FINAL REPORT 2014

FIRE DEPARTMENT MASTER PLAN UPDATE

Central York Fire Services

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DILLON CONSULTING

Central York Fire Services

Fire Department Master Plan Update

Final Report 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 it 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.***

<u>Prevention /Education Division:</u>

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 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 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
	Minimum firefighter deployment	**4**	**14**	**24**

Table 19: Recommended Revised CYFS 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 ***and 20 seconds*** *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 ***fourteen*** *firefighters within ten minutes* ***and 20 seconds****, 90% of the time.*
Turnout Time
CYFS should strive to achieve a goal of ***80*** *seconds or less for turnout time of firefighters,* ***90% of the time.***

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 CYFS hire an administrative assistant dedicated to supporting the needs of the Training Division in the immediate horizon of the plan.***
32. ***That CYFS hire a third Training Officer as a dedicated position to replace the secondment position implemented in 2011.***
33. ***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.***
34. ***That the proposed Assistant Deputy Chief - Training & Emergency Management be designated the Community Emergency Management Coordinator (CEMC) as well as being tasked with monitoring 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.***
35. ***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.***
36. ***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.***
37. ***That the CYFS conduct a comprehensive training facilities assessment as part of the design and development of the proposed fifth fire station.***
38. ***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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GLOSSARY OF TERMS

ANSI	American National Standards Institute
CACC	Central Ambulance Communications Centre
CAO	Chief Administrative Officer
CEMC	Community Emergency Management Coordinator
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 139 staff, including a Fire Chief, Deputy Fire Chiefs, 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.

Automatic aid agreements (6) A municipality may enter into an automatic aid agreement to provide or receive the initial or supplemental response to fires, rescues and emergencies.

Review of municipal fire services (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.

Failure to provide services (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).

Regulation (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.

Fire departments (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).

Same (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).

Exception (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).

Same (4) The councils of two or more municipalities may establish one or more fire departments for the municipalities. 1997, c. 4, s. 5 (4).

Fire chief, municipalities 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.

Same (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.

Responsibility to council (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

Powers of a fire chief (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

Appointment of Fire Marshal 8 (1) There shall be a Fire Marshal who shall be appointed by the Lieutenant Governor in Council.

Powers of 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 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 paradigms shift within the fire service.

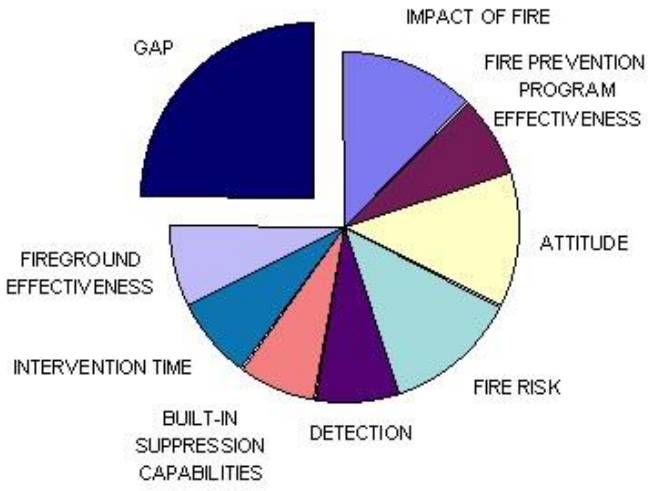
Figure 1 below shows each of the factors which make up the comprehensive model. Although the chart is divided equally, each factor will in reality contribute differently to the total level of protection provided to a community.

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*[1] 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.*"

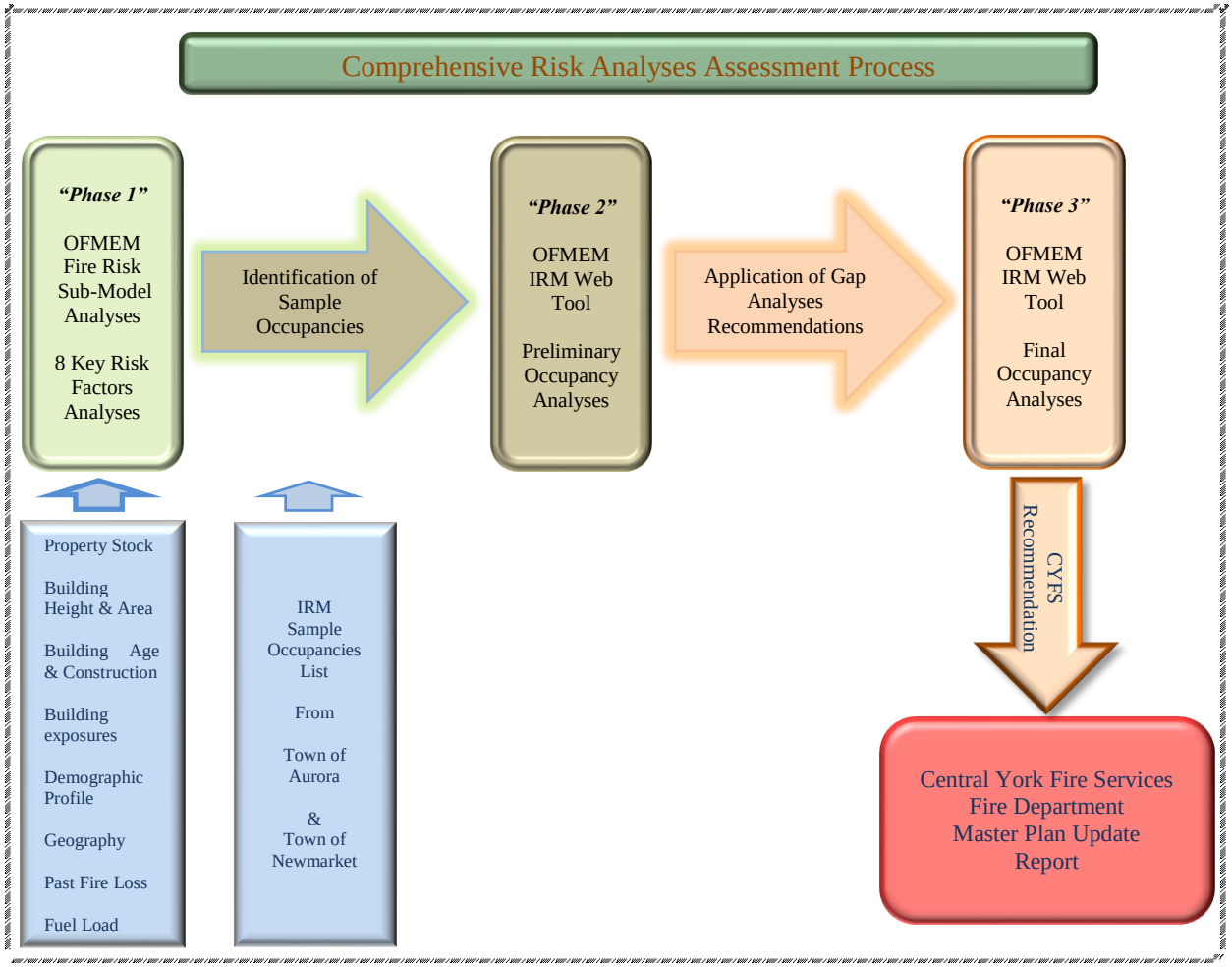
5.1 Comprehensive Risk Analyses Assessment Process

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.

[1] 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. As development increases there will be more high-rise buildings which will result in increased challenges for CYFS, both in response to the building site and vertical response within the building itself. 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. The risk assessment conducted within the study identified eight buildings in Aurora and twenty-one in Newmarket as vulnerable occupancies, such as hospitals, residential care facilities and long-term care facilities. The OFMEM identifies 19 buildings as 'vulnerable occupancies.' This includes nine in Aurora and 10 in Newmarket. 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 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, recue 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 three to five 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-to-day 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. Ownership issues with facility consolidation need to be resolved before the CFESA can be adopted.

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 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

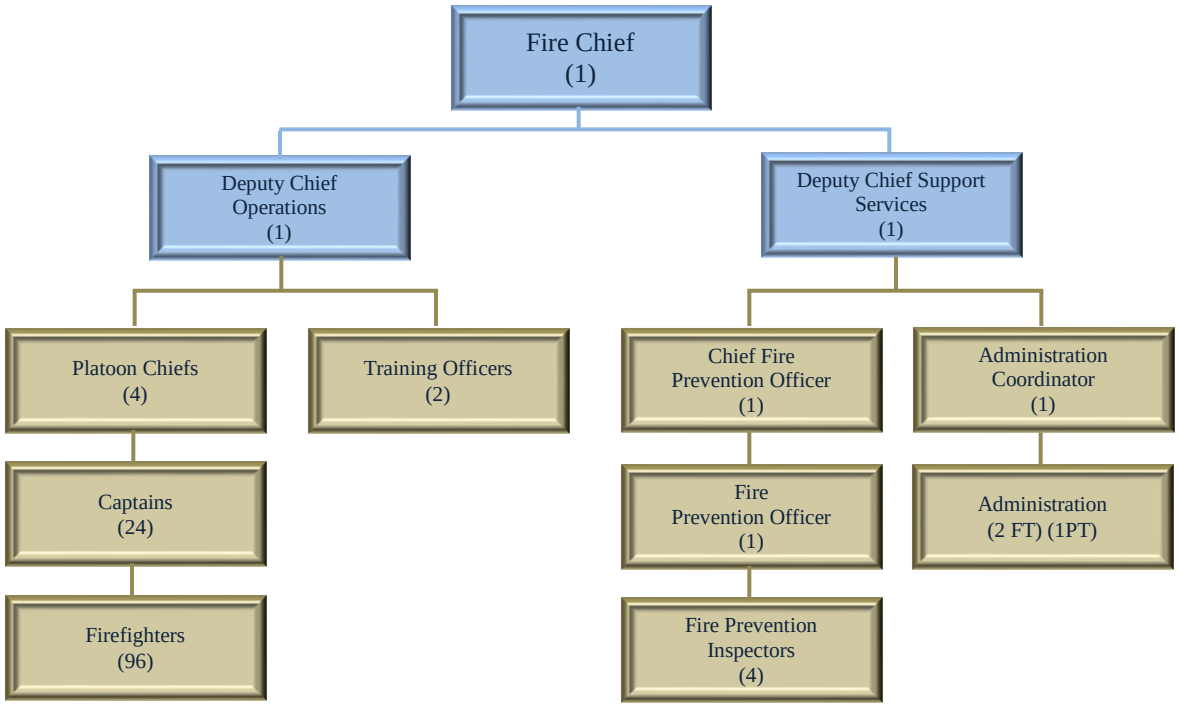


Table 1: CYFS Department Staffing

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

(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 31st 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 31st 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 31st 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).

Figure 5: Central York Fire Services Station and Facility Locations

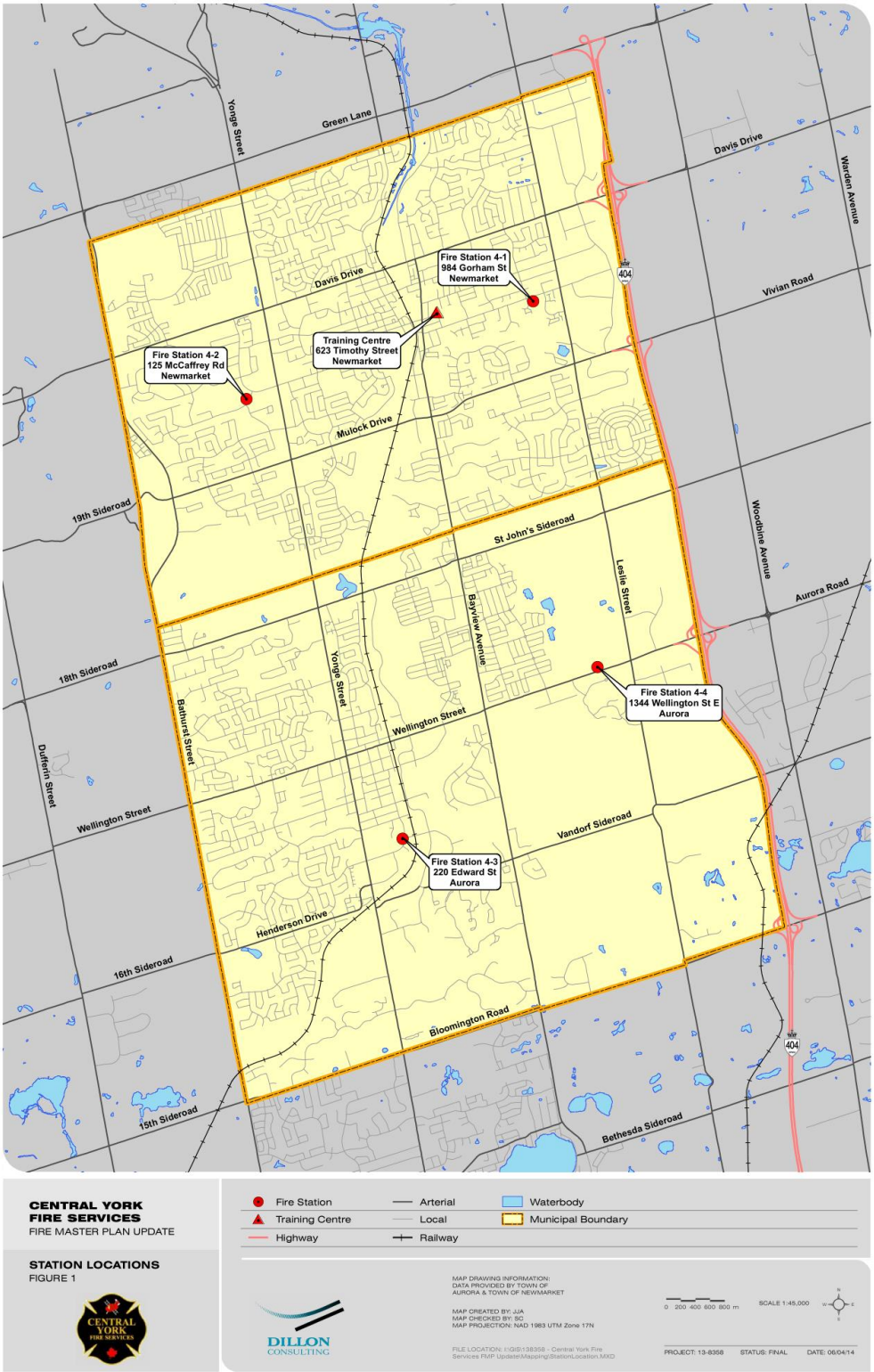


Table 2 includes with a brief description of each station and the Training Centre.

Table 2: Existing Fire Station Descriptions

Station Number	Description
Station 4-1 984 Gorham St., Newmarket 	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. Staff: The administration team of three Chief Officers and four administrative staff operate from Headquarters as do six fire prevention personnel, four platoon chiefs and 20 suppression personnel.
Station 4-2 125 McCaffrey Road, Newmarket 	Station 4-2 was built in 1998. The station was renovated in 2014. There are 40 suppression staff at this station.

Station Number	Description
Station 4-3 220 Edward St., Aurora 	Recently renovated in the Fall of 2011, Station 4-3 is the oldest CYFS fire station being built originally in 1979. There are 40 suppression staff at this station.
Station 4-4 1344 Wellington St. E, Aurora 	Station 4-4 was built in 2003 and is therefore the newest station. There are 20 suppression staff at this station.

Station Number	Description
Training Centre 623 Timothy Street, Newmarket 	The Training Division currently resides in the former Newmarket Operations Centre on an interim basis. 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 has been allocated.

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 day 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 a 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 analysis of maintenance costs reflects that the American LaFrance apparatus (Pumper –E421 and Pumper E-431) are consistently higher 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. Over the last couple of years, these apparatus have been out of service for extended times waiting for parts.

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 - **E411** 2012 Crimson	12-08	$565,000	15	2027	$880,252
Pumper- **E421** 2005 American Lafrance	06-14	$471,483	15	2021	$734,555
Aerial- Telesquirt - **S423** 1996 Freightliner	96-05	$565,000	15	2016	$800,000
Pumper Rescue - **E431** 2005 American LaFrance	06-15	$465,514	15	2021	$734,555
Aerial - **A436** 2012 Smeal	12-07	$798,489	15	2027	$1,244,020
Pumper, **E441** 2009 Smeal	10-09	$448,949	15	2025	$699,448
Pumper- **E412** 1997 Superior (E-One)	97-02	$565,000	15	2015	$617,391
Pumper FL80 **E442** 1999 Freightliner	99-21	$565,000	15	2017	$635,912
Pumper - **E432** 1986 Mack	87-01	$565,000	15	2013	$581,950
Aerial - Platform - **P427** 2013 Smeal	13-01	$1,200,000	15	2028	$1,869,561
Tanker- **T444** 2012 Smeal	12-09	$465,000	15	2024	$724,455
Haz Mat **H438** 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.

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
Apartment/Office Inspections Base Building			
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%
Faxing or Mailing Reports	$27.86	$31.48	0%

Unit of Measure (Time Allotted)	2014 Fee Excluding HST	Total Fee Including 13% HST (where applicable)	% Increase from 2013 Fee
(0.5 hours)			
Hazardous Materials Response (any location)			
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%
Industrial & Commercial Inspection			
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%
Provincial Highway Accident Responses			
First hour per fire unit/flat rate	$410.00	$410.00	0%
Each additional ½ hour per fire unit	$205.00	$205.00	0%
Paid Duty Truck Stand-by			
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%
Other Fees			
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
Administration			
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
Fire Prevention			
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	-
Medical			
M-005	Disinfection & General Cleanliness	98-06-19	2013-05-01
Fire Suppression			
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	-
Training			
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 it 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 of 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 a 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 the 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 the 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 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 homes, domiciliaries, 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 have 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 (approximately 14,500 residents). 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 the 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, an 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 on 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 occupancy 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

Occupancy Classification (OBC)	Buildings	Proposed Fire Safety Program Delivery Cycles
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 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 to conduct inspections upon complaint or when requested to assist with code compliance.

8.5.1 Key Functions

The primary goal of 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

Occupancy Classification (OBC)	Buildings	Current Inspection Target (Performance Measure)
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 1st 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 Apartments regulated by Part 9.5 of the OFC Apartments regulated by Part 9.8 of the OFC Hotels, Motels and occupancies regulated by Part 9.9 of the OFC Stay Fire Smart Program	2 – Years 2 – Years 2 - Years 2 - Years 5 - Years	2 – 3 Years 2 - 3 Years 2 – 3 Years 2 – 3 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 and 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
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

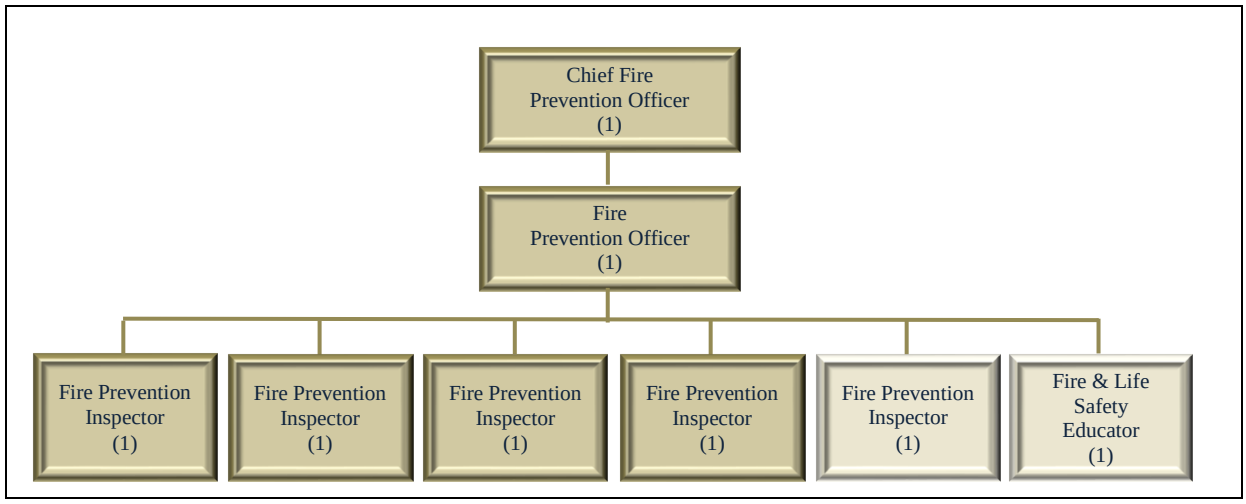
This FDMPU contains recommendations to enhance the current public education and fire prevention activities and programs provided by the CYFS in response to the strategic priority identified, including:

"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 it 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 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 Fire Safety Program Delivery Cycles (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 6th 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 6th 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
		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	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
Platoon Staffing			**31**	**25**	**21**

(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 either Platform 427 or 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 6th 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.

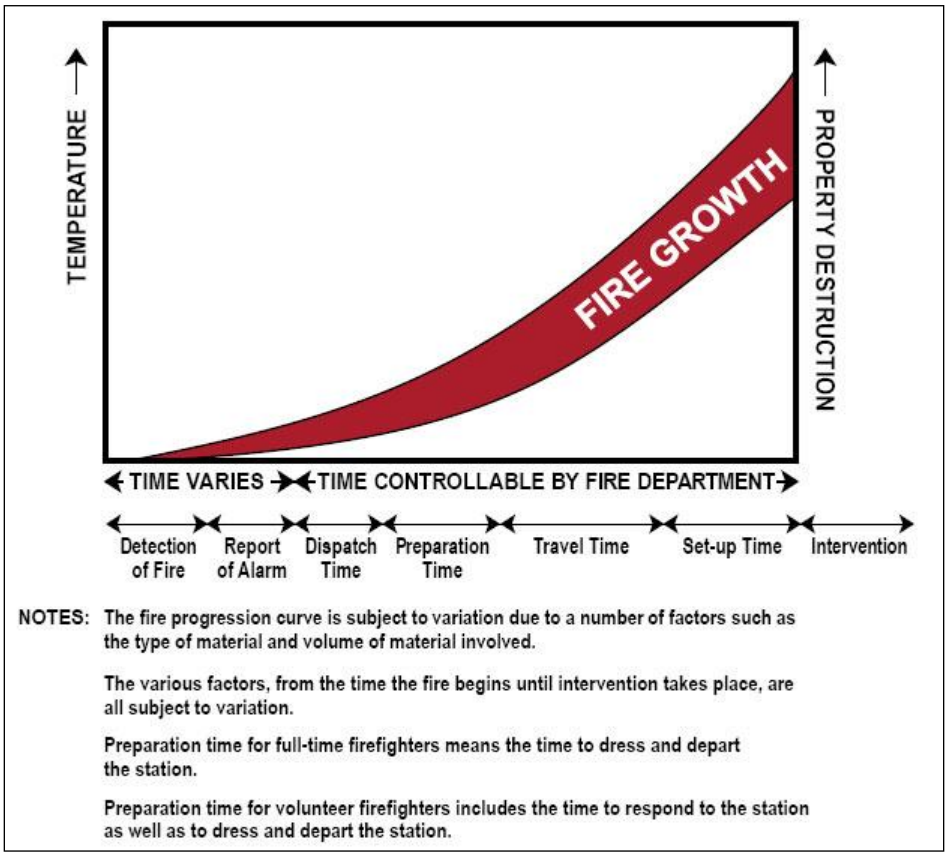
Fire growth rates, defined by the Society of Fire Protection Engineers, as slow, medium and fast are listed in ***Table 15***. The fire growth rates are measured by the time it takes for a fire to reach a 1 megawatt (MW) fire. This is roughly equivalent to an upholstered chair burning at its peak. A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

Time to Reach 1 MW and 2 MW Fire Growth Rates in the Absence of Fire Suppression		
Fire Growth Rate	***Time in Seconds to Reach 1MW***	***Time in Seconds to Reach 2 MW***
Slow	600 seconds	848 seconds
Medium	300 seconds	424 seconds
Fast	150 seconds	212 seconds
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 (www.OFMEM.gov.on.ca)		

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)								

Notes:

- LERL = Lower Effective Response Level & UERL = Upper Effective Response Level, [together form the critical staffing range]
- 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.
- Planning moderate, high and extreme risk occupancies/locations will further validate staffing requirements to ensure the optimum level of protection for the municipality.
- Simultaneous events will require further consideration due to additional personnel requirements beyond the scope of this matrix.

* 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.

(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"

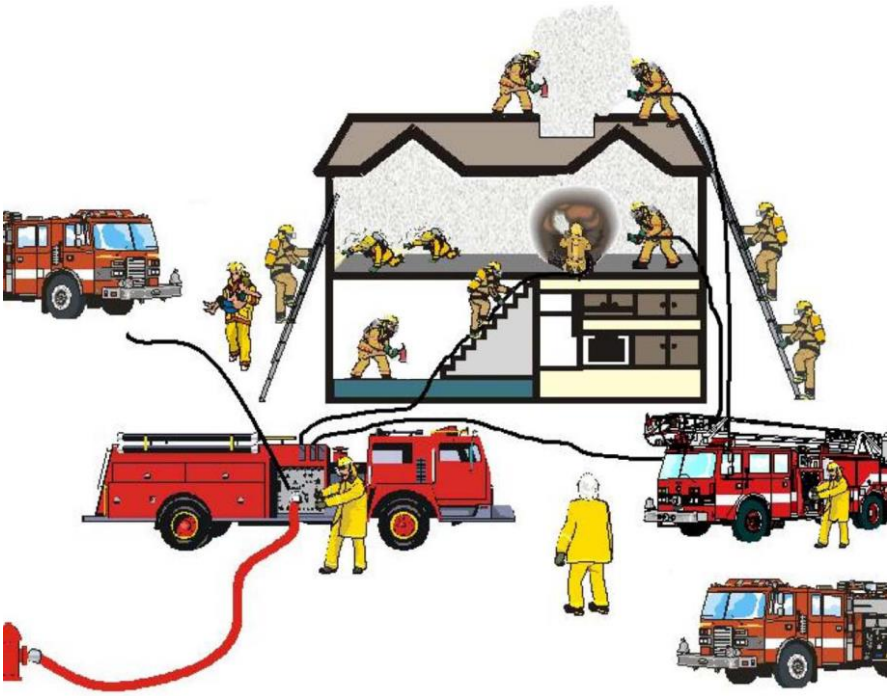
In comparison to the first response, the depth of response relates to the "total" number of firefighters initially assigned to an incident. Depth of response is also commonly referred to as "First Alarm" or "Full Response." For example NFPA 1710 defines "*Initial Full Alarm Assignment"* as *"Those personnel, 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.[2]

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".*

[2] 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
	Minimum firefighter deployment	**4**	**14**	**24**

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 ***Total Response Time***	90%	4 firefighters arriving on scene within 4 minutes of ***Travel Time***	90%
Depth of Response	12 firefighters arriving on scene within 10 minutes of ***Total Response Time***	90%	14 firefighters arriving on scene within 8 minutes of ***Travel Time***	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	**80 seconds**	**90%**	80 seconds	90%
Initial Response	4 firefighters arriving on scene within 6 minutes **and 20 seconds** of ***Total Response Time***	90%	4 firefighters arriving on scene within 4 minutes of ***Travel Time.***	90%
Depth of Response	**14** firefighters arriving on scene within 10 minutes **and 20 seconds** of ***Total Response Time***	90%	14 firefighters arriving on scene within 8 minutes of ***Travel Time***	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

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 ***and 20 seconds*** *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 ***fourteen*** *firefighters within ten minutes* ***and 20 seconds****, 90% of the time.*
Turnout Time
CYFS should strive to achieve a goal of ***80*** *seconds or less for turnout time of firefighters,* ***90% of the time.***

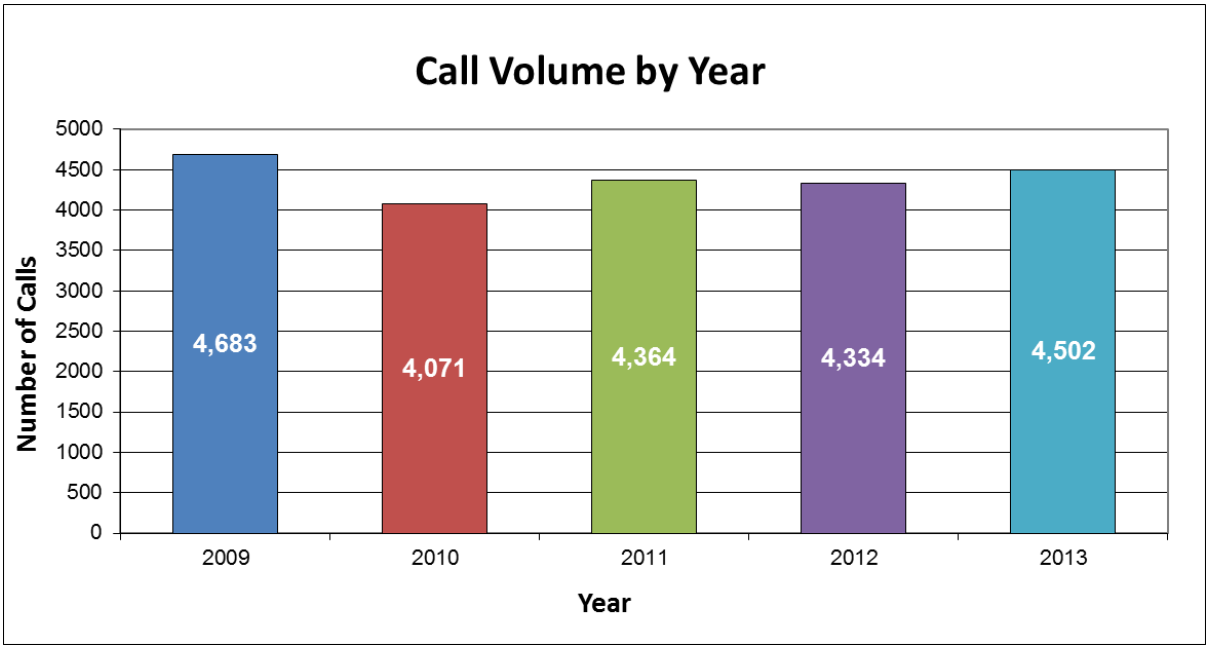
9.11 Historical Emergency Response Overview

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

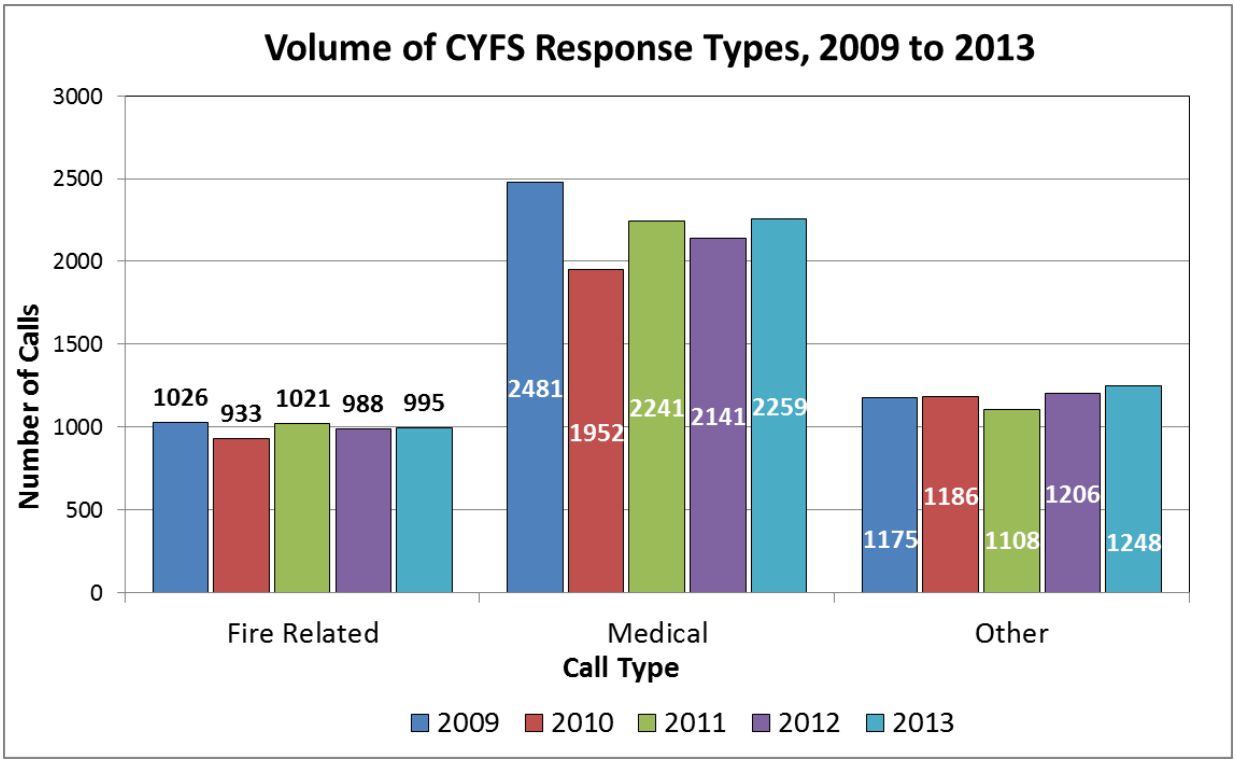
Dillon Response Type	OFMEM Response Type	CYFS Fire-Related Response Type
Fire	Property fires / explosions - Fire, Explosion & No Loss outdoor fire	Fire-related
Medical	Medical / resuscitator call -Oxygen administered, CPR, Defibrillator used, Electric Shock, Burns, DOA, Alcohol or Drug related, etc.	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.

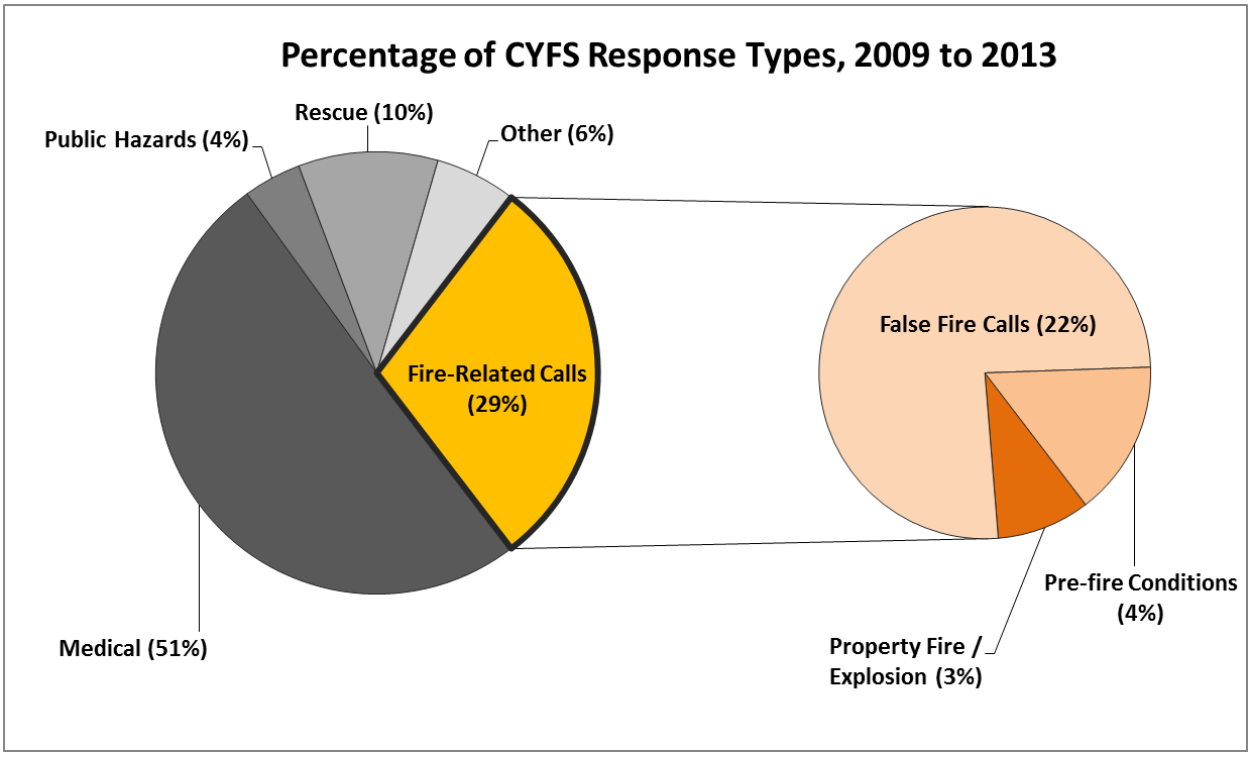
The number of fire related, medical and other response types responded to over the period from 2009 through 2103 is shown in ***Figure 12.***

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%).

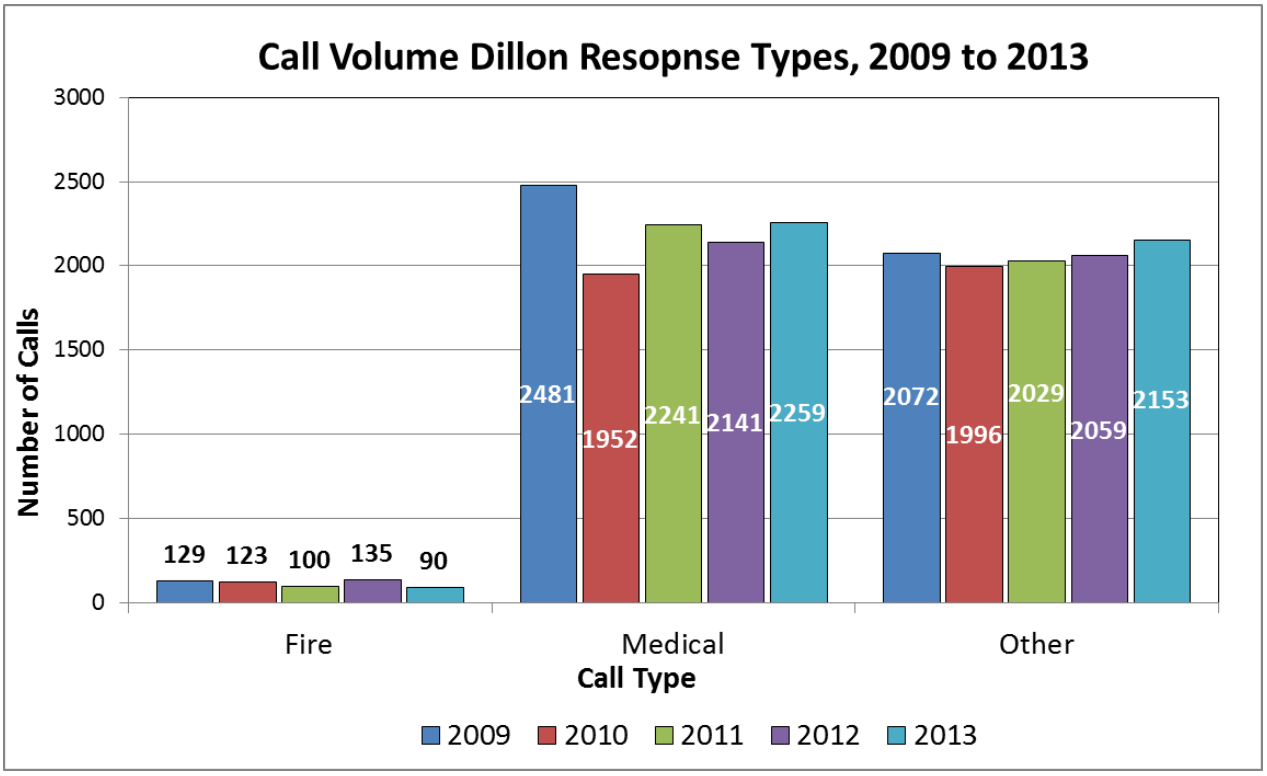
Figure 13: Percentage of CYFS Response Types, 2009 to 2013



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* [3]*– 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.*"

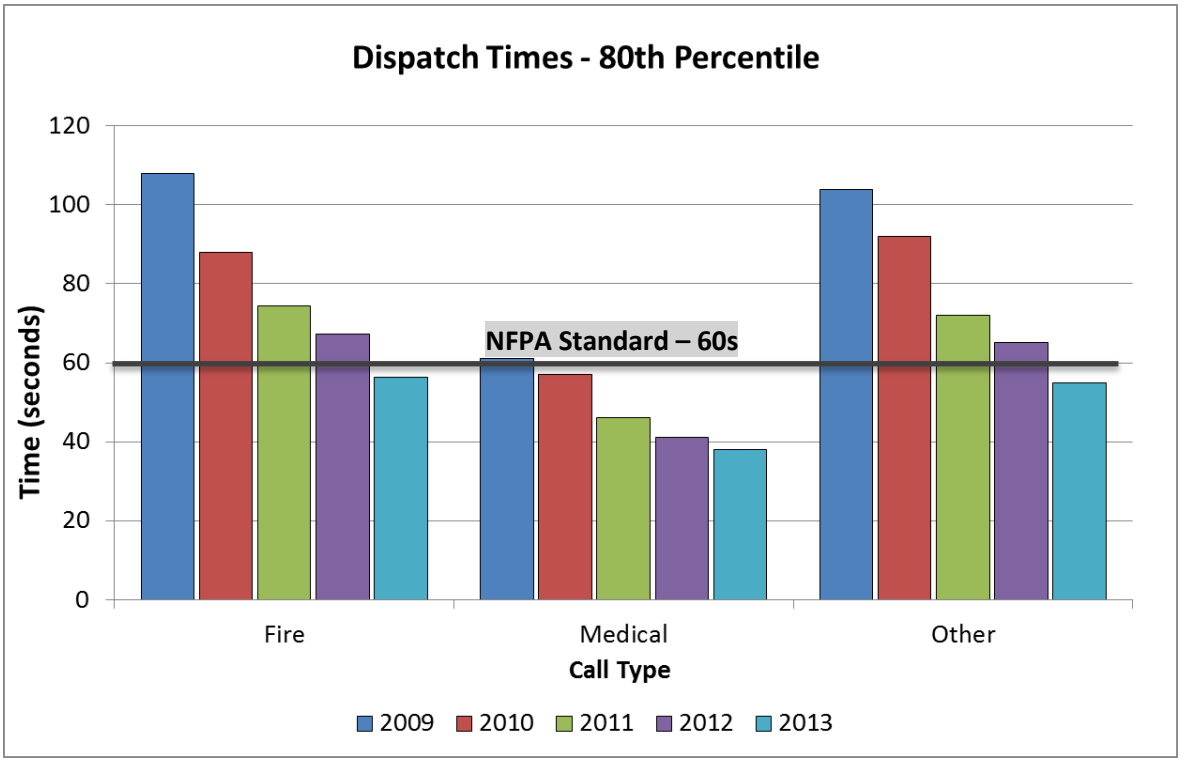
[3] NFPA 1221 2013 Edition was referenced within this report

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 (80th 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 80th percentile of historical dispatch times from the period of 2009 to 2013.

Figure 15: Historical Dispatch Times by Type - 80th 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 80th 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 80th 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.

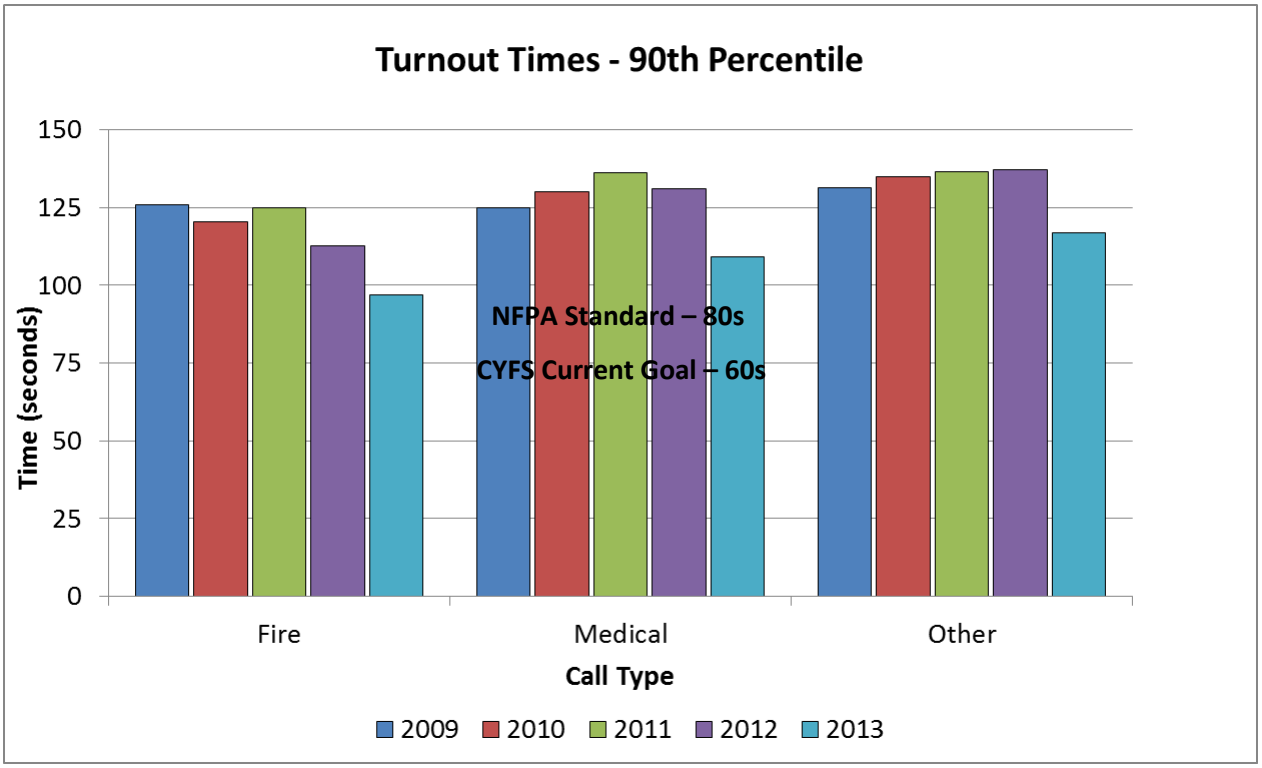
9.11.5 Turnout Time

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 - 90th Percentile2009 to 2013



The 2013 90th 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:

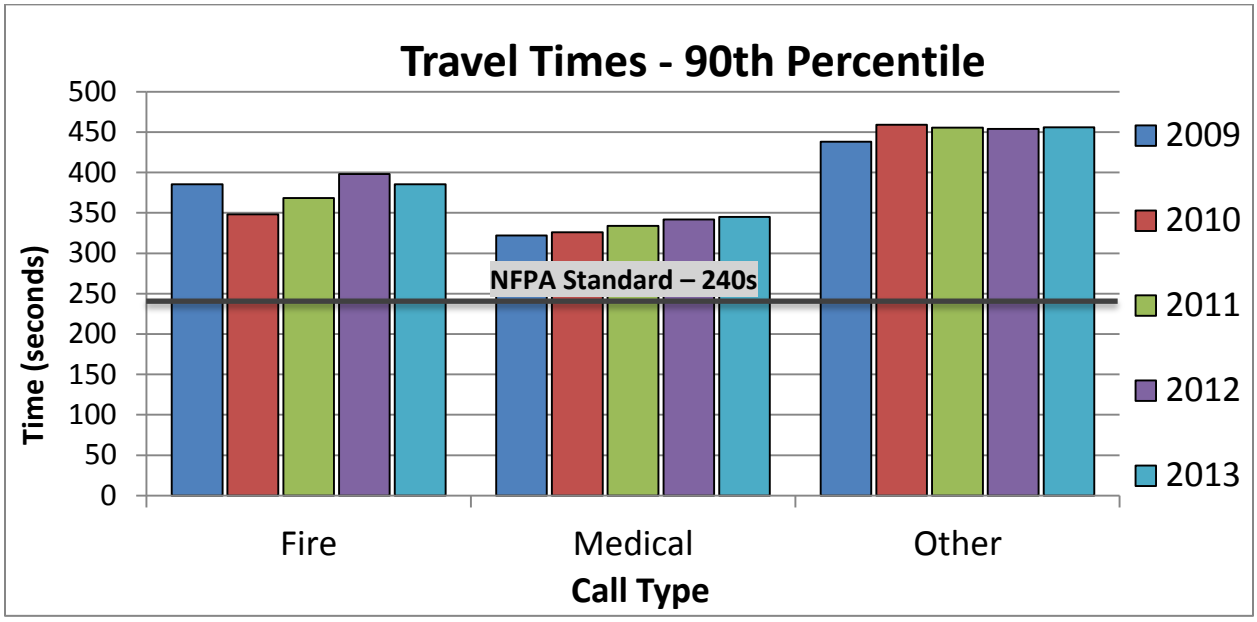
The NFPA 1710 performance measure identifies a travel time of 240 seconds (four minutes) for the first arriving engine company (four firefighters) on-scene for 90% of calls (90th percentile).

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

For fire-related calls, the aggregate 90th 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."*

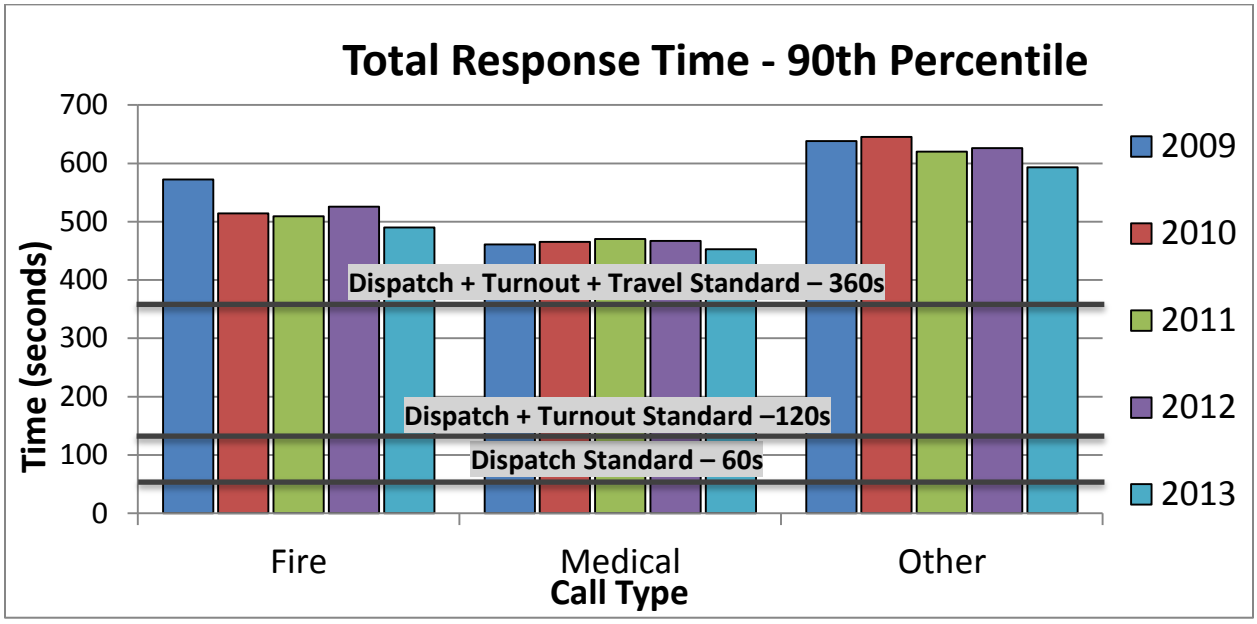
Total response time includes dispatch time, turnout time and travel time components.

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 90th percentile total response time of 360 seconds for medical calls and 380 seconds for fire / other calls as performance targets. CYFS 90th 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 than 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 on local roads. Arterial roads and highways remained at posted speeds within the model. This is referred to as 'Network Speed' within the model plots.

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.

Figure 19: CYFS Existing Initial Response Coverage

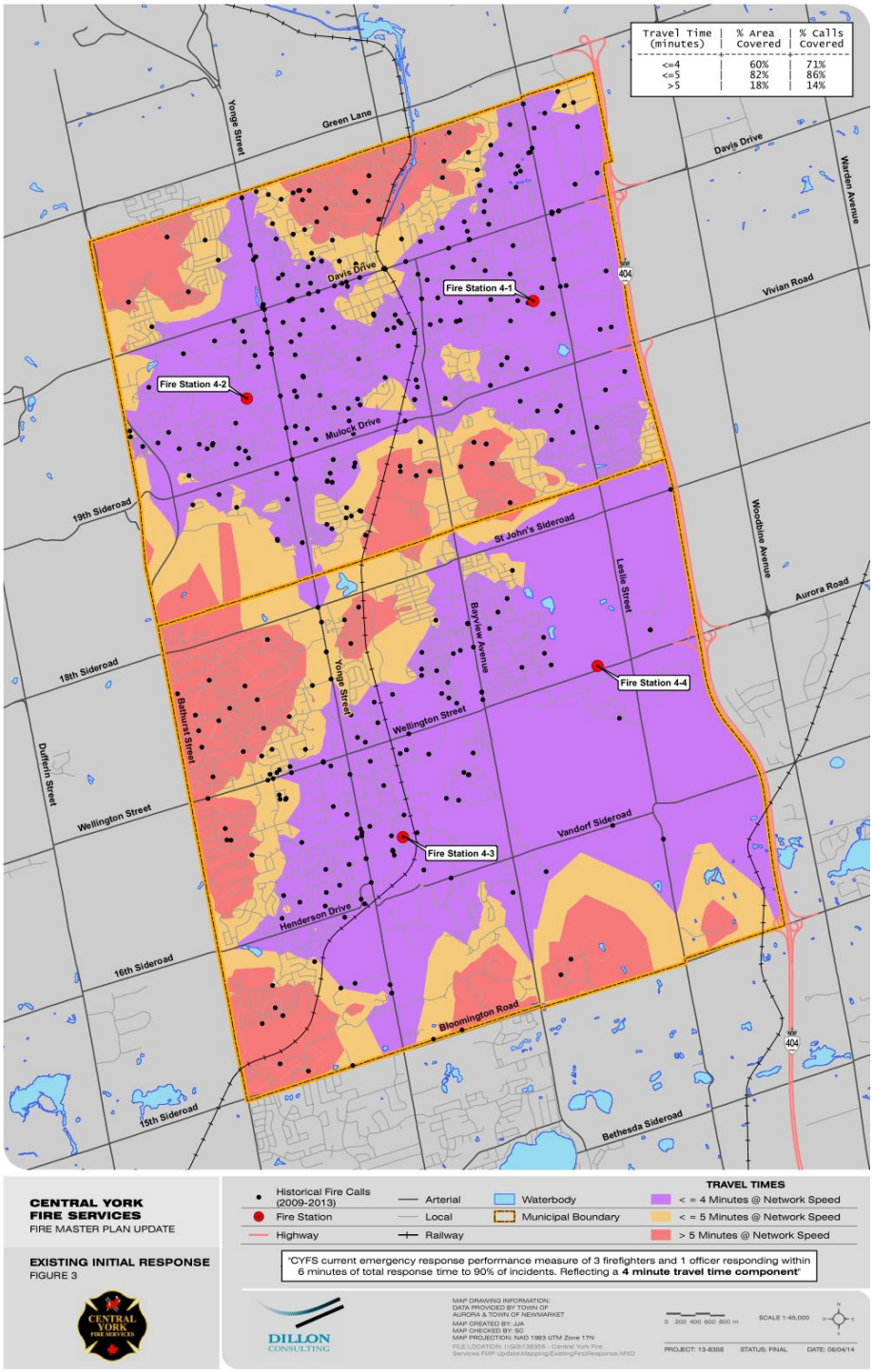


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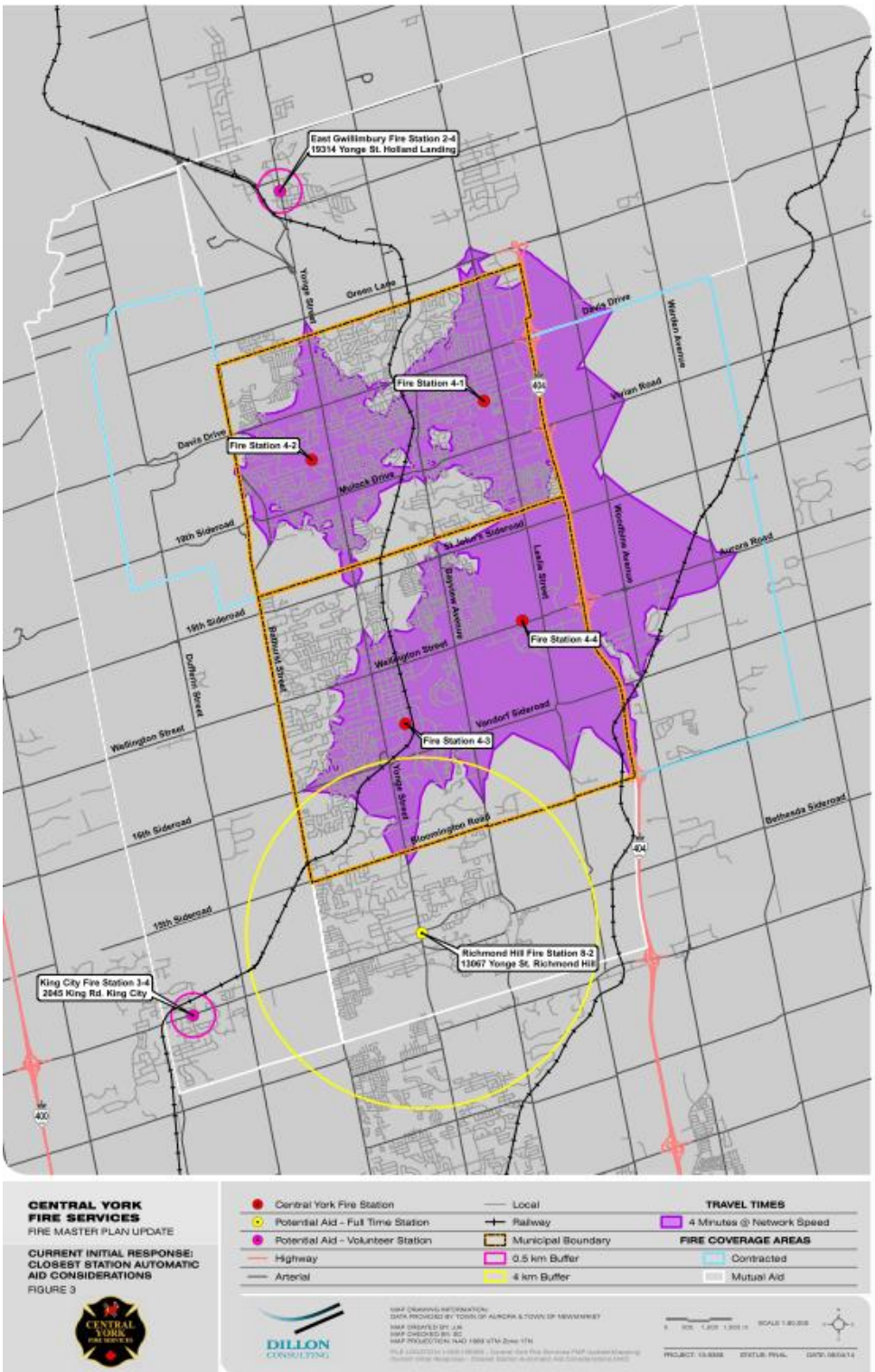
Figure 20: Closest Station Initial Response (Automatic Aid Considerations)



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 achieve 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 achieve 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 6th 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%	--	--	--

Figure 21: Future Initial Response, Proposed Five Station Model (a-Earl Stewart)

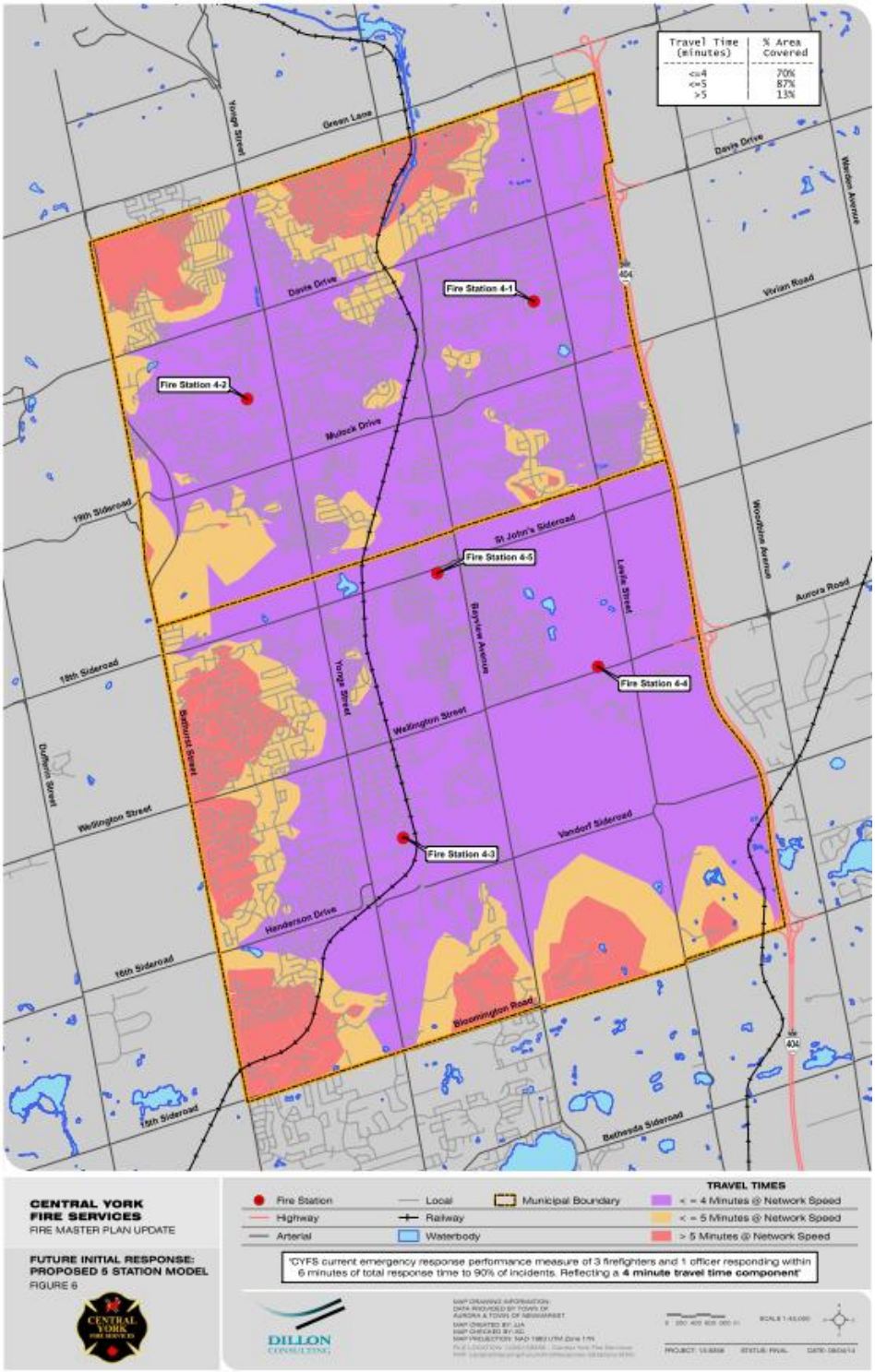
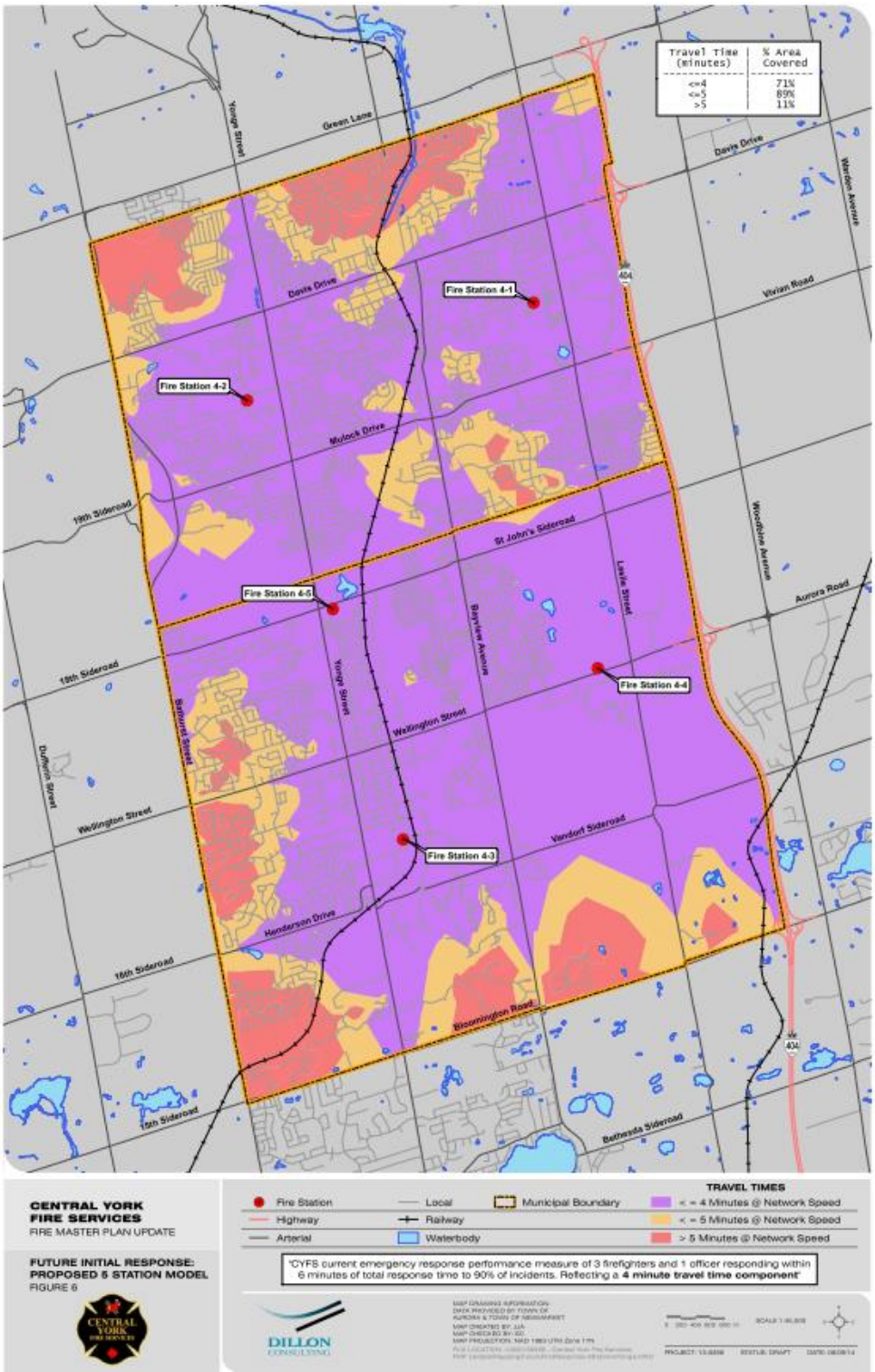


Figure 22: Future Initial Response, Proposed Five Station Model (b-Industrial)



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 6th 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.

Figure 23: Existing Depth of Response (Platform 427 at Station 4-2 & Aerial 436 at Station 4-3)

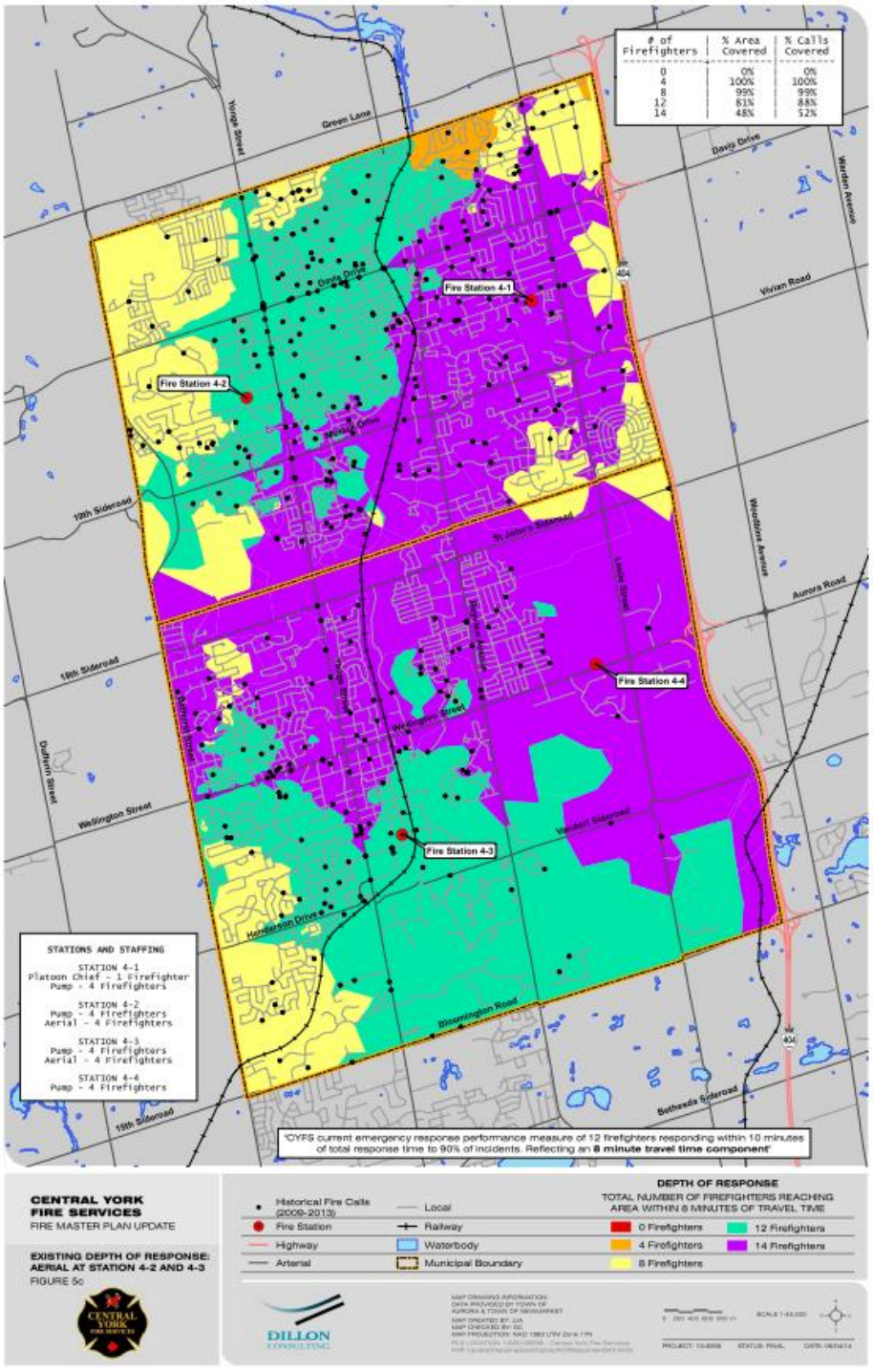


Figure 24: Existing Depth of Response (Platform 427 at Station 4-2)

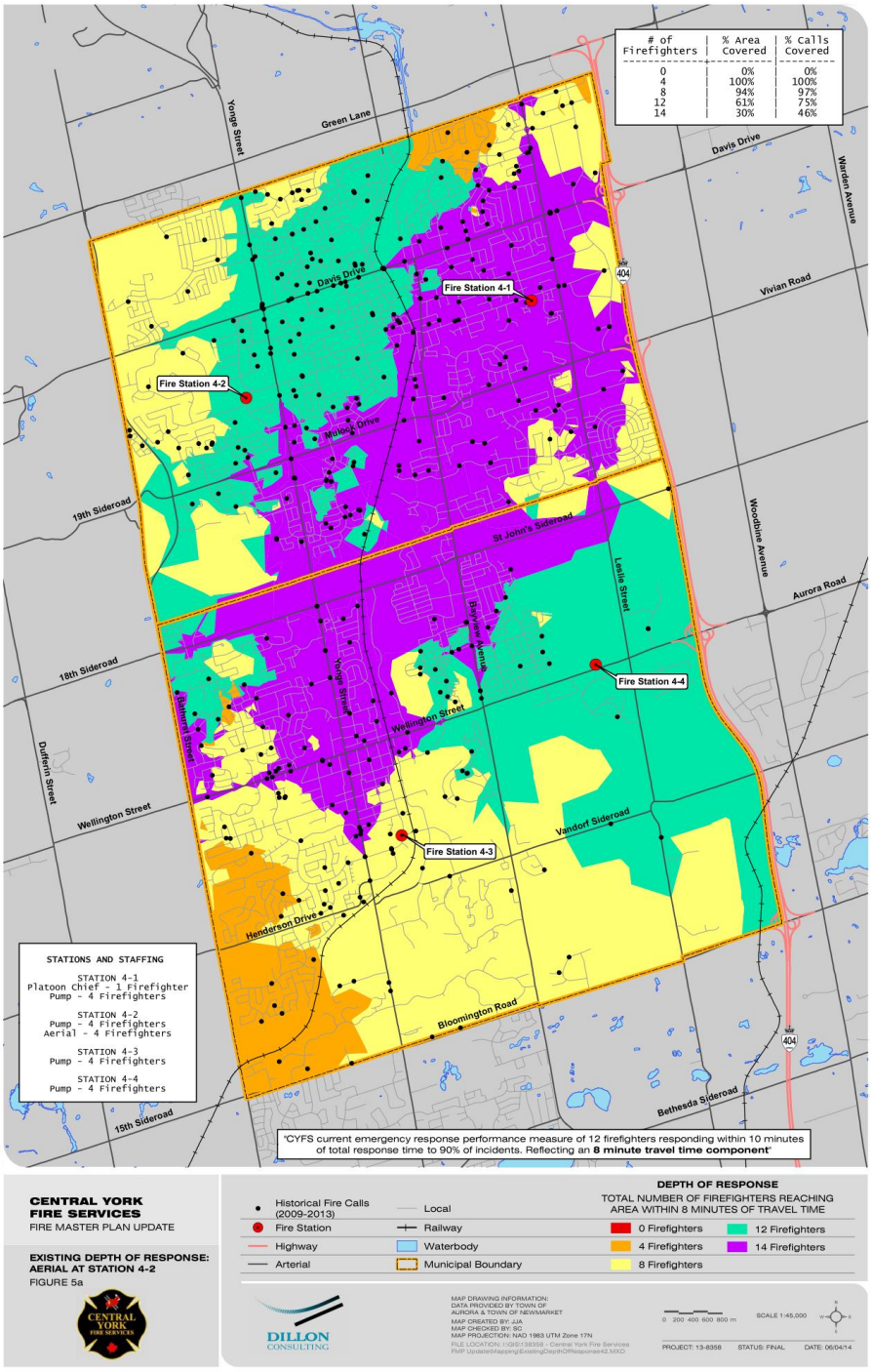


Figure 25: Existing Depth of Response (Aerial 436 at Station 4-3)

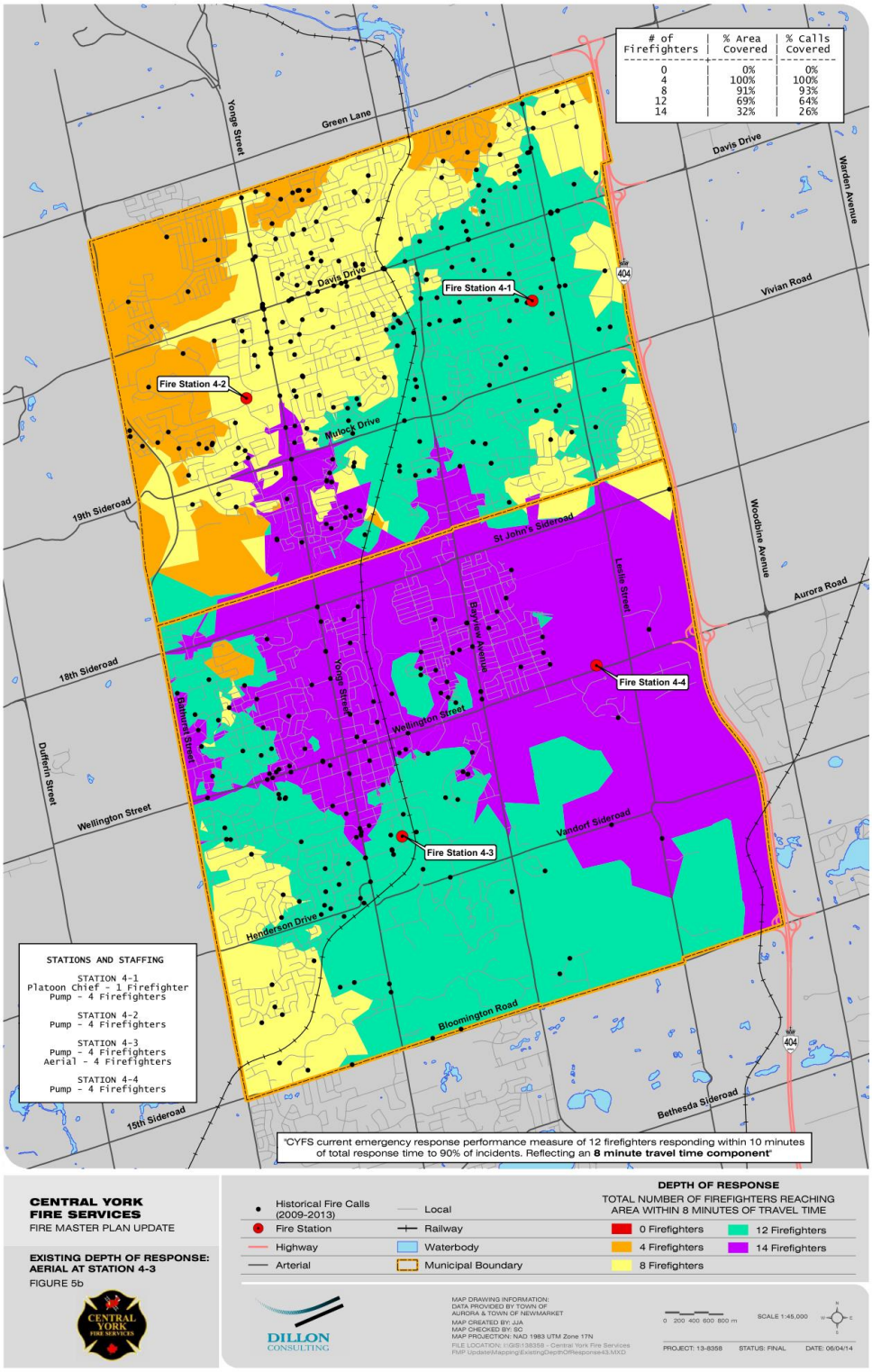
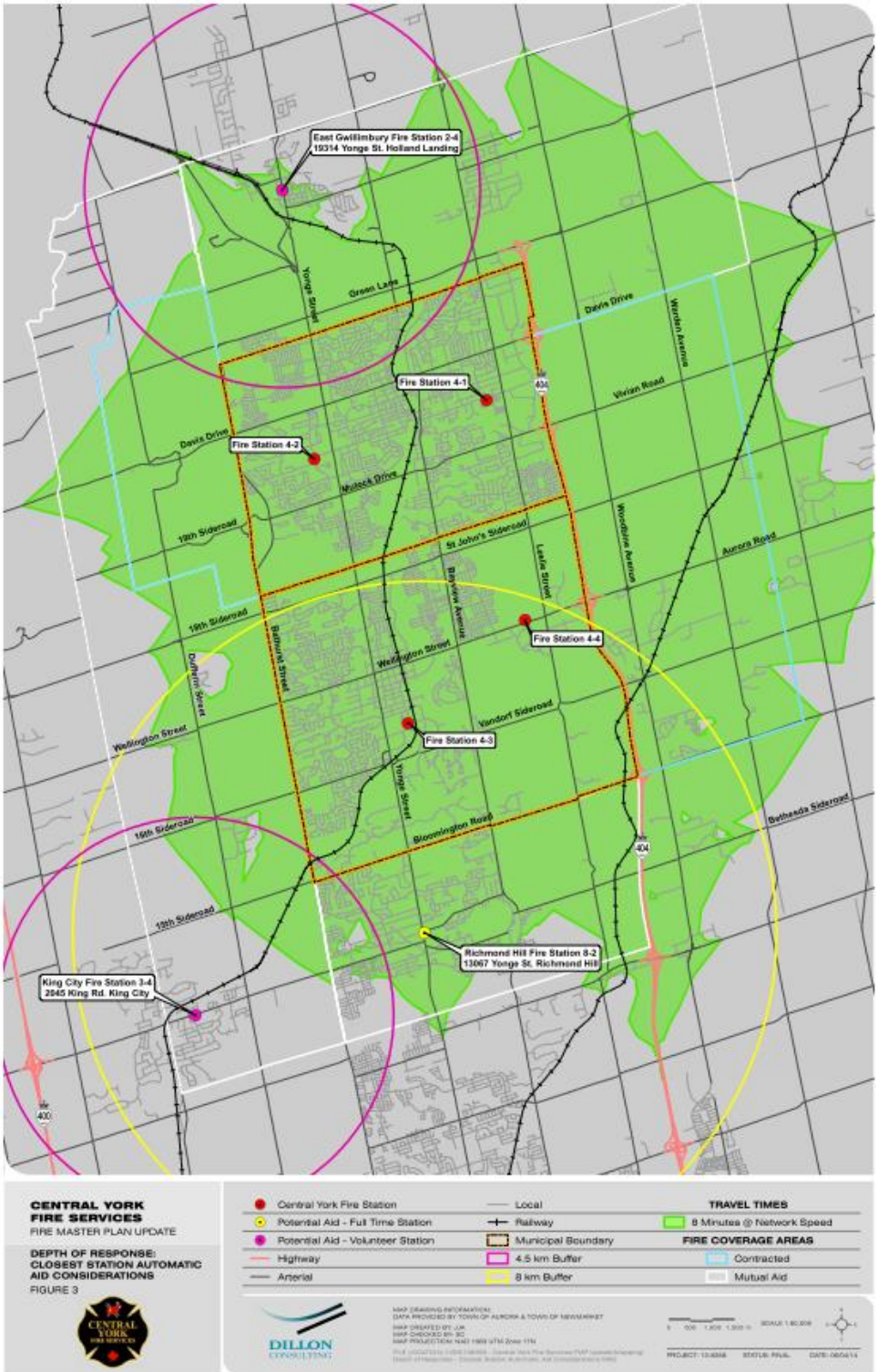


Figure 26: Closest Station Depth of Response (Automatic Aid Considerations)



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***.

Figure 27: Future Depth of Response, Five Station Model

Pump at Station 4-5 with 5 Crew Model

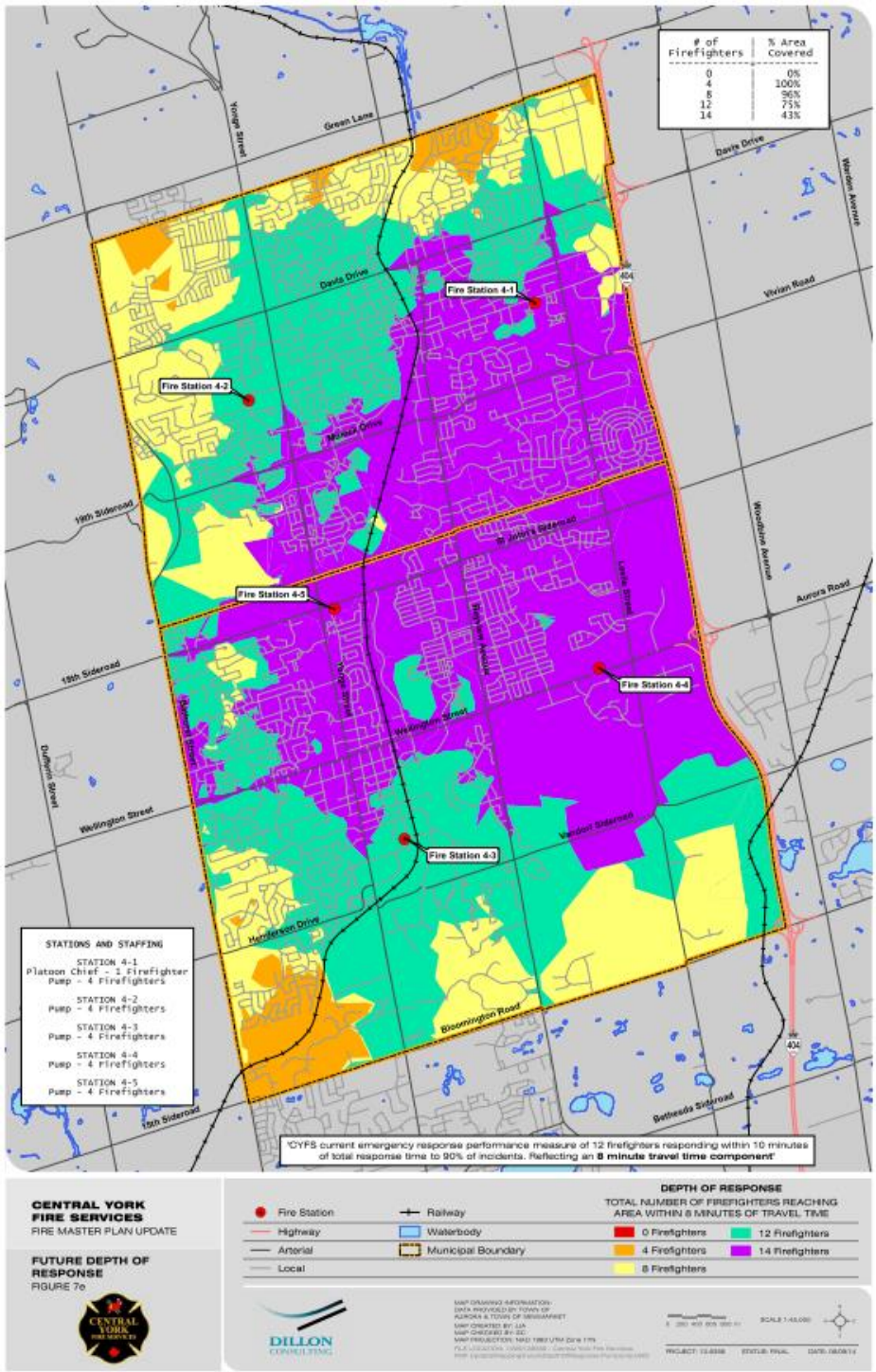


Figure 28: Future Depth of Response, Five Station Model

Platform 427 at Station 4-2 with 6 Crew Model

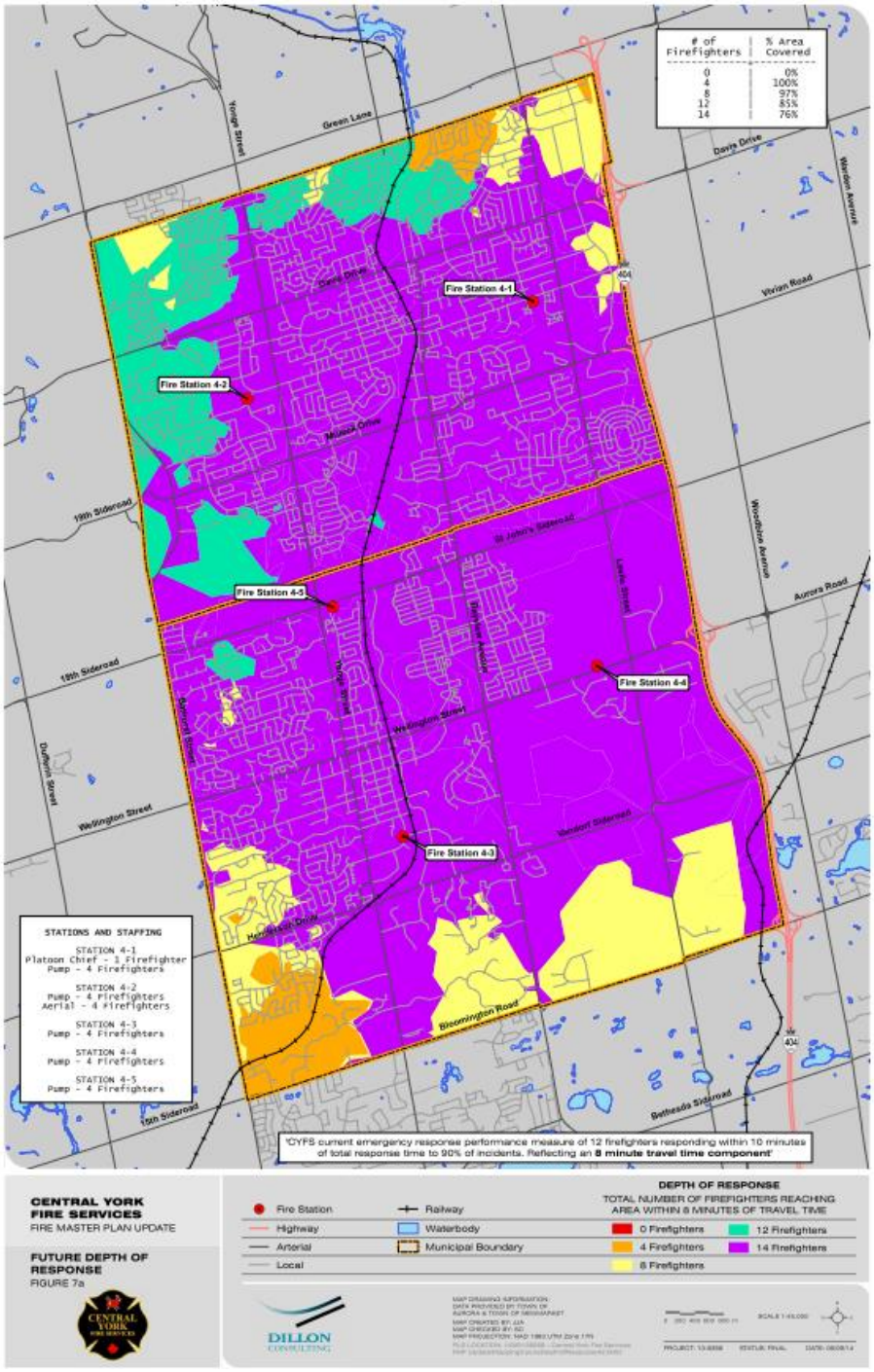


Figure 29: Future Depth of Response, Five Station Model

Aerial 436 at Station 4-3 with 6 Crew Model

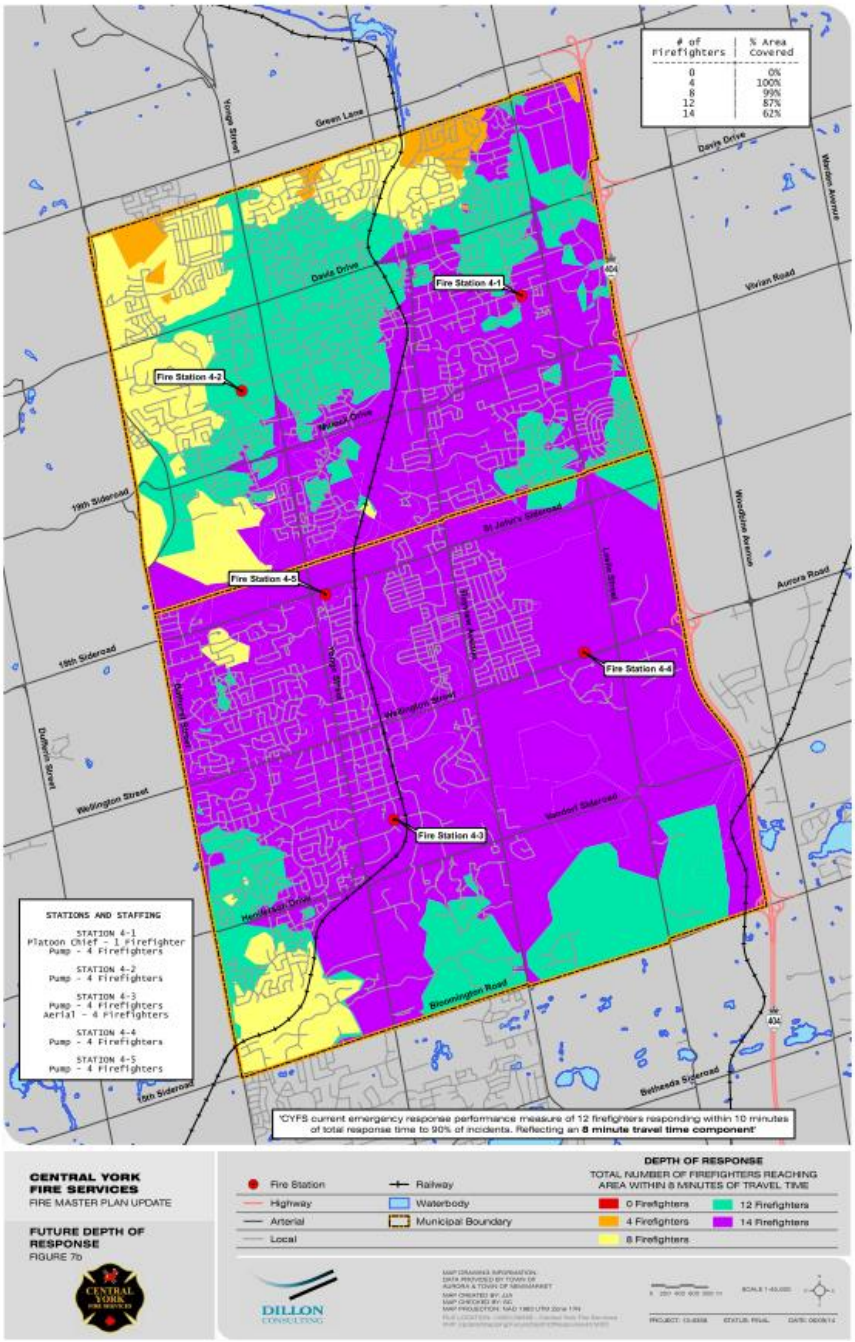


Figure 30: Future Depth of Response, Five Station Model

Aerial 436 at Station 4-5 with 6 Crew Model

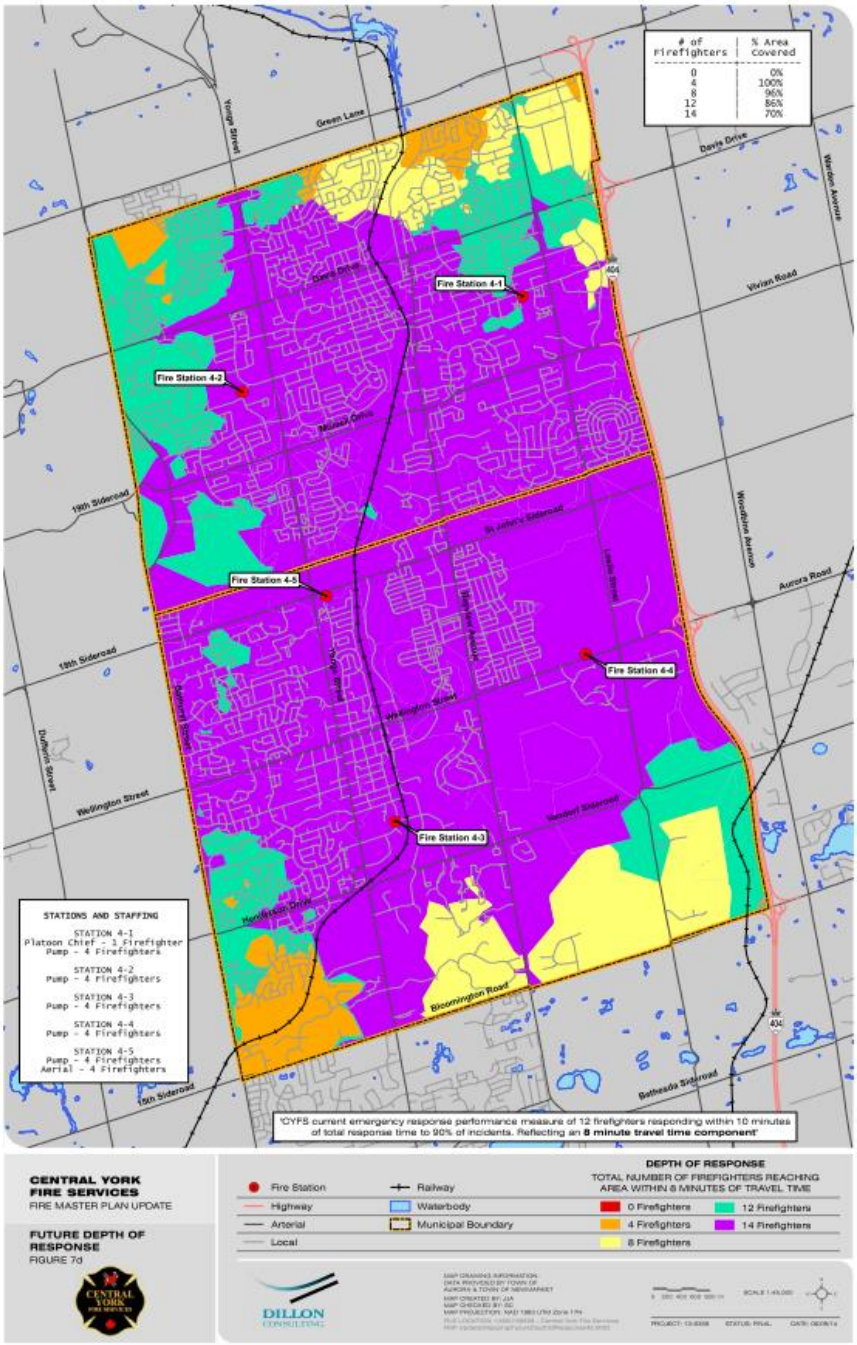


Figure 31: Future Depth of Response, Five Station Model

Platform 427 at Station 4-2, Aerial 436 at Station 4-3 with 7 Crew Model

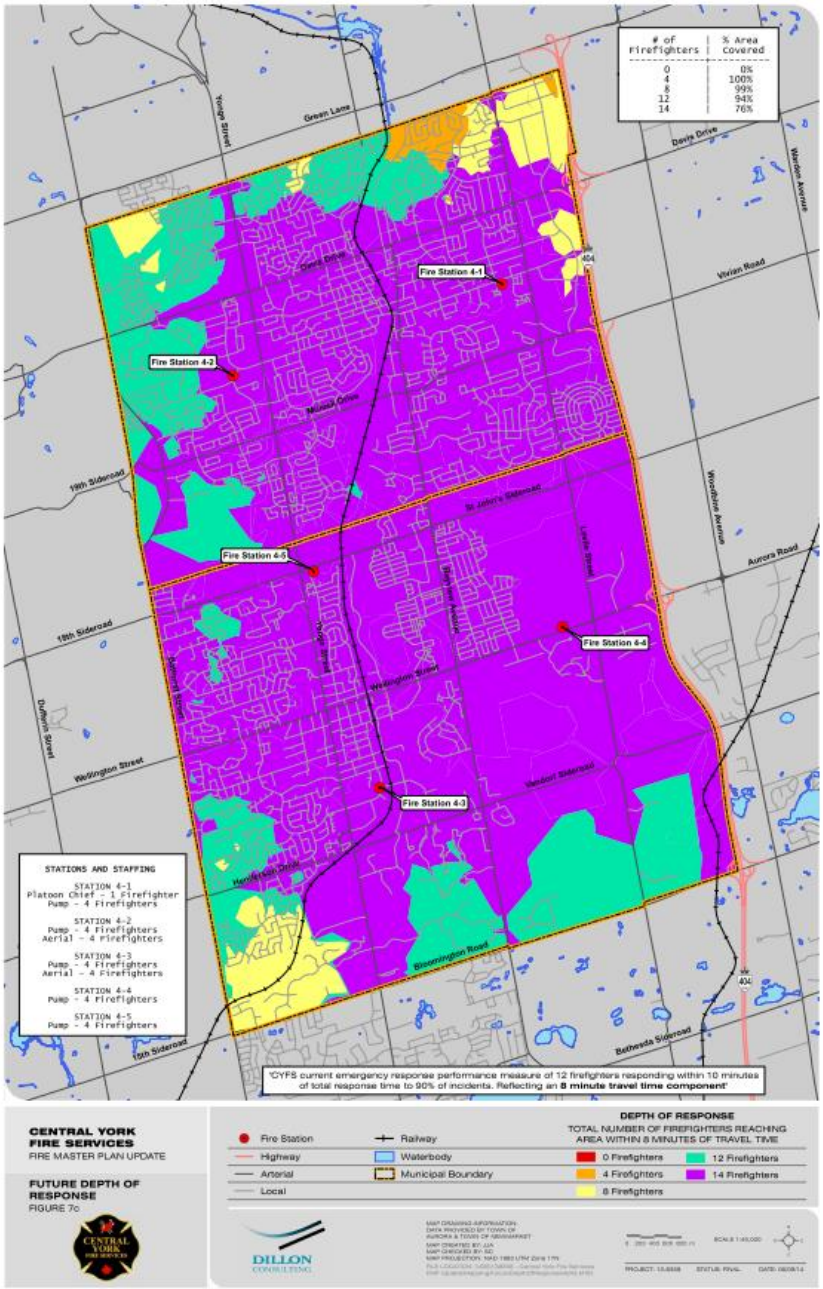


Table 22: Summary of Depth of Response Analysis

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	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 6th crew provides. In our view the analyses of Option 1 further supports the importance of the additional 6th 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 5th 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 has 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 5th station.

Option 7 requires sustaining the 6th 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 x 4 firefighters x 4 platoons = 20 firefighters.

Option 8 including the proposed 5th 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 5th 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 5th 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 5th 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 5th 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. It is therefore recommended that an additional administrative assistant be hired to provide dedicated support to the Training Division.

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. This leaves a need for an additional Training Officer position. It is recommended that this position be filled as a full-time position in the short-term of the plan.

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 personnel 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 has 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 CYFS hire an administrative assistant dedicated to supporting the needs of the Training Division in the immediate horizon of the plan.

Recommendation 32:

That CYFS hire a third Training Officer as a dedicated position to replace the secondment position implemented in 2011.

Recommendation 33:

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 34:

That the proposed Assistant Deputy Chief - Training & Emergency Management be designated the Community Emergency Management Coordinator (CEMC) as well as being tasked with monitoring 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 35:

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 36:

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.[4]

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[5]

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.

[4] *Source: CYFS Training Centre Facilities and Activities Outline provided by CYFS*

[5] *Source: CYFS Training Centre Facilities and Activities Outline provided by CYFS*

This review recommends a proposed 5th 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 5th 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 37:

That the CYFS conduct a comprehensive training facilities assessment as part of the design and development of the proposed 5th 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 38:

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 tis Division as it moves forward.

The following are the Training Division recommendations of this review:

31. ***That CYFS hire an administrative assistant dedicated to supporting the needs of the Training Division in the immediate horizon of the plan.***
32. ***That CYFS hire a third Training Officer as a dedicated position to replace the secondment position implemented in 2011.***
33. ***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.***

34. ***That the proposed Assistant Deputy Chief - Training & Emergency Management be designated the Community Emergency Management Coordinator (CEMC) as well as being tasked with monitoring 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.***
35. ***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.***
36. ***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.***
37. ***That the CYFS conduct a comprehensive training facilities assessment as part of the design and development of the proposed fifth fire station.***
38. ***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 16th, 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:

- Fire Chief
- Deputy Fire Chiefs (Operations and Support Services)
- Chief Administrative Officers (Town of Aurora and Town of Newmarket)
- Director Financial Services / Treasurer (Town of Aurora and Town of Newmarket)
- Representative from Human Resources

11.1.1 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 5th, 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 Stakeholder Consultation

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.

11.2.1 Key Stakeholder Interviews

As a component of stakeholder consultation, interviews were conducted with key staff at the project outset. This included the following group of key stakeholders:

- Representatives from Aurora Town Council and Newmarket Town Council
- Chief Fire Prevention Officer

- Fire Prevention Officer
- Training Officers
- Platoon Chief Representative
- Members of the Association Executive

All members of the Steering Committee, and the above-listed staff 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.

Input from these stakeholders was also garnered at the presentation of the draft report to the JCC.

11.2.2 Senior Staff Consultation

Throughout the process to develop this plan ongoing consultation with the Fire Chef was maintained through regular contact including telephone calls, teleconferences, e-mails and meetings. Additional information and data was provided by the Fire Chief and the Administration Coordinator, as required, to support the development and analysis of the Fire Department Master Plan Update.

11.3 Public Consultation

The findings and recommendations of the plan were presented to the public in early 2015 to garner public input and feedback to the plan. The meeting, held on January 8th, 2015 at the Art Ferguson Clubhouse in Newmarket, was attended by members of the public, project stakeholders and staff from both Towns.

11.4 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.

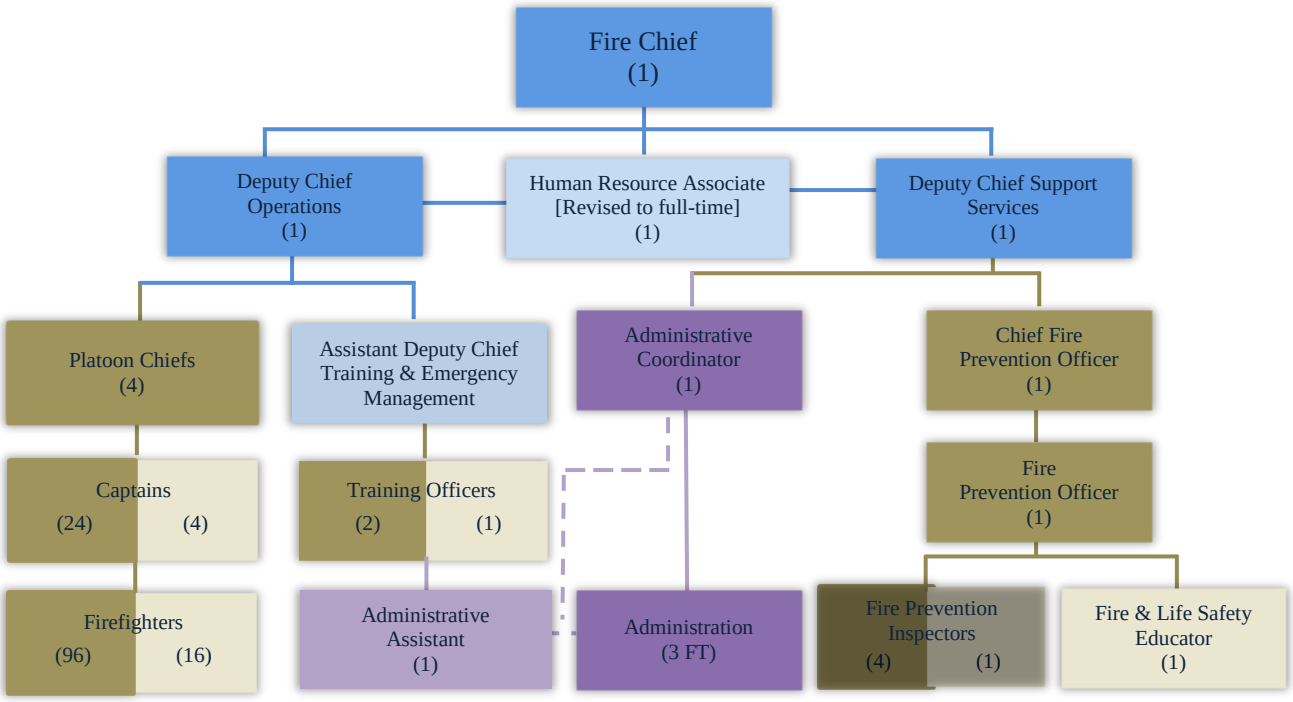
Study consultation allows for input into the FDMPU by stakeholders and also provides an opportunity to inform stakeholders about the FDMPU purpose, goals and recommendations. Support from Town staff (Aurora and Newmarket), and Council (Aurora and Newmarket), is essential to the success of the FDMPU, 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);*
- *Administrative Assistant 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



Legend:

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

	Recommendation	Capital Budget	Operating Budget
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	Hire an Administrative Assistant to support the Training Division.		$50,000
Immediate	Begin the transition of reinstating the Human Resources Consultant to full-time representing 0.5 in the next 12 months.		*Human Resources Department*
2016	Phase 1 - hiring of additional full-time firefighters through a 2 year phased process of hiring 8 firefighters per year (2015 – 10 firefighters).		$920,000
2016	Capital equipment requirements (bunker gear) for 8 firefighters.	$32,000	
2016 (timed with opening Station 4-5)	Purchase additional Pumper for proposed fifth fire station.	$750,000	
Short-term	Hire proposed position of additional Training Officer.		$85,000
Short-term	Hire proposed position of Fire and Life Safety Educator.		$85,000
Short-term	Implement proposed Network and Communications Coordinator position.		*Information Technology Department*
Short-term	Purchase property and initiate design for the proposed fifth fire station and training centre.	$2,500,000	

Planning Horizon	Recommendation	Capital Budget	Operating Budget
Short-term	Initiate construction of proposed fifth fire station and training centre.	$5,500,000	
Short-term	Complete the transition of the Human Resources Associate to full-time representing 1.0 FTE.		*Human Resources Department*
2017 (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 – 12 firefighters, timed with opening of fifth station).		$1,380,000
2017 (timed with opening Station 4-5)	Capital equipment requirements (bunker gear) for 12 firefighters.	$48,000	
Medium-term	Hire proposed additional Fire Inspector to coincide with opening of fifth fire station.		$100,000

The consolidated agreement requires the Fire Master Plan be reviewed and updated every five years. The 2008 plan and this update recommend updating the Fire Master Plan and developing a Financial Business Plan in conjunction with the five year review cycle. The long-term needs and considerations should be assessed during the next five year review and subsequent update of the Fire Master Plan. The performance of the department, response coverage, resource needs, community growth, community risk, community profile and local needs and circumstances should be monitored and assessed throughout the coming five year horizon to inform the five year plan update.

APPENDIX A

2008 – 2017 Master Fire Plan Update Recommendations
Operational Task Tracking Matrix

APPENDIX B

PFSG 00-00-01 "Framework for Setting Guidelines within a Provincial-Municipal Relationship"

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

APPENDIX L

PFSG 04-45-12 “Fire Prevention Policy”