The fire department's establishing and regulating by-law should authorize fire prevention and fire safety education activities. Council approved policies should set the expected level of service.

Fire prevention and public education activities vary from community to community based upon needs and circumstances, as determined by a risk assessment or needs analysis.

An approved fire prevention policy has numerous benefits:

- Clearly identifies fire prevention and fire safety education objectives
- Provides direction for consistent activities
- Identifies programs being delivered
- Assists in fire department risk management

### **Development:**

The fire chief should identify the fire department's fire prevention and public education programs and the objectives that meet the needs and circumstances of the community. The fire chief should refer to the municipal risk assessment. The policy should be approved by council.

### **Policy Content:**

The policy should contain some or all of the following, depending on the municipal needs and circumstances:

- Direction to conduct a Risk Assessment periodically to determine the needs of the community
- Identify the fire department programs and objectives that will address installation and maintenance of smoke alarms in dwelling units and home escape planning

- Identify the fire department programs and objectives that will provide appropriate public education to residents
- Identify how the fire department will provide fire prevention inspections upon complaint or request
- Identify routine inspection programs and objectives of identified risk occupancies (refer to Appendix 1)
- Identify in-service inspection programs and objectives
- Identify home inspection programs and objectives
- Identify plans examination and new construction inspection programs and objectives
- Identify fire investigation programs and objectives
- Identify reporting and record keeping activities
- Direct that standard operating guidelines/policies for all fire prevention and public education activities be developed

A sample fire prevention policy is included as [Appendix 1](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-45-03at1.html>](#) to this document.

A sample routine inspection schedule is included as [Appendix 2](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-45-03at2.html>](#) to this document. Appropriate inspection frequencies for high-risk occupancies should be developed.

### **Codes, Standards and Best Practices:**

Codes, Standards and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at <http://www.mcscs.jus.gov.on.ca/>. [<http://www.mcscs.jus.gov.on.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.

See also PFSG:

[01-02-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/01-02-01.html>](#) Comprehensive Fire Safety Effectiveness Model

[02-02-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html>](#) & [03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](#) Fire Risk Assessment

[04-40A-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40a-12.html>](#) & [03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40a-03.html>](#) Simplified Risk Assessment

[02-03-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html>](#) Economic Circumstances

[02-04-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html>](#) & [23](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html>](#) Capabilities of Existing Fire Protection Services  
[04-12-13](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-12-13.html>](#) Core Services  
[04-39-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html>](#) Fire Prevention Effectiveness Model  
[04-40-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40-12.html>](#) & [03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40-03.html>](#) Selection of Appropriate Fire Prevention Programs  
[04-41-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-41-12.html>](#) Community Fire Safety Officer/Team  
[04-40B-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40b-12.html>](#) & [03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40b-03.html>](#) Smoke Alarm Program  
[04-40C-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40c-12.html>](#) & [03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40c-03.html>](#) Distribution of Public Fire Safety Materials  
[04-38-13](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-38-13.html>](#) Role of the Assistant to the Fire Marshal  
[04-52-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-52-12.html>](#) & [03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-52-03.html>](#) Fire Investigation Practices  
[04-56-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-56-12.html>](#) Use of Fire Related Statistics  
[04-80-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-80-01.html>](#) & [23](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-80-23.html>](#) Fees for Service  
[TG-01-2000](#)

[<../../../../english/firemarshal/legislation/technicalguidelinesandreports/2000-01.html>](#)  
Fire Safety Enforcement

# Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

## Fire Prevention Policy

### Public Fire Safety Guidelines

Subject Coding

**PFSG 04-45-12**

Section

Date

### Fire Prevention and Public Education

**August 1998**

Subject

Page

### Fire Prevention Policy

#### **Purpose:**

To identify essential considerations for the development of a municipal fire prevention policy.

#### **Service Delivery Implications:**

- Fire prevention includes public fire safety education.

Fire prevention is an integral part of overall fire protection.

*2(1) Fire Protection and Prevention Act*

*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*

- the fire department establishing and regulating by-law provides direction from council and sets out the principal fire prevention responsibilities
- specific policy should be developed to establish:
  - level of service
  - types of activities and programs
  - responsibilities of personnel

#### **Policy Requirements:**

Policy statement should reflect the following fire prevention activities:

- inspection
- code enforcement
- fire and life safety education
- fire investigation and cause determination
- fire loss statistics
- Fire department operational guidelines will dictate how, when and where activities will be conducted.

### Quality and Performance Measures:

The policy should:

- encourage the participation of all fire department personnel in prevention and fire and life safety education.
- provide clear direction from council to the chief, members of the department and the public.

### Related Functions/ Considerations:

The fire prevention policy should describe:

- public fire and life safety education programs such as: *Learn Not To Burn; Older & Wiser; Alarmed For Life; The Arson Prevention Program For Children; and Risk Watch.*
- inspections, code enforcement programs such as: routine inspections; home safety checks; complaint inspections; request inspections; open air burning regulation; new construction inspection; and plans examination
- fire investigation / fire origin and cause determination - liaison with appropriate agencies

### Codes, Standards, and Best Practices:

Codes, Standards and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at <http://www.mcscs.jus.gov.on.ca/>.  
[<http://www.mcscs.jus.gov.on.ca/>](http://www.mcscs.jus.gov.on.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.

See also PFSG

[01-02-01](#)

[<../.../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/01-02-01.html>](http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireserviceresources/publicfiresafetyguidelines/01-02-01.html) Comprehensive Fire Safety Effectiveness Model

[02-02-12](#)

[<../.../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html>](http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html) & [03](#)  
[<../.../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html) Fire Risk Assessment

[02-03-01](#)

[<../.../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html>](http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html) Economic Circumstances

[02-04-01](#)

[<../.../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html>](http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html) & [02-04-23](#)  
[<../.../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html>](http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html) Capabilities of Existing Fire Protection Services

[04-12-13](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-12-13.html>](#) Core Services

[04-39-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html>](#) Fire Prevention Effectiveness Model

[04-40-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40-12.html>](#) & [04-40-03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40-03.html>](#) Selection of Appropriate Fire Prevention Programs

[04-41-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-41-12.html>](#) Community Fire Safety Officer/Team