Municipality of the Town of Cobourg

Fire Master Plan 2023

Cobourg
"Ontario's Feel Good Town"

COBOURG FIRE DEPT.

EMG Emergency Management Group

Emergency Management Group, Inc.
65 Cedar Pointe Drive, Suite 144, Barrie, ON L4N 9R3
1.888.421.0665
info@emergencymgt.com / www.emergencymgt.com

EXECUTIVE SUMMARY

This Fire Master Plan (FMP) encompasses a comprehensive review of the Cobourg Fire Department's (CFD) strengths, weaknesses, opportunities, and challenges. This FMP also consists of a review of the community, along with identifying present and future population statistics and anticipated growth of the community. By conducting these reviews, Emergency Management Group (EMG) was able to develop this 10-year FMP for the Cobourg Fire Department.

The benefits of master planning are many, but the key advantages are:

- Having a clearer vision of what future needs to be implemented and when.
- A guide that includes options and budgetary estimates for implementation.
- Prioritization of each project.
- The ability to communicate with staff, internal and external stakeholders about the future goals of the organization.

The recommendations contained within this FMP document have been submitted to provide the CFD with a set of strategies and goals for implementation. These strategies are aimed at assisting CFD in making decisions in relation to the efficient allocation of resources and staffing. A review of past and present service levels was also completed, keeping in mind the overall goals and expectations of the department.

The recommendations summary in section 12, as provided by the Emergency Management Group (EMG), have been broken down into the following priority timelines:

- Immediate – should be addressed urgently due to operational, legislative or health and safety requirements.
- Short-term – 1 – 3 years
- Mid-term – 4 – 6 years
- Long-term – 7 – 10 years

Each recommendation is also supported with an estimated cost and rationale behind the recommendation.

Ultimately, the timing of the implementation of the recommendations will depend on the Town of Cobourg's resources and ability to move forward with the associated recommendations contained within the document.

Overview of Master Plan Sections

Through the utilization of objective evidence and best practices, including applicable standards and legislation, this report was prepared by completing an assessment of the following areas:

1. Community and Fire Department Overview
2. Planning – future community growth and related service needs
3. Risk Assessment of the community in relation to present and future service requirements
4. Non-Emergency Related Services (Prevention, Public Education, and Technical Training)
5. People Optimization (Human Resources and Staff Development)
6. Fire Suppression
7. Facilities, Vehicles, Equipment, Technology, and Hydrants
8. Emergency Management
9. Fire Service Agreements
10. Finance, Budgeting
11. Review of Previous Fire Service Review
12. Recommendations
13. Appendices

Recommendations are noted within each section of the document. However, section 12 of the document contains a quick reference recommendations chart, that includes recommended timelines for implementation, along with any estimated costing and possible service enhancements to be realized with the implementation of each recommendation.

Scope of Requirements

As noted in the Request for Proposal (RFP) C0-22-09 FIR, the following generally describes the responsibilities of the Consultant, which is to develop a new FMP and Community Risk Assessment for the CFD:

- Examine the possible alignment of services and resources.
- Proactively respond to current and anticipated community needs.

- Protect firefighters (full-time and volunteer) by ensuring appropriate and safe equipment and adequate staffing is available 24/7, as required.
- Explore opportunities to adjust and revise the fire department's structure.
- Share services to improve effectiveness, and,
- Implement cost efficiencies and cost avoidance.

Based on the information received during the meetings, a review of supplied documentation and reference to industry standards and best practices, there is a total of 53 recommendations for consideration to assist in guiding the CFD into the future.

***Note:** All estimated costing presented in this document is based on current industry pricing along with the estimated amount/extent of equipment and/or facility requirements. Taxes and/or other inflationary information have not been included in the estimates. Therefore, actual costing can vary depending on the date of implementation (by the community), the type of equipment used, the level of staff involvement, and other mitigating factors (i.e., pricing between contractors can vary).*

TABLE OF CONTENTS

DEFINITIONS AND ACRONYMS

Definitions	
Immediate	Recommendations that should be addressed urgently due to the legislative or health and safety requirements or operationally critical needs
Short-term	Recommendations that should be addressed within 1 – 3 years
Mid-term	Recommendations that should be addressed within 4 – 6 years
Long-term	Recommendations that should be addressed within 7 – 10 years
Acronyms	
AED	Automatic External Defibrillator
AHJ	Authority Having Jurisdiction
ASA	Acetylsalicylic Acid
ASHER	Active Shooter/Hostile Event Response [Program]
CFAI	Commission on Fire Accreditation International
CFD	Cobourg Fire Department
CPI	Consumer Price Index
CRA	Community Risk Assessment
CSA	Canadian Standards Association
DPG	Dwelling Protection Grade
E&R	Establishing & Regulating By-law
EAP	Employee Assistance Program
EDI	Equity, Diversity, and Inclusion Strategy
EMC	Emergency Management Coordinator
EMG	Emergency Management Group
EMP	Emergency Management Plan
EOC	Emergency Operation Centre

ERP	Emergency Response Plan
EVT	Emergency Vehicle Technician
FESO	Fire and Emergency Services Organization
FPD	Fire Prevention Division
FPO	Fire Prevention Officer
FUS	Fire Underwriters Survey
GPS	Global Positioning System
HAZMAT	Hazardous Materials
HRFP	Health Related Fitness Program
IMS	Incident Management System
MOU	Memorandum of Understanding
MVC	Motor Vehicle Collision
NIST	National Institute of Standards and Technology
NFPA	National Fire Protection Association
OAFC	Ontario Association of Fire Chiefs
OFM	Ontario Fire Marshal's Office
OHSA	Occupational Health and Safety Act
PPE	Personal Protective Equipment
PFLSE	Public Fire Life Safety Educator
PFPC	Public Fire Protection Classification
PTSD	Post-Traumatic Stress Disorder
RFP	Request for Proposal
SCBA	Self-Contained Breathing Apparatus
SOG	Standard Operating Guideline

SOP	Standard Operating Policy
SWOT	Strength, Weakness, Opportunity, Threats
TSSA	Technical Safety Standards Authority
WSIB	Workplace Safety & Insurance Board

Introduction

INTRODUCTION

Purpose of a Plan

This Fire Master Plan (FMP) is based on a review of the Cobourg Fire Department (CFD) facilities, programs, and services. The CFD Fire Master Plan provides a strategic framework for the delivery of fire protection services from the Fire Department within the Town of Cobourg and within the Mutual Aid Agreement for Northumberland County over a 10-year horizon.

To provide a more defined criteria and guidelines for the council and the fire chief, the FPPA defines what fire protection services are – FPPA under Part I, Section 1(1) defines fire protection services to include,

a) fire suppression, fire prevention and fire safety education,

b) mitigation and prevention of the risk created by the presence of unsafe levels of carbon monoxide and safety education related to the presence of those levels,

c) rescue and emergency services,

d) communication in respect of anything described in clauses (a) to (c),

e) training of persons involved in providing anything described in clauses (a) to (d), and,

f) the delivery of any service described in clauses (a) to (e).

This FMP and a recently completed Community Risk Assessment (CRA) will provide the council with information on the existing conditions, key areas of focus, and recommendations to assist with decisions about future levels of service.

The key driver behind the recommendations in this document is the assessment of and the reduction of risk. The plan relies heavily on the information gathered and compiled through the CRA and the components therein.

Plan Foundation

Community Risk

The goal of the FMP is to provide Council, the Fire Department, and its stakeholders with an understanding of the programming and resources required to reduce, mitigate, or eliminate community risk as it relates to fire and emergency services.

The risk assessment process has become fundamental to the planning and delivery of fire and emergency services that match the “needs and circumstances” of the community as defined by the

Fire Protection and Prevention Act, 1997, (FPPA) and the Council-approved Establishing and Regulating (E&R) Bylaw. Quantification of risks within Cobourg will assist CFD in integrating risk considerations into the planning and delivery of fire protection services. This includes fire prevention, public education, and emergency response services.

The Town's CRA (2022) was prepared in line with the guidelines provided by NFPA 1730, NFPA 1300 and Ontario Regulation 378/18. Both the CRA and FMP documents compliment each other and help to create a more fulsome risk assessment. The CRA informs and reinforces this FMP, and the resulting recommendations are reflective of the community risk reduction strategies identified in the assessment.

Foundation of a Fire Safe Community

To ensure that a community is as fire-safe as possible, the Office of the Fire Marshal has identified three lines of defense, which are contained within OFM-TG-02-2019:

1. Fire safety education
2. Fire safety standards and enforcement, and
3. An effective emergency response program.

The authors also include Emergency Preparedness as part of our community risk assessment process. This allows a community to see how their fire safety education and emergency preparedness programs work to ensure a safe community.

Public Fire Safety Education

Proactive public fire safety education is critical to community safety. The CFD delivers a variety of public education programs. These programs are delivered by the fire prevention officer (FPO) who specializes in developing and delivering fire safety programs, as well as the part-time aka volunteer firefighters who interact with the community regularly.

Public education programs are designed for all age groups, from young children to seniors. The overall objective of these programs is to educate the public on the dangers of fire, provide information to prevent fire, and provide the tools to ensure safe evacuation in the instance that a fire occurs.

Fire Safety Standards and Enforcement

Enforcement of both the Ontario Fire Code (OFC) and the Ontario Building Code (OBC) is essential for fire & life safety. It is the responsibility of a property owner to ensure they comply with appropriate regulations and statutes. Property owners who fail to ensure that their properties meet minimum standards of fire and life safety face potential charges under the *Provincial Offences Act* and are subject to penalties as outlined in the *Fire Protection and Prevention Act*, 1997.

Currently the CFD contracts a FPO who conducts fire safety inspections to ensure buildings are safe and ensure they comply with the OFC at the time of inspection. These inspections are being completed on a demand-complaint or request basis due to the limited staffing. This is not to say that the contract FPO is not endeavouring to be proactive based on the time and resources available. However, the frequency of inspections directly impacts the level of fire safety and code compliance of properties. This will be discussed later in this document.

Within the Town of Cobourg, the vulnerable occupancies (Group B - retirement homes and care and treatment facilities and hospices) are of specific concern. All vulnerable occupancies are required to be fully inspected annually, as per provincial legislation, and simulated fire drills are conducted yearly to ensure compliance.

Emergency Response

Emergency operations personnel respond to emergency and non-emergency calls. These include fires, medical emergencies, motor vehicle collisions, public hazard situations, water and ice rescues, and hazardous materials incidents.

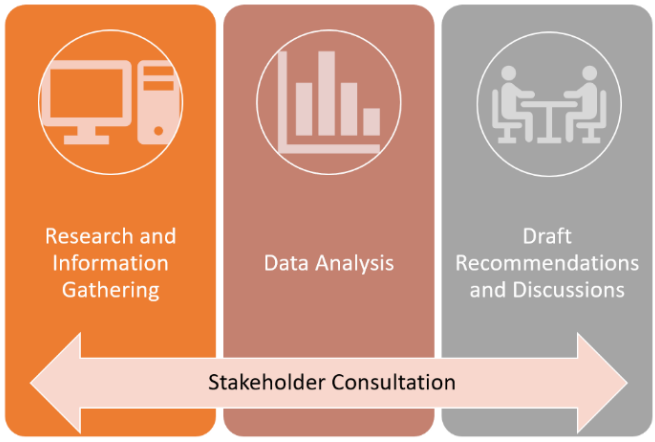
Risk-Based Planning

Excerpts from the CRA document have been carried over into this FMP due to similarities of the information that was obtained to complete the two reports. Reviews conducted to complete the CRA assessment have already confirmed that the CFD is doing a decent job in its efforts to protect the community based on its staffing, facilities and inventory of apparatus and equipment. To ensure that this FMP review was complete in its evaluation, the following steps were undertaken:

- Meetings and/or interviews were held with the Town of Cobourg senior management, the fire chief, and all the firefighters.
- Community surveys were conducted.
- Physical reviews of the apparatus and equipment.
- Review of any related documentation, such as call volumes and types of calls.
- Review of the vehicle and large equipment replacement schedules along with planned capital expenditures.
- Identification of options for efficiencies and making recommendations, including approximate budgetary implications.

Project Methodology

The Emergency Management Group (EMG) has based the review process on the Request for Proposal (RFP) and the response document submitted by EMG. The specific scope of work noted (in the RFP) was reviewed and included in each section of this document. The FMP review was completed by utilizing best practices, current industry standards, and applicable legislation as the foundation for all work undertaken. EMG also utilized quantitative and qualitative research methodologies to develop a strong understanding of the current and future needs and circumstances of the community.



Overall, the methodology involves a considerable amount of research, documentation review, data analysis, along with stakeholder consultation. Subsequently, the submission of draft reports, and related recommendations.

This FMP provides direction to CFD by reviewing and addressing the following areas:

- Applicable legislation, guidelines, standards, and industry best practices.
- Fire master planning process
    - Analysis and recommendations
    - Strategic priorities
    - Stakeholder consultation
- Hazard risk and vulnerability analysis
    - Key hazards, risks, and vulnerabilities
    - Risk categorization
- Administrative and people optimization
    - Applicable By-laws, organizational structure, staffing, management team, promotion and, succession planning
- Fire Prevention and Public Education
    - Best practices and proactive fire and life safety programming

- Training
    - Training requirements, NFPA standards and qualifications, specialty training
- Operations
    - Response times, dispatch time, travel time, call volume and type, etc.
- Fleet and facilities
- Emergency management
- Fire communications and dispatch
- Budget

Community Risk Assessment

As per the originating Request for Proposal, the consultant shall complete a Community Risk Assessment (CRA) as per Ontario regulation 378/18. This involved visiting the Town of Cobourg to meet with fire department personnel, senior staff, reviewing the existing fire and life safety programs, fire station, apparatus, and equipment as well as overall community risk management vulnerabilities identification. The CRA is intended to inform decisions about the provision of fire protection services within a community.

The CRA is a stand-alone document for ease of annual review and updating as needed. A high-level overview of the CRA findings have been included in this document in section 3 – Risk Assessment.

To accomplish the goals of this FMP project, EMG has:

- Reviewed the E&R by-law.
- Reviewed applicable municipal legislation.
- Reviewed planning department documents regarding community and areas of jurisdiction growth projections over the next 10-20 years.
- Reviewed any previous risk assessment, Council's strategic priorities and other pertinent documents.
- Reviewed the Community Risk Profile including community building stock, industry, care occupancies, transportation networks, etc.
- Reviewed current service agreements with neighbouring municipalities and any other current documents.

- Gathered information on operational requirements including past and current response statistics (call volumes/response times) to analyze trends, staff availability/needs and response capabilities, etc.
- Reviewed service administration including staffing, organizational structure, policies and procedures, administrative support, record keeping and information management/technology, purchasing, and inventory control, public and media relations, and customer service.
- Conducting a location/response mapping analysis.
- Examined fire vehicles, apparatus and equipment including the maintenance program.
- Reviewed policies, procedures and emergency response operational guidelines, training programs and records.
- Collected information on the fire prevention program including education programs, inspection reports/data, enforcement data, and investigations.
- Identified and compared industry best practices relating to fire and emergency services performance measurement.
- Reviewed, where existing, job descriptions, staff recruitment and retention practices, promotional policy, succession planning and demographics.
- Reviewed the operational and capital budgets along with reserves and current revenue generation programs within the emergency services and the city (development fees).

Based on the previously noted criteria, through meetings with the fire chief and other stakeholders, the consulting team was able to complete a thorough review of elements that are working well and areas requiring improvement within the CFD. Data provided by the CFD was reviewed in relation to all the previously noted items contained within the RFP. This review culminated in a total of 53 recommendations.

Performance Measures and Standards

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

- The Fire Marshal's Office (OFM) Public Fire Safety Guidelines.
- The *Health and Safety Act*, with reference to the National Institute for Occupational Safety and Health (NIOSH).
- The National Fire Protection Association (NFPA) standards:
    - NFPA 1001 – Standard for Fire Fighter Professional Qualifications

- NFPA 1002 – Standard for Fire Apparatus Driver/Operator Professional Qualifications
- NFPA 1021 – Standard for Fire Officer Professional Qualifications
- NFPA 1031 – Standard for Professional Qualifications for Fire Inspector and Plan Examiner
- NFPA 1033 – Standard for Professional Qualifications for Fire Investigator
- NFPA 1035 – Standard on Fire and Life Safety Educator, Public Information Officer, Youth Fire Setter Intervention Specialist and Youth Fire Setter Program Manager Professional Qualifications
- NFPA 1041 – Standard for Fire Service Instructor Professional Qualifications
- NFPA 1061 - Professional Qualifications for Public Safety Telecommunications Personnel
- NFPA 1072 – Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications
- NFPA 1201 – Standard for Providing Fire and Emergency Services to the Public
- NFPA 1225 – Standard for Emergency Services Communications
- NFPA 1500 – Standard on Emergency Services Occupational Safety, Health, and Wellness Program
- NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Emergency Services
- NFPA 1730 – Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations
- NFPA 1901 – Standard for Automotive Fire Apparatus
- NFPA 1911 – Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles

- Fire Underwriters Survey technical documents

Project Consultants

Several staff at EMG were involved in the collaboration and completion of this FMP, the overall review was conducted in the following order by:

- Phil Dawson, Fire Service Consultant
- Rick Monkman, Fire Service Consultant

- Richard Hayes, Fire Service Consultant
- Michelle Collette, Fire Service Consultant
- Lyle Quan, Fire Service Consultant/ VP of Operations
- Darryl Culley, President

Collectively, the team has accumulated a considerable amount of experience in all areas of fire and emergency services program development, review, as well as training. The EMG team has worked on projects that range from municipal by-laws and fire service reviews to the creation of strategic and master fire plans, and the development of emergency response programs for clients.

SECTION 1

Community, Fire Department Overview

1.1 Community Overview
1.2 Fire Service Composition
1.3 Governance and E&R By-Law
1.4 Fire Related By-Laws
1.5 Policies, Directives & Standard Operation Procedures/Guidelines

SECTION 1: COMMUNITY & FIRE DEPARTMENT OVERVIEW

1.1 Community Overview

The Town of Cobourg is located within Southern Ontario, 95 km (59 mi) east of Toronto and 62 km (39 mi) east of Oshawa. It is the largest town in Northumberland County. Its nearest neighbour is Port Hope, 7 km (4 mi) to the west. It is located along Highway 401 (exits 472 and 474) and the former Highway 2 (now Northumberland County Road 2). To the south, Cobourg borders Lake Ontario. To the north, east and west, it is surrounded by Hamilton Township.

By the 1830s, Cobourg had become a regional centre, due to its harbour on Lake Ontario. On 1 July 1837, Cobourg was officially incorporated as a town.

Throughout the late 1980s and early 1990s, the town invested heavily in purchasing property along the waterfront and beautifying the area. A boardwalk was developed to connect the harbour and large sandy beach while further pathways were created to encompass Victoria Park and the historic downtown. Many community activities now revolve in and around these spaces due to the renewal and revitalization.

In the 2021 Census of Population conducted by Statistics Canada, Cobourg had a population of 20,519 living in 9,134 of its 9,520 total private dwellings, a change of 5.6% from its 2016 population of 19,440. With a land area of 22.41 km^2 (8.65 sq mi), it had a population density of 915.6/km^2 (2,371.4/sq mi) in 2021[1].

[1] Statistics Canada, *Census Profile, 2021- Profile Table,* https://www12.statcan.gc.ca/census-recensement/2021/Cobourg, Accessed on October 31, 2022.

TABLE #1: CANADA CENSUS – COBOURG COMMUNITY PROFILE

	2021	2016
Population	20,519 (+5.6% from 2016)	19,440 (+5.0% from 2011)
Land Area	22.41 km^2 (8.65 sq mi)	22.36 km^2 (8.63 sq mi)
Population Density	915.7/km^2 (2,372/sq mi)	869.3/km^2 (2,251/sq mi)
Median Age	54.8 (M: 51.2, F: 56.8)	53.5 (M: 51.5, F: 55.1)
Total Private Dwellings	9,520	8,958
Median Household Income		$64,328

Cobourg retains its small-town atmosphere, in part due to the downtown and surrounding residential area's status as a Heritage Conservation District. The downtown is a well-preserved example of a traditional small-town main street.

Cobourg has several parks and Cobourg Beach, is used as a location for volleyball tournaments, events, beach days, family picnics and other events. Additionally, there is a trailer park located directly next to the beach[2].

[2] Cobourg, Town of Cobourg, https://en.wikipedia.org/wiki/cobourg, Accessed on October 31, 2022

FIGURE #1: MAP OF THE TOWN OF COBOURG

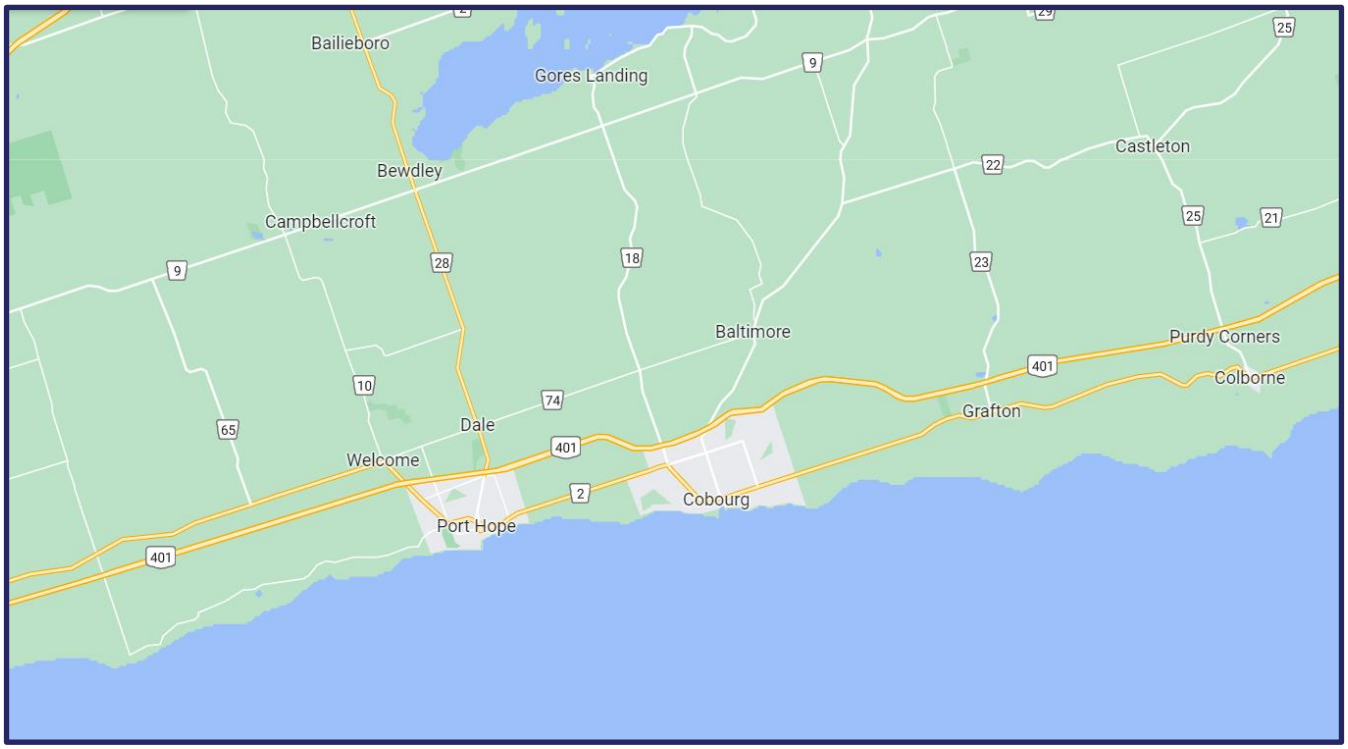


TABLE #2: COBOURG POPULATION BY YEAR

2016	2021	2031 (Estimated from Planning documents)
19,440	20,519	27,500 (est)

From 2016 to 2021, the population in Cobourg has only grown by approximately 5.6%. It is anticipated that the population will grow much beyond what it presently is as outlined in the 2019-2022 Strategic Plan [3]

1.2 Fire Service Composition

The Town of Cobourg is serviced by a composite fire department that responds out of one fire station. In total, there is a complement of 20 dedicated career (full-time) personnel and approximately 16 volunteer fire service personnel. CFD day-to-day operations are managed by the Cobourg Fire

[3] Cobourg Council's Strategic Plan; https://www.cobourg.ca/en/town-ha;;/CouncilsStratgeicPlan;retreived November 2022

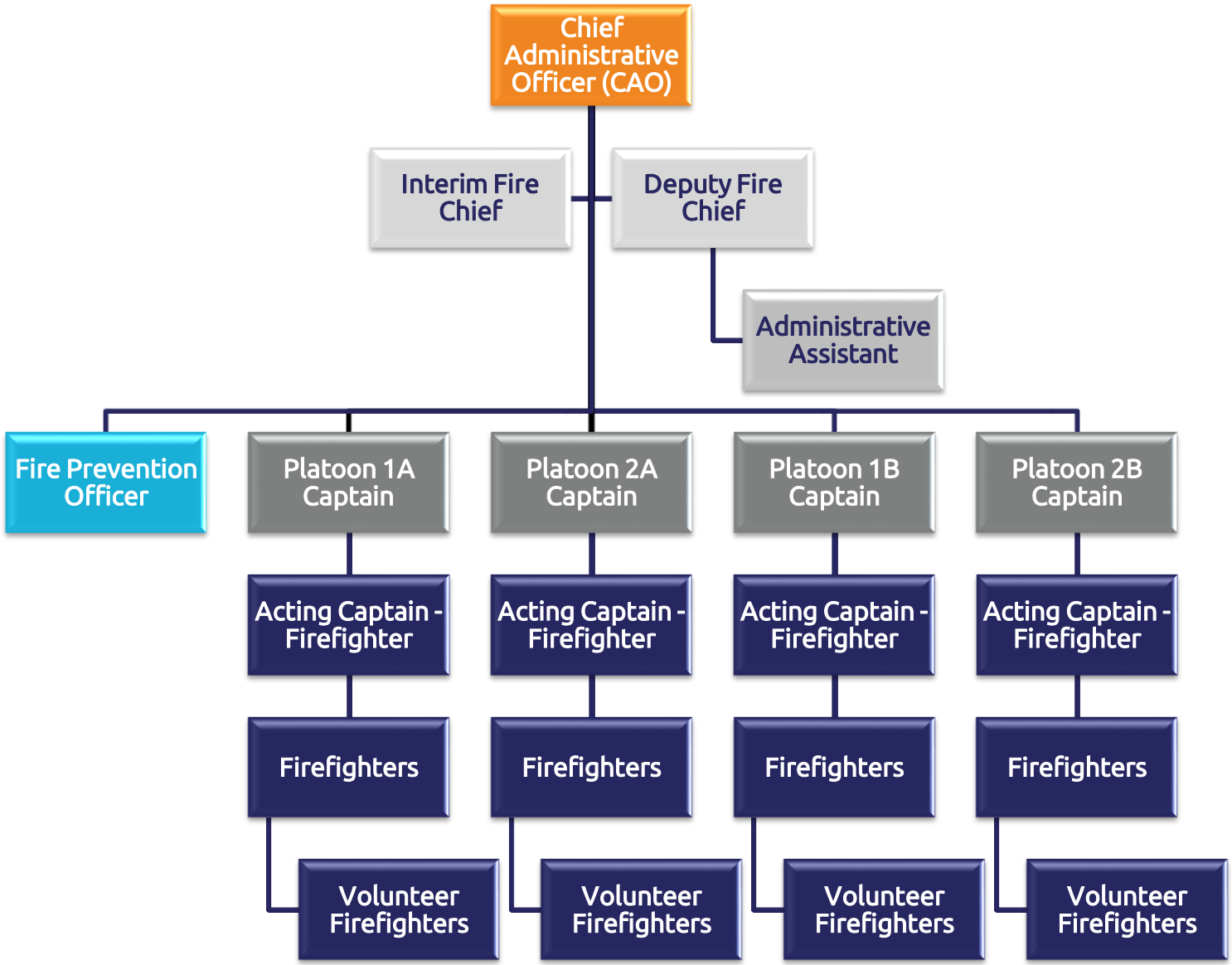
Department (CFD) Fire Chief, who is supported by a full-time Deputy Fire Chief, which is currently vacant. There is a full time Chief Fire Prevention Officer (CFPO) currently filled by contract. Presently, there is no Fire Inspector/Public Fire and Life Safety Educator (PFLSE) or Training Officer for the Fire Department.

The CFD responds to approximately 1300 to 1600 calls for service per year. These incidents include, but are not limited to, fire-related incidents, medical assist, and motor vehicle collisions. Many of the calls for CFD are ambulance assistance related. These account for approximately 64% of the Department's calls, based on the 2017 to 2021 data set.

Based on By-law No. 057-2012, the fire chief is appointed by the council and responsible for the operation of the department. The CFD fire chief reports to the Chief Administrative Officer (CAO). This reporting system allows the FC to present reports and updates to the Town of Cobourg Council.

The organizational chart noted in Figure #2 reflects the general reporting structure within the CFD and that of the fire chief to the CAO.

FIGURE #2: TOWN OF COBOURG FIRE DEPARTMENT ORGANIZATION CHART



The emergency services facilities are comprised of one fire station.

FIGURE #3: STATION LOCATION

1.3 Governance and Establishing & Regulating By-law

The current Establishing & Regulating By-law No. 057-2012 was last updated in 2012. This by-law is the guiding document that outlines such things as the general structure of the CFD, and what level of services the CFD are expected to provide to the community. It is therefore recommended that this document be reviewed and updated as soon as possible to ensure that the E&R and the level of services offered by the CFD are current (and exact). Upon approval by Council, the updated document should be reviewed annually, or as significant changes occur to the community to ensure that the noted services levels, service expectations, and authority of the fire chief are properly aligned with the service needs of the community.

The OFM's Public Fire Safety Guideline (PFSG) 01-03-12 is an excellent reference when updating E&R By-Laws. The fire chief needs to consider bringing the E&R by-law forward to newly sitting councils every four years. Doing so will allow new council members to understand the level of service provided to the community. The draft should be vetted through the Town of Cobourg solicitor prior to going to council for approval. The current by-law includes the mission statement. This should be reviewed, renamed, and written as vision, values, and mission statements, which would align with current fire service trends and industry best practices.

No definitive response time expectations or criteria are noted in the E&R By-law. The National Fire Protection Association (NFPA) and the Commission on Fire Accreditation International (CFAI) recommend that some type of assessment be completed to evaluate a baseline for a department's response time goal. To accomplish this, the CFAI in the Centre for Public Safety Excellence, 6th Ed., recommends that a minimum of the past three years' response times be reviewed. This review will offer an understanding of how the CFD has been performing, along with identifying areas for possible improvement concerning station location and vehicle and staffing distribution. More information on response times will be covered in section 6 – Fire Suppression, of this report.

Consideration should include reference to such guidelines and standards as:

- Section 21 Guidelines for the Fire Services
- OFMEM Guidelines concerning staffing and response recommendations.
- Related NFPA Standards that deal with:
    - Training
    - Fire prevention inspection and public education programs, including smoke and carbon monoxide alarm.
    - Fire department response goals and objectives
    - Communications and vehicle dispatching
    - Response times
    - Maintenance

By incorporating these guidelines and standards, the CFD will ensure that staffing, training programs, fire prevention initiatives, and emergency responses to the community adhere to industry best practices.

1.4 Fire Related By-laws

The by-laws reviewed or suggested for this FMP include:

- Open Air Burning By-Law 058-2012
- Fire Works By-Law (TBD)
- Registry for Second Suites By-Law (TBD)
- Second Suites and Short-Term Accommodations By-Law (TBD)
- Development Charges By-Law 087-2017

- Fees and Service Charges By-Law 063-2016 (Referenced in section 10)

By-laws should be reviewed with a recommendation to be brought forward at the start of any new term of the council as updated versions. Doing so will allow a newly sitting council to understand the full scope of the Fire Department's level of service and commitment to the community.

1.4.1 Open Air Burning By-Law

The Open-Air Burning By-law No. 058-2012 stipulates the parameters for outdoor burning within Cobourg, which came into effect in July of 2012. This by-law replaced by-law 17-01 and has not been amendment since being passed in 2012.

The following needs to be considered for inclusion in the revised by-law:

- The amended by-law should reference the OFC Article 2.4.4.4.
- It should also reference O. Reg 256/14, amendments to the Ontario Fire Protection and Prevention Act.
- By-Law should also reference *Ontario Regulation 207/96, Outdoor Fires, from the Forest Fires Prevention Act.*
- With the increase in residential occupancies and population, expressly prohibit burning leaves and grass clippings.
- The by-law should note wood-burning outdoor furnaces that are becoming quite popular.
- By-Law must include approved manufactured burning appliances with spark arrestors, as found in chimineas.
- It should also state that manufactured appliances cannot be placed and used on wooden surfaces such as decks and porches.

1.4.2 Fireworks By-law

The by-law should include the importance of fire safety while setting off fireworks. Therefore, it would also be appropriate to have safety information on the proper method of setting off fireworks and the equipment worn by those setting off consumer fireworks. Along with this document, it will also be essential to outline the need for some form of extinguishment that should be readily available such as a pail of water and a fire extinguisher or garden hose.

The municipal authority to control fireworks rests within the OFC O. Reg. 213/07, Division B, Part 5, ss 5.2.

Include in the by-law the prohibited use of fireworks during a fire ban.

The document should also include a list of any celebrational and holiday seasons in which fireworks would be allowed.

Other considerations to be included in the revised version of the by-law include the following:

- Referencing the actual federal regulation regarding the training required to set off commercial and pyrotechnic fireworks should be included in the document. Doing so will direct those who need this training and education and assist them in locating the supporting information. The by-law should list the differentiation between the consumer, display, and pyrotechnic fireworks, as listed in the *Explosives Act, R.S. c. E-15*.
- The by-law should include the importance of fire safety while setting off fireworks. Therefore, it would also be appropriate to have safety information on the proper method of setting off fireworks and the equipment worn by those setting off consumer fireworks. Along with this document, it will also be essential to outline the need for some form of extinguishment that should be readily available such as a pail of water and a fire extinguisher or garden hose.
- While the By-Law states that fireworks may be discharged only on Victoria Day and Canada Day, the list should be amended to include a list of holiday seasons in which fireworks would be allowed. It should also consider all religious-based celebrations and rituals, along with New Year's Eve.
- The beaches are a trendy location for parties in the summer, and there should be a section that speaks to discharging fireworks along the beach areas year-round.
- Include a requirement that all those involved in discharging high-hazard fireworks have completed the National Fireworks Certification Program (NFCP) on discharge.

- The document should include when fireworks, such as during winds, over a pre-determined speed, should not be discharged.
- A guide on how to set off "family fireworks" should be written, i.e., use a pail of sand to place the firework in, have a charged garden hose close by or a fire extinguisher, keep children away from the discharge area, etc.
- For discharging high-hazard ordinances, the CFD should conduct a pre-event inspection of the site to ensure it complies with the application by a member of the CFD that has completed the NFCP course.
- Include in the by-law that a fire apparatus stands by at the site of high-hazard firework displays.
- There should be at least two post-event inspections of the area adjacent to the discharge zone to look for unexploded ordinances. One takes place the night of the display, and the second the morning of the following day during daylight hours.
- The Fees and Services By-Law to include pre-and post-discharge inspections and the stand-by fire crew.

1.4.3 Registry for Second Suites By-law

The Province of Ontario's housing supply Action Plan support second suites to relieve some of the affordable housing shortages. Second, suites are an essential part of Ontario's rental housing landscape. They offer affordable housing solutions throughout the province. Second suites are self-contained residential units generally allowed in single detached, semi-detached, and row houses. Second suites may also be in ancillary structures (i.e., garage, laneway house or garden suite).

All second suites built in Ontario must also meet health, safety, housing, and maintenance standards. These standards include but are not limited to the OBC, the OFC, and municipal property standards by-laws. These changes, however, do not automatically legalize existing second suites, and they do not allow new units without a building permit.

A by-law is required to establish a registry which would also provide the Town of Cobourg with the ability to inspect renovations or new constructions involving a second suite.

The CFD should also review opportunities to implement a means of reporting unregistered or illegally built second suites, such as an anonymous tip line.

1.4.4 Second Suites and Short-Term Accommodations By-law

As detailed in the previous section, Cobourg does not have a second suites registry by-law or regulating second suites by-law. However, there is a by-law governing short-term accommodations. Through the *Affordable Housing Act* of 2011, the province amended the *Planning Act* that requires municipalities to allow secondary residential units in detached, semi-detached, and rowhouse units. A few points to be considered about second suites and short-term accommodations:

- An unidentified number of second-unit apartments in a house.
- An unknown number of short-term accommodations operate in Cobourg.
- Combustible furnishings
- An increase in housing within the municipality increases demands on the fire service.
- Detached dwellings used as lodging for multiple students with bedrooms in basements.
- Students or tenants on restrictive budgets may locate residences that may not meet the requirements of the OBC and OFC. Violations include not having proper exits, adequately sized basement windows, smoke alarms, CO alarms, fire extinguishers, fire escape plan, etc.).
    - May lack direct route to the outside from basement.
    - Windows that are too small for a person to escape through in the event of a fire.
- Property owners may not understand their responsibilities regarding fire safety and fire code.
    - The CFD should review its fire prevention and enforcement resources regarding adequate staffing to inspect all the second units and short-term accommodations in the municipality for OFC violations.
        - Due to the number of second units and short-term accommodations, the CFD may not have the resources in place to be able to correctly complete these inspections along with the other inspection requirements of the Town of Cobourg. As such, setting (reasonable) priorities may be the only option that the CFD must work with now.
    - The CFD should establish and advertise a method (reporting line) to identify possible illegal locations.
    - Inground-related dwellings (basements) must meet OBC and OFC standards under the *Strong Communities through Affordable Housing Act*, 2011.
    - The CFD should develop a stand-alone by-law that addresses second units and short-term accommodations.

- Several significantly sized residential developments are in progress, which may contain second suites or used as a short-term accommodation.
- Unknown increase in population with the new developments in various stages of approvals.

With these points in mind, the planning and building departments should bring forth an updated by-law that regulates second units and short-term accommodations, including the licensing of these locations. Within the document, it should identify the responsibilities of the fire department.

1.4.5 Development Charges By-law

A Development Charges By-law No. 087-2017 was enacted as permitted by the Province of Ontario's, *Development Charges Act*, S.O. 1997, c27. The purpose of the *Act* is to allow municipalities to collect a fee for new construction to offset the costs incurred in enhancing service provision levels. The payments are allocated and directed towards police and fire protection, roads, recreation facilities, water and sewer system upgrades, paramedic services, public works, etc.

According to the Town of Cobourg's website, the Council approved the current by-law, which was updated in 2022, bringing the fees charged in line with other municipalities.

1.5 Policies, Directives, & Standard Operating Procedures / Guidelines

Fire department policies and guidelines have immense value for a department. They are the critical foundation of a department's success. The backbone of any fire service is its policies, standard Operating Policy's (SOPs), and Standard Operating Guidelines (SOGs), which govern and provide direction on its operations.

- Policy is a high-level statement that expects consistent compliance. It is very little to no flexibility permitted with a policy.
- Guideline is a standard with an acceptable level of quality or attainment. It provides direction on how to act in each situation with non-mandatory controls.
- Procedure is a requirement with an acceptable level of quality or accomplishment in a series of detailed steps to accomplish an end. There are step-by-step instructions for execution and completion.

The CFD SOGs need updating, and new ones developed. To ensure all the SOGs are current, the fire chief should review and revise the existing policies and SOGs and develop new policies and SOGs, as required. Some fire departments review a third of their SOGs annually. Adopting this procedure provides the entire set of documents to receive a full review every three years.

Reviewing the SOGs can be a detailed and time-consuming process. The CFD relies on the fire chief to maintain current SOGs and develop new ones as circumstances change. Establishing a committee meeting regularly to develop new SOGs and review older ones would relieve some of the pressures placed on a single individual. The development of a structured SOG committee that creates its terms of reference would be a great benefit to the CFD in several ways:

- Updated and current SOGs
- Staff would be more involved in the fire department operations.
- Safer environment for members to work.

To ensure that all the guidelines, procedures and policies are current, the CFD should review and revise existing policies and guidelines regularly and develop new policies and guidelines as required. For example, some fire departments review a third of SOGs annually so that the entire set of documents is reviewed every three years. SOGs should have the date they were established and the date of when they went into effect or the date they were revised. By having these dates will aid the Department in identifying any SOGs that are or are not current.

The Section 21 Committee is part of the *Occupational Health and Safety Act* (OHSA) initiative for firefighter safety. A good source of information is Section 21 Guidance Notes which are kept current by a provincial team of fire service personnel. The many NFPA Standards are also a good resource for developing SOGs.

The following Table #2 provides a comparison of NFPA and Section 21 Guidance Note (OFM) to serve as best practices SOGs development for the CFD.

TABLE #3: NFPA AND SECTION 21 GUIDANCE NOTE COMPARISON

NFPA Code/Standard	Standard	Section 21 Guidance Notes
NFPA 1001	Standard for Fire Fighter Professional Qualifications	7-7
NFPA 1002	Standard for Fire Apparatus Driver/Operator Professional Qualifications	6-25, 6-26
NFPA 1003	Standard for Airport Fire Fighter Professional Qualifications	6-21
NFPA 1006	Standard for Technical Rescuer Professional Qualifications	6-3, 6-5
NFPA 1081	Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services	4-9
NFPA 1142	Standard on Water Supplies for Suburban and Rural Fire Fighting	6-26
NFPA 1401	Recommended Practice for Fire Service Training Reports and Records	7-3
NFPA 1402	Standard on Facilities for Fire Training and Associated Props	7-6
NFPA 1403	Standard on Live Fire Training Evolutions	7-5
NFPA 1404	Standard for Fire Service Respiratory Protections Training	6-43

NFPA Code/Standard	Standard	Section 21 Guidance Notes
NFPA 1451	Standard for a Fire and Emergency Service Vehicle Operations Training Program	6-25
NFPA 1500	Standard on Fire Department Occupational Safety, Health, and Wellness Program	4-10, 7-3
NFPA 1521	Standard for Fire Department Safety Officer Professional Qualifications	2-4
NFPA 1561	Standard on Emergency Services Incident Management System and Command Safety	5-1
NFPA 1670	Standard on Operations and Training for Technical Search and Rescue Incidents	6-3, 6-4, 6-5
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	6-26
NFPA 1851	Standard on Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting	4-8, 6-1
NFPA 1858	Standard on Selection, Care, and Maintenance of Life Safety Rope and Equipment for Emergency Services	1-5
NFPA 1901	Standard for Automobile Fire Apparatus	1-8, 4-11, 6-10, 6-29
NFPA 1906	Standard for Wildland Fire Apparatus	1-8
NFPA 1911	Standard for Inspection, Maintenance, Testing and Retirement of in-Service Automotive Fire Apparatus	1-2

NFPA Code/Standard	Standard	Section 21 Guidance Notes
NFPA 1912	Standard for Fire Apparatus Refurbishing	6-26
NFPA 1936	Standard on Powered Rescue Tools	1-6
NFPA 1971	Standard on Protective Ensembles for Structural Firefighting and Proximity Firefighting	4-1, 6-1
NFPA 1977	Standard on Protective Clothing and Equipment for Wildland Firefighting	4-7
NFPA 1982	Standard on Personal Alert Safety Systems	4-4
NFPA 1983	Standard on Life Safety Rope and Equipment for Emergency Services	1-5, 6-5
NFPA 403	Standard for Aircraft Rescue and Fire-Fighting Services at Airports	6-21
NFPA 414	Standard for Aircraft Rescue and Fire-Fighting Vehicles	1-8, 6-21
NFPA 472	Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents	6-9

For a fire department to operate safely and efficiently, all members must adhere to all policies, directives and/or SOGs. Those that fail to do so should be held accountable.

Section 1 - Recommendations

Rec #	Recommendation	Rationale
1	The E&R By-law be reviewed and updated to ensure that the services offered by the CFD align with Council's expectations.	The updating of the E&R document will legally confirm the level of services as provided to the community. It will also identify key performance indicators for response, fire prevention and public education programs, as well as levels of required training levels.
2	Establish By-laws and SOG committees with representation from the Town of Cobourg staff and the CFD that reviews and develops new By-laws as required, and reviews current SOPs annually.	Establishing By-laws and SOG committees will aid in maintaining relevant information while allowing the participation of the Town of Cobourg and the CFD staff to assist in determining the documentation and guidelines that govern the delivery of services to the community.

SECTION 2

Planning

SECTION 2: PLANNING

Planning is a key function of any organization and should be done with a focus on the present needs of the community, coupled with its future growth and how this will affect the service demands on the emergency services. The initial phase of such planning efforts is to identify the strengths, weaknesses, opportunities, and threats affecting the department and the community it serves.

2.1 Community Safety – Three Lines of Defence and Emergency Management

Even though this review and its recommendations are grounded, in part, on the future configuration and utilization of the fire stations and its staff, it should be highlighted that the key focus for a fire department is generally based on three key lines of defence in relation to servicing its community. These three lines are public education, safety standards, and enforcement and emergency response. EMG also views emergency management as the fourth, inclusive line of defence, and have added this into the overall concept of community safety.

1. Public Education – educating residents has proven to be the most effective means in reducing and preventing the incidences of fire and property damage. Reducing the number of fires before they start and identifying how the municipality will continue to meet the fire education needs while the municipality grows. More information on this topic can be found in section 4.
2. Safety Standards and Enforcement – ensuring that the inspection and enforcement of fire codes occur so buildings meet the required safety standards. More information on this topic can be found in section 4.
3. Emergency Response – the availability of well trained and well-equipped firefighters to respond and effectively mitigate the incident is the last defence. The staff, equipment and fire station locations impact how the emergency is mitigated. More information on this topic can be found in section 6.

4. Emergency Management – a municipality is legislated to have an emergency preparedness program to ensure the safety of the residents of the community by having a training, education, response, and mitigation plan in place for any possible emergency the community may encounter. More information on this topic can be found in section 8.

With these four lines of defence in mind, the following strengths, weaknesses, opportunities, and threats (SWOT) were identified.

2.2 National Fire Protection Association (NFPA) 1201

To assist with EMG's review and related recommendations, reference has been made to a key NFPA standard that identifies the services that should be offered and how they are to be delivered based on the composition of an emergency service.

National Fire Protection Association Standard 1201 – Standard for Providing Fire and Emergency Services to the Public

Section 4.3.5 notes:

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

- Prevent fire, injuries and deaths from emergencies and disasters.
- Mitigate fire, injuries, deaths, property damage, and environmental damage from emergencies and disasters.
- Recover from fires, emergencies, and disasters.
- Protect critical infrastructure.
- Sustain economic viability.
- Protect cultural resources.

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

To provide an emergency service clearer focus on what the ultimate goals for emergency response criteria are, the NFPA suggests that response times should be used as a primary performance measure in emergency services. NFPA 1720 refers to goals and expectation for volunteer emergency services has been incorporated into the evaluation of the emergency services response and staffing needs.

2.3 Fire Underwriters Survey (FUS)

Fire Underwriters Survey (FUS) provides data on public fire protection for fire insurance statistical work and underwriting purposes of subscribing insurance companies. Subscribers of the FUS represent approximately 85% of the private sector property and casualty insurers in Canada. The insurance rates are based on the score that a community receives founded on such things as the emergency services assessment. This assessment included a review of apparatus, distribution of companies/ fire stations, staffing, training, maintenance, pre-incident planning, etc.

2.4 Commission on Fire Accreditation International (CFAI)

When a Fire Department applies a model of risk assessment to help determine their level of emergency services commitment, they have moved from being reactive to being proactive. The NFPA standards represent the benchmark to strive for in the fire service. Many of these standards have been adopted by the OFMEM.

The CFAI is recognized as the organization that has incorporated all national and local standards, which has become the model for best practices for all fire departments.

Benefits of Accreditation:

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

The CFAI program revolves around 11 categories, which are:

1. Governance and Administration – includes such things as organizational reporting structure, E&R by-law requirements, etc.
2. Assessment and Planning – evaluating the organization in relation to future planning.
3. Goals and Objectives – what are the goals of the fire service; do they have a strategic plan in place.
4. Financial Resources –funding to effectively meet the needs of internal and external stakeholders.
5. Programs – this includes fire prevention, fire suppression, training, emergency management.

6. Physical Resources –state of fire stations, as well as determining if stations are in optimal locations to respond to the community in a timely manner.
7. Human Resources – staffing of the organization in all divisions and how the fire service works with the municipality's Human Resources Department
8. Training and Competency – review of all training programs based on what the fire department is mandated to provide.
9. Essential Resources – this section covers such things as water supply, communications/dispatch, and administrative services.
10. External Systems Relations – includes such topics as mutual aid, automatic aid, third party agreements, etc.
11. Health & Safety – includes a review of the health & safety risk management program.

Even if a fire department chooses not to seek accreditation with the CFAI, the implementation of some of their program in conjunction with its recommended practices, will assist the fire management in comparing the Fire Department's present practices with those recommended by the CFAI. This could result in process improvements overall and provides a due-diligence assessment of the fire department thereby addressing the risk-management component of providing fire and life safety programs to the community.

2.5 Strengths, Weaknesses, Opportunities, and Threats (SWOT)

The strengths and weaknesses portion of a SWOT analysis are based on an internal review that identifies what is working well, along with recognizing areas for improvement. The opportunities and threats portion of the SWOT are related to external influences and how these influences affect the operations and response capabilities of an emergency service.

2.5.1 Strengths

- Motivated and positive senior management and fire department staff.
- Composite full-time and volunteer firefighter fire department model.
- The CFD has strong relationships with the Cobourg Police and surrounding fire departments.
- Fire station major renovations underway to enhance staff accommodations and operational efficiencies.
- Personal protective equipment (PPE), fleet, and cancer prevention initiatives.

2.5.2 Weaknesses

- CFD, as with many composite emergency services, is challenged when it comes to having sufficient volunteer firefighter numbers for response and support of the full-time staff. Significant reliance on full-time firefighter call-back is problematic in that staff are not receiving adequate off-duty work break.
- Future growth projections indicate a growth in population, service demands will increase due to a population increase, aging population, and aging infrastructure.
- The CFD needs full-time fire prevention/public education officers and a training officer to ensure that fire safety inspections and public education needs are being met. Without a full-time training officer, training needs and service level expectations outlined in such documents as the NFPA standards in training and certification and the *Occupational Health and Safety Act* are not being delivered and documented on a consistent basis.
- Lack of technology infrastructure and support for records management for training, payroll, and efficiencies in documentation processes.
- Job descriptions, supervisory, leadership and succession training and planning.
- Town organizational knowledge including people optimization and inter-department communications.
- Mutual aid or automatic aid agreements.
- Fire station and location is not presently meeting the needs of the community and will not meet response needs as the community grows.

2.5.3 Opportunities

- Enhanced prevention and public education programs.
- Council education regarding the CFD and operational requirements, which will provide a better understanding by Council on abilities of the CFD.
- Regional Training Centre, mutual aid partners cross-training can be a financial savings, along with ensuring consistent training throughout the region.
- Enhanced fire prevention office and location resourcing.
- Emergency management training and corporate resources development.
- Staff development, supervisor and leadership coaching/mentoring, and performance management.

- Dispatch agreement review and update of expected service level.

2.5.4 Threats/Challenges

- Call-back stressing full-time staff and the available suppression staffing resources.
- Opioid, homelessness, violence, and mental health community incidents are at an all time high.
- E&R bylaw service levels delivery, specialty rescue water, hazmat, and confined space need to be updated to align with resource and training requirements.
- Response by the part-time / volunteer firefighters is a challenge due to their other commitments, such as full-time jobs within or outside of the community. This is a challenge for most emergency services that may need to depend on responses from the volunteer firefighters.
- Operational guidelines and procedures need updating and maintaining.
- Community growth and fire department pacing with growth.
- OFC closure, funding, and location of available training.

2.6 Stakeholder Focus Sessions and Community Survey

To get a complete understanding of how well the CFD is meeting the needs of its staff and the community, and to assist the CFD in making strategic decisions for the future of the community, staff surveys and interviews are essential.

Feedback was gathered from internal fire staff, which included full-time and part-time suppression firefighters, administration, and fire prevention staff. Additionally, the municipal Senior Management Team members where interviewed.

The sessions resulted in the identification of the following themes:

- Continuing to meet the needs of the growing community with the present set up of the fire station, equipment, apparatus, and service level expectations.
- Staffing roles, development, and firefighter recruitment.
- Training and NFPA certification requirements.
- Focus on an excellence of leadership and communication between fire chief and the CAO, council, and firefighters.
- Continually ensuring that the growing community of residents and businesses understand the fire services delivery model and expectations of service levels.

- Need for corporate Human Resources capability to address needs of the town including CFD as the town grows in population and municipal staffing levels.

2.6.1 Public Survey

There was a total of 74 respondents to the Public Survey. The survey was posted to the Town website along with a media release to facilitate interest and generate as much participation as possible. Additionally, the survey opportunity was proactively distributed to various community groups, and business associations.

Based on the information received, areas that were extremely important to the respondents:

- Response time to calls or service
- Response for service
- Purchase and upkeep of equipment
- How well the CFD works with other agencies to provide safety services
- Relevant training to meet needs of the community

The top three services that the public survey revealed as most wanted, based on the information received:

- Fire fighting
- Rescues – motor vehicle accidents
- Medical Assistance

Other information received, and that EMG recommends for consideration include:

- The fire department is viewed as professional and a good community partner.
- Some suggestion comments that the external stakeholders would like to see an increase:
    - Attendance at community events
    - Home inspections
    - Education and safety programs
    - Communication / safety newsletter with businesses and homeowner

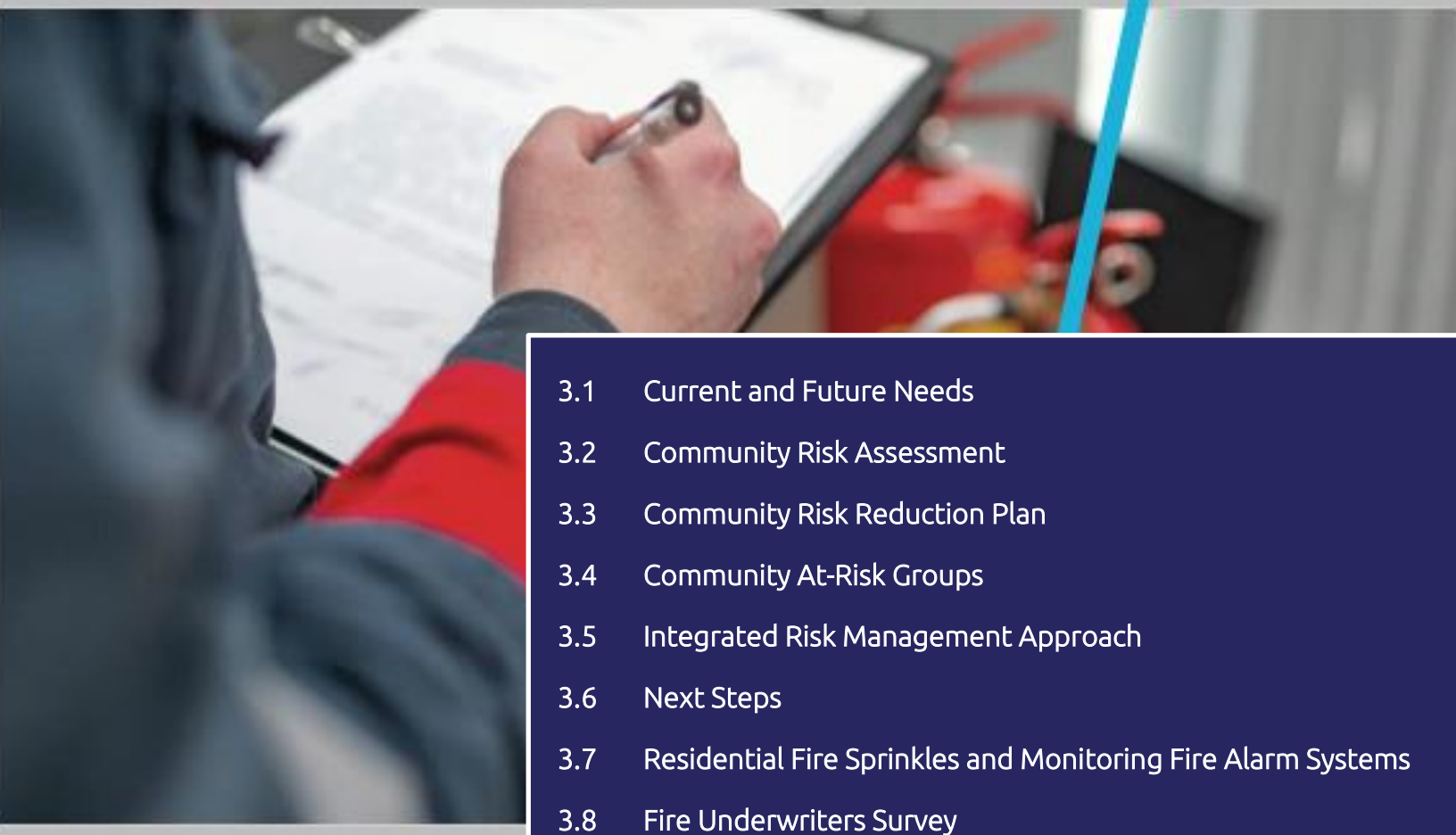
It should be noted that that 78% of the respondents indicated that they had not directly received service from CFD.

Section 2 - Recommendations

Rec #	Recommendation	Rationale
3	Regular surveying and seeking internal CFD and Town staff input, as well as external community stakeholders and partners should be part of the CFD ongoing satisfaction and operational assessment process.	This recommendation should be seen as a proactive and positive initiative to work with Town of Cobourg and the CFD staff and community stakeholders to encourage feedback and collaborate on finding solutions to any issues/comments received.

Section 3

Risk Assessment



SECTION 3: RISK ASSESSMENT

3.1 Current and Future Needs

The population of Cobourg is forecasted to grow to approximately 27,500 residents by the year 2031 due to an increase in land development. With a land area of approximately 22.41 km^2 (8.65 mi^2.), the community contains developed areas including single-family, multi-unit, low-rises, and high-rises. In the coming years, additional single-family and high rises will be evident throughout the town.

3.1.1 Municipal Responsibilities

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

- 2 (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.

- 5 (0.1) The council of a municipality may establish, maintain, and operate a fire department for all or any part of the municipality. 2001, c. 25, s. 475 (2)

By way of the legislation, the Town of Cobourg established a fire department as outlined by Town By-law No. 057-2012. The level of service to be provided is determined by the needs and circumstances of the community and can be derived from conducting an FMP. The 'needs' can be defined by the type of buildings, infrastructure, and demographics of the local area which in turn can be extrapolated into the types of services that would be offered and needed. The 'circumstances' are considered the ability to afford the level of service to be provided.

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

The Town of Cobourg is currently experiencing controlled growth. While most of this growth is residential in design, it brings commercial and industrial prospects. This increase impacts the current levels of service delivery of the CFD, affecting the need for service along with the population. Growth is also based on the Town of Cobourg's ability to continue to provide the level of services it currently does.

The CFD is concerned that with the anticipated growth there will be future challenges in meeting reasonable service level including response times as call volumes increase. This creates a possible risk to the community and as such the fire chief will need to monitor response times including how often a full response assignment was not amassed. This type of information can be utilized to identify any future needs and/or considerations for the incorporation of any additional apparatus and fire stations.

3.2 Community Risk Assessment (CRA)

The first and most effective way to reduce injuries, death, and property damage due to fire is through public education, inspections, and enforcement. The fire prevention program normally addresses these key components of fire safety which starts with conducting a CRA; a completed CRA for the town and the CFD, has been prepared by EMG as a supplementary document. The assessment was completed in compliance with The Province of Ontario, *Regulation 378/18.* Key summary portions of the risk assessment will be identified throughout this section.

3.2.1 Community Risk Assessment Profile

A risk assessment is the process used to identify the level of fire protection required within the boundary of a community. It is a means of measuring the probability and consequence of an adverse effect to health, property, organization, environment, or community as, a result of an event, activity, or operation. Council has the authority to establish the level of fire protection within the community. The fire chief is responsible for informing council of risks existing within the town. It is based on this information that council can make an informed decision on the level of service that is required to meet the fire and life safety needs of the community.

The CRA was completed following both NFPA 1300, *Standard on Community Risk Assessment and Community Risk Reduction Plan Development* and The Province of Ontario *Regulation 378/18.* Within Regulation 378/18 it states, "a CRA is a process of identifying, analyzing, evaluating, and prioritizing risk to public safety to inform decisions about the provision of fire protection."

There are two basic risk categories associated with the fire service – operational risk and organizational risk. Operational risk is the responsibility of the CFD to determine the risks within its community and devise strategic, tactical, and task-orientated plans to mitigate incidents. Organizational risk is a function and responsibility of council to determine the disciplines, level of service, staffing, stations, and approval of the department's business plan based on the overall risk assessment of the municipality.

The accumulation and analyzation of these factors will assist in applying this information to identify potential risk scenarios that may be encountered. It is during the assessment of the information

gathered which includes the likelihood of these scenarios occurring and subsequent consequences that will assist in answering the following questions:

- What could happen?
- When could it happen?
- Where could it happen?
- Who could it happen to?
- Why could it happen?
- How likely could it happen?
- How bad would it be if it happened?
- What can be done to mitigate or prevent any or all the above?

The answers to these questions will frame the basis for formulating and prioritizing risk management decisions to reduce the likelihood of incidents from occurring and to mitigate the impact of incidents when they occur.

The CRA may identify gaps and areas where actual conditions vary from the desired outcomes. Data to be reviewed for each mandatory profile include:

Demographics Profile – age, gender, educational attainment, socioeconomic makeup, vulnerable individuals or occupancies, transient population, ethnic and cultural considerations.

Critical Infrastructure Profile – the facilities and services that contribute to the interconnected networks, services and systems that meet vital human needs, sustain the economy, and protect public safety and security.

Geographic Profile – waterways, highways, canyons, railroads, wildland-urban interface, bridges and other specific features of the community.

Building Stock Profile – potential high-risk occupancies (whether residential, commercial, or industrial), building density, building code classifications, age of the structure(s), occupancies that could be a high life safety risk, and aging / historic buildings.

Public Safety Response Profile – resource distribution within the community including their deployment and usage, types of incidents responded to and the frequency of such incidents including the seasonal variations and time of day.

Community Service Profile – existing planning and zoning committees, schools, seniors' organizations, ratepayers' associations, mental-health organizations, faith-based groups, cultural/ethnic groups, etc.

Hazard Profile – human, technological, or natural hazards.

Economic Profile – infrastructure, local employers, industries, institutions, community's tax base and local attractions.

Past Loss/Event Profile – consideration to the impact and frequency of an event; identify large acute events which have a low frequency but a high impact, or small chronic events which have a high frequency with a low impact.

The CRA is a separate document from the FMP. When the fire chief has reviewed its contents and discussed it with the council, a Community Risk Reduction Plan is the next step to be developed and implemented.

In the interpretation phase of the data collected for the nine profiles, only matters that are relevant to fire and life safety protection services are considered. The following flow chart outlines the process whereby risks are to be identified from past events, while also reviewing future growth trends within the community relating to demographics and building stock.

The probability or likelihood of a fire occurring within a community is estimated based on previous occurrences and the frequency of such events. It is this review of previous events including the fire loss data, learning from what may have occurred in other jurisdictions, and discussions with those who may have been in attendance of the event that will assist in laying a baseline for evaluation. The judgement of professionals with such experiences must not be missed during this process and may paint a more in-depth picture of what may have occurred in the past.

These evaluations are based on five levels of probability as outlined in the Ontario Office of the Fire Marshal's Comprehensive Fire Safety Effective Model:

Rare – Level 1

- May occur in exceptional circumstances.
- No incidents in the past 15 years.

Unlikely – Level 2

- Could occur at some time, especially if circumstances change.
- Five to 15 years since the last incident.

Possible – Level 3

- Might occur under current circumstances.
- One incident in the past five years.

Likely – Level 4

- Will probably occur at some time under current circumstances.
- Multiple or recurring incidents in the past five years.

Almost Certain – Level 5

- Expected to occur in most circumstances unless circumstances change.
- Multiple or recurring incidents in the past year

When an event occurs, whether minor or major in intensity, what are the consequences of it? The use of professional judgement and reviews of past events are important means for establishing the quantification levels. To establish this level, four components are to be considered:

1. Life Safety – any injuries or loss of life to anyone involved, public and firefighters (includes actual or potential situations).
2. Property Loss – the dollar loss relating to public and private buildings, contents, irreplaceable assets, significant and symbolic landmarks, and critical infrastructure.
3. Economic Impact – monetary loses associated with income, business closures, downturn in tourism, tax assessment value and loss of employment.
4. Environmental Impact – harm to humans, vegetation, and animals; the decline in quality of life due to air, water, and soil contamination as a result, of either the fire or fire suppression operations.

The four different levels of risk treatment are:

1. Avoid the Risk – Implementation of programs to prevent fires or emergencies from occurring.
2. Mitigate the Risk - Programs and initiatives implemented to reduce the probability and/or consequences of a fire or emergency.
3. Accept the Risk – After identifying and prioritizing a risk, it is determined that there are no specific programs or initiatives to be implemented to address this risk.
4. Transfer the Risk – The fire department has chosen to transfer the impact and/or management of the risk to another organization or body outside the agency.

3.2.2 Provincial Community Risk Statistics

The CFD can work with the Municipal team to obtain an updated listing of building stock within the community, along with identifying other hazards such as railway crossings, major highways, and the introduction of any high-rise structures.

The first set of statistics noted is the most recent provincial data provided by the Office of the Fire Marshal and Emergency Management compared with the most recent CFD statistics.

Provincial - Loss fires by Property Class

From 2016 to 2020, 53,481 fires with a dollar loss were reported to the OFM.

- 73% of these fires occurred in residential occupancies.
- 28% occurred in vehicles.
- 5% occurred on structures/properties not classified by the OBC – this includes many non-structure property types – land, outdoor storage, and some structures ranging from barns to weather stations.
- 8% of loss fires occurred in Industrial occupancies.
- 4% in Assembly occupancies.
- 3% in Mercantile occupancies
- 3% in Business and personal services occupancies.
- 2% in Care and detention occupancies.

The distribution of fire occurrence across property types has been relatively unchanged.

Provincial - Loss Fires Property class: Structures only

From 2016 to 2020, 34,414 Structure fires with losses reported to the OFM.

- Fires in residential occupancies account for 73% of structure loss fires.
- Properties not classified by the OBC – 5%
- Industrial occupancies – 7%
- Assembly occupancies – 4%
- Mercantile – 3%
- Business and Personal Services – 3%

- Care and Detention Occupancies – 1%

This distribution of fire incidents across structure property types has been consistent over many years.

Provincial - Structure Loss Fires: Ignition sources

Notably, 8% of the structure loss fires were arson or vandalism (intentionally set).

Between 2016 and 2020, the ignition sources in other (not intentionally set) structure loss fires were:

- 24% undetermined
- 17% cooking
- 14% open flame tools, smoker's articles
- 9% electrical distribution equipment – wiring
- 7% heating equipment, chimney etc.
- 10% miscellaneous
- 5% appliances
- 5% other electrical, mechanical
- 5% Exposure fires
- 3% lighting - excluding candles.
- 1% processing equipment
- 0% unknown not reported.

The OFM provided the following information and documents received and taken from the past CFD reports supplied to EMG. The following data is an overview of concerns within Cobourg and from the highest to the lowest level for ease of review. This information will assist in formulating and implementing fire prevention and public safety awareness initiatives.

Town of Cobourg Fire Loss by Property Classification

Based on the information received, the following building classifications for property loss are listed based on the number of fires in each occupancy from 2017 to 2021:

- Group C – Residential occupancies
- Group F – Industrial
- Classified under National Farm Building Code

- Group A - Assembly
- Structures/Properties not classified by OBC.
- Group B – Care and Detention
- Group E - Mercantile

Town of Cobourg Reported Fire Cause

Assessing the possible cause of the fires is essential when identifying potential trends or areas to be considered for introducing additional public education on fire prevention initiatives as part of the community fire protection plan.

The leading causes of fires were:

- Misuse of ignition source/materials first ignited.
- Unintentional undetermined
- Undetermined
- Mechanical/electrical failure
- Design/construction/maintenance deficiency
- Arson
- Vandalism
- Other unintentional

Town of Cobourg Ignition Source Class

The leading causes for ignition sources were:

- Undetermined
- Cooking equipment
- Miscellaneous
- Appliances
- Electrical distribution equipment
- Open flame tools, smokers' articles
- Heating equipment, chimney, etc
- Lighting equipment

- Other electrical, mechanical
- Processing equipment

Community Risk Assessment Summary

The following table #4 is an overview of the risks identified in the Town of Cobourg as taken from the CRA, 2022 Edition and further summarized and focused, given the FMP review process.

The CFD will put forward strategies to address the risks, including public education and Fire Code enforcement, within the level of fire service provision. Council will set the level of service. These decisions will form the basis of the Town of Cobourg's community risk mitigation strategies.

A thorough review coupled with sound strategic planning will garner successes in the form of fewer fires, reduced fire-related injuries, and lower dollar property loss through ongoing fire prevention initiatives. These fire prevention initiatives would include early warning detection systems (i.e., smoke alarms), proactive inspections, and public education.

TABLE #4: SUMMARY OF TOP RISKS OR ISSUES/ CONCERNS FOR COBOURG

***Note: The following features are not identified in the order of their level of risk. Please refer to accompanying CRA document for additional information.*

Issues / Concerns	Risks
Bodies of Water	Risks – Ensuring training, equipment, and SOGs are current. Response times to some areas of the Town may be longer due to flooding, road closures, lack of access points, or poor directions. Risks – Educating the public on the dangers of bodies of water and knowing their location in an emergency. Risks – TOC coordinates activities in the event of flooding caused during an intense wind event that causes a storm surge in Lake Ontario. In danger of being carried away by the fast-flowing currents and drowning, causing severe property damage to structures and shoreline erosion.
Radio System	Risks – A fully functional and reliable radio system is a requirement for modern-day fire service. Failing this may put the lives of the public and firefighters in peril. The current system uses the simplex system on the analogue platform. Other fire departments are receiving stronger and more distant signals by moving to the innovative modern digital platform using repeaters. Completing a radio system audit that analyzes coverage and the entire infrastructure will provide a good image of the system's operations.

Issues / Concerns	Risks
Structure Fires	Risks – Historically, the cause of several fires in Cobourg have been the result of poorly maintained electrical or mechanical equipment, which has failed over prolonged use and little maintenance. Fires are less likely to occur with adequately maintained equipment through a preventative maintenance program. Risks – Depending on zoning, the Municipality permits a height limit of twenty-one meters or seven floors for residential structures in some regions of Cobourg. Currently there are no structures over seven stories, and as residential development continues, the council may need to consider changing the current height limits. A fire occurring in a higher construction could put a strain on fire service resources. The OBC permits the construction of residential structures of up to six floors made of ordinary building materials. The longer a fire remains uncontrolled, it becomes difficult to contain it in the apartment/room of origin. When a fire occurs in structures built with wood construction, fire spreads rapidly and is difficult to manage and control. Including light weight construction components which will increase the risk level for firefighters. Water supply may be a considerable impediment in the development of higher structures.
New and Existing Building Stock	Risks – Fire Prevention is involved in plan examinations and approvals. The involvement of fire prevention during the approval process of new structures and any site and building plan examinations will ensure that the required fire safety systems are in place and compliant. Risks - Currently, the CFD does not conduct fire inspections based on either NFPA 1730 or the FUS recommended schedule, as it is difficult to achieve with the current staffing level. Legislation requires that some occupancies are to have compulsory inspections. Inspections are being completed based on a five-year rotation and upon request

Issues / Concerns	Risks
	and complaints. The CFD's goal should be to achieve compliance with the NFPA 1730 or the FUS inspection schedule. Risks – Several mercantile and industrial occupancies in Cobourg have a higher risk level due to the products they offer for sale or manufacturing. Risks - Historical buildings within older areas of the Cobourg may be of heavy timber construction, thereby providing a higher fire load in the event of a fire. Risks – Even though there are fewer farms in Cobourg, new building stock on farms involves structures that are getting larger and the use of sizeable lightweight roof trusses that have a wide span. Risks – Cobourg requires building permits for all solid fuel-burning appliance installations, and that should include a Wood Energy Technology Transfer (WETT) inspection. Such inspections would consist of fireplaces and woodstoves to determine their compliance with the WETT inspection requirements. Doing so would ensure that any installations meet the OFC and manufacturer's requirements. Insurance companies often require these to be completed when buying a residential structure equipped with a wood-burning appliance. Within Cobourg, many residences rely on wood burning as their primary or secondary means of heat. With many occupancies burning wood, chimney fires increase, resulting from poor maintenance, such as annual cleaning of the chimney.

Issues / Concerns	Risks
	Risks – Pre-manufactured roof trusses and floor joists used in many construction applications, mainly in residential and some mercantile occupancies. These trusses are made at a manufacturing facility off-site and then transported to the on-site location. Roof truss failures have killed many firefighters. The OFM has mandated through Fire Marshal's directive 2022-001 that municipalities must inventory all building stock within their town. The focus shall include identifying all those that have incorporated some lightweight construction techniques. Risks – There remain far too many fatalities in the province resulting from either missing or not operating smoke alarms. This statement includes the need for working carbon monoxide (CO) alarms as well. Many residential structures may have smoke and CO alarms past their recommended life span, requiring replacement. Smoke alarms have a 10 year life span, whereas CO alarms have a life span of seven years.
Seasonal Campgrounds	Risks - The Town also operates one seasonal campground known as Victoria Park. It is not uncommon to find units parked very close to each other to maximize the space on the property. Working CO and smoke alarms are required when heating or cooking facilities are in the trailer/mobile home, along with sleeping facilities. Many clients will have liquid petroleum gas (LPG) tanks onboard their trailers for cookstoves or heating purposes. These may pose a risk if a leak is present primarily due to improper tank installation. Campers may enjoy a campfire within the park, which could be a possible fire hazard if not done correctly.

Issues / Concerns	Risks
Vulnerable Occupancies *Inspections & Enforcement*	Risks – Having the most vulnerable residing in occupancies that have fire safety violations is a concern for all fire services. There are currently 24 vulnerable occupancies defined in the TOC's MPAC classifications. An unknown number of vulnerable occupants could be living at their residence or with a family member. With the risk of mobility and cognitive behaviour issues present, the CFD should reach out to the community, begin a database of these high-risk locations, and complete Pre-Incident Plans.
Accessory Apartments, Garden Suites & Short-Term Accommodation *Possible Illegal Units*	Risks – There could be an unknown number of illegal rental suites in the Cobourg. The Official Plan allows for the construction of accessory apartments and garden suites in Cobourg. TOC does not have a dedicated by-law regulating these suites' registration, installation, and rental or locations used as short-term accommodation.

Issues / Concerns	Risks
Water *Hydrants*	**Risks** – Lakefront Utilities Inc. (LUI) is responsible for safe drinking water for Cobourg's residents. Water mains and appurtenances are designed and installed following several pieces of legislation or regulations. Flows are assessed on an annual basis to ensure the system meets demands. Fire flow from hydrants should meet Fire Underwriters, a Water Supply for Public Fire Protection guide. LUI is responsible for 864 hydrants throughout Cobourg. The water distribution system must follow the American Water Works Association (AWWA) Standard M31, Distribution System Requirements for Fire Protection. With an unknown number of private hydrants in Cobourg, the property owners are technically responsible for ensuring that they are annually serviced based on the NFPA 291 standard as per Subsections 6.6.4., 6.6.5. and 6.6.6. of the OFC. Hydrant repairs are the property owner's responsibility, and LUI does not complete hydrant repairs to units on private property. LUI is installing reflective flow markers on the hydrants; some have yet to have them installed. The marker's colour reflects the fire flow rate from the hydrant. The minimum size for water mains is 100 mm (4") which is small as most municipalities now have their minimum set at 150 mm (6"). LUI has a standard make and model of hydrant they use, which includes a threaded steamer port. When ordering new hydrants, most municipalities obtain them with lug coupling on the steamer port, also known as Storz; Cobourg should implement this change.

Issues / Concerns	Risks
Technical Rescues Trench, Confined Space, High and Low Angle, Ice/Water	Risks – There are no formal agreements with other fire services to mitigate technical rescues. The TOC should enter into a response agreement with another fire department or third party to respond to either trench, high and low angle, or confined space rescue. The CFD must comply with the Section 21 Guidance Notes by ensuring all firefighters receive training to the awareness level for all technical rescues, including elevators. Risks – CFD currently does not mitigate technical rescues such as trench, high angle, and confined space. At a minimum, firefighters should be trained to the Awareness Level for all technical rescue responses under the Section 21 Guidance Notes. Before conducting any elevator rescues, the firefighters must receive training that meets the Technical Safety Standards Authority (TSSA) standards. Risks – Even though the CFD ice/water rescues are to the technician level, training is deficient to ensure compliance with NFPA and Section 21. Until all firefighters are trained to the technician level, shore-based rescue attempts should be mandated. The CFD to suspend all ice/water rescues at the technician level until personnel trained to that response level. Perform shore-based in the interim.
Public Education	Risks – The CFD does not have an active Public Education Program delivered by Fire Prevention or a certified PFLSE. Some firefighters may have completed NFPA 1035, *Public Fire and Life Safety Educator* (PFLSE). Having those that have completed the program become certified to Pro Board/International Fire Service Accreditation Congress (IFSAC) standards will allow some form of public education to be available to the residents and visitors of Cobourg. With the need for so many fire inspections requiring completion, as well as public education opportunities, the fire prevention and public education programs may not be meeting the needs of TOC as there is not a dedicated PFLSE.

Issues / Concerns	Risks
	Risks – The senior demographic should receive fire safety messaging, which is not occurring on a consistent due to available resources and the time required. Topics discussed during public education should include fire safety in the home, cooking and kitchen safety, escape planning, and smoke and CO alarms. PFLSE is required to be trained in NFPA 1035 to deliver public education. In 2021 of the 20,519 residents in Cobourg, 8,670 are over 60. Risks – Troubled youth that has started fires may see the individual enrolled in the Juvenile Fire Setter Intervention/ The Arson Prevention Program for Children (TAPP-C). This program includes the involvement of family members and could consist of other community partners. The CFD does not offer the TAPP-C program. A TAPP-C program may be enough to bridge the issue of junior fire-setters.
Domestic Terrorism	Risks –The threat of domestic terrorism exists in Canada, with numerous incidents producing havoc and terror among the populace Active Shooter incidents may occur in factories, schools, supermarkets, seasonal facilities, and the family home. Situations have appeared in several Canadian cities with catastrophic consequences. NFPA 3000 – *Standard for an Active Shooter/Hostile Event Response (ASHER) Program* defines domestic terrorism as "an incident where one or more individuals are or have been actively engaged in harming, killing, or attempting to kill people in a populated area by means such as firearms, explosives, toxic substances, vehicles, edged weapons, fire, or a combined thereof."

Issues / Concerns	Risks
	It further describes the ASHER program as "a community-based approach to preparedness, mitigation, response, and recovery from an ASHER incident, including public or private partnerships, emergency management, the medical community, emergency responders, and the public." Frequently, communities wait until an event has occurred with catastrophic consequences and loss of life before identifying the need for public education and preparedness to handle such incidents. Terrorism attacks quite often focus on those of religious faith.
Public Safety Response Profile *Fire Underwriters Survey*	Risks – It is unknown when FUS completed their last report for Cobourg. Developing an action plan based on CRA and FMP could improve scores, thereby passing on saving in insurance costs to the property owners. The information would identify several areas by engaging in a review of current service levels. The survey reviews all aspects of the CFD. It identifies if there is room for improvement in the supply of water. Fire flows of water from the hydrants are one of the elements studied. Water supply will improve as the infrastructure is enlarged or updated to larger water mains. Cobourg's minimum size for mains is 100mm (4"), and most municipalities have increased theirs to 150 mm (6"). When reviewing fire prevention, two areas often identified as opportunities for improvement are the General Program and Codes and Enforcement. In both instances, adding staff would increase the number of inspections completed and public education delivered. The survey will aid in establishing insurance rates for property owners in the TOC. When completed and updated regularly, using the FUS Portal may cause insurance rates may be adjusted, thereby savings found in lower insurance rates.

Issues / Concerns	Risks
Cobourg Fire Department *Health & Wellness*	**Risks** – In recent years, there has been a more intensive review of cancer prevention and a correlation of the disease to firefighting. The focus has been on contamination control surrounding fire incidents. From pre-fire and incident duration to cleaning and decontamination post-fire, all aspects of prevention are currently under review by all levels of fire service management. Departments need to limit cross-contamination and secondary exposure to carcinogens involved at fire scenes. As part of a more significant commitment to firefighter health and wellness, CFD should review related Section 21 Guidance Notes and include items such as, but not limited to: • Post-fire decontamination of PPE • Firefighter hygiene at fire scenes • Firefighter hygiene at the fire station before departing for home after a fire. • PPE during handling of contaminated gear/ equipment. • Document potential exposures by completing exposure reports. • Reducing exposure to diesel exhaust. The Occupational Health & Safety (OH&S), Section 21 Health & Safety Guidance Note 6-1, Hygiene and Decontamination[4], states: Employers should: "…develop a program of decontamination, which includes engineering controls (ventilation), decontamination procedures, personal protective equipment (respiratory protection devices, gloves) and hygiene practices, in consultation with the joint health and safety committee."

[4] Ontario, "6-1 Hygiene and decontamination – Actions for employers", last modified October 21, 2019, https://www.ontario.ca/document/firefighter-guidance-notes/6-1-hygiene-and-decontamination

Issues / Concerns	Risks
	The pollutants of vehicle exhaust have been a recognized cause of cancer. Section 21 Guidance Note #3-1 - Reducing Exposure to Diesel Exhaust should be referenced. CFD does not have an exhaust extraction system in the fire station.
Cobourg Fire Department *NFPA Certifications*	Risks – Members of the CFD have been completing training to the NFPA Standards reflective of their rank/roles/activities in the department. Even though the training is completed, some members have not taken the extra step in completing each program by becoming certified as required by the OFM. Certification is documentation recognized within the legal system by identifying a department member who has completed the training and is competent in that role. Failure to complete certification may question a member's level of competency during a legal proceeding. Members of the fire service should become certified to the NFPA standards. Certifications recognize the completion of programs to a higher level of training and competency. The IFSAC seal is also affixed to the certificates, as that agency is responsible for certifying candidates that complete a higher education degree program related to the fire service.

Issues / Concerns	Risks
Cobourg Fire Department *Live Fire Training*	Risks - CFD does not have a training facility to train its firefighters. Live fire training has not been completed in a long time and needs to be an annual requirement. Fire services often use buildings that are abandoned or destined for demolition for training purposes. Due to, in some cases, the dilapidated condition of the structure, the health & safety of the firefighters is paramount. These opportunities allow firefighters to sharpen their skill sets in many firefighting disciplines, including Search and Rescue, ventilation, fire attack, building construction, tanker operations, pumper operation, etc.
Cobourg Fire Department *Staff Development & Succession Planning*	Risks – The employer's responsibility is to ensure their staff completes training to levels determined by legislation and standards. Failure to meet these requirements exposes the employer to the *Ontario Health and Safety Act* charges. Firefighters often wish to move up the ranks within the fire service. Succession plans must be in place for staff's personal development to move into positions of higher authority and enhanced levels of responsibilities and roles ensuring appropriate training and competency.
Cobourg Fire Department *Tiered Medical Responses*	Risks – CFD responds to tiered medical calls under the agreement between Northumberland County Paramedic Service and each fire service of Northumberland County. While the current contract went into effect in 2016, it needs to be reviewed and updated to reflect any enhancements available within the document. Like many communities, Cobourg has seen the effects of opioid dependencies. The CFD is called upon to respond to aid victims of opioid overdoses. By the CFD, administering naloxone to a victim of an opioid overdose could save a life.

Issues / Concerns	Risks
	Some fire departments, like CFD, administer naloxone and inject epinephrine. Epinephrine is injected into a patient via an Epi-Pen when a known risk of entering anaphylactic shock is present. The CFD firefighters are not permitted to administer medications such as glucose gel or 81mg acetylsalicylic acid (ASA) to patients. Consideration should be given to including glucose gel for diabetic emergencies and ASA 81 mg for cardiac emergencies. Citizens diagnosed with diabetes are at risk of having a diabetic emergency due to the lack of food intake. Depending on the symptoms present, the administration of glucose gel may aid in reducing the signs of the diabetic crisis. A high percentage of CFD's fire calls are medical-related, which requires the station to be back-filled each time a crew responds to this call type. Backfilling the station each time requires both full-time and paid-on-call firefighters to respond, which in the case of the TOC firefighters, takes them away from their place of full-time employment. Each callback places additional pressure on the budget as those responding to cover the station must be paid.
Cobourg Fire Department *Fire Service Response Agreements*	Risks - The CFD has no automatic aid or response agreements with their neighbouring fire department. Having contracts in place will prevent questions about the number of times a fire department calls upon their neighbours for assistance as a mutual aid call.

Issues / Concerns	Risks
Town of Cobourg *Emergency Management Program*	**Risks** - Under the *Emergency Management and Civil Protection Act* R.S.O. 1990 (EMCPA), municipalities must have an Emergency Response Plan (ERP). The Plan is to be reviewed and updated yearly, along with training exercises completed. Cobourg's Community Emergency Management Plan (CERP) was last updated in 2015, and the Emergency Management Program By-Law was unavailable during this review. TOC must incorporate the incident management system (IMS) within its community emergency management plan, including online training. Community control group (CCG) and support teams' members need to complete IMS 100 and IMS 200. All members of the CCG should also complete the basic emergency management (BEM) 200 course. Lacking in the CCG is a representative from environmental services. TOC has not consistently completed its annual training exercises as required by the EMCPA. With a new Community Emergency Management Coordinator (CEMC) in place, anticipation is that the Town will become compliant regarding legislated training sessions. A real-time practical training exercise should be considered a training exercise within five years. A real-time exercise includes internal and external departments to mitigate a simulated incident. An example of an incident is a carbon monoxide leak at an apartment building with casualties that require transport to a hospital. In Cobourg's case, a mass casualty event involving a train or a chlorine leak from the wastewater treatment plant are a few suggestions. Many municipalities like Cobourg have never conducted real-time exercise exercises.

Issues / Concerns	Risks
Peterborough Fire Services *Dispatching Services for CFD*	Risks – Peterborough Fire Services (PFS) dispatches the CFD to incidents and all the other fire services of Northumberland County. The CFD should communicate concerns to PFS regarding their ability to meet the standards established in NFPA 1225, *Standards for Emergency Services Communications*, and NFPA 1061, *Standard for Public Safety Telecommunications Personnel Professional Standards*. The current agreement with PFS was established in 2016 and expired in 2020. It was between the Northumberland County and the City of Peterborough. In conjunction with its Fire Chiefs, Northumberland County needs to review and update the recent document for County Council's and Peterborough's consideration and approval. As part of the OFM moving towards certifications to the NFPA standards, PFS communications operators will be required to complete the NFPA certification to NFPA 1061, which their communications operators. have either completed or are in the process of doing so. The dispatch centre lacks supervision in the room 24/7. The station captain or platoon chief is considered the dispatcher's supervisor. There is no supervisor to monitor the centre's operations when they are out at incidents.

3.2.2 Future Needs

The CRA identified that there has been significant building stock growth in the community (namely residential, but not exclusively). This growth has impacted the demographic profile and, consequently, the needs and circumstances for delivering services by the CFD. As the population and infrastructure grow to meet the community's needs, the types of calls and related frequency will need monitoring. The fire chief must ensure that they are meeting the community's requirements and the internal training and equipment needs of the firefighters to do their jobs efficiently and effectively.

As with many communities in Ontario, Second Suites and Short-term Rentals are becoming problematic. While permitted in the Town of Cobourg, there are no stand-alone by-laws that regulate their use or know how many are in service.

Fire prevention and public education initiatives, the CFD's fire prevention has inspected all the vulnerable occupancies, schools, and other special needs facilities annually as legislated to complete.

The CFD should prepare for technical rescue incidents by entering into response agreements with either a third party or another fire service to mitigate these incidents. All CFD members require training to at least the awareness level for all technical rescues to comply with the Ministry of Labour, Section 21, Guidance Notes. The OFM would be a resource for the fire chief to understand better the response capabilities of other fire services in the area to protect Cobourg's residents better.

Understanding the community and its needs allows the CFD to be proactive with education and enforcement programs for the community. When fires, medical or emergency situations occur within the community, the firefighters can be ready to fight the fires because they are trained not only in the basics of firefighting and emergency response, but in understanding any unique and/or special hazards that are found within the community. These hazards must be identified in a risk assessment so the CFD can ensure preventative and mitigative programs are in place. As the community grows in population and building stock, the frequency of and the need for service will grow.

There is a need for the CFD to re-establish and maintain a robust Fire Prevention/Public Education Division.

3.3 Community Risk Reduction Plan

With the CRA completed and all risks identified, developing a Community Risk Reduction Plan (CRRP) should begin. When properly applied, the CRRP coordinates emergency operations with prevention and mitigation efforts throughout the community and at the fire station level. The involvement of fire station personnel is critical for gathering local risk data and performing activities necessary to implement the CRRP.

A CRRP improves firefighter and emergency responder safety and occupational health, reducing line-of-duty deaths. Aside from the primary benefits to the community, a CRRP can positively impact the fire department. Due in part to the number of fire inspections and public education events completed, enforcement of the OFC, and the reduction in the number of fires, resulting from these measures.

In addition to firefighter safety, there are several other reasons why departments should begin the process of developing a CRRP, including:

- The presence of new and emerging hazards and managed risks makes the community safer.
- Declining budgets among fire departments and local governments, thereby better resource allocation.
- A rapidly changing community demographics.
- Community engagement.
- May prevent potential ramifications of hazards that were ignored or not fully addressed.
- It will better define the fire department's purpose and value within the community beyond just fighting fires.

Completing the CRA and this FMP document provides the fire chief with the components needed for the Risk Reduction Plan. Utilizing the information and recommendations found within the CRA and FMP forms the foundation of the CRRP.

There are several steps in the development of a CRRP:

Identification and Prioritization – Upon completing the CRA and identifying risks, priorities are determined, and the results become known for use in the remaining planning process. The document does not need to be complex or complicated, but in a clear and concise format that enables the reader to understand the risks and those that should have the highest priority.

During this process, consider the following:

- Why and how the risk occurs and, in some cases, when.
- Who does the risk affect the most, and why?
- How are the community and the fire department affected by the threat?
- What about this risk ranks it higher than others?

Develop Mitigation Strategies & Tactics – This requires input from various individuals involved, including those most affected by the risk. Stakeholder involvement is paramount and should always be in the decision-making process. It will necessitate decisions to determine what tactics and strategies will be necessary to prevent and mitigate those risks with the highest priority.

Five elements to be reviewed during the development of the plan include:

- *Education* - Determining the appropriate type and mix of educational messaging necessary to inform the public and effect behavioural change. More encompassing education through different mediums of social media.
- *Enforcement* - Identifying whether more vigorous enforcement is necessary or if newer codes and standards need adoption. Notification of the public on successful convictions through the justice system.
- *Engineering* – Establish whether there are engineering or technological solutions to address the identified risk(s).
- *Emergency Response* – Changes to the emergency response protocols, SOGs, SOPs, and policies to better meet a specific risk or need. It may require additional resources such as stations, apparatus, equipment, staffing, and enhanced levels of training.
- *Economic Incentive* – Distinguishing whether financial incentives will improve compliance or help increase awareness of community needs.

Prepare the CRRP – With the risks now identified and prioritized, the strategies and tactics become determined for prevention and mitigation. It will be necessary to develop a written plan.

Implementation of the CRRP – The completed CRRP usually involves several steps. The process should include timelines, which can be quick and focused or slow and methodical. The implementation may rely on the fire department, community partners, or a combination.

Monitor the Progress, Evaluate Your Findings & Modify the CRRP – The final step involves monitoring and evaluating the plan's effectiveness and implementing changes as necessary. This process will enable the organization to determine if they are achieving their desired goals and if the program is or is not impacting them. Ongoing monitoring allows for plan modifications promptly.

The CRRP is a gateway to the reinvention of the fire service culture that requires approval, buy-in from Council, vision, and strong leadership to champion needed change and navigate the process. A successful CRRP will bring additional resources to the effort through partnerships within the fire department and the community it serves. The community-based approach increases public safety

because of the collective work within the community to understand, assess, and provide inclusive solutions to community safety issues.

The CFD can work with Town of Cobourg staff to obtain an updated listing of building stock within the community, along with identifying other hazards such as railway crossings, major highways, and the addition of any high-rise structures.

To assist the department in its fire safety goals it is recommended that the CFD staff meet with relevant local community groups to form a partnership for organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community. These events can be based on the previous fire cause information supplied. An example of community groups would be a local group that wish to promote fire safety in the community or any local service clubs or faith groups, that want to support fire safety initiatives.

3.4 Community At-Risk Groups

In 2016 the "Targeted Residential Fire Risk Reduction"[5] report was released. The focus of the report was based on previous studies in England, Scotland, Sweden, and Norway. Those reports found that targeted home visits for public education efforts produced promising results. By shifting public education efforts by way of door-to-door campaigns away from an entire community and towards identified at-risk households, not only are the campaigns more efficient but the effectiveness has measurable outcomes. The study team reviewed the 2011 Statistics Canada Census and National Household Survey and the numbers presented were an estimate of households and at-risk populations intended to provide an approximation. The identified five areas for "at risk" criteria:

1. Age >65
2. Age <6
3. Lone Parent
4. Unemployed
5. Mobility (movers)

The team evaluated and determined "the top 10th percentile" of areas within municipalities that would be most at risk for fires to occur in their home. From this they created dissemination areas (areas which represent populations of between 400-700 persons) and focused on single-family detached dwellings. The project did not focus on residents of condominiums, apartments, or townhouses. Surrey Fire Rescue Service used this data to create a "Home Safe" program that focused on installing smoke alarms in these identified homes.

All target audience public education programs should be fluent and adaptive to the changing needs of the community. The CFD is moving towards involving more data analytics in its operations. By including identification of at-risk groups, the CFD could better utilize available personnel resources and improve efficiency of programs. They would likely find ways to cross reference the data and metrics obtained in other areas of fire safety (i.e., tracking fire calls with areas targeted at public education).

[5]"Targeted Residential Fire Risk Reduction A Summary of At-Risk Areas in Canada," June 2016, https://www.researchgate.net/publication/307599464_Targeted_Residential_Fire_Risk_Reduction_A_Summary_of_At_Risk_Areas_in_Canada

3.5 Integrated Risk Management Approach

The Ontario Fire Marshal's Communiqué 2014-12 introduced the Integrated Risk Management (IRM) to the fire service, and it can be utilized by the CFD as a general reference for risk management programming.

The IRM model is built around the three lines of defence (public education; inspection & enforcement; and emergency response) and was intended for municipal and fire service decision-makers to assist municipalities in fulfilling their responsibilities. The concept of the IRM model is to be a holistic approach that is meant to combine all, of a fire department's efforts in relation to:

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

NFPA 1730, *Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations,* defines the risks in three categories and provides examples for each. These risk categories are:

- High-Risk Occupancy – An occupancy that has a history of high frequency of fires or high potential for loss of life or economic loss. Alternatively, an occupancy that has a low or moderate history of fire or loss of life, but the occupants have an increased dependency in the built-in fire protection features or staff to assist in evacuation during a fire or other emergency (e.g., apartment buildings, hotels, dormitories, lodging and rooming, assembly, childcare, detention, educational and health care).
- Moderate-Risk Occupancy – An occupancy that has a history of moderate frequency of fires or a moderate potential for loss of life or economic loss (e.g., ambulatory health care and industrial).
- Low-Risk – An occupancy that has a history of low frequency of fires and minimal potential for loss of life or economic loss (e.g., storage, mercantile and business).

Conducting a review of every building within the city may not be practical. However, by utilizing the NFPA 1730 definitions of risk categories may guide council in deciding the focus and service level within the community. Council should determine, with input from the fire chief, an acceptable level of

risk to manage within the community based on its needs and balanced with the circumstances to deliver the services.

In the NFPA standards, public education and risk assessment is a key component of having a successful Community Risk Reduction Plan.

3.6 Next Steps

As the community grows, the frequency of calls and the need for service will grow. Based on this growth, there may be a future need for additional staff in the Fire Prevention Office, the Fire Suppression Division, and training. Supporting information relating to the staffing needs of each division can be found in the associated sections within this FMP document.

The provincial government has recently introduced updates to the *Fire Protection and Prevention Act*, which outlines the responsibilities of a community and its fire department concerning service level expectations. These updates are:

- Certification for firefighters, fire service instructors (training officers) and fire service inspectors (fire prevention inspectors)
- Mandatory reporting requirements
- The mandatory requirement for community risk assessments to be reviewed annually with a new document completed every five years.
- Municipalities must inventory all building stock using the OBC occupancy classification codes and, at the same time, identify any with lightweight construction components in them.

These four additions will put an even more significant strain on fire departments to ensure proper training, reporting and completion of CRAs.

3.7 Residential Fire Sprinklers and Monitoring Fire Alarm Systems

The NFPA, along with the Canadian Association of Fire Chiefs, are strong supporters of residential sprinkler systems to reduce the risk to life and property from fire. Because fire sprinklers react so quickly, they can dramatically reduce the heat, flames, and smoke produced in a fire. Properly installed and maintained fire sprinklers help save lives, reduce damage, and make it safer for firefighters.

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

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

Automatic sprinklers are highly effective and reliable elements of total system designs for fire protection in buildings. According to an American Housing Survey, 8% of occupied homes (including multi-unit) had sprinklers in 2010-2014 up from 4.6% in 2009.

Source: *U.S. Experience with Sprinklers*[6]

- 85% of all U.S. fire deaths occur in the home.
- The civilian death rate of 1.4 per 1,000 reported fires was 81% lower in homes with sprinklers.
- The civilian injury rate of 25 per 1,000 reported fires was 31% lower in homes with sprinklers. Many of the injuries occurred in fires that were too small to activate the sprinkler or in the first moments of a fire before the sprinkler operated.
- The average fire fighter injury rate of 13 per 1,000 reported home fires was 78% lower where sprinklers were present.
- Where sprinklers were present flame damage was confined to the room of origin in 97% of the fires compared to 74% of fires without sprinklers.

In 2021 some fire safety statistics[7] were released which includes:

- 40% of fire deaths happen in homes with no smoke alarm.
- 17% of home fire deaths occur due to a non-functional smoke alarm.
- 25% of smoke alarm failures with a deadly outcome occur due a dead battery.
- $235 million per year in property damage is caused by children starting fires.
- Smoke alarms decrease the risk of dying in a home fire by 50%.
- Electric space heaters are the cause of 80% of house fires with a deadly outcome.
- Fire sprinklers can reduce the chance of death in homes by 80%.

[6]"NFPA Research - U.S. Experience with Sprinklers, Marty Aherns, October 2021", accessed on December 31, 2021, https://www.nfpa.org/News-and-Research/Data-research-and-tools/Suppression/US-Experience-with-Sprinklers.pdf

[7] Safeatlast - The Latest Fire Safety Statistics - Stay Safe in 2021, Published January 30, 2021, accessed on December 31, 2021, https://safeatlast.co/blog/fire-safety/

- According to the National Fire Protection Association, firefighters in the US respond to a fire every 24 seconds.
- Fire sprinklers use less water than fire hoses.
- Sprinklers activate on an individual basis.
- The risk of property loss is reduced by 70% in homes with sprinklers.

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

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

3.8 Fire Underwriters Survey

The FUS is a national organization that provides data on public fire protection for fire insurance statistical work and underwriting purposes of subscribing insurance companies.[8] Subscribers of FUS represent approximately 85% of the private sector property and casualty insurers in Canada.

FUS certified fire protection specialists conduct detailed field surveys of the fire risks and fire defences maintained in built up communities including incorporated and unincorporated communities of all types across Canada. The results of these surveys are used to establish a public fire protection classification (PFPC) for each community. While the FUS is not involved in setting rates, the information provided through the fire insurance grading index is a key factor used in the development of commercial lines property insurance rates. The PFPC is also used by underwriters to determine the amount of risk they are willing to assume in each community or section of a community.

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

[8] "Who We Are: The Fire Underwriters Survey," Retrieved September 30, 2022, https://fireunderwriters.ca/

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

The fire insurance grading system used does not consider past fire loss records, but rather fire potential based on the physical structure and makeup of the built environment. When a community improves its PFPC, or DPG insurance rates may be reduced, and underwriting capacities may increase. Every insurance company has its own formula for calculating their underwriting capacities and insurance rates; however, the PFPC and DPG classifications are extremely useful to insurers in determining the level of insurable risk present within a community.

3.8.1 Fire Underwriters Survey – Town of Cobourg

Cobourg Fire Department has not had a FUS completed for several years, and this may be a suitable time for the community to complete an appraisal.

A Fire Underwriters assessment allows a fire department to apply for its superior tanker shuttle accreditation. CFD has not received their tanker shuttle accreditation, and EMG does not see any advantage to completing it due to the limited areas with no hydrants in the Town.

FUS has introduced the FUS Municipal Fire Portal, allowing CFD to access and update data relevant to Cobourg and forward updates promptly. By accessing this system regularly, CFD can provide frequent updates from which FUS specialists will analyze and publish grade updates as deemed necessary. EMG generally recommends that fire administration regularly access and provide input to the FUS Municipal Fire Portal once a FUS assessment is complete.

Section 3 - Recommendations

Rec #	Recommendation	Rationale
4	The CFD develop a comprehensive CRRP that aligns with the Community Risk Assessment and the recommendations of the Fire Master Plan.	The CFD has identified the risk present within the community and the Town of Cobourg needs to reduce or remove these risks. A CRRP needs to be developed to identify priority areas, formulate a plan to mitigate risks, implement programs and evaluate outcomes.
5	CFD meet with relevant local community groups to form partnership and organize fire safety and public education events.	The proactive nature of fire and life safety education to the community will enhance the CFD effectiveness and better manage the risks in the community.
6	The CFD undertake a Fire Underwriters Assessment and Survey.	Completing/updating the FUS will offer even more guidance to the CFD in relation to risks observed by FUS along with suggestions on how to address them. The CFD will have access the FUS Municipal Fire Portal to identify improvements and provide updates. This data could relate to new fire apparatus replacements, new fire stations, new construction, hydrants in new sectors, increased staffing levels etc.

SECTION 4

Proponent Qualifications

SECTION 4: PROPONENT QUALIFICATIONS - NON-SUPPRESSION

Within the scope of work noted in the original RFP document, staffing needs was identified as a priority in which EMG was to review the capabilities of existing staffing and identify future needs for each of the divisions where applicable including Suppression, Communications, Mechanical, Training, Prevention and Administration.

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

- Is there a proper level of senior staff to manage the department and its divisions?
- Is there adequate administrative support staff to assist with such things as records management and addressing day-to-day operations of the department?
- Is there a need for other support staff for vehicle and facility maintenance?

This section will discuss the following divisions:

- Administration
- Fire Prevention and Public Education
- Training & Education

4.1 Administration Division

The Administration Division is comprised of senior staff and administrative staff. In the Cobourg Fire Department this includes the fire chief, a deputy fire chief, and an administrative assistant. Over the past year there has been a change of personnel, vacancy, in the administrative positions of the CFD in the role of fire chief and in the deputy fire chief positions. Additionally, the administrative assistant is new to the role.

A fire chief's role, in a large or small fire department, requires regular interaction of council, and senior corporate management. Responsibility for Fire Protection Services found in Part 2, section 2, paragraph 6 (3), of the *Fire Protection and Prevention Act*, 1997, S.O. 1997 states that,

> "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".

It is based on this provincial legislation that the fire chief needs to communicate directly and regularly with the council of a municipality to satisfy the requirements of the role.

The placement of qualified and dedicated personnel in these key roles ensures stability within a department. At the time of this report the position of deputy fire chief was not filled, and the fire chief position was only recently filled permanently through a formal recruitment and hiring process. Once all senior positions are filled, this will help to create more stability within the CFD and will help to promote the development and updating of policies, strategic planning, operational changes, acquisition of equipment, etc., that provides focus on the direction the CFD is heading.

The administrative assistant position encompasses a considerable list of responsibilities. The major areas of these responsibilities are records management, payroll activities, and coordination of department scheduling and information technology (IT). Given the significant increase in records management for to address the risk liability of required documentation for department functions of prevention activities; required training and certification records; as well as timely incident reporting and data collection; the administrative assistant position needs to be properly resourced. The increased workload that community and department growth will generate supports the need for additional administrative assistant position. This can be addressed with a part-time position and transitioned to a full-time as the workload steadily increases during the next five years.

Commission on Fire Accreditation International

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

Category 9C: Administrative Support and Office Systems

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

Even if the CFD is not interested in becoming an accredited agency, just the fact that they become familiar with the CFAI program, and its goals will assist the CFD in looking at other options for operational improvements. There are three-day quality improvement courses offered by the CFAI that would be of benefit to senior management in relation to professional development.

4.2 Fire Prevention and Public Education

Public education is the first line of defence in relation to the 'Three Lines of Defence' presented by the Province of Ontario's OFM and as stated in the Community Risk Assessment Guideline, OFM-TG-02-2019; the more resources assigned to this endeavour, the more proactive a community and its fire department are regarding fire safety. Inspection and enforcement, is, the number two line of the

'Three Lines of Defence' in preventing fires before they begin. Fire prevention and education combined with inspection and enforcement are the most effective methods of reducing injuries and death associated with fires and associated emergencies. The Town of Cobourg has high-risk structures that require constant monitoring by the Fire Prevention Inspectors, and as mentioned it is unknown the frequency in which these are inspected.

EMG conducted a review of the existing fire prevention program, identifying strengths, gaps and areas for growth and improvement. When evaluating CFD current structure, it became evident that the CFD does not have a sufficient fire prevention/public education division resourcing to meet the level of services as outlined in the E&R By-law No. 057-2012.

During the review of the fire prevention/public education program, it was noted that there was a lack of documentation and required inspections completed regarding the number of fire inspections that have been completed over the past number of years, and little documentation records of the public education events.

To the credit of current CFD contract staff, they have shown considerable effort and initiative by attempting to crisis-manage outstanding required prevention inspections and current case files.

Currently, there is no ability to fulfill plans examination by a qualified fire prevention staff. This is problematic given expected growth of the Town of Cobourg and new construction that entails.

The CFD is not meeting the level of inspections required. The CFD should fill the Chief Fire Prevention Officer (CFPO) current position with a permanent full-time staff and create and hire a full-time fire inspector/educator position who is certified in NFPA 1031, *Standard for Professional Qualifications of Fire Inspector and Plans Examiner* and NFPA 1035, *Standard for Fire and Life Safety Educator, Public Information Officer, Youth Fire setter Intervention Specialist and Youth Fire setter Program Manager Professional Qualifications.*

By establishing an adequately resourced fire prevention division, CFD will see a consistent manner of fulfilling inspections requirements as expected to meet the legislated requirements for inspections of vulnerable occupancies as well as have the capacity to timely address demand-inspections and proactively aid in enhancing fire and life safety risks in the community. The public education portion of the division would be responsible for proving fire safety messaging to prevent fires and life safety incidents from occurring in the first place, thereby possibly saving lives. The division would also need to re-establish a smoke and CO alarm program to ensure all residences and campgrounds have them in place and operating.

The Fire Prevention Division may also identify high-risk audiences and target these for their fire prevention and public education efforts. These efforts should focus on engaging the numerous care

facilities throughout the community with resources dedicated to documentation and records management, conducting monthly mandatory inspections, supervising fire drills, and supporting the training of onsite staff.

4.2.1 Code Enforcement / Inspections

For a Community Risk Reduction Plan to be successful, ongoing fire inspections are a necessity. It is the inspections that will identify deficiencies and contraventions of either the OFC or OBC before they cause a fire.

Fire inspectors would oversee community life safety issues concerning fire code inspections and enforcement of the OFC. Fire inspections of all types of occupancies in the city, with the intent of compliance with the OFC is crucial to the protection of persons and property from the hazards of fire. The reduction of risks from fire and other life safety hazards with detection and reporting through the inspection process is necessary for the creation of a fire safe community, occupant safety and building preservation. Inspections also provide assurances that fire detection equipment in buildings meet code standards, are present and operational and that firefighting equipment in buildings have been tested to the standards. Fire Inspectors also manage the issuing of orders, filing court documents, and carrying out inspections.

The following figure displays the inspection metrics specifically the total files opened, closed, and remaining open during the 2019 to 2021 and 2016 to 2018 periods.

FIGURE #4: INSPECTION METRICS 2019 TO 2021

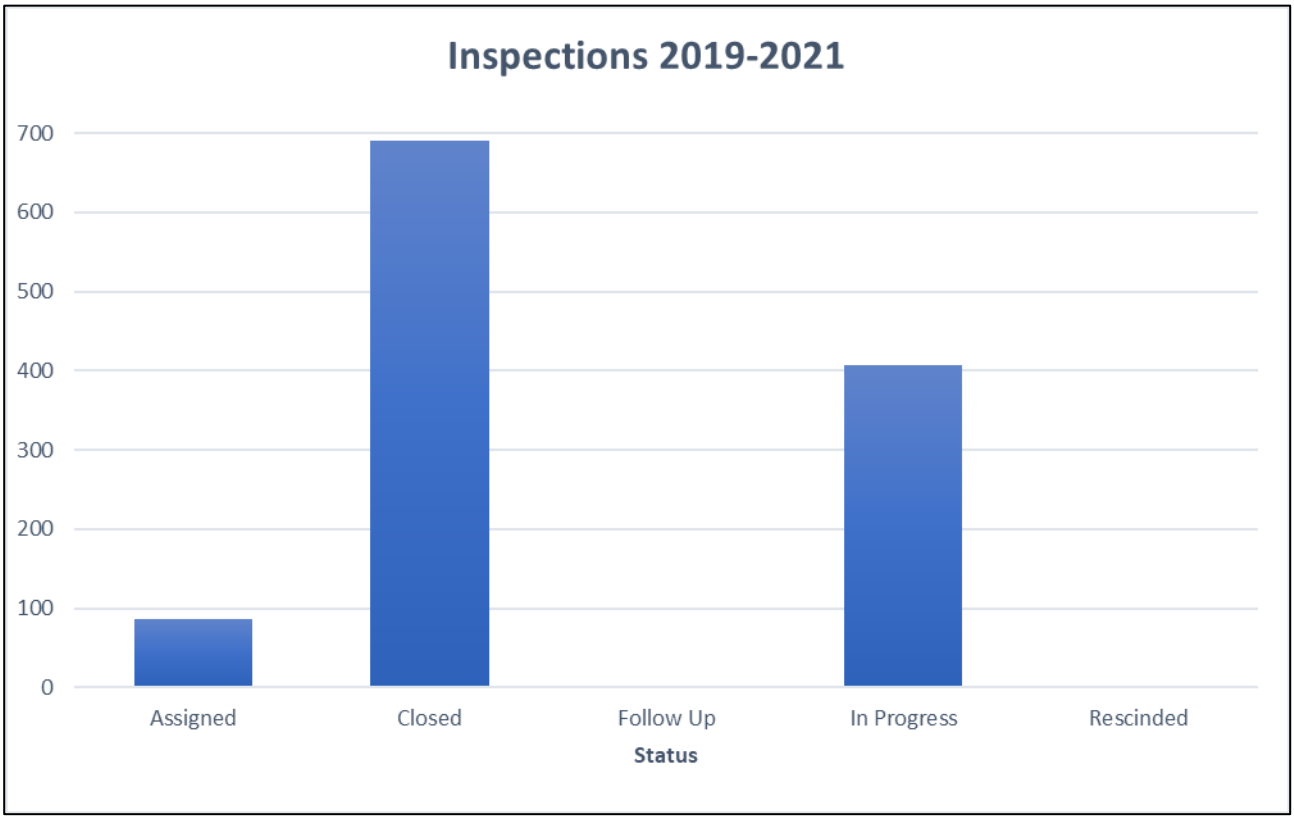
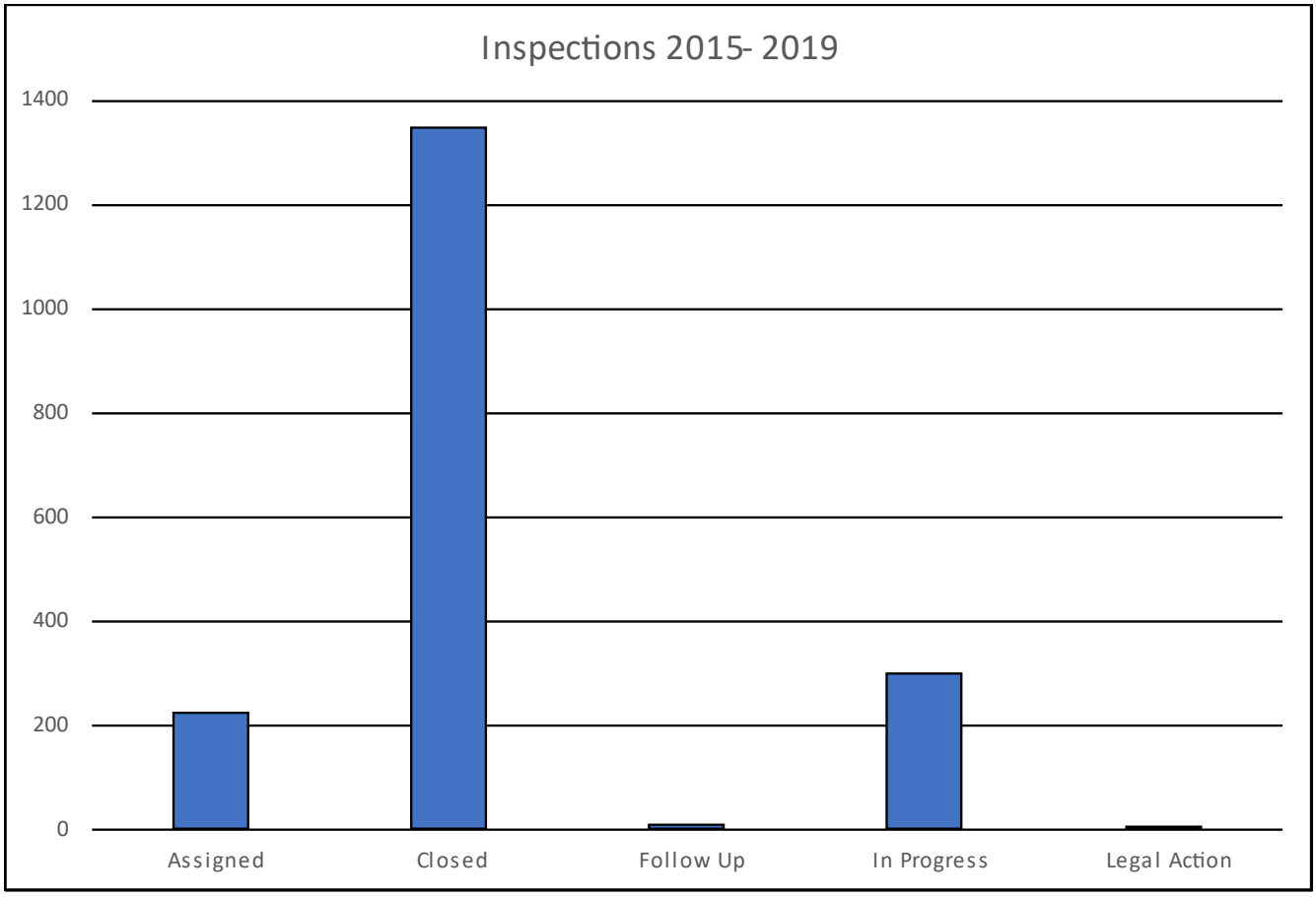


FIGURE #5: INSPECTION METRICS 2016 TO 2018



Through the utilization of the FUS Inspection Frequency Chart (figure #5), the CFD can measure requirements to meet inspection benchmarks and developing a plan on what can be accomplished with its present staffing complement, along with presenting options for increasing inspection frequencies. The utilization of this inspection chart can also prove beneficial in the fire chief to review for staffing needs.

TABLE #5: FUS SUGGESTED INSPECTION FREQUENCY CHART

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

It is acknowledged that the FUS suggested frequency chart can be difficult to address, therefore priority should be focused on the vulnerable occupancies (e.g., nursing homes, retirement homes, group homes, etc.), institutional buildings, assemblies, multi-residential and industrial buildings. The required annual inspection of vulnerable occupancies[9], of which there are currently 20 sites in the Town of Cobourg, is not being completed. This is of particular concern and a critical risk-management liability that needs to be addressed.

While suppression personnel have been utilized to support public education and community engagement activities, they could be better utilized in supporting the CFD prevention efforts through targeted inspections in areas of concern. To ensure these inspections are carried out in a knowledgeable manner, it is recommended that new suppression personnel to the CFD be already trained to the NFPA 1031, *Inspector Level I* and NFPA 1035, *Fire and Life Safety Educator Level 1* qualification.

[9] O.Reg.364/13: Mandatory Inspection – Fire Drill in Vulnerable Occupancy, FPPA, 1997, S.O. 1997, c.4 Retrieved October 30, 2022, https://www.ontario.ca/laws/regulation/130364.

4.2.2 Origin and Cause

The fire service is mandated to determine the origin and cause of fires. The E&R By-law No. 057-2012 states that "The Cobourg Fire Department will provide fire cause determination and/or fire investigation services…" The results of these investigations assist in identifying trends which are used in the development of building and fire codes, public education, and fire prevention initiatives.

Typically fire investigation is a part of a fire prevention officer's role. For a member to be successful, the fire investigators should have successfully completed NFPA 1033, the *Standard for Professional Qualifications for Fire Investigator* and become a certified fire investigator. Knowledge from determining origin and cause assist in targeting groups or causes to better educate the public on fire safety. Another purpose is to ensure fire code compliance (i.e., were there working smoke alarms). It is recommended that all fire prevention division personnel be qualified as per NFPA 1033 as certified fire investigators.

4.2.3 Public Education

CFD is underperforming in delivering adequate fire prevention and public education programs with available resources. With a full-time Fire Investigator/Public Fire and Life Safety Educator (FI/PFLSE) in place, this programming and person(s) would be responsible for teaching fire safety to all ages and in a variety of formats and settings. Numerous partnerships with local businesses, media outlets and other city entities such as the library could be established that aid in the delivery of this public education programming. It is recommended that efforts be increased to leverage social media platforms and develop partnerships with internal and external stakeholders that would support advancement of public safety messaging campaigns.

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

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

The utilization of existing resources is a cost-effective option for the promotion of fire prevention and public education programs.

The CFD utilizes suppression personnel to support the smoke alarm program, the school program, fire station tours, community event appearances and distributing public safety material. Opportunities exist to enhance these programs and to implement innovative approaches with support from within

CFD. It is recommended that consideration be given to training all Suppression personnel to Fire & Life Safety Educator I.

Determination of Current Staffing Requirements

To assist fire departments in the determination of present and future staffing needs, NFPA 1730 *Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation and Public Education Operations*, outlines a five-step process within Annex 'C' of the standard. Ultimately, it is the municipal council that determines the level of fire prevention based off the local needs and circumstances of the community.

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

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

1. Identifying the scope of desired services, duties, and desired outputs.
2. Review of the Fire Prevention Division's overall time demands in its efforts to offer services.
3. Review of hours presently documented, coupled with the hours required to meet annual goals of the branch.
4. Actual availability of branch personnel factoring in vacation and other absences.
5. Estimating total number of personnel required based on the previous four steps.

By completing this process, it will assist the CFD in further identifying what services it not only wants to offer, but what it can actual deliver based on present staffing levels and shift schedules. More information on this staffing equation can be found in the NFPA 1730 standard.

4.3 Training and Education Division

A fire service is only capable of providing effective levels of protection to its community if it is professionally trained (and equipped) to deliver these services. Firefighters must be prepared to apply a diverse and demanding set of skills in a safe manner to meet the needs of a modern fire service. Whether assigned to operations, training, fire prevention (community risk reduction), or administration, staff must have the knowledge, skills, and abilities necessary to provide reliable fire protection.

Regarding training and professional development, NFPA 1201, *Providing Fire and Emergency Services to the Public* notes:

4.11.1 Purpose "The FESO shall have training and education programs and policies to ensure that personnel are trained, and that competency is maintained to effectively, efficiently, and safely, execute all responsibilities."[10]

NFPA 1500 Standard on Occupational Safety, Health, and Wellness Program states that:

5.1.1. "a fire department shall establish and maintain a training, education, and professional development program with a goal of preventing occupational deaths, injuries, and illnesses."[11]

NFPA 1500 also states that:

> "…training programs should include but not be limited to the following: community risk reduction (fire prevention, public education, investigation, etc.), health and safety, fire suppression, emergency medical, human resources (leadership, supervision, interpersonal dynamics, equal employment opportunity, etc.), incident management system, hazardous materials, technical rescue, information systems and computer technology, position-specific development (fire fighter, company officer, chief officer, telecommunicator, investigator, inspector, driver/operator, etc.)."[12]

The expectations of knowledge and skill placed on the modern firefighter are higher than they have ever been. Community fire protection demands a high level of training and qualification in all aspects of prevention, suppression management and administration. The broad spectrum of disciplines and the skills they carry is challenging. When the decisions made at an emergency scene may literally be life or death, the reliance on strong skillsets is of the utmost importance. The CFD has no Training Officer position and has no staff operating in this capacity. Lack of training records, reliable or non-existent, made statistical and any meaningful metrics analysis impossible during the fire master planning process.

[10] "Standard for Providing Fire and Emergency Services to the Public," Retrieved October 30, 2022, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1201

[11] "Standard on Fire Department Occupational Safety, Health, and Wellness Program," Retrieved October 30, 2022, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1500

[12] NFPA 1500 Annex A.5.1.1

Staffing Levels & Workload

For the CFD, technical training is one of the critical areas of risk-management concerns that is currently unaddressed in the absence of a Training Officer position. The E&R By-law No. 057-2012 indicates that the Department is composed of several divisions, one of which being in section 16, (a), (iv) – Division of Training. This position and individual should be responsible for the planning, development, and implementation of training programs for the approximately 40 members of the CFD. During EMG's review of the training and education programs, it was evident that the current CFD fire chief is endeavouring to address training gaps and liabilities. However, the CFD is significantly underperforming in this critical area in terms of coordinated, adequate, consistent, and documented training records, including records management and a learning management system.

The CFD does provide technical rescue services as per the E&R By-law No. 057-2012, which means the CFD is expected to be able to perform emergency response and rescues at an operations level of hazardous materials as defined by NFPA 472. Additionally, the CFD is to provide operations level confined space rescue as defined by NFPA 1670. At present members are only trained and permitted to respond at the awareness level of training. There is also no reference in the by-law of elevator rescues which needs to be at the operations level and training subsequent of TSSA standards. Given the current building stock with elevators as well as the anticipated growth of multi-story building construction in the Town of Cobourg, this omission of technical rescue services should be addressed by the CFD.

For the department to provide a rescue above straightforward fire rescues, the Town of Cobourg would need to approve it through an updated and current E&R By-law, the equipment would need to be acquired and training programs developed which would give the members the ability to enhance and maintain their skill sets. If a technical rescue is required, under the CFD's current service model, members would attend and await the arrival of another rescue service to mitigate the rescue situation, which could take several hours before their arrival.

It can be very difficult under the current staffing structure to deliver training to those members on duty due to the number of times the training would be interrupted by incoming calls. To help alleviate this challenge, it is advisable that a workflow assessment/gap analysis be undertaken to compare current program delivery expectations and outcomes to that of the CFD anticipated objectives. An internal training review is needed to address any identified gaps or omissions in the CFD training program.

Another requirement is the documentation of completed training. This was done by way of hard copies which in many cases are incomplete in the description of the training outcomes and how they

were achieved. Hard copies are difficult to file, and they may become misplaced or damaged and difficult to retrieve. At present there is no learning management system (LMS) in-place.

The CFD requires a proper training program that can be made available on-line for components that do not require any hands-on tasks. This online program could also be used as a records management system for training records. This electronic format would allow for ease of updating and review by the fire chief to ensure that all required training is being accomplished. The lack of a proper record management system for training assignments and reports needs to be addressed.

4.4 Training Facilities

The CFD does not have a training facility to conduct regular hands-on programs such as live fire training and other specialized programs that require more training props outside of those available at the fire station. A training facility would benefit the CFD by ensuring that all firefighters are professionally trained to do their job. A facility which is on a large parcel of land allows the department to conduct many different training evolutions.

Live fire training is critical part of the instruction and ongoing training for firefighters. It teaches them how to fight fires safely and effectively in a controlled setting under supervision. This aspect of training reinforces for company officers and firefighters how to think clearly and act calmly under the stress of an emergency when lives are at stake, and every second counts.

Even though a great deal of training can be accomplished through video training, in-class training and even some hands-on training at the fire station. There is a need for actual live fire training by all the suppression staff. Unfortunately, CFD lacks a proper training facility to conduct regular hands-on programs, such as live fire training and other specialized programs that require more training props outside of those available at the fire station.

While CFD does not have a training centre within its municipal boundaries, CFD has made significant utilization of the alternative option of the Hastings Prince Edward Mutual Fire Aid Training Complex in Trenton, Ontario. Trenton is approximately 1 hour away.

However, due to the travel distance and time, attendance at the Hastings Prince Edward Mutual Fire Aid Training Complex or any other training facility takes considerable planning, funding, and resource management. As always, the cost benefit comparison of utilizing an external, third-party training centre, versus opportunities to training internally are important to ensure a fiscally sound fire department operation.

The cost of designing, developing, and maintaining a training centre can be cost prohibitive for a community like the Town of Cobourg. Many smaller and mid-size departments have opted to purchase

a mobile training unit that has multi-training capabilities. The advantage of having access to such a unit is that it can be parked at a fire station and does not require a full site-specific yard/compound to use. Another advantage of such a unit is that it can be moved between fire stations or even rented out to other communities on a scheduled basis as a method of revenue generation.

The cost of these units can range greatly based on if it is purchased through a vendor or is an in-house design. The advantages of purchasing from a vendor is that all structural and engineering approvals have addressed. The unit noted in the following photo is approximately $500,000.00.

The range of building such a unit can range from approximately $100,000.00 to $500,000.00. Whether it is a used, rented or wholly purchased unit, the overall goal is to ensure that the firefighters are provided with live fire training on an annual basis.

It should be noted that the OFM has two Live Fire Training Units available. However due to the many Ontario fire departments vying for the use of the Units, the availability is a limiting factor should any long-term utilization of a Live Fire Training Unit be considered.

FIGURE #6: MOBILE LIVE FIRE TRAINING UNIT (MLFTU)

As an alternate solution, there is also the possibility of a "public-private" partnership that may be possible where funding is secured between a municipality and third-party agencies that have a vested interested in fire suppression training.

A growing trend for training facilities is the use of shipping containers (also called sea-cans) due to the ease and flexibility of modifying the shipping container to design a facility that meets the NPFA 1402 Standard on Facilities for Fire Training and Associated Props. The use of shipping containers allows a fire department to custom design a facility that specifically meets their needs and allows expansion at a low cost in the future.

A two or three-storey structure for ladder training and firefighter emergency exiting such as bail out procedures from a second storey window can easily be accommodated with a shipping container training structure. A propane fed system can provide environmentally friendly fires for suppression and advanced training in fire flow behaviours. The designs are limitless in terms of what a department wants to incorporate into the facility and an analysis of what the fire department requires must occur to ensure that taxpayers' dollars are spent in the most efficient and cost-effective manner. While considering the possibility of new fire station locations, it may be cost-effective to build a small-scale training facility at the same time while ensuring the necessary space is considered for this new facility.

The fire department that responds to multi-storey structures must have a training facility that at the very least be a two-storey structure with preference being at least three or more storeys. A two-storey structure can be designed to replicate a modern apartment floor plan for ladder, search and rescue and emergency bail out training. A new training facility must have concrete pads for auto extrication, hazmat training, and a car fire prop.

***Note: Prior to the building of such a facility, the fire chief would need to ensure that all environmental requirements are met by the contract. This could include the installation of proper run-off, catchment systems for contaminated water, and a properly engineered foundation for the facility.*

The benefits of the hands-on practical component of a small-scale training facility are numerous as firefighters can develop new skills, maintain existing skill sets and gain confidence in equipment and tactical strategies. The practical training improves firefighter safety and reduces work related injuries. Live fire burn training is an invaluable training tool to improve a firefighter's skills and confidence when facing heat, smoke and understanding the science of fire flow paths.

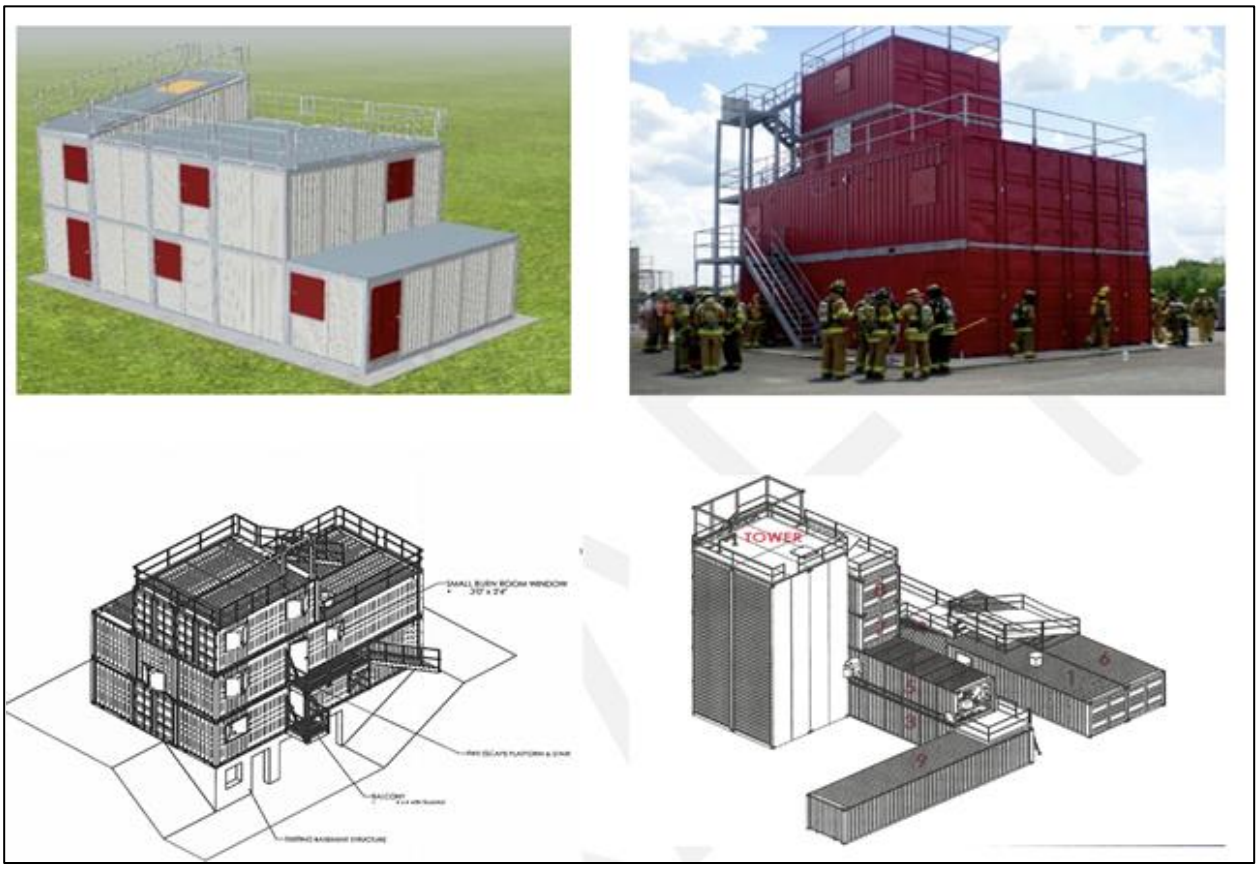
An often-overlooked aspect of a training facility is building situational awareness in fire officers. The fire officer is responsible to minimize the loss of life and property and to ensure that firefighters on scene are safe. A fire officer must conduct a rapid assessment of the situation during times of stress and while countless bits of information are bombarding the Officer. The ability to make good decisions is based upon recognition primed decision-making process. These factors are of key

importance for the fire department as the number of structure fires is low volume and regular exposure to live fire training ensures that firefighters and officers can maintain their skills.

The most important objectives for supporting a new training facility for the fire department include the benefits to firefighters as they develop and maintain skills, and to officers as they gain new situational awareness through continuous exposure to real life scenarios.

A new small-scale training facility will vary in price from $200,000-$700,000 depending upon the options that meet the needs of the fire department.

FIGURE #7: TRAINING FACILITY EXAMPLES



A well-designed small-scale training facility that meets the needs of the fire department will have many benefits that include:

- A satellite centre that can offer certified NFPA 1001 firefighter related training as well as specialty rescue skills in NFPA 1006 and Driver/Operator as per NFPA 1002.
- A significant cost savings for the FD as they can provide improved training for all volunteer firefighters without them having to travel.

The purpose of live fire training is to provide realistic fire training evolutions under safe and controlled conditions. Live fire training evolutions are intended to simulate the actual fire conditions that a firefighter may encounter such as fire spread, high heat, humidity, restricted vision, and smoke conditions. This training must comply with NFPA 1403, *Standard on Live Fire Training Evolutions*.

The current editions of the NFPA professional qualification standards require fire service members to "remain current" with the knowledge and skills related to their qualifications or certifications. This need for knowledge and skills proficiency has been expressed in various ways in the NFPA professional qualifications and training standards for at least a decade. Advancements in fire science reveal that continuing education in the fire service goes beyond maintenance of initial skills and core competencies. It is necessary to ensure that firefighters are current with changes in suppression and ventilation techniques, building construction, fire behavior, personal protective equipment, firefighter health and safety.

As such, industry best practices indicate that firefighters should be participating in live fire training exercises at least annually. This type of hands-on training and exposure to heat and smoke conditions should be considered a mandatory component of the fire department's comprehensive training program.

EMG recommends that all firefighters receive live fire training on a regular basis. At a minimum, all recruit firefighters receive during initial training phase and that incumbent firefighters receive live-fire refresher training, assuming they have received live-fire training previously.

In consideration of above, EMG recommends consideration of a training facility/mobile training unit that provides live-fire and other training opportunities internally. The other option is to secure the use of an outside facility on a regularly scheduled basis to ensure that all firefighters are provided with this critical life saving training.

The fire service continues to be tasked with a wide array of responsibilities and the CFD is no different. The importance of maintaining and building on the fireground knowledge, skills and abilities that derives from live fire training should not be underestimated. Firefighter and civilian safety rely on effective and efficient fireground activities and live fire training is central to that approach.

Following a review of the CFD annual training program it is apparent that live fire training has not been completed.

It is recommended that live fire training become an annual occurrence. Any impediments to delivering this training should be identified and addressed in the short-term.

4.4.1 Commission on Fire Accreditation International

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

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

The CFD is aware of the program needs and facility requirements and is tracking much of this; however, to verify in a more formal manner that training is meeting the related NFPA program recommendations the fire chief, should identify:

- What training programs are required in relation to the services that the CFD is providing.
- The number of hours that are required to meet each of those training needs.
- Resources required to accomplish this training.
- Joint partnerships with bordering fire departments and private organizations that can be entered to achieve the training requirements identified.
- An annual program outline at the start of each year to the fire chief with noted goals and expectations and completion success rate.

To complete the evaluation of the CFD training programs and related successes in meeting the training needs of the firefighters, EMG is suggesting the following:

- Continue to support training and certification for each rank and position within CFD.
- The fire chief should annually review training programs and costs to ensure that all efficiencies are identified to keep costs fiscally responsible.
- Continue to work with regional partners to run joint training sessions.

NFPA Certification

All firefighters and officers are required meet the requirements for the appropriate NFPA standards. Firefighters, fire officers including fire prevention and public education officers undergo written and practical exams, and job performance requirements under direction from the fire chief, to meet the required standards. [13]

Recruits

Recruit firefighters undergo a training program that includes departmental procedures and operations of vehicles and equipment and medical training. New recruits have generally completed NFPA 1001, I & II during their pre-fire training. During recruit training, is an opportune time to review many of the key components of NFPA 1001, as a review during orientation. This would ensure they have and are maintaining the necessary skills to perform their duties safely and effectively as firefighters. The CFD is well-positioned in this regard and needs to monitor and maintain this level of training and certification with new hires and promotions.

Firefighters

Firefighters should complete a refresher course that also aligns with the NFPA Fire Fighter I & II, every year with theory and practical evolutions as time and conditions allow. This ensures technical training, knowledge, and skills are maintained.

[13] O.Reg. 343/22: Firefighter Certification, FPPA, 1997, S.O. 1997, c.4. Accessed on November 3, 2022, https://www.ontario.ca/laws/regulationr22343

Company Officers

All company officers (captains) should be trained to NFPA 1021 Level II. This ensures that OFM Ontario training and certification standards requirement is being met. The CFD is well-positioned in this regard and needs to monitor and maintain this level of training and certification with new hires and promotions.

Section 4 - Recommendations

Rec #	Recommendation	Rationale
7	The Town should create a second administrative assistant part-time position.	This recommendation supports senior leadership and department strategic and operational functions as well as addresses the risk liability of records management.
8	The CFD needs to fill the full-time CFPO position with permanent staff as well as create and hire a Public Fire and Life Safety Educator (PFLSE)/ Fire Inspector to expand the current initiative in fire prevention and fire and life safety service level delivery. They need to be certified to the required NFPA credentials.	Ensuring that staff possess the noted NFPA credentials will enhance a fire safe community and address the risk management liabilities that currently exist with the CFD and the TOC.
9	Fire Department personnel be qualified as per NFPA 1033 as certified fire investigators.	As a composite department with full-time staff, the fire prevention division staff as well as full-time officers should possess the qualifications to conduct their own initial fire investigations.
10	Efforts be increased to leverage social media platforms and develop partnerships with internal and external stakeholders that would support advancement of public safety messaging campaigns.	This recommendation continues to support what is viewed as the first line of defence, which is public safety education.
11	Consideration be given to training all current Suppression personnel to NFPA 1035 *Fire & Life Safety Educator Level I.*	Having staff trained in fire safety education increases opportunities to promote lifesaving messages publicly.

Rec #	Recommendation	Rationale
12	The CFD to identify, develop, and hire a full-time Training Officer (TO) position. That position should be filled with a qualified NFPA 1041, *Fire Service Instructor* staff to ensure the delivery of training and address the training risk-management liability of status of the CFD.	The CFD needs an individual responsible for planning, developing the training programs, scheduling, documentation, implementing a learning management system, and ensuring all the CFD staff are adequately trained to consistent and competent levels. This also addresses the health and safety of all CFD staff.
13	Conduct an internal review of workflow compared with training outcomes. Any identified gaps should be addressed to ensure complete and consistent delivery of high-quality training.	A full review of the CFD training programs is recommended to identify any possible gaps in the CFD training program.
14	CFD to utilize an on-line training or learning management system which not only delivers training but maintains training records as well.	With the advance of technology, many training programs can be offered and completed in an online/virtual format. This provides flexible options to both the department and staff. Many of these programs have built-in records management systems, which would be an improvement to paper-based systems.
15	CFD should secure resources required to ensure annual live fire training is provided to all personnel in accordance with NFPA 1403, *Standard on Live Fire Training Evolutions.*	A full assessment should be completed based on the level of services offered to the community, as per Establishing & Regulating By-law, coupled with training requirements to ensure that all firefighters are trained to deal with actual fire conditions.

Rec #	Recommendation	Rationale
16	It is recommended that the CFD ensure adequate technical training resources (staff and programs) are funded to maintain qualified company officers, prevention, and education officers to NFPA 1021 Level II minimum.	This level of training and certification is now mandated by the OFM, all fire officers and firefighters should be trained to ensure consistency in knowledge and skills.

People Optimization

SECTION 5

SECTION 5: PEOPLE OPTIMIZATION

The Town of Cobourg has developed and created a corporate strategic plan with pillars that supports and identifies the importance of their People Plans. Developing a Human Resources Plan that manages future demands and provide a plan for succession as well as encourage healthy lifestyles and wellness. The plan will also include leveraging of the Equity, Diversity, and Inclusion EDI Strategy to promote inclusion in the workplace and within programs and services.

People management is a major leadership function for a municipality which is designed to enhance employee performance for the delivery of professional services. People Optimization is primarily concerned with how people are managed within organizations, focusing on processes, practices, and systems. These processes and practices are responsible for several activities:

- Employee recruitment
- Training and professional development
- Performance appraisal
- Recognition and rewards
- Employee and labour relations
- Health safety and wellness

These systems are developed in conjunction with balancing organizational practices along with regulations arising from collective bargaining and legislation.

The following table is a review of the current People Optimization features as discussed during our focus group interview sessions with fire management, staff, and the human resources leadership team. This analysis outlines possible impacts on organizational effectiveness and demonstrates attributes that may influence the ability to provide a level of fire protection service as delivered by the CFD and the Town of Cobourg.

TABLE #6: PEOPLE OPTIMIZATION – IMPACTS AND ANALYSIS

People Optimization (OP) Feature	Fire Service Impacts and Analysis
Talent Management	**Goal:** The Town of Cobourg supports and develops strategic People Optimization plans to recruit, retain, develop, and grow their personnel to reach optimum potential while providing the best services to their residents. *Current State: Recruitment and Selection* • No competition strategy currently in place. • Volunteer recruitment strategy required to address retention. *Management:* • The chief position is secure and brings extensive senior fire service leadership. • Deputy chief position currently vacant • Administrative support proposed. *Full-time* • Current complement 18. Absence of training officer position • Fire prevention and public education resources needed. • Vacancies in captain position *Volunteer FF* • Current complement 15. • Vacancies in total complement number. *Recruitment Methodologies* Fire management and HR are working collaboratively reviewing all recruitment programs, practices, and processes currently in place. • Working in collaboration with municipal comparators.

People Optimization (OP) Feature	Fire Service Impacts and Analysis
	• Current practice has HR working in collaboration with the CFD recruitment campaign and sourcing program. • Volunteer Fire Fighter Recruitment Guide developed and has been identified as requiring updating. *Corporation Gap:* Succession planning assessments have not been addressed or created.
Organizational Development (OD)	**Goal:** Creating a Learning and Development Program that supports People's continued career growth. *Current State:* • Professional development programs including mentoring and coaching being reviewed by fire management and HR. • Reviewing new performance management program and fire service processes and practices • Reviewing and analyzing current promotional process • Organizational review currently being developed including recommendations for corporate governance. • Succession Planning program incomplete *Corporation Gap:* • Developed and established competent supervisor program. • Lack of structured performance reviews; training, promotion strategy. • Training needs assessment and a matrix be developed and implemented. • Leadership development – officer training program to be developed.

People Optimization (OP) Feature	Fire Service Impacts and Analysis
Leadership	**Goal:** Provide, clear and concise direction while developing people for the future growth potential. *Current State:* • New CFD leadership in place with extensive senior leadership experience • No formal training program or matrix in place • Senior staff intellectual capital lost with retirements. *Corporation Gap:* • Developed People and performance plans. • Formalized and implement leadership programs and initiatives
Employee Engagement	**Goal:** Provide recognition and rewards programs and initiatives that your employees value and assist in representing corporate culture. *Current State:* • Solid team environment with strong employee commitment and engagement. • Informal approach to recognition. *Corporation Gap:* • Currently no formalized reward and recognition programs in place.
Labour Relations	**Goal**: Fire labour relations refers to the process and relationship between the Town of Cobourg and the Cobourg professional firefighter's association to address the terms and conditions of employment for firefighters while providing fair and reasonable labour relations practices within legislative provisions.

People Optimization (OP) Feature	Fire Service Impacts and Analysis
	Current State: • Positive management and association relationship with regular quarterly labour management meetings • Current agreements in place and expiring Dec 31, 2024 • Memorandum of understanding (MOU) volunteer fire fighters (requires updating – expired December 31, 2021 *Corporation Gap:* Update volunteer and firefighter agreement with current terms and conditions of employment
Health Safety and Wellness	**Goal:** Providing a robust health, safety, and wellness program that meets the employees needs and legislative requirements. *Current State:* • Review of current joint committee terms of reference and working collaboratively with the corporate committee • Health and safety committee in place and active with all members certified. • Work life balance needs to be assessed and reviewed. • Call outs / hours of work – impacts under the *Employment Standards Act* practices. *Corporation Gap:* • Currently not following chain of command language and protocol structures • New staff – need an understanding of CFD policies and procedures. • New research findings on risks for occupational stress injuries among Canadian first responders.

People Optimization (OP) Feature	Fire Service Impacts and Analysis
	• Review and update post-traumatic stress disorder (PTSD) plans and programs
Corporate Culture	**Goal:** The Town of Cobourg supports and cares for the social and physical well-being of its citizens while leveraging the EDI Strategy to promote inclusion in the community, develop a Human Resources Plan to manage demands and plan for succession, and encourage healthy lifestyles and wellness. *Current State:* • Well-developed corporate strategic plan in place with ongoing implementation. *Corporation Gap:* • Equity diversity and inclusion, need to increase inclusion activity in all aspects. • Connecting to corporate policies, SOGs, procedures, and programs • Review of current departmental structure based on current and future needs

5.1 Talent Management

The Town of Cobourg's Strategic Plan: People Pillar – Human Resources Plan to manage demands, refers to a plan for succession.

Talent management is defined as a methodic and strategic approach and process of obtaining and retaining the right talent. It also provides an environment for employees to grow to their optimal potential, reaching any organizational objectives. The process identifies talent gaps, appropriate sourcing, retention strategies and on- boarding approaches. Creating a strategy for developing, growing, and engaging your intellectual capital for an impending focus to achieve long-term municipal fire service goals.

When organizational departments establish and execute a talent management strategy that links to the corporate strategy the benefits create a positive and connected workplace. A CFD talent management best practice process should be developed, and in place for recruitment and retention. Succession plans will be aligned for organizational achievement and strategic goals.

One popular strategy is to institute programs aimed at their high potentials. These are personnel that companies believe may possibly become their future leaders. Talented managers are enticed to companies that are recognized for their robust development opportunities, and having a well-managed procurement of talent will therefore dramatically increase the odds of appointing successful leaders.[14]

5.2 Succession Planning

Succession planning in the fire service can often be an overwhelming responsibility. Succession programs are about identifying and creating opportunities for personnel to be exposed to the roles and responsibilities of senior positions. This can support their advancement to senior positions within the municipality when opportunities for advancement evolve. These programs are also effective at providing not only career development, but often help to boost morale. Personnel relate to the CFD being committed in their success and that of their co-workers.

The CFD should develop and implement a succession planning program.

The following steps should be undertaken to formalize this initiative:

[14] Fernandez-Araoz, Claudio, Groysberg, Boris and Nohria, Nitin, *How to Hang On to Your High Potentials,* Harvard Business Review, October 2011.

- Identify roles and responsibilities of all officers and update and/or create position profiles.
- Determine qualifications and core competencies necessary to succeed in these roles.
- Identify training and certifications that will meet the desired qualifications.
- Determine a methodology for selecting and supporting the CFD personnel to participate in the program.

To build potential leaders for the CFD, the Department should start planning and developing personnel through programming that enhances current staff and as well prepares the Department for growth and to ensure organizational excellence.

5.3 Recruitment and Retention Part-time / Volunteer Firefighters

Recruitment and retention of the volunteers is becoming more of a challenge within the fire service. This is primarily due to the increase in training that must be completed on an annual basis. Furthermore, there is a high level of staff turnover as a result of either volunteers obtaining employment outside of the community or due to family/personal obligations.

The following are a few reasons that prevent individuals from applying for part-time / volunteer roles within their community fire department:

- Lack of time, no time to volunteer.
- Not informed of any opportunities and job responsibilities.
- Conflicts with current work arrangements
- Lack of time for training.

As with many fire departments, the daytime hours from Monday to Friday are the greatest challenge for volunteer response due to fact that many volunteer firefighters are either at work, school, or taking care of family. While some issues may be uncontrollable, other issues can be mitigated such as conflicts within the organization, leadership, training, attitudes, criticism, and camaraderie.

The CFD has had an ongoing recruitment program and is currently reviewing it to make improvements and targeting new recruits within the community. This initiative could be extended to include signs being posted in the Town as well as notices placed on social media platforms. Members of the CFD have also been spreading the word that the fire department is looking for new members.

Consideration of the following should be included when reviewing and implementing recruitment and retention programs going forward:

- Rebranding and marketing the fire service as being a part-time /volunteer opportunity as some newcomers may not be aware of the job responsibilities and required commitment.
- A deteriorating sense of community among the population. This could be due to the fire department not adequately reflecting the diversity of the people it serves.
- The ratio of men versus women in the fire service giving the misconception that a department is looking for firemen vs firefighters.
- The lack of the fire department fully connecting with the community by promoting the activities and services provided by the CFD.
- The lack of structured pay / honorarium for time served assisting the department at calls, during training or public education and relations events.

It is suggested that a proactive approach be taken to recruit new members. This may include:

- Placing regular ads in local media such as newspapers, rate-payers association newsletters and websites along with working with local radio stations to provide public service announcements about the recruitment.
- Posting notices on social media such as Facebook, Twitter, Instagram, and home page of the Town of Cobourg website including increasing the fire department profile by posting pictures of the firefighters in action and statistics on social media outlets.
- Posting signage in the front of the fire station may yield interest.
- Develop a recruitment video and use local students to help develop and film the video as part of their required community service time.
- The CFD could begin to recruit new members early through a Junior Fire Fighter program. This has been very, successful in the United States and is beginning to grow in Canada as a means of gaining interest in the fire service at an early age. The local youth centre would be a great asset in seeing this to fruition. Ensuring those that join the program feel that they are valuable and accepted to the department family.
- Promote and conduct an information night at the fire station for potential new members to drop by to see what being a firefighter is all about. Encourage attendees to bring the entire family and have activities for children to promote that the fire service is a family unit.

- During the information sessions, members of the department could provide tours of the station and apparatus. Administration would outline the expectations of members of the department such as the number of fire calls and training sessions they must attend; satisfaction gained knowing that you're helping your neighbour on the worst day of their lives; describe the life-long friendships that are started; understand what true teamwork is like and the bond that is garnered between firefighters.
- Diversity can only thrive in a welcoming, inclusive environment. This will require a plan on making new members feel accepted and welcomed. There needs to be a change in attitudes and overall fire department culture. Include a focus on reflecting residents, social and faith groups, and businesses in the community.
- Fire departments tend to recruit in a one-dimensional fashion which is not always successful. Departments need to adapt the recruitment strategies to better suit the individuals in the community and recruit those that believe in the department's objectives.
- Establish a recruitment committee comprising of representative community members of the CFD and the Town of Cobourg.
- The building of new fire station may peek a potential new recruit's interest and could be the turning factor for some to wish to join the department.

5.3.1 Retention

The issue of retention has been identified as a challenge with just about every volunteer fire service in North America. There are numerous reasons for personnel leaving including feelings of being under appreciated by the municipality, time and effort required for both training and response, as well as a firefighter's family not being recognised for the commitment of their family member to the community.

Opportunities to increase retention may include:

- Assign a seasoned member to mentor each recruit when a new member joins the department.
- Conduct a firefighter appreciation events (e.g., dinner, BBQ) where members and families are recognised by Council for their long term, outstanding service, or something exceptional that individual firefighters did at a call.
- Council take time to acknowledge, the employers, of the firefighters for permitting their participation in the fire department and/or permitting them to leave work to attend fire calls.
- Survey other fire services to compare pay rates and adjust accordingly.

- Implement a service recognition pay incentive. This might include paying extra in the form of a 5 to 10% pay increase for every 5 years they have been on the department; this would prevent the loss of years of experience.
- Performance pay for those who reach high percentages of attendance at training sessions and fire calls.
- Offer comprehensive benefit packages as many may not have benefits at their place of employment, and some are self-employed. Such packages would include basic dental, drug, eyewear coverage and employee assistance programs (EAPs).
- Purchase a wellness benefit package for the firefighters such as mental, financial, and family counseling.
- Engage in treating PTSD, which is a common illness among fire responders.
- Offer a RRSP/pension savings plan with contributions from the Town of Cobourg after they have been a member of the department for a predetermined length of time.
- Provide excellent training opportunities to make them want to remain a member of the fire department. Make the training sessions enjoyable and memorable.
- Recognition and support of those who want to attend regional courses, which sometimes requires firefighters using their vacation time from their full-time employers.
- The implementation of an "on call or platoon" program that would pay a week or weekend stipend to the volunteer firefighters who commit to being available by signing up for weekdays and/or weekends.
- Education assistance programs to support staff in their professional development.
- Maintain and improve morale by providing modern trucks, equipment, and stations.
- Provide strong leadership that focusses on the mission, vision and values of the department and connect to the corporate strategic plans while resolving conflict resolution in a timely manner.
- Conduct exit interviews with those that leave the department to understand their reasons for leaving. While there may be simple reasons, there could be a more complex issues that are occurring such as taunting, bullying, harassment, a feeling of not being welcome, etc.
- Foster the history of the fire department by sharing pictures of past members, events, apparatus, to instill a sense of pride on how far the department has grown.

The CFD may have in fact tried some or many of these suggestions, however, it is the ongoing efforts and consistency in demonstrating gratitude and appreciation that will enhance the CFD recruitment and retention efforts. Some of the above suggestions may imply an expense, but with the value of keeping trained personnel longer, which will save on constant training of new firefighters.

Part-time / Volunteer Firefighter Complement

The CFD has a current roster of 15 volunteer firefighters to call upon when an emergency arises. They are called out to attend motor vehicle collisions (MVCs), fire alarm calls, and many incidents where additional firefighter resources are required. While a high percentage of the calls the CFD responds to are medical-related, the part-time firefighters are an asset to the community and this model of fire department resource deployment should continue. The utilization of part-time / volunteer firefighters to increase current staffing when there is an inundation of calls, is an excellent risk management model. Having this capacity of resources enhances the CFD operational capabilities. Increasing the roster of part-time / volunteer firefighters is recommended.

5.4 Organizational Development

Organizational development focuses on improving a municipality's capability through the alignment of corporate culture, strategy, structure, people, rewards, metrics and management processes and practices. The functional area of organization development involves continuous systematic approaches, problem solving and enhancing organizational performance.

Through our discussions with the CFD leadership and Human Resources, currently plans are in place to work on the development and creation of organizational development programs that link to both the department and the corporate strategic plans. This will be an important area for preparing for the future departmental demands and changing workforce.

The movement toward creating conditions for learning and improving the quality of human capital is paramount in high-performing organizations.[15]

[15] Carnevale, David G., *Learning, Power, and Action Research*,.(Organizational Development in the Public Sector, 2003) Page 17.

5.5 Leadership

Leadership in the fire service sector is essential and is required to deliver a modern fire service model. Fire service employees require strong knowledgeable leaders who possess the competencies of experience, confidence, leads by example, has integrity, and has innovative vision.

To operate an effective fire service, communities must develop a department composed of well trained and appropriately certified firefighters. As service demands change and the educational and practical workload steadily increases, the need to train and certify staff in effective firefighting practices requires a considerable time and effort. Along with the maintenance of EMS designations the commitment is not only cross trained firefighter EMS practitioners, but by all firefighters[16]

5.6 Employee Engagement

Employee engagement measures how employees feel about their organization. All based on their perceptions and experiences of their workplace environment, leadership, and the corporate culture.

Employee engagement is the strength of the mental and emotional connection employees feel toward their work performance, team, and organization.

Engaged employees possess an intellectual commitment and emotional bond to their employer. This in turn uncovers an eagerness to exert discretionary effort and creativity, as well a willingness to accept some personal ownership for their own level of engagement, all leading to maximized outcomes.[17]

5.7 Labour and Employee Relations

Labour relations refer to the relationship between an employer and an employee. Some elements include labour organizations, collective bargaining, labour market and government policy and legislation, the structure of the economy, labour law and any technological changes in the workplace.

Fire labour relations refer to the process and relationship between the Town of Cobourg and the Cobourg Professional Firefighters Association. This process and relationship address the terms and conditions of employment for full-time firefighters. The current Collective Agreement has an expiry

[16] Redefining Fire Committee. "Redefining Fire: The Evolving Role of Fire Departments in Canada." Https://Cdn.Ymaws.Com/Cafc.Ca/Resource/Resmgr/Reports/Redefining_fire_en.Pdf. Canadian Association of Fire Chiefs, February 9, 2020.

[17] Sheridan, Kevin, 2012. *Building a Magnetic Culture*. 1st ed. McGraw-Hill Inc.

date of December 31, 2024, placing fire and human resources management in a stable position to be prepared for the next set of collective bargaining. As many fire agreement settlements will be at the bargaining table in 2023 which establishes trends and precedents within this sector. This provides an opportunity for review and collaboration with municipal fire comparators before beginning the collective bargaining process. The results create regional consistency and a unified approach to fire bargaining.

The current approach for selecting comparators with the fire service area has been intermittent and not in collaboration with a corporate approach. A recommendation to confirm comparators using the following best practice approach and criteria is as follows; historic comparators, measures of size, population, operating budget, geographic location, number of households, a reflection of the local and regional economy and recruitment sources as well the scope of services is noted in this report below.

As well as discussed in our meetings with the fire chief and HR leaders an opportunity exists to review the current language and articles regarding the captain and acting captain promotional process to create language that speaks to normative practices and standards.

Employee and labour relations refer to an organizational effort that creates and maintains a positive equitable relationship with its employees. By maintaining positive, constructive employee relations, organizations hope to keep employees loyal and more engaged in their work. There is an opportunity to analyze, conduct a comparator review and update the current memorandum of understanding (MOU) for the part-time/ volunteer fire fighters by recommending comparative compensation and benefits.

5.8 Health Safety and Staff Wellness

The health and wellness of staff is a key focus within all municipalities and the Town of Cobourg is no exception. Due to the nature of the firefighter's position of maintaining a separate primary vocation, a focus on fitness can be overlooked. The inherit nature of firefighting is both stressful and physically demanding. During the review by EMG, it was noted that the fire station has not been equipped with exercise facilities to ensure that all staff has the ability, to keep fit. Staying healthy and fit assists in reducing work-related injuries. With any new station, it would be important to remember the inclusion of a fitness room into the structure.

Routine occupational fitness tests are delivered, internally or by a third party, by many fire departments to assess their personnel. NFPA 1582 details basic expectations placed upon firefighters. The CFD is encouraged to review these and incorporate these expectations into both candidate testing and firefighter fitness and functionality. It is recommended that, as part of a larger commitment to firefighter health and wellness, the CFD review the physical expectations of a firefighter for use in training and recruiting.

NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments* identifies 14 essential job tasks that detail the physical and physiological strains placed on firefighters. The standard outlines the requirements for a department medical program which includes certain conditions that may pose a risk to firefighting. As the core determination for the physicality of firefighting, it is important for the CFD to understand the expectations they are placing on their personnel. These job tasks are listed in the Standard as:

5.1 Essential Job Tasks and Descriptions

5.1.1 The fire department shall evaluate the following 14 essential job tasks against the types and levels of emergency services provided to the local community by the fire department, the types of structures and occupancies in the community, and the configuration of the fire department to determine which tasks apply to their department members and candidates:

- While wearing personal protective ensembles and self-contained breathing apparatus (SCBA), performing firefighting tasks (e.g., hose line operations, extensive crawling, lifting, and carrying heavy objects, ventilating roofs or walls using power or hand tools, forcible entry), rescue operations, and other emergency response actions under stressful conditions, including working in extremely hot or cold environments for prolonged time periods.
- Wearing an SCBA, which includes a demand valve-type positive-pressure facepiece or HEPA filter mask, which requires the ability to tolerate increased respiratory workloads.

- Exposure to toxic fumes, irritants, particulates, biological (infectious) and nonbiological hazards, and heated gases, despite the use of personal protective ensembles and SCBA.
- Depending on the local jurisdiction, climbing six or more flights of stairs while wearing a fire protective ensemble, including SCBA, weighing at least 50 lb (22.6 kg) or more carrying equipment/tools weighing an additional 20 to 40 lb (9 to 18 kg).
- Wearing a fire protection ensemble, including SCBA, that is encapsulating and insulated, which will result in significant fluid loss that frequently progresses to clinical dehydration and can elevate core temperature to levels exceeding 102.2°F (39°C).
- While wearing personal protective ensembles and SCBA, searching, finding, and rescue-dragging or carrying victims ranging from newborns to adults weighing over 200 lb (90 kg) to safety despite hazardous conditions and low visibility.
- While wearing personal protective ensembles and SCBA, advancing water-filled hose lines up to 2 ½ in. (65 mm) in diameter from fire apparatus to occupancy [approximately 150 ft (50 m)], which can involve negotiating multiple flights of stairs, ladders, and other obstacles.
- While wearing personal protective ensembles and SCBA, climbing ladders, operating from heights, walking, or crawling in the dark along narrow and uneven surfaces that might be wet or icy, and operating in proximity to electrical power lines or other hazards.
- Unpredictable emergency requirements for prolonged periods of extreme physical exertion without benefit of warm-up, scheduled rest periods, meals, access to medication(s), or hydration.
- Operating fire apparatus or other vehicles in an emergency mode with emergency lights and sirens.
- Critical, time-sensitive, complex problem solving during physical exertion in stressful, hazardous environments, including hot, dark, tightly enclosed spaces, that is further aggravated by fatigue, flashing lights, sirens, and other distractions.
- Ability to communicate (give and comprehend verbal orders) while wearing personal protective ensembles and SCBA under conditions of high background noise, poor visibility, and drenching from hose lines and/or fixed protection systems (sprinklers).
- Functioning as an integral component of a team, where sudden incapacitation of a member can result in mission failure or in risk of injury or death to civilians or other team members.
- Working in shifts, including during nighttime, that can extend beyond 12 hours.

The 14 essential job tasks explained in NFPA 1582 lay the groundwork for NFPA 1583 standard on health-related fitness programs (HRFP) for fire department members. NFPA states that "this standard outlines a complete HRFP for members of fire department involved in emergency operations to enhance their ability to perform occupational activities and reduce the risk of injury, disease, and premature death". The applicable portion of the standard comes from section 4.1 wherein it states:

Program Overview

4.1.1 The fire department shall establish and provide a HRFP that enables members to develop and maintain a level of health and fitness to safely perform their assigned functions.

The occupational health and safety program provides direction on performing assigned functions in a safe manner. The HRFP allows members to enhance and maintain their optimum level of health and fitness throughout their tenure with the fire department. Education, one provision of a health-related fitness program, allows a means for improving health and fitness throughout the organization. The organization needs to provide the recognition and support to ensure the promotion and success of this process. Health and fitness needs, to become a value within the organization just as safety is a value.

Data suggest a correlation between the following:

- A proactive approach to health and fitness and a decrease in debilitating occupational injuries.
- A reduction in workers compensation claims and a decrease in acute and chronic health problems of fire fighters.

Combining the health-related fitness program with a proactive occupational safety and health program provides a fire department with the level of quality needed for its members.

It is suggested that, as part of a larger commitment to firefighter health and wellness, the CFD review the 14 essential job tasks from NFPA 1582 as they pertain to their recruitment and testing process and seek options for offering personnel the ability to exercise and maintain fitness levels as explained in NFPA 1583.

The CFD has included all its fire department staff in the EAP offered through its Municipal employee benefits. This is an important piece of employee wellness. The CFD should have regular meetings with administrative staff from the Town of Cobourg who oversee it to ensure that firefighting personnel are fully aware of what benefits the EAP offers, should they need it.

In 2017, emergency services organizations were required by the Ontario, Ministry of Labour to submit a PTSD Prevention Plan. This was to coincide with PTSD and occupational stress injuries to be considered as workplace injuries and compensable through the Workplace Safety & Insurance Board

(WSIB). The CFD has an in-depth package available to its members outlining what PTSD is, the dangers it presents, training, on-going support, early intervention, WSIB claims management, recovery, and return to work.

Initial awareness training for existing staff and recruits is essential in establishing minimum levels of resiliency. Through their PTSD prevention plans, departments are expected to outline a full spectrum proposal. They are encouraged to address four pillars of managing a PTSD event: prevention, peer support, treatment/recovery, and return to work programs.

It should be noted that not all EAP services include accredited availability of trained mental health professionals (psychologists/psychiatrists), and some only offer limited assistance through counselling and therapy.

5.9 Cancer Prevention

In recent years there has been a more intensive review of cancer prevention and a correlation of the disease to firefighting. The focus has been on contamination control surrounding fire incidents. From pre-fire, incident duration, to cleaning and decontamination post-fire, all aspects of prevention are currently under review by all levels of fire service management. Departments are limiting opportunities for cross contamination and secondary exposure of carcinogens involved in fire scenes. It is suggested that, as part of a larger commitment to firefighter health and wellness, the CFD begin work on a cancer prevention program. This may include items such as, but not limited to:

- Post-fire decontamination of PPE
- Firefighter hygiene at fire scenes
- PPE during handling of contaminated gear/equipment
- Documenting potential exposures
- Reducing exposures to diesel exhaust
- Clean cab technologies on new apparatus

Fire stations should be equipped with a diesel exhaust extraction system to reduce exposure to vehicle exhaust. Diesel exhaust has been contributed to health issues when people are exposed to it over long duration. By having these systems in the station, the health concern is greatly reduced. This would be a positive feature towards cancer prevention by have a system installed in the station.

In reviewing the PPE program, also known as structural firefighting ensemble, it was noted the gear that is nearing ten years of age is being replaced proactively. A plan has been established to review PPE inventories and forecasted replacements are identified so that budgetary submissions are

effectively managed. This is important to note as NFPA 1851 *Standard on Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting* states in Chapter 10:

- 1.1.2 - Structural fire fighting ensembles and ensemble elements shall be retired in accordance with 10.2.1 or 10.2.2, no more than 10 years from the date the ensembles or ensemble elements were manufactured.

The appendix within the section also references that "…it is imperative that the protective elements be routinely inspected to ensure that they are clean, well maintained, and still safe".

The CFD has a program that PPE is inspected and cleaned in-house, and that there is a cache of used gear that can accommodate a portion of the department. The CFD is also working towards the increasing of spare/replacement bunker gear inventory in the coming years.

Cancer prevention may begin at the scene of a structure fire. The bunker gear becomes laden with contaminants and smoke, and off gas for some time after a fire. By decontaminating the fire fighters at the scene of the fire and their, not wearing their dirty gear back to the station or transporting it in the cab of the truck, is the step in the right direction of cancer prevention. The department should invest in some on-scene decontamination equipment and bags for transporting the bunker gear back to the station.

Cancer prevention does not stop at just taking off and bagging the bunker gear for cleaning at the fire station, clothing may also contain cancerous contaminants. The hygiene and decontamination program should also address the fire fighters personal clothing or uniform worn in the fire. This may see the necessity of the fire fighters having spare clothing at the fire station or in their personal vehicle, available for them to change into after they have a shower at the station. This clothing should also be washed at the fire station and not taken to the residence to be washed as they are then introducing the contaminants to members of their family.

A fire department exposure report should be completed each time a fire fighter is exposed to the products of combustion.

5.10 Mental Well Being

Like law enforcement, paramedics, and military personnel, firefighters are regularly exposed to critical incidents. A critical incident can be described as:

- A near miss that threatened the health and safety of a member of the department. This can include a situation where a member of the department experienced an event that could have resulted in significant harm or was a close call where they escaped significant harm.

- The suicide or attempted suicide of a co-worker.
- The sudden death of a fellow firefighter.
- The loss of a patient after a rescue attempt.
- The death or a critical incident involving a child.
- A prolonged rescue or incident with excessive media coverage.

Being regularly subjected to horrific events can lead to critical incident stress. A critical incident can best be described as a normal reaction to an abnormal traumatic incident. Exposures to critical incidents can impact firefighters later in life. Therefore, it is critical to have a formal record of critical incidents to assist a firefighter for a workplace injury if they are struggling due to PTSD.

Mental health takes on a critical importance in high-stress, high-risk work settings, such as those in which first responders operate, where their own functioning has serious implications for the health, safety, and security of the public they serve.

Municipalities generally have employee assistance programs, but these tend to have gaps when dealing with long term mental health injuries because of continued exposure to extraordinary and horrific events throughout a firefighter's career. Being proactive in recognizing the reality of this issue and committing resources to educate members and provide mental health services prior to a member suffering from PTSD is the best recourse. It is common practice that all fire department members and their families are enrolled in the municipal EAP.

Firefighters are the greatest asset of any fire service, and it is imperative that their mental well being is addressed in a genuine, consistent, and professional manner. This may include the establishment of a PTSD Prevention Plan by a committee of firefighters, chief officers, mental health professions and representatives of the bargaining unit.

The plan should include:

- An introduction about the plan.
- Goals and objectives
- Prevention and education focus areas
- Screening and initial intervention focus areas
- An overview of PTSD, risk factors, signs, and symptoms.
- Legal requirements of the municipality under the OH&S Regulations of Ontario.

- Organizational PTSD practices (promoting good mental health).
- Organizational anti-stigma practices.
- Roles and responsibilities for prevention, intervention, recovery, and return to work.
- Training on awareness and anti-stigma, recognising the signs and symptoms and responding to signs of PTSD, postexposure education and awareness.
- Chaplaincy program

5.11 Corporate Culture

Corporate culture refers to the beliefs and behaviors that determine how a company's employees and management interact and handle outside business transactions. Often corporate culture is implied, not explicitly described, and develops organically over time from traits and behaviors of the people within the organization.

In a recent Harvard Business review, a study of corporate values It was noted that every great culture needs a mission, a vision, and values. Its mission is the organization's exceptional purpose for being. The vision is an aspiration, and the values (or virtues) are the commitments to working. These are never meant to be static. Just as the environment around the company changes, so must the company itself. [18]

[18] Coleman, John. It's Time to Take a Fresh Look at Your Company's Values. (Harvard Business Review, March 28, 2022)

Section 5 - Recommendations

Rec #	Recommendation	Rationale
17	Utilizing talent assessment tools as a component of the corporate and the CFD talent management strategy to update position profiles, define core competencies, recruiting, screening, promotion, and career development opportunities.	Research reveals that utilizing talent assessment as part of your talent management strategy results in significant productivity increases, cost savings and decreased attrition.
18	CFD review and implement an enhanced recruitment and retention strategy and program with the objective to increase part-time/volunteer firefighter complement. Engage the community in the recruitment activities and sourcing of candidates.	Provides surge capacity as well as on-scene staffing for large and/or lengthy emergency incidents. Filling positions with top talent and matching competencies is paramount to maintaining an employee value proposition talent management program.
19	Create an organizational development strategy program and plan that algins with corporate program and plans. Develop and communicate clear career development paths and program options that algin with positions.	Organizational development and a career path program create a learning and development culture which provides for clear direction as well as performance expectations. Therefore. forming a major part of the performance management program.
20	Develop and formalize a leadership program with a focus on personnel planning and linking to performance plans.	People plans will create an organized approach to developing your people strategy for now and the future as well create human capital.

Rec #	Recommendation	Rationale
21	Create a reward and recognition culture through surveying employees to know, understand and determine what they value, and feel is important to be recognized and celebrated.	Engaging and listening to the thoughts and ideas of your employees will generate engagement, commitment, and advocacy for new rewards and recognition programs.
22	Opportunity to enhance employee engagement through developing a corporate rewards and recognition programs including a Service Awards – "Night of Honour"	Provides a corporate collaboration with the CFD connecting the department and the people with the entire workplace community.
23	Determine and select municipal comparators based on appropriate criteria as noted above. This will present an opportunity to prepare for future bargaining by working collaboratively with municipal comparators by reviewing and understanding current trends in the sector. Review the current Collective Agreement regarding promotion processes acting and captain positions.	An approved comparator criteria will provide market validation and benchmarking. Working in a collaborative bargaining approach allows for a regional consistent collective strategy based on current bargaining trends.
24	Review and update MOU for the part-time / volunteer fire fighters including comparative compensation and benefit practices with the Full time Fire Fighters.	Creating a fair and equitable treatment of positions through comparative compensation and benefit programs.
25	A fitness room be incorporated into the fire station.	The inclusion of a well-equipped fitness room that focuses on cardio health and fitness maintenance has been a key component to the reduction of on-the-job injuries, along with promoting good health for the firefighters.

Rec #	Recommendation	Rationale
26	The CFD invest in decontamination equipment and develop the appropriate policies and SOGs in performing decontamination of firefighters at the scene of a fire. The CFD should develop policies and procedures that reflect the following. That gear is not to be: • Transported inside the cabs of fire department vehicles. • Taken into living quarters of a fire station (this should include any areas of the fire station other than the apparatus bays). • Taken into the firefighter's home. • In personal vehicles	The introduction and enforcement of the previously noted points will help to reduce contamination related to carcinogens, which in turn demonstrates a commitment by the city to the health and wellness of its firefighters.
27	The CFD establish a committee to develop and implement a PTSD Awareness and Prevention program. It is also recommended that the Town of Cobourg, in co-operation with mental health professionals and develop a mental health awareness and treatment program.	Both recommendations are aimed at ensuring the mental health and wellness of the CFD staff. Investment in mental health programs have a correlation in the reduction in future disability claims.
28	Review and assess the current corporate and departmental culture from CFD Service perspective in collaboration with Human Resources leadership with a goal to develop a departmental culture plan for now and the future. The review will include understanding current equity, diversity, and inclusion EDI approaches.	With a view for change and to understand the current corporate culture including EDI approaches an assessment and review is required for an updated corporate and CFD culture plan.

Rec #	Recommendation	Rationale
29	Create, develop, and implement employee surveys working in collaboration with human resources and the corporate employee survey programs.	Employee engagement surveys are designed to measure employee commitment, motivation and passion for their roles and responsibilities and provides employers with information on areas of that are thriving and areas to review and provide corporate change programs.

SECTION 6

Fire Suppression

SECTION 6: FIRE SUPPRESSION

6.1 Fire Suppression

The CFD is a composite fire department in that is has both career and volunteer firefighters. With there being a full-time firefighting crew on duty the NFPA 1710 S*tandard for career fire departments* is applicable for this review. It should be noted that although the NFPA is not a mandated standard, it is recognized as an industry best practice. It is advisable that fire departments use NFPA standards as goals and guidelines to strive for.

NFPA 1710 notes that first responding apparatus shall be staffed with the minimum number of members to deal with the tactical hazards, high-hazard occupancies, high incident frequencies, geographical restrictions and other significant factors identified by the authority having jurisdiction (AHJ). For an initial response, it is recommended that the crew consists of four personnel – one officer and three firefighters.

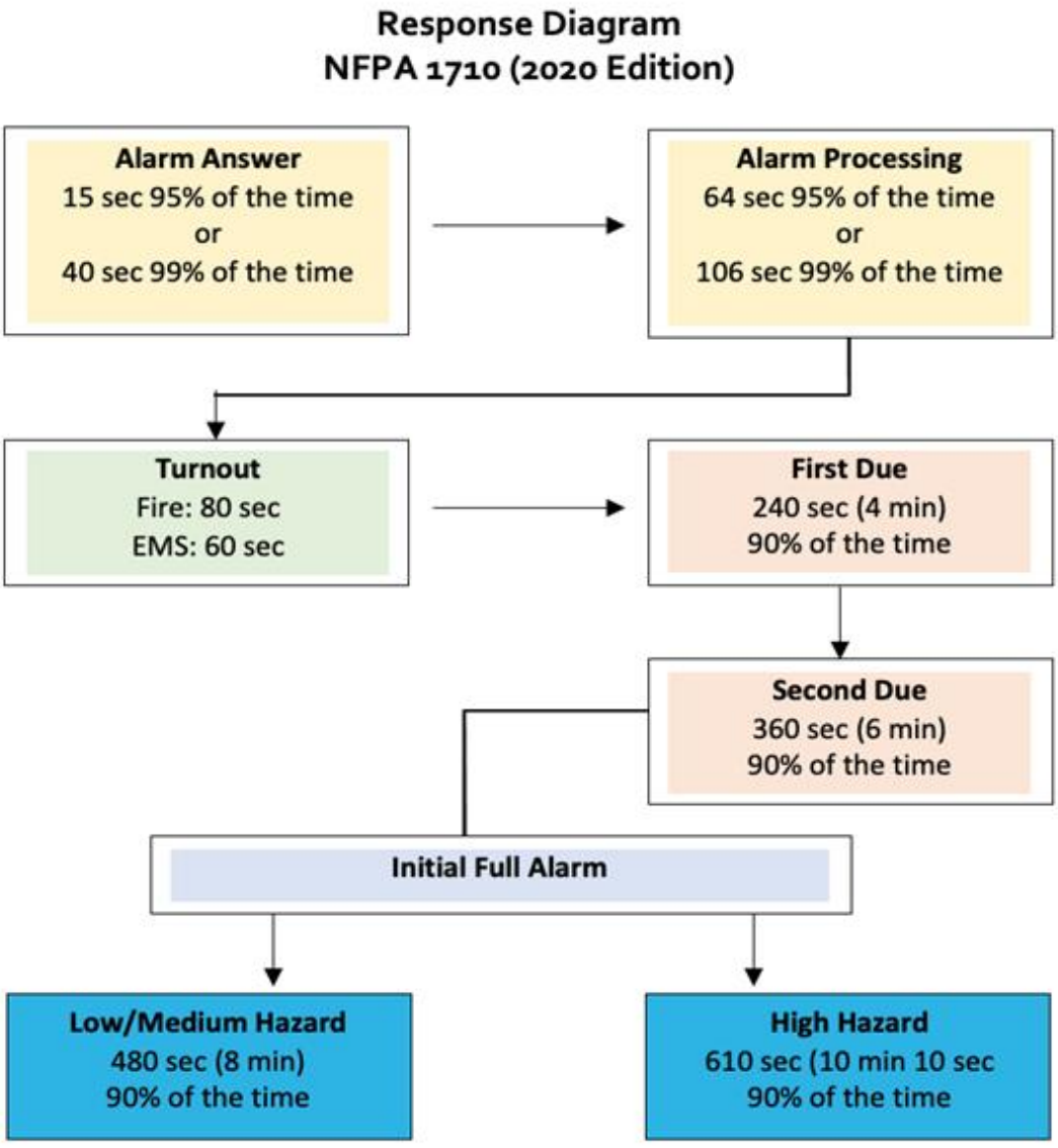
In NFPA 1710 (2020 Edition) *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Career Fire Departments,* in Chapter 4.1 the Fire Department Organizational Statement Clause 4.1.2.1 States that:

The fire department shall establish the following performance objectives for the first-due response zones that are identified by the AHJ.

- Alarm handling time completion in accordance with 4.1.2.3.
- 80 seconds turnout time for fire and special operations response and 60 seconds turnout time for EMS response.
- 240 seconds or less travel time for the arrival of the first engine company at a fire suppression incident.
- 360 seconds or less travel time for the arrival of the second company with a minimum staffing of four personnel at a fire suppression incident.
- For other than high-rise, 480 seconds or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident.
- For high-rise, 610 seconds or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident.
- 240 seconds or less travel time for the arrival of a unit with first responder with automatic external defibrillator (AED) or higher-level capability at an emergency medical incident.

- 480 seconds or less travel time for the arrival of an advanced life support (ALS) unit at an emergency medical incident, where this service is provided by the fire department provided a first responder, with an AED or basic life support unit arrived in 240 seconds or less travel time.

FIGURE #8: RESPONSE DIAGRAM BASED ON NFPA 1710 STANDARDS



When a career department receives a call for service, firefighters are generally in the station when the call comes in. They must get into their bunker gear, board the apparatus, and then respond; this is known as 'turnout' time. The NFPA standard for career fire departments uses 80 seconds as the benchmark turnout time 90% of the time.

The overall goal of any fire department is to arrive at the scene of the incident as promptly and as effectively as possible. If a fire truck arrives on scene in four minutes or less with a recommended crew of four or more firefighters, there is increased opportunity to contain the fire by reducing further spread to the rest of the structure. Alternatively, if the first fire incident team arrives with fewer than four firefighters on board, it is limited to what operations it can attempt successfully.

Based on studies and evaluations conducted by the National Institute of Standards and Technology (NIST) and the NFPA, no interior attack is to be made by the firefighters until sufficient personnel arrive on scene. The expectation is that a minimum of three firefighters and one officer arrive on scene to make up the initial fire suppression team. This team of four can effectively do an assessment of the scene, secure a water source (e.g., fire hydrant), ensure the fire truck is ready to receive the water, get the fire pump in gear, as well as unload and advance the fire hose in preparation for entry into the structure.

In 2010 and 2020, the NIST in the United States conducted a study on fire crew efficiencies and the tasks that may be completed during a residential structure fire with different sized crews.

The following research questions guided the experimental design of the low-hazard residential fireground experiments documented in this report:

- How does crew size and stagger affect overall start-to-completion response timing?
- How does crew size and stagger affect the timings of task initiation, task duration and task completion for each of the 22 critical fireground tasks?
- How does crew size affect elapsed times to achieve three critical events that are known to change fire behavior or tenability within the structure?
    - Entry into structure?
    - Water on fire?
    - Ventilation through windows (three upstairs and one back downstairs window and the burn room window).
- How does the elapsed time to achieve the national standard of assembling 16 firefighters at the scene vary between crew sizes?

The experiments were conducted in a burn prop designed to simulate a low-hazard fire in a residential structure described as typical in NFPA 1710. A low-hazard occupancy is defined in the NFPA standard as a one, two or three-family dwelling and some small businesses. Medium hazard occupancies include apartments, offices, mercantile and industrial occupancies not normally requiring extensive rescue or firefighting forces. High-hazard occupancies include schools, hospitals, nursing homes, explosive plants, refineries, high-rise buildings and other high life hazard or large fire potential occupancies.

TABLE #7: THE 22 TASKS AND MEASUREMENT PARAMETERS

Assigned Tasks		Measurement Parameters
1	Stop at Hydrant, Wrap Hose	START - Engine stopped at hydrant. STOP - Fire fighter back on engine and wheels rolling
2	Position Engine 1	START - Wheels rolling from hydrant. STOP - Wheels stopped at structure
3	Conduct Size-up	START - Officer off engine (360-degree lap), transmit. STOP - Completes radio report, establish command transmission of report
4	Engage Pump	START - Driver off engine. STOP - Driver throttles up pump
5	Position Attack Line	START - Fire fighter touches hose (Forward Lay) to pull it from engine. STOP - Flake, charge, and bleed complete (hose at front door prepared to advance)
6	Establish 2 In/2 Out	Company officer announces – "2 In/2 Out established" (4 persons assembled on scene OR at the call of the Battalion Chief/Company Officer)
7	Supply Attack Engine	START - Fire fighter touches hydrant to attach line. STOP - Water supply to attack engine
8	Establish RIT	Time that Company Officer announces - RIT is established
9	Gain/Force Entry	START - Action started (HOLD time= 10 seconds) STOP - Door opened for entry

Assigned Tasks		Measurement Parameters
10	Advance Attack Line	START – Fire fighter touches hose. STOP – Water on fire. STOP - Backup line charged to nozzle
11	Advance Backup Line	START - Fire fighter touches hose (stop time at front door) to pull from engine bed
12	Advance Backup	START - Fire fighter crosses Line/Protect Stairwell threshold. STOP - Position line for attack at stairwell
13	Conduct Primary Search	START - Firefighters enter front door. STOP - Firefighters transmit "search complete"
14	Ground Ladders in Place	START - Fire fighter touches ladder to pull it from truck. STOP - 4 Ladders thrown: 3 ladders on the 2nd-story windows and 1 to the roof
15	Horizontal Ventilation	START- Fire fighter at 1st window to (Ground) begin ventilation (HOLD for 8 seconds) STOP - Hold time complete - window open
16	Horizontal Ventilation	START - Fire fighter grabs ladder (2nd Story) for climb. (Fire fighter must leg lock for ventilation. HOLD time at each window is 10 seconds) STOP - All 2nd-story windows open - descend ladder - feet on ground.
17	Control Utilities (Interior)	START - Radio transmission to control utilities. STOP - When Fire fighter completes the task at the prop
18	Control Utilities (Exterior)	START - Radio transmission to control utilities. STOP - When Fire fighter completes the task at the prop

Assigned Tasks		Measurement Parameters
19	Conduct Secondary Search	START - Firefighters enter front door. STOP - Firefighters transmit “secondary search complete”
20	Check for Fire Extension	START- Firefighters pick up (walls) check-for-extension prop. STOP- Completion of 4 sets total (1 set = 4 in and 4 out) This task may be done by more than one person.
21	Check for Fire Extension	START - Firefighters pick up (ceilings) check-for-extension prop. STOP - Completion of 4 sets total (1 set = 3 up and 5 down) This task may be done by more than one person.
22	Mechanical Ventilation	START - Firefighters touch fans to remove from truck. STOP - Fans in place at front door and started

The study found that four-person crews were able to complete 22 essential firefighting and rescue tasks in a typical residential structure fire 30% faster than a two-person crew and 25% faster than a three-person crew.[19] Having crews of four firefighters lessens the risk of injury as more personnel are available to complete assignments.

6.1.1 National Fire Protection Association (1710)

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

When considering the response times and needs of a community, the fire response curve (figure #9) presents the reader with a general understanding of how fire can grow within a furnished residential structure over a short period of time. Depending on many factors, the rate of growth can be affected in several different ways which can increase or suppress the burn rate through fire control measures within the structure.

A review the response time of a fire department it is a function of various factors including, but not limited to:

- The distance between the fire stations and response location.
- The layout of the community.
- Impediments such as weather, construction, traffic jams, lack of direct routes (rural roads).
- Notification time
- Assembly time of the firefighters, both at the fire station and at the scene of the incident.
    - Assembly time includes dispatch time, turnout time to the fire station and response to the scene. It should be noted that assembly time can vary greatly due to weather and road conditions along with the time of day.

[19] "Report on Residential Fireground Field Experiments," Averill, Jason D. et all, April 2010, https://tsapps.nist.gov/publication/get_pdf.cfm?pub_id=904607

As illustrated in the following fire propagation diagram the need for immediate initiation of fire suppression activities is critical. The CFD responds to more than just fires; motor vehicle collisions can create a medical or fire emergency that also needs immediate response. Thus, it is imperative to be as efficient and effective as possible in responding to calls for assistance.

FIGURE #9: FIRE RESPONSE/PROPAGATION CURVE

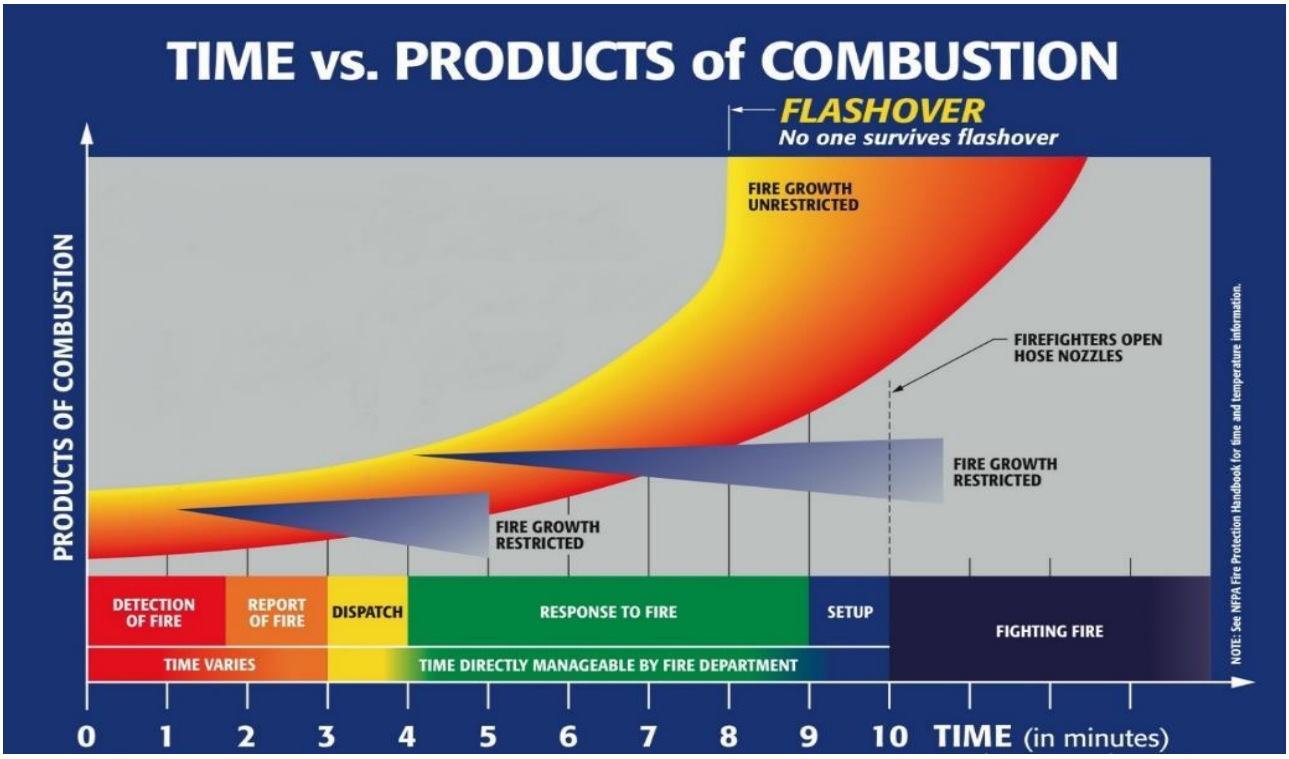


Figure #9 notes the following time variables:

- Detection of fire – this is when the occupant discovers that there is a fire. The fire may be in a very early stage or could have been burning for quite some time before being detected.
- Report of fire – this is when someone has identified the fire and is calling the CFD for help.
- Dispatch – the time it takes the dispatcher to receive the information and dispatch the appropriate resources.
- Response to the fire – response time is a combination of the following:
    - *Turnout time* – how long it takes the career firefighters to get to the fire truck and respond or how long it takes the volunteer firefighters to get to the fire station to respond on the fire truck.

- *Drive time* – the time from when the crew advises dispatch that they are responding until the time that they report on scene.

- Setup time – the time it takes for the fire crews to get ready to fight the fire.
- Fighting the fire – actual time it takes to extinguish the fire on scene.

The CFD should endeavour to meet the stated minimum response standards based on responding to a 2,000 ft^2 single-family dwelling. The dwelling (noted in the Standard) does not have a basement or other exposures (buildings close enough to each other to create a greater possibility for fire spread). Homes in Iqaluit do not have basements and are built close enough, in some locations, to each other to create an exposure risk for potential fire spread, which must be considered by the Department in its response efforts. NFPA 1710 (2020 Edition) recommends a minimum of 16 firefighters on scene for a single-family dwelling (17 if an aerial is used); having the ability to call upon additional resources such as having the volunteer firefighters called out as soon as it is known to be an actual fire. Provision could include the recall of the full-time firefighters that are not working.

Table #8 outlines the minimum tasks of the firefighters at a residential structure fire and the staffing required to complete each. Climate plays a large role in staffing at a fire as extreme temperatures diminish the physical abilities of those fighting the fire.

TABLE #8: NFPA 1710 (2020) STAFFING REQUIRED AT A RESIDENTIAL STRUCTURE FIRE

Function	Staffing Required
Establish Incident Command for the overall coordination and direction of the full alarm assignment.	**1**
Establish uninterrupted water supply of a minimum 400 GPM (gallons per minute). (1,520 L/min) for 30 minutes with supply line maintained by an operator.	**1**
Establish effective water flow application rate of 300 GPM. (1,140 L/min) from two handlines, each of which has a minimum flow rate of 100 GPM. (380 L/min) with each handline operating by a minimum of two members.	**4**
The provision of one support member for each deployment attack and back-up line to provide hydrant hook-up and assist in laying of hose lines, utility control and forcible entry.	**2**

Function	Staffing Required
Provision of at least one victim search and rescue team with each such team consisting of two members.	**2**
Provision of at least one team consisting of at least two members to raise ground ladders and perform ventilation.	**2**
If an aerial device is used in the operations, one member to function as the aerial operator.	**1**
An initial rapid intervention crew assembled from the initial attack crew and as the initial full alarm arrives, a sustained rapid intervention crew of four members.*	**4**
Total effective response force with a minimum 16 (17 is an aerial device is used). ** See asterisk below	**17**

*** NFPA 1710 (3.3.53)** - outlines the Rapid Intervention Crew as a dedicated crew of at least one officer and three members positioned outside the Immediate Dangerous to Life or Hazard (IDLH) Zone, trained and equipped as specified in NFPA 1407, *Standard for Training Fire Service Rapid Intervention Crews,* who are assigned for rapid deployment to rescue lost or trapped firefighters.

****NFPA 1710 (1.3.53.1)** - defines the initial rapid intervention crew as two members of the initial attack, crew, positioned outside the IDLH zone, trained, and equipped as specified in NFPA 1407, *Standard for Training Fire Service Rapid Intervention Crews*, who are assigned for, rapid, deployment (i.e., two/in/out) to rescue lost or trapped firefighters.

***** NFPA 1710 (5.2.2.3)** - An incident safety officer shall be deployed upon confirmation of a structural fire, at special operation incidents, or when significant risk is present to the member, due to the nature of the incident. Further to this, NFPA 1710 (5.2.2.3.1) states that the safety officer meets the requirements as specified in NFPA 1521, *Standard for Fire Department Safety Officer*, and shall have the expertise to evaluate, hazards and provide direction with respect to the overall safety of personnel.

TABLE #9 outlines the resources required for a working fire within a high-rise structure about 75’ or 23 m. NFPA 1710, Article 5.2.4.4.1 States:

Initial full alarm assignment to a fire in a building with the highest floor greater than 75’ (23 m) above the lowest level of fire department vehicle access shall provide for the following:

TABLE #9: NFPA 1710 (2020) STAFFING REQUIRED FOR A HIGH-RISE FIRE

Function	Staffing Required
Establishment of a stationary incident command post outside of the hazard area for overall coordination and direction of the initial full alarm assignment with a minimum of one officer with an aide dedicated to these tasks and operations are to be conducted in compliance with the incident command system for the overall coordination and direction of the full alarm assignment.	2
Establishment of an uninterrupted water supply to the building standpipe/sprinkler connection sufficient to support fire attack operations maintained by an operator and if the building is equipped with a fire pump, one additional member with a radio to be sent to the fire pump location to monitor and maintain operations.	1/1
Establishment of an effective water flow application rate on the fire floor at a minimum of 500 GPM (1892 L/m) from two handlines, each operated by a minimum of two members to safely, and effectively, handle the line.	4
Establishment of an effective water flow application rate on the floor above the fire floor at a minimum of 250 GPM (946 L/m) from at least one handline, with each deployed handline operated by a minimum of two members to safely, and effectively, handle the line.	2

Function	Staffing Required
At a minimum, an initial rapid intervention crew assembled from the initial attack crew and, as the initial attack crew and as, the initial alarm response arrives, a full and sustained rapid intervention crew established.	4
Provision of two or more search-and-rescue teams consisting of a minimum of two members each.	4
Provision of one officer, with an aide, dedicated to, establish an oversight at or near the entry point on the fire floor(s).	2
Provision of one officer, with an aide, dedicated to, establish an oversight at or near the point of entry on the floor above the fire.	2
Provision of two or more evacuation management teams to assist and direct building occupants with evacuation or shelter actions, with each team consisting of a minimum of two members.	2
Provision of one or more members to account for and manage elevator operations.	1
Provision of a minimum of one trained incident safety officer.	1
Provision of a minimum of one officer two floors below the fire floor to manage the interior staging area.	1

Function	Staffing Required
Provision of a minimum of two members to manage member rehabilitation and at least one of the members to be trained to the ALS level.	2
Provision of an officer and a minimum of three members to conduct vertical ventilation operations.	4
Provision of a minimum of one officer to manage the building lobby operations.	1
Provision of a minimum of two members to transport equipment to a location below the fire floor.	2
Provision of one officer to manage external base operations.	1
The establishment of an initial medical care component consisting of a minimum of two crews each with one member trained to the ALS level, capable of providing immediate on-scene emergency medical support, and transport that provides rapid access to civilians or members potentially needing medical treatment. NFPA 1710 asks for four, members to be assigned to this task.	No staff required as this would be handled by ambulance
Total effective response force, a minimum of 42 (38 due to the non- implementation of #18) 43 if the building is equipped with a fire pump.	38

As mentioned previously, the CFD total staffing per platoon on duty is four to five, depending on the platoon, but they generally operate with a minimum of three on duty. This indicates that the minimum required to operate at a working any type of structure fire, especially a high-rise fire is not adequate, which is a health and safety concern. Additional resources may be requested by the IC to support the fire scene, as well as provide fire protection to Cobourg, which includes a recall of full-time firefighters and additional callouts for the volunteers.

The population figures for the Town of Cobourg are estimated to be 27,500 in 2031. All of this depends on the Town of Cobourg's ability to supply water to any new developments once the population reaches 27,500 or above. This increase in population will influence call volumes for the CFD. This needs to be monitored by the fire chief to determine if present staffing levels meet the growing demands of the Town of Cobourg.

Even if the population does not increase at the anticipated rate, increasing the number of on-duty staff is still recommended. As such, it is recommended that the CFD hire additional staffing to achieve having five firefighters per platoon with a minimum of four on duty. The CFD needs to grow with the existing growth and current development in the community.

As mentioned previously, there are currently four to five firefighters assigned to each of the four platoons, and the minimum number on duty at any given time is three. Consideration for vacations and illness affects the minimum staffing levels and for four on duty, at any given time.

The current CFD call-back policy has been in effect for many years. It is a four-level call-back system that steadily increases in severity (Level 1 being lowest to Level 4 being highest) resulting in a call-back "net" that requires off-duty firefighters, including part-time, paid-on-call firefighters, to respond to the station and/or the emergency scene. The highest level "Level 4" is now regularly utilized to get the needed resources at emergency incidents. This results in firefighters having to essentially be "on-call" and respond 24/7 due to insufficient staffing resources. The dedication of current staff, both full and part-time is evident in regularly responding to call-back. However, this call-back policy, in its current form, is resulting in significant risk management concerns regarding time-off, away from work requirements as well as potential firefighter health and safety liabilities because of the regular and often utilization of the call-back policy. An on-duty staffing increase is necessary to assist in alleviating the over-use of call-back to adequately resource incident response.

A staffing increase can be accomplished in stages, the options are:

- The hiring of four more firefighters (for a total of five firefighters per platoon) two in 2023 and two in 2024. This would bring the staffing up to a minimum of four firefighters on the fire apparatus by end of 2024.

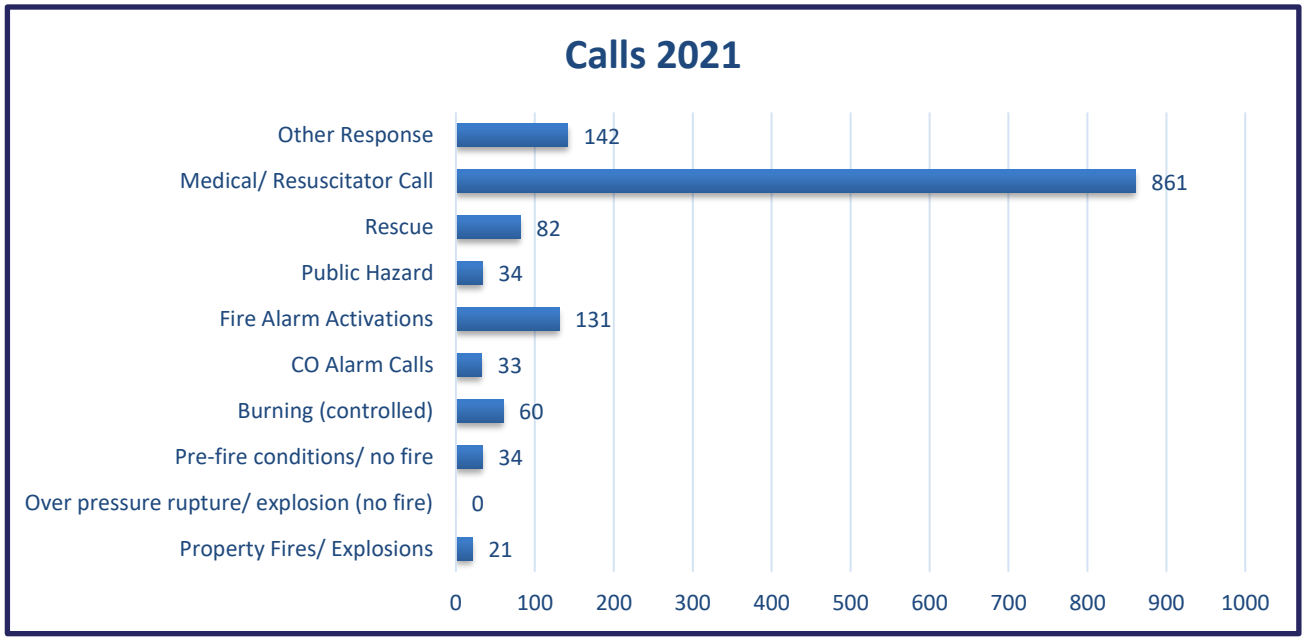
- The hiring of four more firefighters (for a total of five firefighters per platoon) two in 2024 and two in 2025. This would bring the staffing up to a minimum of four firefighters on the fire apparatus by end of 2025.

The following recommendations will enhance the level of response resources available within the CFD. It should be noted that the increase in personnel will add full-time additional firefighters. This is still an insufficient number of staff in the event of a residential and a high-rise fire were to occur simultaneously. But would move towards enhancing the current operational resources and abilities of the CFD required to meet the demands of the growing community.

6.1.2 Emergency Response

During this review, EMG conducted a retrospective review of response information with the most recent full year data-set available. The data for 2022 is representative and consistent with previous years, as far back as 2017. The intent of this review is to provide an accurate indication of the call types, response times, firefighter resources, locations, and clustering, with which to provide a perspective on the CFD response metrics.

FIGURE #10: CALL RESPONSE TYPES FOR 2021



***Note**: In 2021, approximately 62% of the calls were medical related. The chart (through the use, of the supplied data) helps to identify the types of calls that are creating the bulk of response demands.*

FIGURE #11: CALL RESPONSE TIMES FOR 2021

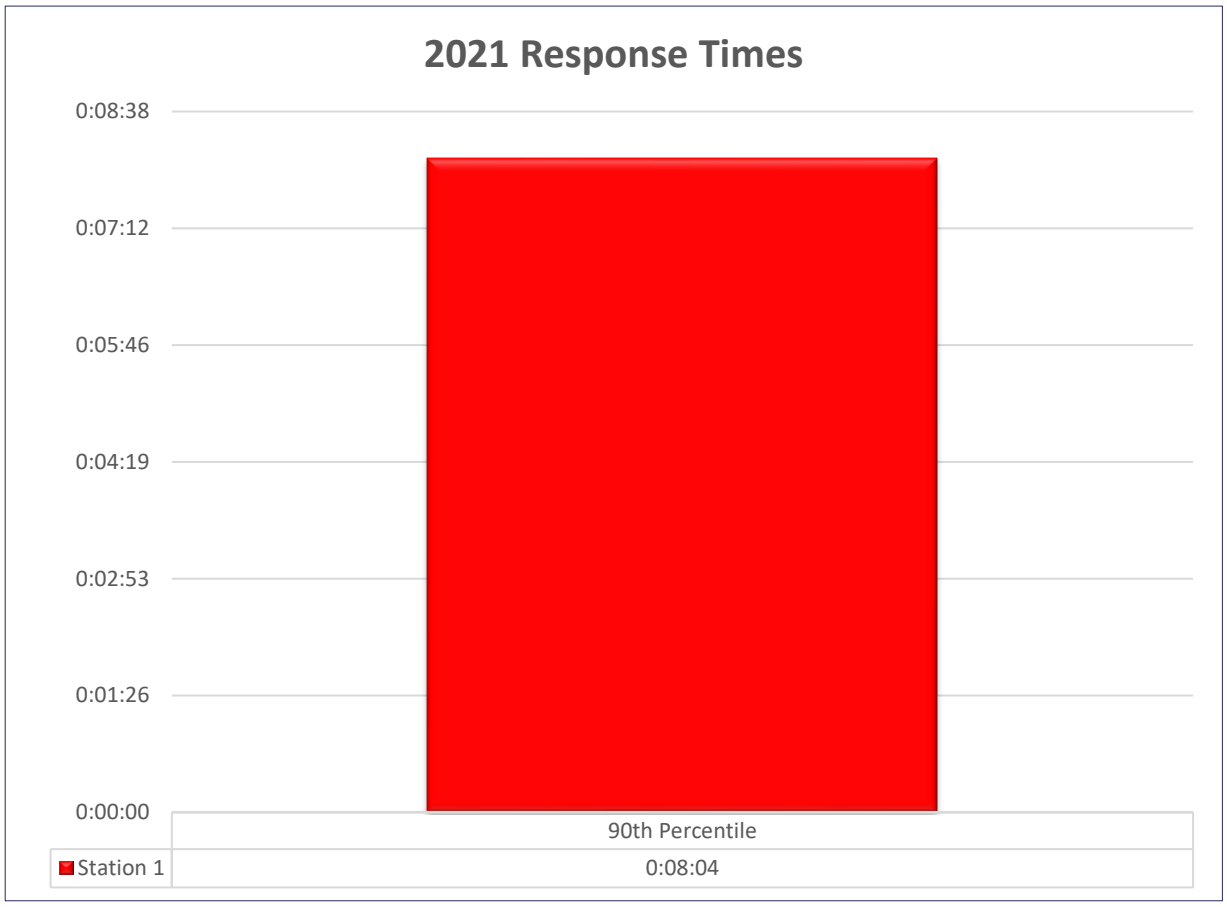


FIGURE #12: CALL RESPONSE TIMES – 3 OR LESS FIREFIGHTERS

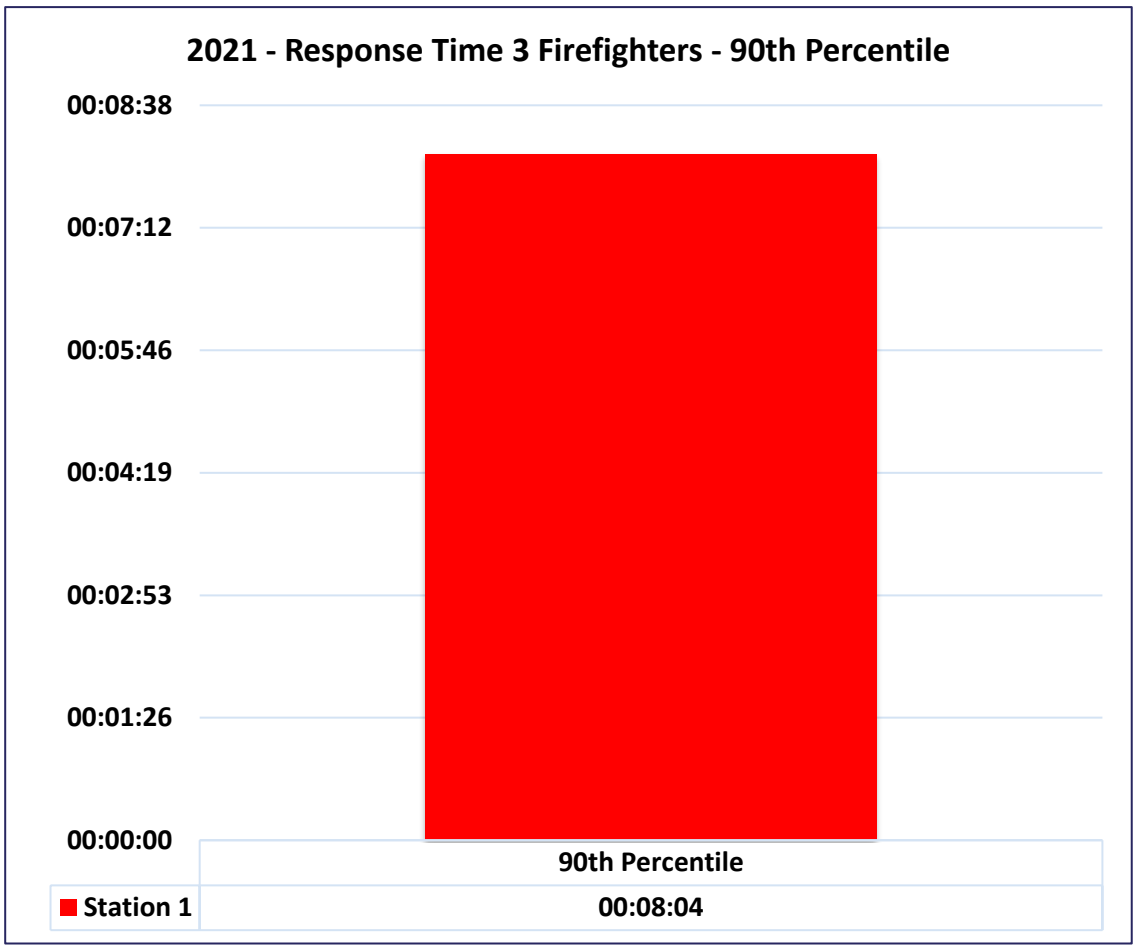
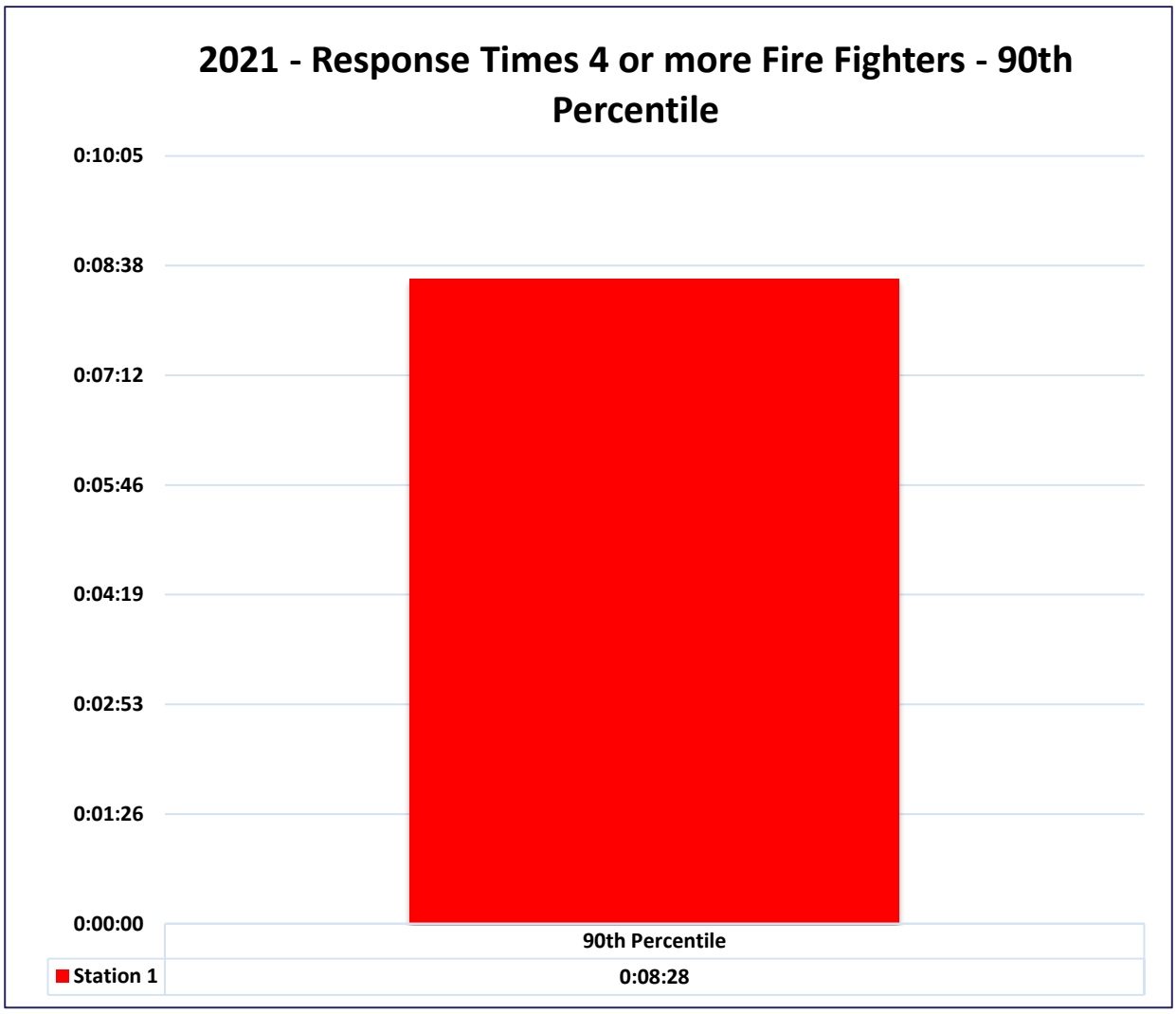


FIGURE #13: CALL RESPONSE TIMES – 4 OR MORE FIREFIGHTERS



Performance measurements that the fire department should monitor include:

- Response time: the total time from receipt of call to the time the fire vehicle arrives at the incident location.
- Turnout time: time from page until the first vehicle is responding.
- Drive time: time tracked from when the fire vehicle has left the station until arrival at the incident location.

The CFD response times should be monitored based on the NFPA 1710 standards which is from "dispatch time to time of arrival at the incident."

***Note:** In monitoring time measurements, the 90th percentile criterion is the recommended practice that is endorsed by the NFPA and CFAI. This data is more accurate since it is evaluating the times based on 90% of the calls as opposed to averaging the times at the 50th percentile.*

For example:

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

6.1.3 Fire Station Location

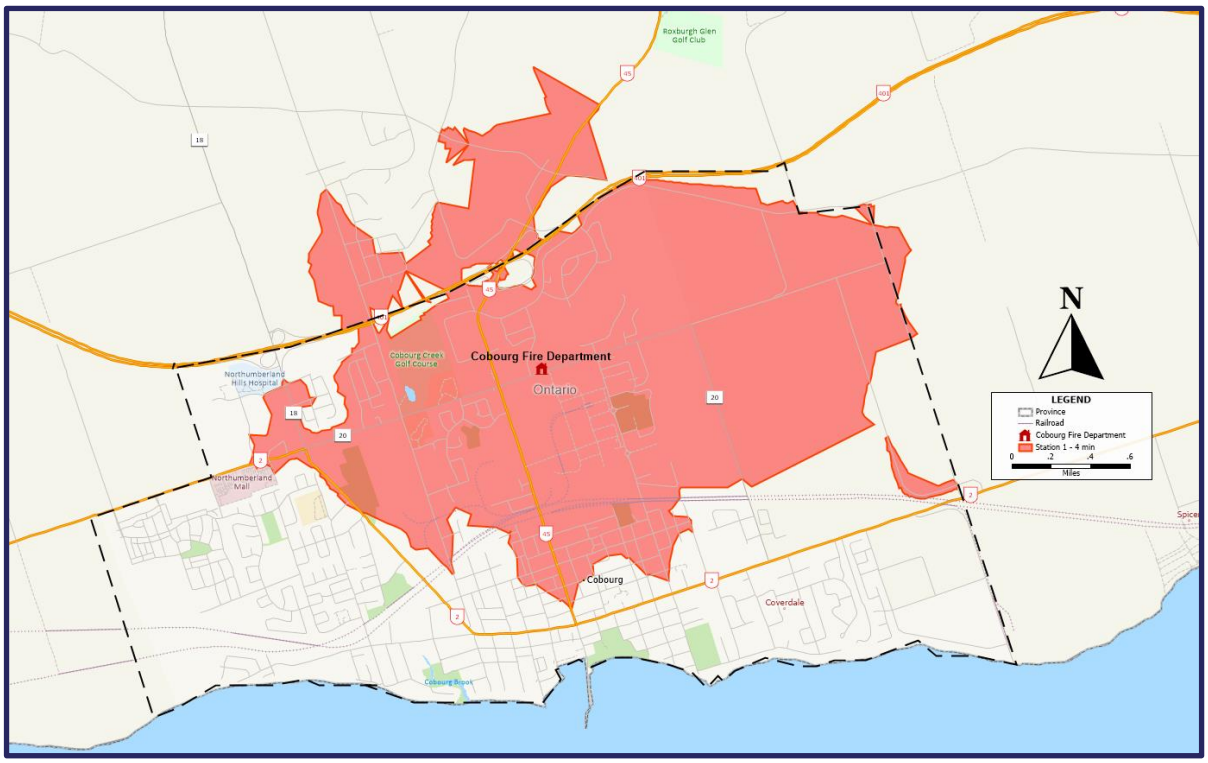
Fire Station Location:

Deciding on where a fire station is located varies upon several factors:

- Relative fire risk values for various areas, occupancies, or properties.
- Desired response times for each identified fire risk.
- Information regarding the road network in the community including reasonable travel speeds, one-way streets, rail crossings, etc.
- Emergency vehicles and personnel necessary to assemble fire attack teams.

The travel time grids highlighted in Figure #14 were calculated using the GIS software Caliper Maptitude, which uses the road network with the posted speed limits, factoring in direction of travel, traffic lights and stop lights. While the posted speed limit is used, it is understood that at times fire apparatus responding to calls may exceed the speed limit if it is safe to do so, therefore reducing the response time. Correspondingly, there will be times due to weather conditions, construction, and traffic congestion that the fire apparatus will be travelling at speeds lower than the posted speed limit (even using emergency lights and sirens). Then using the posted limit is a reasonable calculation in determining travel distance.

FIGURE #14: CURRENT FOUR MINUTE DRIVE TIME MAP



With the program tailored to the specific needs of a community, many fire response factors may be analyzed including:

- Existing and proposed station locations based on desired response times.
- Best and alternate emergency response routes to specific locations.
- Ability of pumper, aerial, rescue, and support crews to cover all parts of the community based on desired response times.
- Emergency response times for first, second and additional vehicles and personnel.
- Areas for potential automatic aid responses.

A benefit of using a computer program is the ability of municipal staff and council to evaluate fire station location needs (based on objective criteria). Fire stations should be located where they can serve as much of the community as possible. For example, it may seem wise to place the fire station across from a nursing home. However, if many responses are to the residential or commercial areas at the other side of the coverage area, the station should be situated closer to that area but still could arrive at the nursing home in the desired time. No matter where a new fire station is located, the

primary goal is serving the community in a timely manner by meeting NFPA Standards for response times.

The 8-minute travel time is used to identify the locations where there can be an "effective firefighting force" as observed by NFPA 1710. The NFPA 1710 Standard requires 16 firefighters (17 if an aerial device is being used) at a single detached house fire within 8 minutes of leaving the station. With the current level of staffing, including the volunteer firefighters, this measurement cannot be met because there is not enough full-time staff on duty to meet this criterion.

NFPA 1710 calls for the first engine company, with a crew of four firefighters, to arrive at a fire suppression incident in 240 seconds (four minutes, drive time) or less 90th percentile of the time. The response data for this calculation indicates that the CFD is not currently meeting NFPA 1710.

Although the NFPA response times are not mandated, it would be beneficial for the fire chief to have a response time target as a key performance indicator.

6.2 Water Supply

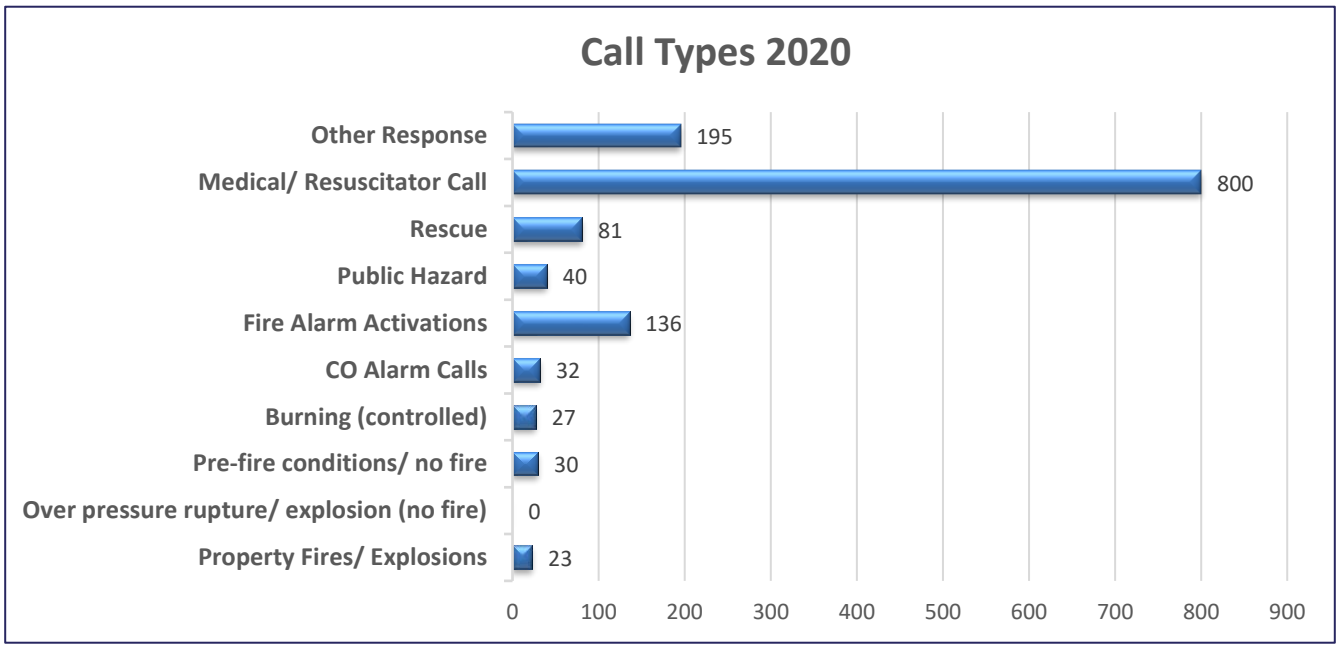
When fighting a fire of any size, water supply is paramount to successfully extinguishing the fire, saving lives, and property loss. The lack of a reliable or sustainable water supply will lead to the loss of the structure. The CFD relies on hydrants for supply water. The current fire apparatus, engines, carry approximately 4,500 liters (1,000 gallons) of water. The CFD must use either the hydrant, if on is close by or by mutual aid for water tenders to bring water to them (reference CRA 2022).

The best means of ensuring a constant flow of water, is if the department acquires their own pumper/tanker that has a fire pump and carries a large quantity of water. The apparatus could respond immediately once the address is known, the crews may already know if hydrants are available, and if not, the pumper tanker would also respond to the address of the fire. The apparatus should have as a minimum, a 5,000 l/min (1050 imp gal.) pumping capacity and carry 11,375 liters (2500 gallons) of water. The apparatus could, if need be, used as a front-line apparatus if the main apparatus is out of service for repairs. The practise of calling for mutual aid water tenders to respond with a load of water should also continue.

6.3 Medical Response

Currently, approximately 62% of the calls for assistance the CFD attends are medical related.

FIGURE #15: RESPONSE TYPES INCLUDING MEDICAL CALLS FOR 2022



The CFD administers naloxone to individuals who have overdosed on opioids.

The Department, in consultation with their medical oversight, should discuss whether crews be permitted to administer glucose to those suffering a diabetic event. Anyone who is diagnosed with diabetes are at risk of having a diabetic emergency due to the lack of food intake, including fasting. The administration of glucose will aid in reducing the symptoms of the diabetic emergency.

The current level of training required is to respond at the scene of a vehicle collision, over-dose, heart attack, trauma, or other emergencies to perform possibly life-saving medical intervention. For this, the CFD firefighter only needs a First Responder certification. This includes basic first aid skills, including CPR. This course usually takes around 55-65 hours from start to finish. Typically, this level of training does not permit the administration of medications.

At present, the CFD is continuing basic medical training including defibrillation training and certification in-order to respond to medical calls.

Some communities have their fire crews trained to the level of emergency medical technician (EMT) which requires approximately 120 hours of training. EMTs are qualified to provide first aid as well as emergency medication as approved. Their training in patient assessment and stabilization also allows them to enhance the level of pre-hospital medical treatment. The goal of an EMT is to rapidly evaluate the condition of the patient and maintain their breathing and circulation (by CPR and defibrillation) until they're transported to a hospital. Controlling external bleeding and preventing further injury or disability while transporting the patient for more extensive medical care is the focus of an EMTs responsibilities. This enhanced level of service provision requires significant training and annual maintenance costs. Therefore, significant consideration for funding to qualify all medical response firefighters should the enhanced level of service be desired for the approximately 62% of response type workload that the CFD is experiencing.

The CFD should review the level of training, certification, and operational response resourcing and training costs that are required to provide the medical call response at the current service level as outlined in the E&R By-law No. 057-2012.

Personnel that respond must ensure they are qualified for medical calls and their training is completed. There could be a cost avoidance/savings realized by not committing training, certification, firefighter, and operational response funding to medical call response.

6.4 Communications

The CFD receives its dispatching services from the City of Peterborough Fire Department, which provides services for all eight Peterborough County fire departments.

EMT is not recommending any changes to this agreement. It is, however, recommended that the CFD work with the County of Northumberland, and the City of Peterborough Fire Services to ensure that they are adhering to NFPA 1225 *Standard on Emergency Services Communications* and NFPA 1061 *Standard for Public Safety Telecommunications Personnel Professional Qualifications*.

That standard under section 15.4 Operating Procedures, sets out a benchmark listed below:

- 15.4.1 Ninety percent of alarms received on emergency lines shall be answered within 15 seconds, and 95% of alarms shall be answered within 20 - 40 seconds.
- 15.4.1.1 Compliance with 15.4.1 shall be evaluated monthly using data from the previous month.

Ensuring that the NFPA benchmark is being met will allow the CFD to respond to emergency calls as quickly and efficiently as possible, resulting in improved life safety for all residents in the Town of Cobourg. It also allows both Peterborough Fire and the CFD to set goals that both can mutually agree upon.

The CFD also uses "Who's Responding", a cellular phone-based notification system. Firefighters can interact with this program, both receiving emergency notifications and reporting back their response. This gives the senior officers critical information on the number of firefighters available as well as those responding to specific calls.

6.4.1 Next Generation Communications (NG-911)

The 9-1-1 Central Emergency Reporting Bureau (CERB) for Cobourg is Owen Sound Police Service. Emergency 9-1-1 calls are directed to the answering service and then to the emergency service required by the caller (i.e., police, ambulance, or fire).

In June of 2017, the Canadian Radio-television and Telecommunications Commission (CRTC) created regulations regarding the Next Generation Communications for 9-1-1 centres. The following is an excerpt from the CRTC website regarding the program and its benefits for enhancement to public safety communications.

> *Canadians depend on the provision of reliable and effective 9-1-1 services to seek help in an emergency. As technology and consumers' needs evolve, so do consumers' expectations related to 9-1-1 services. In the coming years, telecommunications networks across Canada, including the networks used to make 9-1-1 calls, will continue to transition to Internet Protocol (IP) technology. This will enable Canadians to access new, enhanced, and innovative 9-1-1 services with IP-based capabilities, referred to as next-generation 9-1-1 (NG 9-1-1) services. For example, Canadians could stream video from an emergency incident, send photos of accident*

damage or a fleeing suspect, or send personal medical information, including accessibility needs, which could greatly aid emergency responders.

In this decision, the Commission is setting out its determinations on the implementation and provision of NG 9-1-1 networks and services in Canada. This will require coordination and collaboration between numerous stakeholders, including the Commission; telecommunications service providers that provide 9-1-1 services (TSPs); 9-1-1 network providers; the CRTC Interconnection Steering Committee (CISC); federal, provincial, territorial, and municipal governments; emergency responders; and public safety answering points (PSAPs). As such, in this decision, the Commission is making a number of recommendations in which all stakeholders will have a role to play, including the establishment of a national PSAP and emergency responder coordinating body.

The Commission has determined that an incumbent local exchange carrier (ILEC) stewardship model under Commission oversight is the most appropriate with respect to the governance and funding of NG 9-1-1, such that the ILECs will be responsible for the construction, operation, and maintenance of the NG 9-1-1 networks, with Commission oversight, including through Commission approval of the ILECs' tariffs.

The Commission directs all ILECs to establish their NG 9-1-1 networks and to be ready to provide NG 9-1-1 Voice service by 30 June 2020 wherever PSAPs have been established in a particular region.

The Commission also directs all TSPs to make the necessary changes to support NG 9-1-1 Voice throughout their operating territories by 30 June 2020 wherever (i) their networks are capable of doing so, and (ii) PSAPs have launched NG 9-1-1 Voice. The Commission determines that real-time text (RTT)-based NG 9-1-1 Text Messaging is the second method of communication to be supported on the NG 9-1-1 networks. The Commission directs mobile wireless service providers to provide RTT-based NG 9-1-1 Text Messaging throughout their operating territories by 31 December 2020 wherever (i) their networks are capable of doing so, and (ii) PSAPs have launched NG 9-1-1 Text Messaging. The Commission also requests that CISC submit to the Commission, for information, its recommended public education campaign for each new NG 9-1-1 service.

During the transition to NG 9-1-1, ILECs are directed to support existing 9-1-1 voice services over the existing 9-1-1 networks in parallel with the new NG 9-1-1 networks. As well, ILECs are to decommission their current 9-1-1 network components that will not form part of their NG 9-1-1 networks by 30 June 2023. The existing 9-1-1 tariff rate regime for funding the current 9-1-1 networks will remain in place during the transition, along with new incremental tariffed rates

that will be established for NG 9-1-1. These rates will be in effect until current 9-1-1 networks are decommissioned, at which time final NG 9-1-1 network access tariff rates will be established.

Finally, the Commission is imposing obligations related to (i) ensuring the reliability, resiliency, and security of the NG 9-1-1 networks; (ii) reporting on NG 9-1-1 network outages; and (iii) ensuring privacy in an NG 9-1-1 environment.

Goals and Outcomes of Implementation

- Effective and timely access to emergency services in Canada is critical to the health and safety of Canadians and is an important part of ensuring that Canadians have access to a world-class communication system.
- Canadians currently have access to either Basic 9-1-1 or Enhanced 9-1-1 service through wireline, wireless, and voice over Internet Protocol (VoIP) telephone services wherever a 9-1-1 call centre, also known as a public safety answering point (PSAP), has been established. Canadians in areas where a PSAP has not yet been established are typically required to dial seven- or ten-digit telephone numbers to seek emergency services from responders such as police, fire, or ambulance.
- In the coming years, telecommunications networks across Canada, including the networks used to make 9-1-1 calls will continue to transition to internet protocol (IP) technology. This transition will have a major impact on the networks, systems, and arrangements used to provide 9-1-1 services, and will be a complex and costly undertaking that will occur gradually over a number of years.
- In paragraph 7 of Telecom Regulatory Policy 2014-342, the Commission indicated that Canadians should have access to new, enhanced, and innovative 9-1-1 services with IP-based capabilities, otherwise referred to as next-generation 9-1-1 (NG 9-1-1) services. As such, the Commission announced its intention to conduct a comprehensive examination of NG 9-1-1 in order to establish an NG 9-1-1 regulatory framework.
- With NG 9-1-1, Canadians in need of emergency services could ultimately send a text message or transmit photos, videos, and other types of data to 9-1-1 operators. This is in addition to making traditional voice 9-1-1 calls using wireline, wireless, or VoIP telephone services. For example, they could stream video from an emergency incident, send photos of accident damage or a fleeing suspect, or send personal medical information, which could greatly aid emergency responders.

5.5.2 Current Condition

Dispatching Services:

- The current Dispatch Agreement with Peterborough Fire Services is working well and is meeting the needs of the Cobourg Fire Department.
- The current Agreement expired in 2020 and should be reviewed and updated before being taken to County Council for approval.
- Northumberland County currently pays approximately $425,903 annually for fire dispatching services (2020 rate).
- There are provisions in some dispatch agreements that if the population doubles seasonally, there is an additional charge. It is unknown if this is the case with Northumberland County.
- Before presenting a new agreement, the fire chiefs of the County should take the opportunity to review the document and the services being provided, along with any concerns and bring them forward to the NCSB for discussion with the Peterborough Fire Chief.

Next-generation 9-1-1:

- As noted in the CRTC excerpt, March 4th, 2025, is the revised implementation date. The Fire Chief must ensure that Cobourg is a stakeholder at the steering committee table through direct involvement or as part of the regional committee for this implementation plan.
- The municipalities must understand that there will be significant expenses for the fire dispatch to implement NG 9-1-1. The Peterborough Fire Services will likely increase fees for all fire departments it dispatches to cover these additional costs.
- Currently, there is no firm understanding of the costs incurred with the implementation and annual costs of NG 9-1-1.
- Some fire services with a communications centre have budgeted as much as $1M for the upgrades to 9-1-1. End users should start budgeting for significant increases.
- The CFD will need to work with all related stakeholders to ensure that the community and its fire service is able to meet the CRTC timelines for implementation of the next generation telephone and communications systems.
- Investigation of new and evolving technologies will be made as part of the regional review of emergency services dispatching and consideration of the renewal of the current agreement with Peterborough.

6.5 Radio System

The ongoing technological advancements in radio systems makes it difficult for fire services to maintain current standards. Some of these technologies are:

Simplex vs Repeater Radio Signals

A simplex radio system is best described as having radios that talk directly to each other (i.e., radio to radio). Radio signal strength using a simplex system is not as strong as using a repeater; a repeater system receives a radio message and then rebroadcasts it at a higher strength, thus providing better coverage. Most fire services operate a repeater system for the enhanced radio signal.

Analogue vs Digital

An analogue signal weakens as it travels further way from the radio that sent the signal; a digital radio signal maintains the same strength no matter how far the signal goes.

The Cobourg Fire Department's current radio system operates on the digital platform with a repeater site. The Town of Cobourg has updated portions of its system and will soon be decommissioning a radio transmission tower. There are no redundancies in the radio system in the event of radio failure at the leading transmission site.

Radio communication is a crucial lifeline for firefighters, and complete coverage must ensure firefighter safety. Providing adequate radio coverage may require additional transmission towers or purchasing mobile repeaters. It is unknown whether the CFD previously hired a third party to complete a review of the radio system.

CFD can communicate with other fire services of Northumberland County when required by changing the radio frequency to the department they wish to contact.

The risk of poor radio communications within larger structures increases with each constructed high-rise building. To aid in alleviating this risk there are a couple options; the acquisition of mobile repeaters for the apparatus and the introduction of a bi-directional antenna to be installed in the buildings during construction. The CFD, in cooperation with the Planning and Building Departments, should review the need to incorporate a bi-directional antenna in high rises.

Section 6 - Recommendations

Rec #	Recommendation	Rationale
30	The CFD to maintain a minimum of four firefighters on the fire apparatus for each shift. This would bring CFD closer to being in line with the recommendations regarding the staffing of fire apparatus as identified in the NIST study and NFPA 1710. It would enhance the operational abilities of the CFD.	Having more trained firefighters at the scene of a structure fire, and specialty operations incidents which enhances the opportunity of conducting a rescue, saving the structure, reducing damage, and most importantly, making the emergency scene safer for the firefighters.
31	As a tool to evaluate response times, the CFD is to monitor its ability to meet effective response times as identified in NFPA 1710. This includes the following: • Achieve a goal of 80 seconds for firefighter turn-out time. • Four firefighters arriving on scene within four minutes of travel time. • Sixteen firefighters arriving on scene within an eight-minute travel time at a residential structure fire.	While the NFPA timelines are not mandatory, they do identify an industry requirement based on studies conducted by NFPA and NIST. With the limited number of staff available for the CFD, meeting these goals may not be achievable. If this is the case, then the fire chief must decide what can be safely accomplished by the CFD firefighter staffing at the scene of a fire.
32	It is recommended that the CFD consider purchasing a pumper-tanker to supply water to areas that are not serviced by fire hydrants.	Having access to a much-needed water source in a timely manner is paramount to the effectiveness of the fire department.
33	It is recommended that the CFD work in conjunction with the medical oversight to review delegated medical acts including, but not limited to, the administration of glucagon.	Any opportunity for the CFD to provide an enhanced level of service to the members of the community should be investigated and adopted, where feasible.

Rec #	Recommendation	Rationale
34	It is recommended that the CFD should review the level of training, certification, and operational response costs that are required to provide the appropriate medical call response service level.	An opportunity for the CFD to determine if this level of service, as outlined in the E&R By-law, is sustainable as well as cost-justified in providing an enhanced level of service to the community or not.
35	The CFD work with the City of Peterborough Fire Department to ensure that they are adhering to NFPA 1225, *Standard on Emergency Services Communications*	Ensuring that the NFPA benchmark is being met will allow the CFD to respond to emergency calls as quickly and efficiently as possible, resulting in improved life safety for all residents in the Town of Cobourg.
36	The CFD hires a third party to complete a radio system audit and upgrade all radio system components, including the digital platform.	The radio system has seen a partial upgrade. A fully functioning radio system is a firefighter's lifeline during emergencies and is a health and safety concern.

SECTION 7

Facilities, Vehicles, Equipment, Technologies, and Hydrants

SECTION 7: FACILITIES, VEHICLES, EQUIPMENT, TECHNOLOGIES, AND HYDRANTS

7.1 Fire Station Review

The CFD station is located within the Town of Cobourg boundary. A review of the existing fire station's facilities was conducted by EMG and will be addressed in this section. It should be noted that the walkthrough of the fire station was a visual inspection; no destructive testing or engineering assessment was conducted.

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

Fire stations should be situated to achieve the most effective and safe emergency responses. Distance and travel time may be a primary consideration; however, if a basic expectation of response time is set by the community's decision-makers, then a more realistic level of service and fire station location criteria can be identified.

FIGURE #16: LOCATION OF THE FIRE STATION

FIGURE #17: DRIVE TIME - 4 AND 8 MINUTES FROM THE FIRE STATION

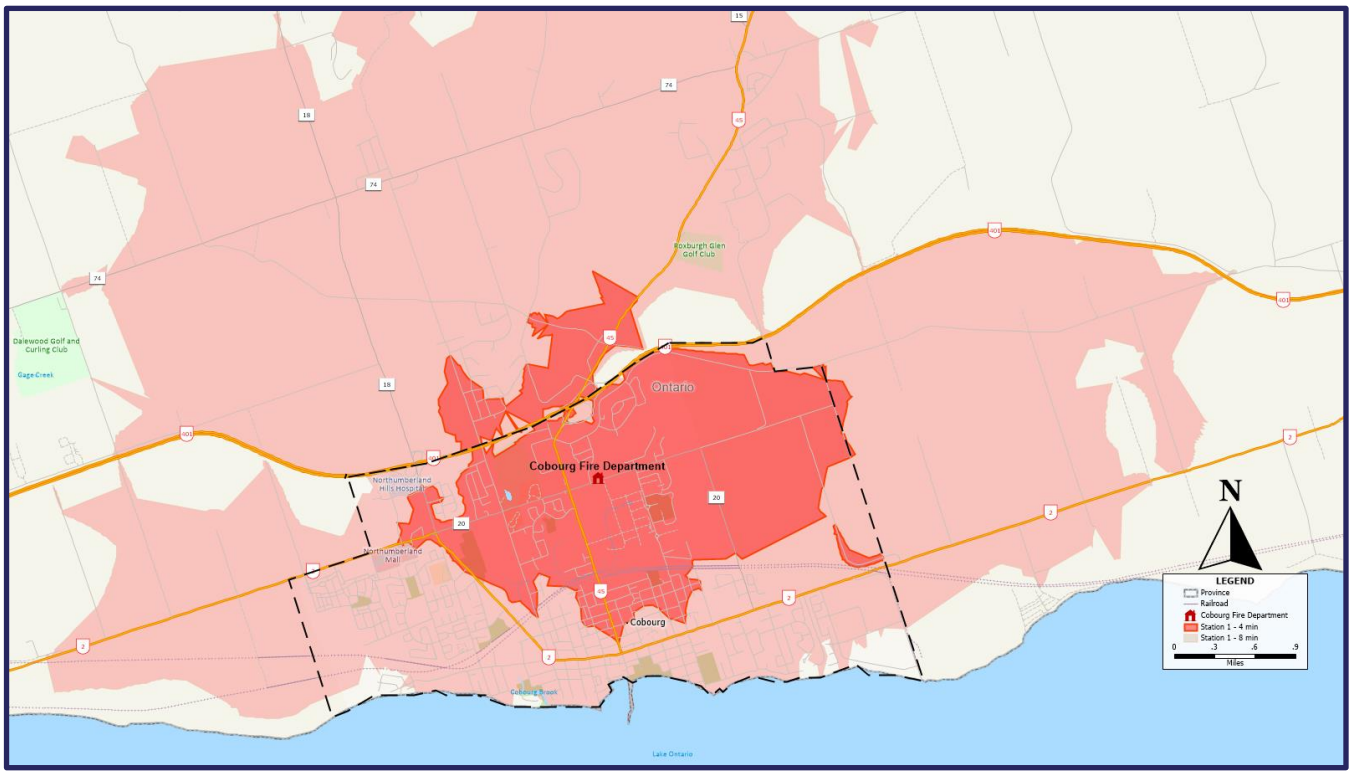


Figure #17 reveals shaded areas around the fire station which represents response time zones:

- The first response time zone in the red-coloured shading is for 4-minute drive time coverage by the initial full-time response which is related to the NFPA 1710 response time standard for career departments.

The response mapping and related response data supplied in this document should not be taken in isolation. Annual reports reviewed by the fire chief with an update on the key performance measures and expectations is required in order to monitor and evaluate response statistics and performance.

Nonetheless, EMG does make recommendation for a future, additional fire station location in this report. A qualitative and quantitative analysis of historical call types, location, and volume together with future growth data for the Town of Cobourg as supplied by Town Planning staff, provides the empirical evidence that EMG utilizes to make any recommendation(s) regarding fire station locations. This is outlined in Section 7.2 of this Fire Master Plan report.

7.1.1 Cobourg Fire Station

During the walk-through by EMG, it was evident that the CFD fire station was short of space to properly accommodate the vehicles, equipment, and particularly staff office and living quarters. As can be seen in the supplied photos, the station is undergoing significant renovations that will ensure the station is operating at its maximum capacity.


COBOURG
FIRE RESCUE
EXIT

EMG makes no recommendations regarding current station facilities as the current renovations (that are underway) are adequately addressing any living quarters and functional issues.

7.2 Type of Buildings and Options for Fire Stations

Traditionally, emergency response stations have been stand-alone structures. Municipalities have been shifting to integrating services into shared-use buildings with emergency service response stations being built into community centres, libraries, public works buildings, etc.

It is common across Canada to have different emergency services co-located; this has included fire and police, fire, and paramedics, or all three in the same building. These stations normally have separate quarters within the same building, with separate entrances and facilities. This permits each service to operate independently while taking advantage of the efficiencies of a single structure.

Municipalities are looking for opportunities to create more efficient use of space and financial resources and integrate municipal services within the community. Several models that are being used

in different jurisdictions including public/ private partnerships, partnerships with non-profit organizations, and leasing of available commercial space.

As technology, community demographics, and operational requirements evolve, maintaining an ability to be flexible in the station design, construction, and location will benefit the community in the long-term.

Leasing reduces the initial capital outlay, placing building maintenance responsibility on the landlord and allows the municipality the flexibility to move, should there be a change in community development.

The following is the City of Vancouver's new Fire Station #5 that is being integrated into a community housing project run by the YWCA. The two lower floors make up the fire station with the upper four floors of the six-storey building providing 31 affordable housing units for single mothers and their children.

While the fire station was funded by the City, the YWCA housing portion of the building received funding from the city, province, and federal governments as well as a capital fundraising campaign. Having the two services integrated provides a sense of safety and security for the single mothers and their children.

In Montreal, a fire station *(pictured below)* is built into the ground floor of the Palais des Congress de Montreal, a convention centre that includes a transit hub and retail space. This was a public/ private project including the city and the province.

The City of Barrie has leased the end unit of a commercial strip mall as a fire station *(pictured below)*. The unit was constructed by the landlord to meet the city's requirements.

The Municipality of Estevan was able to utilize a former car dealership and retrofit the building for the fire department.

EXTREME fire stations are a new concept that is a Canadian built product out of Lethbridge, Alberta. It is a modular-based building, built to seismic and building code standards, using high efficiency, energy code compliant HVAC systems and fire suppression systems; these are standard on EXTREME stations.

The positive aspects about EXTREME fire stations are that they are custom built at a factory and transported to the site where they are quickly placed onsite and ready for occupancy.

As noted already, a typical fire station has a life expectancy of 50 years before the cost/ benefit ratio starts to work against the municipality in terms of maintenance, basic function, and design. The EXTREME fire stations could meet that life cycle because they are made from steel and aluminum and additional modules can also be added if the station needs to expand its footprint.

The West Conrad station is an example of the diversity of EXTREME fire station designs and how they can be designed and expanded to meet the customer's needs.

A partnership with non-profit organizations, EMS, or leasing of available space in a new fire station are options as municipalities become more innovative in how they incorporate a fire station into the community. This model may not work or be a fit in every community, but these options are worth exploring in order decrease costs while simultaneously increasing the fire department's response capacity.

Prior to March 2021 a two-bay EXTREME fire station with appliances, diesel extraction system, exercise room and administration space were estimated to be $2.4 million. Unfortunately, the construction industry is experiencing unprecedented spikes in building materials like wood, cement and steel which creates challenges in projecting final price.

7.2.1 Fire Station Facilities Summary

Fire stations should be constantly evaluated to ensure compliance with provincial legislation, standards, and regulations. This would include, but not limited to, functioning oil separation tanks in the apparatus bays; bunker gear stored in negative pressure rooms; gender-neutral washrooms, locker rooms, and showers; barrier-free in all aspects; and installation of decontamination showers and eye wash stations in the apparatus bays. The CFD should keep this in mind as they continue to renovate and update the current station and as the CFD builds additional station(s)

When considering new facilities including the potential locations(s) of the future new fire station(s), locations to augment the existing fire station. evaluations is based on several factors such as response times, current coverage areas, building types, age, and density. These are some of the objective considerations considered regarding the Town of Cobourg's circumstances, The current fire station provides adequate coverage in terms of response times in the middle to north extensions of the Town of Cobourg including Highway 401 as depicted by the following maps. The southern extension of the

Town of Cobourg is identified as being underserviced in terms of response time and area coverage. This is a particular risk due to the age and density of buildings, as well as risk exposure given the high seasonal population due to the tourism and residential concentrations in the southern extensions of the Town of Cobourg. The additional benefit of a second station and response is providing staffing resourcing of incidents for each station as well as addressing the rail line that runs mid-centre east and west through the Town of Cobourg. Risk management of potential rail incidents is a consideration as they can hamper CFD ingress to the response on either side of the rail line. As such, EMG is recommending that the following potential new fire station location(s) be considered and planned for a second Cobourg fire station, over the term of this FMP.

FIGURE #18: CURRENT FIRE STATION COVERAGE 4 MINUTE DRIVE TIME

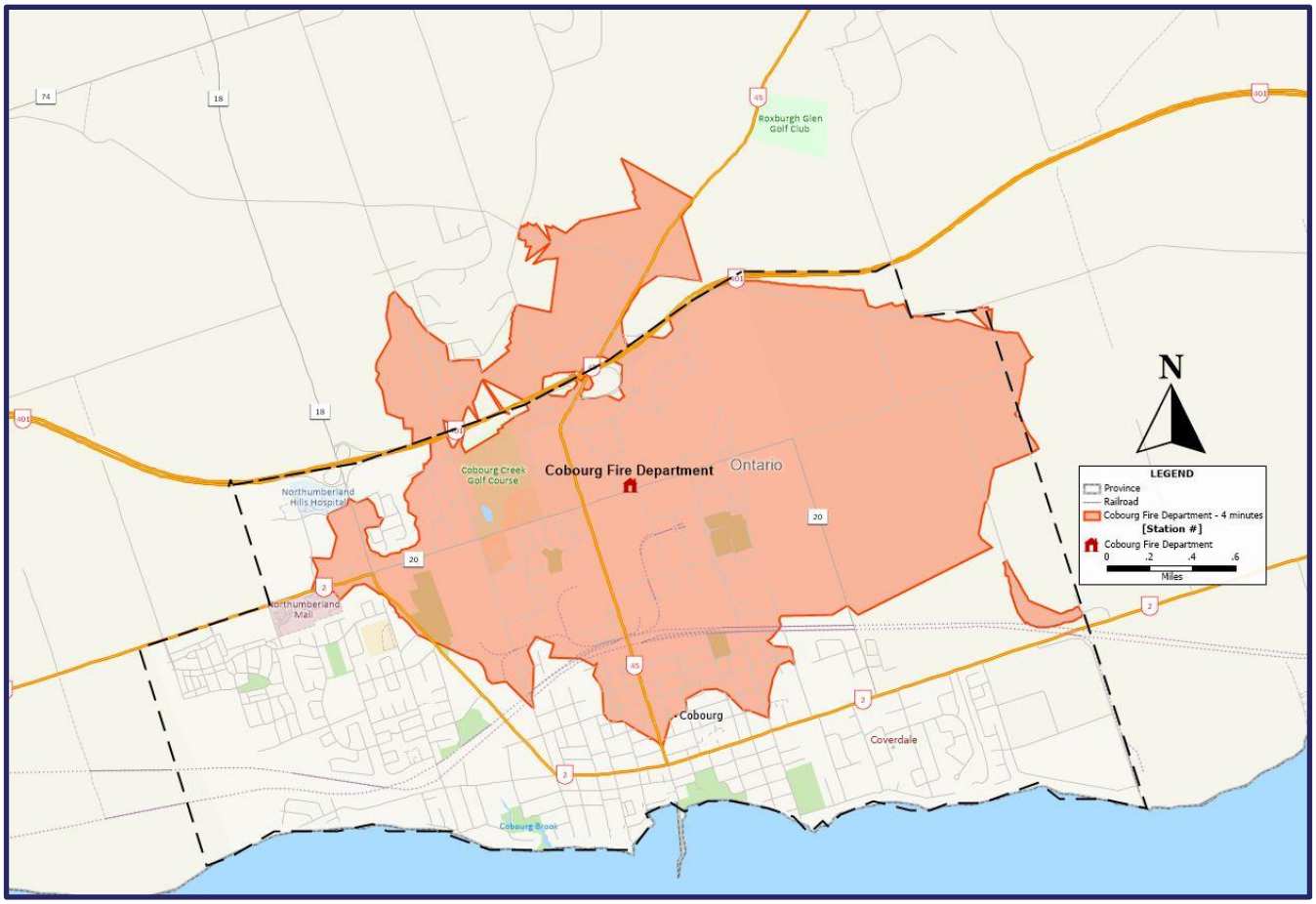
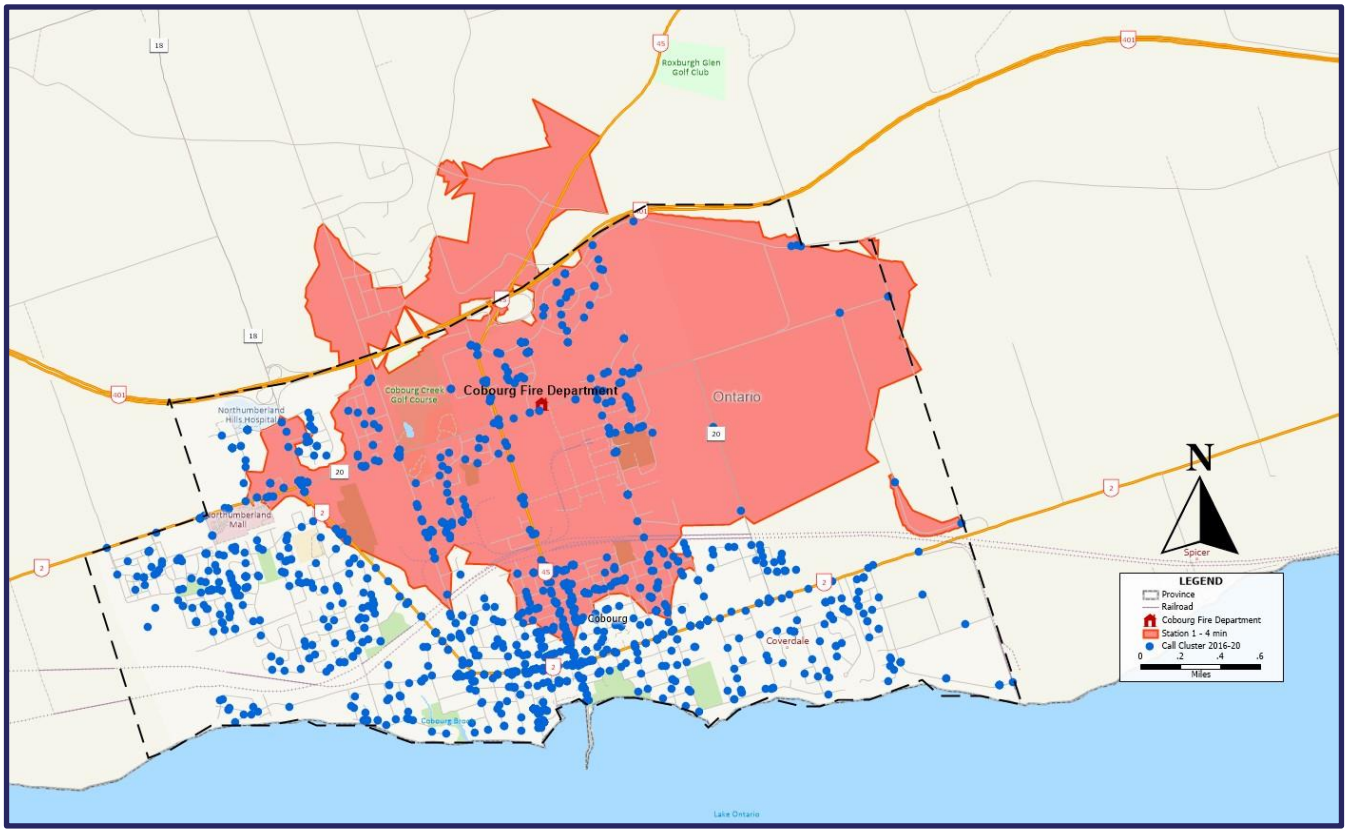
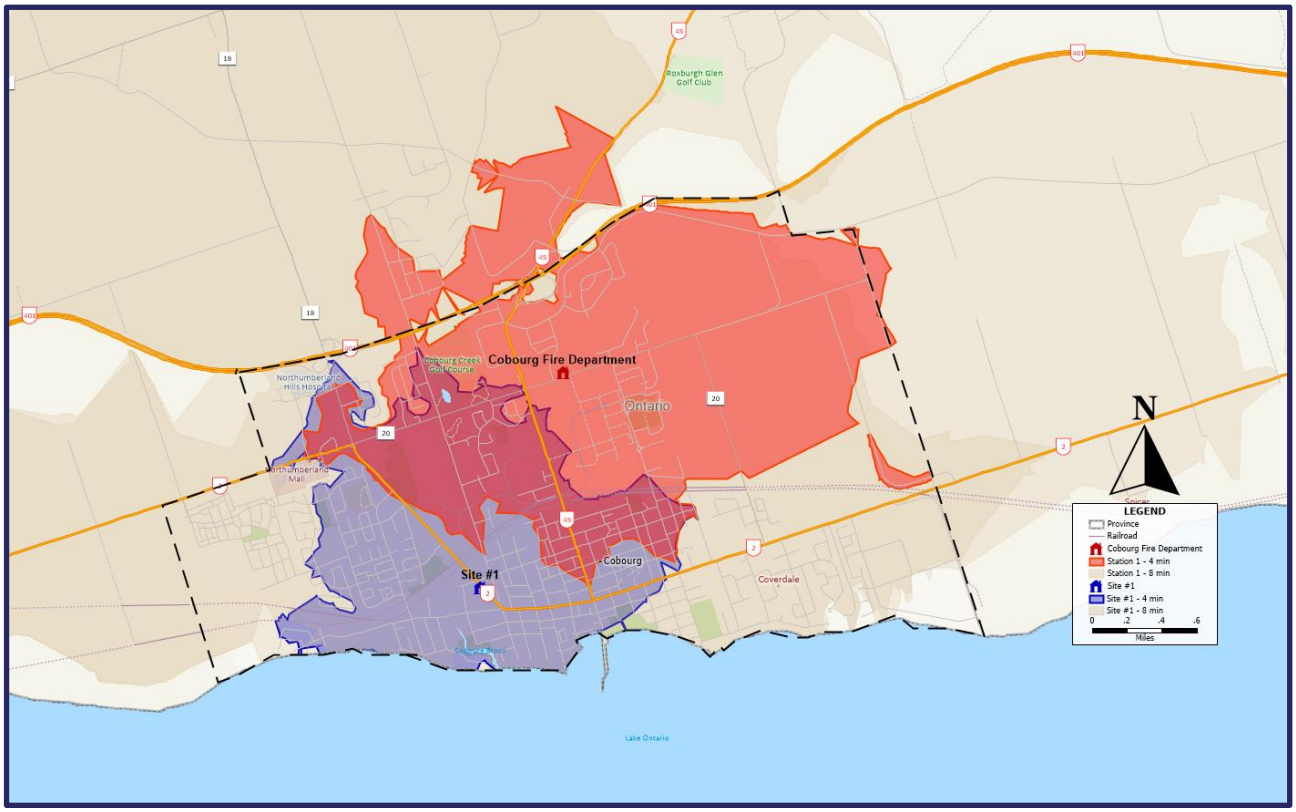


FIGURE #19: HISTORICAL PERSPECTIVE OF CALL LOCATIONS



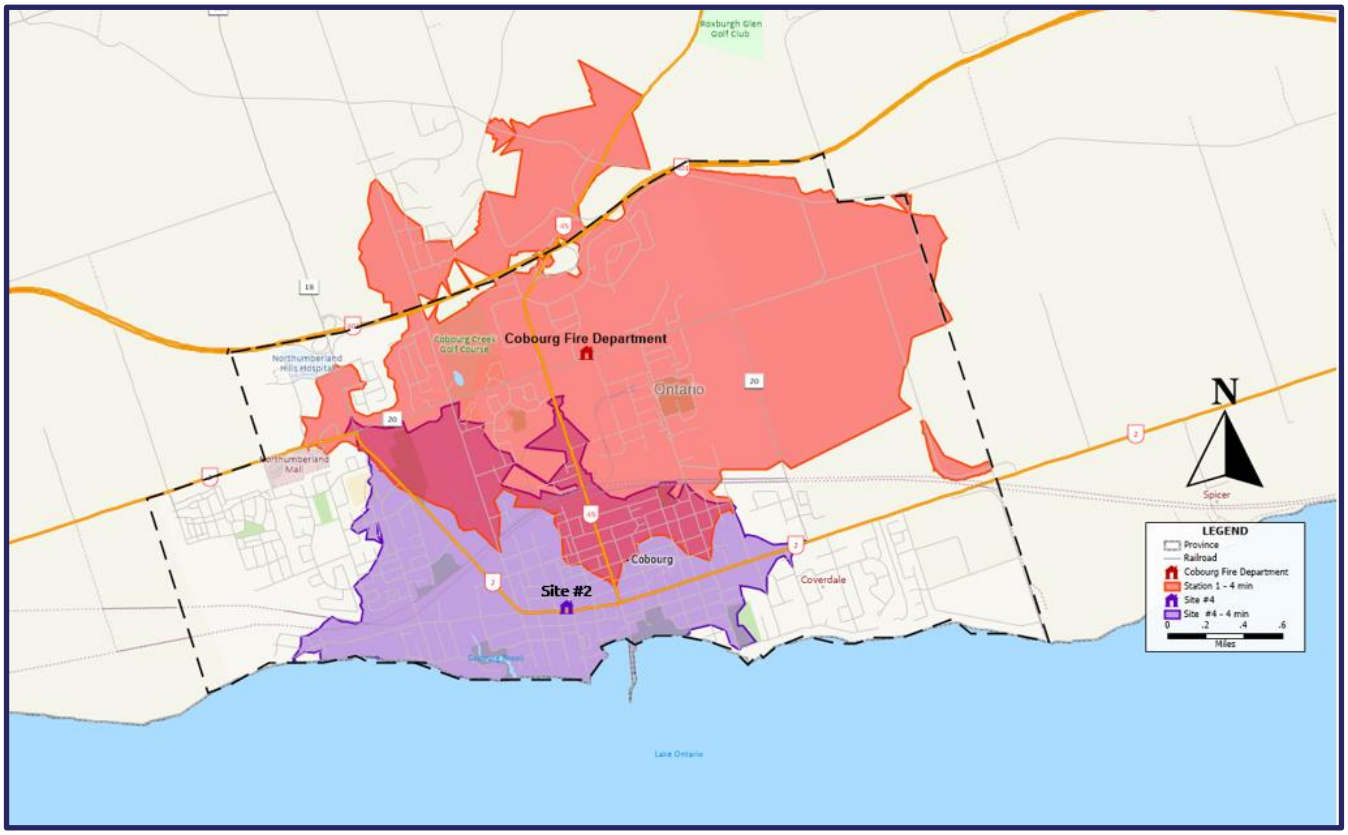
The above map retrospectively identifies the call locations which assists to identify the likely need for response area coverage. As this map indicates, there are significant calls located in the southern extension of the Town of Cobourg, particularly in the “downtown” core and emanating out to the east and west.

FIGURE #20: SITE #1 SUGGESTED LOCATION FOR NEW FIRE STATION(S) BASED ON 4 MINUTE RESPONSE TIMES



Site #1 location at approximately 388 Williams Street provides coverage in the southern extension of the Town of Cobourg particularly in the density of the downtown core along Highway 2 and waterfront. Combined with current fire station coverage in 4-minute response coverage, this provides significant whole town coverage.

FIGURE #21: SITE #2 SUGGESTED LOCATION FOR NEW FIRE STATION(S) BASED ON 4 MINUTE RESPONSE TIMES



Site #2 is an alternate location at approximately 373 County Rd 2 provides coverage in the southern extension of the Town of Cobourg particularly in the density of the downtown core along Highway 2 and waterfront. Combined with current fire station coverage in 4-minute response coverage, this provides significant whole town coverage.

7.3 Fire Apparatus - New and Replacement Schedules

Reliability of a fire apparatus is critical to the successful operation of a fire service. Over the long-term, delaying the replacement of a vehicle is inadvisable as it will add to the overall maintenance costs and the lack of reliability. The lack of current and reliable apparatus can influence insurance costs based on the emergency service's FUS rating.

Overall, the CFD is well-equipped with pumper trucks, aerial devices, and support vehicles required for primary response to calls within the Town of Cobourg. All the vehicles have been identified in the CFD capital replacement plan.

7.3.1 Fire Underwriters Survey – Vehicle Replacement Recommendations

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

The Medium Sized Cities section (outlined in light blue) is the recommendation for vehicle replacement. This allows for up to a 20-year replacement cycle, in which the fire vehicle can be utilized as 2nd Line response status. It is, however, recommended that all First Line units be replaced by a new or younger unit when it reaches 15 years of age.

TABLE #10: FUS VEHICLE REPLACEMENT RECOMMENDATIONS[20]

Apparatus Age	Major Cities [3]	Medium Sized Cities [4] or Communities Where Risk is Significant	Small Communities [5] and Rural Centres
0 – 15 Years	First Line Duty	First Line Duty	First Line Duty
16 – 20 Years	Reserve	2nd Line Duty	First Line Duty
20 – 25 Years [1]	No Credit in Grading	No Credit in Grading Or *Reserve* [2]	No Credit in Grading Or 2nd Line Duty [2]
26 – 29 Years [1]	No Credit in Grading	No Credit in Grading Or *Reserve* [2]	No Credit in Grading Or *Reserve* [2]
30 Years +	No Credit in Grading	No Credit in Grading	No Credit in Grading

[1] All listed fire apparatus 20 years of age and older are required to be service tested by a recognized testing agency on an annual basis to be eligible for grading recognition (NFPA 1071).

[20] Fire Underwriters Survey, "TECHNICAL BULLETIN, FIRE UNDERWRITERS SURVEY™, A Service to Insurers and Municipalities, INSURANCE GRADING RECOGNITION OF USED OR REBUILT FIRE APPARATUS," accessed January 31, 2022, https://fireunderwriters.ca/Downloads

[2] Exceptions to age status may be considered in small to medium sized communities and rural centre conditionally, when apparatus condition is acceptable, and apparatus successfully passes required testing.

[3] Major cities are defined as an incorporated or unincorporated community that has:

- a populated area (or multiple areas) with a density of at least 400 people per square kilometre; AND
- a total population of 100,000 or greater.

[4] Medium Communities are defined as an incorporated or unincorporated community that has:

- a populated area (or multiple areas) with a density of at least 200 people per square kilometre; AND
- a total population of 1,000 or greater.

[5] Small Communities are defined as an incorporated or unincorporated community that has:

- no populated areas with densities that exceed 200 people per square kilometre; AND
- does not have a total population in excess of 1,000.

Fire Underwriters Survey definition of First Line Duty, 2nd Line Duty, and Reserve is:

- 1st line is the first fire truck utilized for response at the fire station.
- 2nd line is the next truck to be used if the 1st line unit is tied up at a call, and
- Reserve is the vehicle kept in the fleet to be put into service if a 1st line or 2nd line vehicle is out of service.

The FUS is reviewed by insurance companies. Provided that the CFD adheres to the recommended replacement timelines through an approved capital replacement schedule, the CFD will retain its fire rating for vehicle replacement. By ensuring that the vehicles are being replaced on a regular schedule, the CFD is also demonstrating due diligence towards ensuring a dependable response fleet for the CFD and the community it serves through its vehicle replacement schedule.

7.3.2 National Fire Protection Association – Vehicle Replacement Recommendations

The NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus* also supports a regular replacement schedule of fire vehicles. This

standard includes guidance on retirement criteria for fire apparatus. NFPA 1911 recommends that all front-run vehicles are replaced on a 15 to 20-year cycle, depending on the community size.

For emergency services that are considering refurbishing their vehicles to extend the in-service life, reference can be made to the NFPA 1912, *Standard for Apparatus Refurbishing*.

NFPA and FUS both recommend replacement of front-run units after 20 years. This same vehicle can then be put into a secondary role. As such, all front-run units should be scheduled for replacement at the 20-year stage with the back-up/ secondary units being replaced at 25 years. Once a pumper truck has passed the 25-year stage, no credit is given by FUS. FUS has their own standard on refurbishing apparatus.

7.4 Maintenance

The CFD does not have its own in-house mechanical division, some basic rolling-chassis work is handled by the Town of Cobourg fleet maintenance department. The fleet maintenance department does not have a certified emergency vehicle technician (EVT). As such, if specialty repairs are required an outside third party is required. The CFD utilizes several third-party maintenance and repair companies.

EMG does note that annual maintenance costs have been trending up steadily towards $100,000 in total for all fire fleet. As the fleet ages, this is not unexpected. However, consideration for regular monitoring of out-of-service per unit time, costs per unit, total fleet costs, and what third party is completing maintenance and repairs, including invoicing, is essential data that will assist in determining budget (operating and capital, including reserves) and procurement requirements as per Town of Cobourg procurement policies.

It would be in the Town of Cobourg interest that one of Town of Cobourg fleet maintenance department certified technicians become a certified Emergency Vehicle Technician (EVT). Along with being EVT certified for fire apparatus, they could also provide maintenance and repair services to the CFD equipment and tools and test the ancillary equipment that the CFD has in service.

7.4.1 Vehicle Technology

The CFD should endeavor to advance the technological perspective on the fire apparatus through the acquisition of tablets. These units are data enabled and will permit the responding crews to acquire information about the incident they are responding to directly from the Communications Centre including mapping, responding apparatus, pre-incident plans, hydrant locations and access to the internet. Some data terminals can open the overhead doors of the fire stations rather than a small remote control that can become lost. The Town of Cobourg Information Technology (IT) department would be responsible for supporting the operating systems.

The tablets will have the capability to provide any pre-incident plans that are completed for a particular location. These plans will provide information such as a footprint of the structure, man and overhead doors, electrical panels, gas valves, hazardous materials storage area, sprinkler and fire hose connections, fire hose cabinets, etc. The Incident Commander will use this information to direct their crews to specific areas of a structure to perform an assigned task and improve the situational data.

The focus of vehicle tablet technology application should be on vulnerable occupancies, industry, main streets with commonly joint buildings, marines, assembly occupancies, campgrounds, fuel storage and retail such as propane and gasoline and any structures with known hazardous materials. It would aid in the completion of additional plans if an individual were to be the co-ordinator of the program and direct crews on which structures to complete. They would also be responsible for drawing the diagrams and uploading information into the computer system. All pre-incident plans should be completed in compliance with NFPA 1620, *Standard for Pre-Incident Planning*.

7.4.2 Equipment and Maintenance

Ancillary equipment that is operational and safe to use is a necessity in firefighting. Equipment that is prone to failure need not be in service and should be replaced if it is unreliable. There is a requirement that many pieces of firefighting equipment be inspected and tested annually.

The CFD does not complete or track the annual equipment testing to ensure the functionality of equipment for the front-line. By scheduling the testing of equipment and apparatus would allow the CFD to confirm that apparatus and equipment is in a state of readiness, safe to use and the department would be compliant with several NFPA and manufacturers standards.

Some of the NFPA Standards include:

- NFPA 1851, *Standard on Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*.

- NFPA 1852, *Standard on selection, Care, and maintenance of Open-Circuit Self-Contained Breathing Apparatus.*
- NFPA 1858, *Standard on Selection, Care and Maintenance of Life Safety Rope and Equipment for Emergency Services*.
- NFPA 1911, *Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Emergency Vehicles.*
- NFPA 1914, *Standard for Testing Fire Department Aerial Devices.*
- NFPA 1932, *Standard on Use, Maintenance, and Service Testing of In-Service Fire Department Ground Ladders.*
- NFPA 1937, *Standard on Selection, Care, and maintenance of Rescue Tools.*

The lack of testing of equipment places a level of risk to not only the safety of the personnel using that piece of equipment, but also the city. A certified EVT could also provided the equipment and tools, to test the ancillary equipment that the CFD has in service. This would also require an equipment testing/maintenance record management program.

The CFD Canadian Standards Association (CSA) SA Z94.4-11 Respiratory Protection Program is overseen by a staff within the CFD. Fit testing is completed as stated in CSA Z94.4-11.

The state of the SCBA inventory is in good condition. The department currently has hydrostatic testing completed on the SCBA tanks when required. The SCBA themselves must be bench tested yearly to ensure their performance meets industry standards and manufactures requirements, and this is being completed.

7.4.3 Bunker Gear

Every year a growing number of firefighters are being diagnosed with cancer. A contributing factor to their illness has been proven to be the contaminants that adhere to the bunker gear during fire fighting operations. After a fire, the bunker gear should be packaged and sent for cleaning to reduce this risk. The CFD fire station has a commercial extraction washing machine made specifically for this type of cleaning.

While bunker gear is being cleaned, the firefighter requires a replacement set. This is achieved by the fact that each firefighter be issued a second set of bunker gear or a reasonable inventory of spare bunker gear of varying sizes, so they do not go without clean gear to wear. Ensuring that the cleaning of gear is a high priority after fires and that firefighters have access, to properly fitting bunker gear during the cleaning process, will assist the CFD in meeting its decontamination and hygiene program.

When used for interior structural firefighting, bunker gear has a life span of 10 years as stated in NFPA 1851, *Standard on Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*. The CFD is following this replacement standard or if the gear is compromised in any way.

Further to contaminating the bunker gear, toxins also contaminate the firefighter's uniform/personal clothing. Each firefighter should have a clean uniform/personal clothing available to wear so that the uniform/personal clothing they wore into a fire is cleaned and the contaminates not taken home with them, where others could become exposed to the toxins. The risk of toxin exposure is not just to full-time personnel but also the volunteer firefighters.

The CFD should ensure that SOGs pertaining to the cleaning, inspection of and maintenance of bunker gear is current and meet manufactures requirements. Special attention should be taken when reinstalling the drag rescue device, which may also require an SOG to provide guidance on the procedure as per manufacturer specifications. Some manufactures have developed an in-house asset management program which is available to assists in maintaining records of the bunker gear inventory.

7.5 Asset Management Program

Fire administration should have established an asset management program and specifically a master equipment life-cycle plan to ensure that equipment replacement is occurring where applicable. It is a common practice to tie this equipment to the parent apparatus. This could be accomplished through each item's entry into a computer program. Purchasing a new apparatus with new fire hose, nozzles and ladders will help in the long-term financial planning of equipment replacement while ensuring the equipment's reliability and longevity.

Many pieces of equipment have a predetermined life span as established in either the NFPA standards and/or the manufacture's guidelines. When it comes to the end of the life span, the items must be decommissioned, replaced with new items, and then disposed of in a manner that ensures they could not be used by any other outside interests for liability reasons. The asset management program should be designed to trigger notifications when an item is approaching the end-of-life span and plans should be in place for replacement (i.e., identified in the budget).

7.6 New Technologies

Technology is ever evolving within the fire service, with new pieces of equipment being added to the resources used by an incident commander. The use of drone technology has proven to be a significant and invaluable tool. Police services have been using them for some time to locate missing persons or document accidents and crime scenes.

The use of drones in the fire service is a growing trend as a multi-purpose tool that can assist with large scale assessments of fireground and hazardous material incidents, enhance search and rescue functions, and be used in pre-incident planning.

Drones can cover a lot of ground thus allowing valuable fire services personnel to be utilized elsewhere. They have proven beneficial for hazardous materials incidents and large-scale emergencies as the drone can be quickly deployed and give the incident commander a live view of the incident. The reduction of risk to firefighting personnel is a significant benefit of drone technology along with the live view capabilities that provides invaluable information.

Drone pilots must follow the Canadian Aviation Regulations (CARs) Part IX-Remotely Piloted Aircraft system that contain the rules for drones up to 25 kilograms. Advanced operations include flying in a controlled airspace, flying over bystanders, or flying within 30 meters of bystanders.

New technologies are being developed each year to protect the firefighters; these include the use of robotics to fight fires, which are being actively used in Europe and Asia.

New SCBA have built in telemetry systems that, like some portable radios, identify the location of the fire fighter. New technology SCBAs can transmit GPS data, the amount of air in the SCBA cylinder, monitor the heart rate, level of exertion the fire fighter is being exposed to, and body temperature.

As the technology progresses it is important to monitor the benefits and opportunities to integrate these devices into the fire service.

7.7 Hydrants

The Town of Cobourg has installed fire hydrants which are tested to an unknown schedule to ensure the status of operability, as the hydrant maintenance is provided by a third party, Lake Front Utilities Inc. The records of testing have not been made available to EMG. The reliability of the hydrants may therefore be in question. The Town of Cobourg needs to ensure there is adequate flow rates to sustain firefighting operations, especially in high-risk areas in which vulnerable occupancies, schools, community centres, hospitals, youth residences, and medical treatment centres are located.

All fire hydrants should be inspected and tested as noted within, NFPA 24, *Standard for the Installation of Private Fire Service Mains Their Appurtenances,* along with NFPA 291, *Recommended Practises of Fire Flow Testing and Marking of Hydrants*. The hydrants should also be painted in colours appropriate to their flow rate, as identified in NFPA 291. The Town is required to follow OFC Article 6.6.4 regarding hydrants maintenance.; failure to do may result in charges. The Town should ensure that every hydrant is flushed each year. The failure of a hydrant to operate as required may present catastrophic results and expose the Town of Cobourg to risk of litigation.

When a fire hydrant is out of service, repairs should be completed in an expedited manner, notifying the fire department of such breakages and the anticipated time to complete the required repairs.

During winter months some hydrants will have markers installed beside for ease of location amongst snowbanks. It would aid firefighters year-round to locate a hydrant at night with reflectors being installed on the 65mm ports and be colour coded to the hydrant's flow rate.

There are no dry hydrants within the Town of Cobourg boundaries.

Modern fire hydrants have three ports for attaching a fire hose when required. The two ports on the side are 65 mm (2 ½") in diameter and the large steamer port on the front may vary in size from 100 mm to 150 mm (4" to 6"). Normally the large steamer port has threads on it, in which fire services attach large diameter water supply hose ranging in size from 100 mm to 150 mm. The water supply hoses do not have threads but Storz couplings or lug locks in which to attach the hoses together. To attach a hose with these couplings to a hydrant requires the fire service to use an adaptor to allow the hose to be attached.

Many municipalities, are now ordering new or replacement fire hydrants with Storz couplings on the large steamer ports, eliminating the need for an adaptor. If an adaptor is not available to be used on the hydrants the firefighters are unable to attach the hose to the steamer port and may have to resort to finding a smaller adaptor and attach it to the 65 mm (2.5") port. It is suggested that any new hydrant installations should include steamer ports and have the Storz connection on them.

Section 7 - Recommendations

Rec #	Recommendation	Rationale
37	The CFD plans and builds a second Cobourg fire station in the southern area of the Cobourg coverage area over the term of this Fire Master Plan.	The additional fire station will address the response times, emergency incident resourcing of firefighters and equipment, and any response delays or potential blocking of fire department resources traveling south or north of the railway that runs east/west through the approximate center of the Town of Cobourg.
38	The CFD initiate a tablet vehicle technology and pre-incident plan development program and that the program follows NFPA 1620.	Creating such a program will assist the incident commander/officer with information on the facility that they are responding to, along with any possible fire suppression equipment on site to facilitate suppression operations. The CFD currently has no pre-incident plans completed.
39	The Town of Cobourg maintain a certified EVT that is trained and provided the equipment to maintain and test the equipment of the CFD, as prescribed in NFPA standards and to manufactures specifications.	Having a certified EVT on staff would greatly reduce both the timing of repairs and cost of repairs and maintenance on the fire apparatus and equipment.

Rec #	Recommendation	Rationale
40	The Town of Cobourg needs to confirm and be in annual receipt of complete hydrant flow testing, maintenance, and NFPA compliance records.	The Town of Cobourg needs to ensure there is adequate flow rates to sustain firefighting operations especially in high-risk areas in which vulnerable occupancies, schools, community centres, hospitals, youth residences and medical treatment centres are located.

Section 8

SECTION 8: EMERGENCY MANAGEMENT

8.1 Emergency Management Program

Emergency Management programming is a specialized programing that requires a trained and dedicated Community Emergency Management Coordinator (CEMC) to coordinate the maintenance and training of the program and a Community Control Group (CCG) to react when a major emergency occurs.

In accordance with the *Emergency Management and Civil Protection Act* a formal Emergency Response Program and Emergency Response Plan is required for the community. The Town of Cobourg has the *Town of Cobourg Emergency Plan 2015* that is endorsed and established with By-Law 067-2015. This plan is required to be reviewed by the CCG annually. In addition to this review there are requirements to conduct training and an exercise so that the plan is tested and those who would potentially be involved in a major emergency can be appropriately trained.

The previous Fire Protection Master Plan (2005) indicated that the fire chief was designated as the CEMC. As the CEMC, the fire chief spent 25% of the time working in this position and the deputy fire chief committed 20% of the time working as the alternate CEMC. Within the Town of Cobourg Emergency Plan 2015 there is reference within the composition of the CCG that the fire chief is the CEMC. In review of the program with town officials it was noted that the CEMC responsibilities have been shifted to the clerk. The staff identified and responsible as the CEMC are required to be trained, certified, and appointed through the Emergency Management Ontario required processes[21]. Every municipality is required to an Emergency Management Program Coordinator, designate otherwise referred to as a CEMC. This CEMC is also required to complete certain training within one year of designation. Currently, this is not the case in the Town of Cobourg.

To maintain compliance to the *Emergency Management and Civil Protection Act* to be ready for a major emergency, considerable commitment is required to ensuring adequate planning is in place and appropriate staff are trained to work at any potential site(s) and within the Emergency Operations Centre (EOC).

[21] CEMC, Emergency Management and Civil Protection Act, O. Reg 380/04, 10. (1), accessed on November 10, 2022, https://www.canlii.org/en/on/laws/stat/rso-1990-c-e9/latest/rso-1990-c-e9.html

In accord with the recommendation presented in the 2021 Independent Review of the Northumberland Fire Services, shared service for a single CEMC for Northumberland County supported by Alternate CEMCs (current CEMCs) in each municipality will provide the County with a focused plan that is consistent between all municipalities.

As each municipality is required within the *Emergency Management and Civil Protection Act* to identify and support an EOC, this shared service would allow municipal EOCs to be maintained. The benefits would come when identifying the alternate EOC. Group planning will allow, during times of emergency, a non-affected municipality's EOC to be utilized as an alternate EOC for the impacted municipality, should the need arise. This will provide cost savings and avoidance by requiring an Alternate EOC within each municipality under the current model.

An Emergency Management Plan developed with this shared service in mind and with a focus on current best practices, training, and provision would benefit all municipalities. Long-term incidents quickly tax resources within a municipality. Having a shared County Emergency Plan and training will allow personnel from other municipalities within Northumberland County to come and work in the EOC and at the incident site(s) in the municipality where an event has occurred enabling adequate rotation of staff throughout a long-term event.

As noted, the *Emergency Management and Civil Protection Act* has directed that municipalities provide training and exercise the Emergency Management Plan on an annual basis. Most municipalities comply with this legislation and have accomplished much in training and exercises over the years. When dealing with a major emergency the plan must be able to accommodate multiple-day events. It becomes imperative that there is a competent and confident depth of personnel to participate in each role and area.

To this end, in the interim as shared County services are investigated, the CEMC for the Town of Cobourg should ensure that Town and CFD personnel are trained in basic emergency management, IMS, and other programs as needed. In addition, the CFD officers take more advanced training so that they may act in the command structure within the EOC and on the emergency site.

8.2 Emergency Management Plan

The CEMC, in consultation with the Community Control Group is responsible for the development and maintenance of the *Town of Cobourg Emergency Plan*. The latest version of the Emergency Plan was completed in 2015. As previously noted, in accordance with the *Emergency Management and Civil Protection Act (EMCPA)* it is a legislative requirement for emergency plans to be reviewed and updated each year.

Ontario Regulation 380/04 (O. Reg. 380/04) under the EMCPA sets out the required elements of an emergency management program. The regulation sets the standards for the development, implementation, and maintenance of emergency management programs required by municipalities. (Framework, 2021, pg 22)

Under the EMCPA and O. Reg. 380/04, an emergency management program must:

- Designate an emergency management program co-ordinator and alternate.
- Complete training for the emergency management program coordinator.
- Establish and conduct training for the Community Control Group.
- Conduct an annual exercise for the Community Control Group.
- Establish an emergency management program committee.
- Designate an emergency information officer.
- Establish an Emergency Operations Centre.
- Ensure 24/7 notification arrangements.
- Identify and assess hazards and risks.
- Identify important infrastructure.
- Conduct public education.
- Formulate an emergency plan.
- Revise the emergency plan.
- Conduct an annual review of complete emergency management program.
- Continuity of Operations Plan.

The Act and Regulation places the accountability for emergency management programs with the municipal head of the council. The Act and Regulation do not govern the approaches on how these

are achieved, leaving flexibility for how the various elements within their emergency management program will be implemented. (Framework, 2021, pg 22-23)

To catalog such changes, the *Town of Cobourg Emergency Plan* could insert a few pages at the front of the document to record the following:

- The date changes were completed.
- A brief outline of the changes and the sections involved.
- Name of individual completing the updates.
- Whether the revised document requires Council approval.

After a review of the current *Town of Cobourg Emergency Plan*, consideration should be given to a review and revision of the plan to be in accordance with the 2021 *Emergency Management Framework for Ontario.*

The emergency management framework notes,

"When implemented, emergency management programs ultimately save lives, protect property, public health, and the environment, maintain economic stability, and help ensure the continuance of critical infrastructure and services. This is accomplished by preventing some emergencies before they occur, lessening the frequency and potential impact of others, preparing for, and then responding to occurrences, and by speeding the recovery process as well as trying to recover to a better standard following an event. Modern, up-to-date emergency managements programs can help build safe, secure, and resilient communities across Ontario." (Framework, 2021, pg 6)

With so many acts of domestic terrorism taking place each year throughout the world, including Canada, a municipality must plan for the possibility of such events within its own community. The emergency plan should have a section dedicated to domestic terrorism. The section should include an integrated response program comparable to NFPA 3000, *Standard for an Active Shooter/ Hostile Event Response (ASHER) Program*. Partnerships could be achieved with outside agencies such as the OPP to develop and deliver a presentation to the public and include local businesses as sponsors to assist in offsetting any expenses.

Full and concise emergency preparedness ensures the inclusion of emergency plans and processes of the various Town departments, the specific responses to emergencies most likely to occur as noted in the Hazard Identification and Risk Assessment process, and those plans of outside agencies that are likely to be utilized. These allied agencies may include conservation authorities, major industry, airports, and government agencies to name a few.

During EMGs evaluation of the *Town of Cobourg Emergency Plan* and in speaking to stakeholders, it was evident that the Plan, training, and exercises have not been upheld in accordance with the *Emergency Management and Civil Protection Act.* A refocus on Emergency Management Programming is necessary to ensure compliance with the legislation and a general readiness to respond in case of a major emergency.

The CEMC is responsible for the development of the Emergency Management Plan (EMP) including updates and training. It is a legislative requirement for emergency response plans to be reviewed and updated each year. Changes could be minor, not requiring a complete document update.

The CEMC is responsible for the upkeep of the plan which includes have the authority to delegate tasks as required. The plan's maintenance should include the following:

- Emergency telephone numbers be reviewed on an annual basis.
- The notifications system be tested annually.
- The plan be exercised once every year as a tabletop exercise or as a practical exercise.
- Staff shall receive training and participate in an exercise held at least once a year.
- The Local Services Directory updated annually.
- The CEMC will determine the schedule under which the maintenance activities will be performed.
- The CEMC may update, correct, or amend information contained within the appendices, or EOC Checklists, of this Plan on a required basis.

During EMG's evaluation of the EMP and in speaking to stakeholders, it was evident that the EMP and all the required components have not been upheld.

8.3 Emergency Operations Centre

Within the *Town of Cobourg's Emergency Plan* the fire station is designated as the primary EOC. The primary EOC is located at the Town of Cobourg Operations Centre with the alternate site being council chambers.

During EMG site visit and review of the primary EOC, it was readily apparent that the EOC space, IT, organization, set-up, and "readiness" is not adequate either at the fire station or the Operations Centre. Council chambers are not suitable as an alternate EOC site and certainly the alternate EOC site is equally as inadequate to function in an EOC capacity as the primary EOC.

During a major fuel leak/spill, severe weather, earthquake, terrorist act both domestic and foreign etc., a functioning Incident Management System (IMS) will be required within the EOC. On the emergency site, there is a high likelihood of the implementation of a Unified Command structure would be required. Within the EOC and at the site, additional agencies to consider for staffing include:

- Police
- Public Health
- OFMEM
- Non-Governmental Organizations, such as:
    - Red Cross
    - Salvation Army
    - Samaritan's Purse
    - St. John's Ambulance

The staff operating within the EOC are critical for providing coordination, resource management, communications, and critical assessments of the event with the Incident Commander. The current plan indicates that the Community Control Group will strategically direct the emergency site. This is a fundamental flaw as it is not practical for the EOC staff to direct the emergency scene. The EOC could provide, or fail to provide, direction that would be contrary to the health and safety of personnel on site as they are remote. The on-scene strategies are best left to the site Incident Command and Command Staff.

To ensure appropriate actions and communications, it is imperative that all involved have the same understanding of the terminology, processes, and planning before and during an event. This is achieved by providing emergency plan reviews, exercises, basic emergency management courses, incident management systems 100, 200 & 300 courses, as well as other training as necessary.

8.4 Emergency Planning, Training, and Exercises

Emergency planning and IMS are both skills that need to be used regularly. Several training options will be identified to assist the Town of Cobourg to plan and exercise in IMS and their emergency plan activation.

There are two main types of exercise used to test emergency plans:[22]

- Discussion Based Exercise - In discussion-based exercises, the primary intent is to have dialogue regarding the emergency plan, procedures, by-laws, and any policies that could impact an emergency. The discussion sessions are low key, low pressure, and a great tool for familiarization. The secondary intent of discussion-based exercises is to build confidence through familiarization amongst team players in the application of the plan. These discussion-based exercises are great tools to facilitate the learning process for the staff designated as alternates expected to fill a role in the EOC. Discussion-based training is a great way to orientate new staff or existing staff that have not had a real opportunity to familiarize themselves with the emergency plan or organizational plans, by-laws, procedures, and policies.
    - Tabletop Exercise -These exercises are low cost with minimal stress, but preparation can require some time to create a scenario that is relevant to the municipality. A tabletop exercise is generally led by one facilitator depending upon the complexity of the scenario. Tabletop exercises are a great way to identify gaps in plans, policies, and procedures in the post-exercise discussions. To complete the exercise, an After-Action Report is completed to identify any shortcomings or deficiencies that need to be addressed.
- Operations-Based - The primary intent is to deploy personnel and equipment in a drill, functional exercise, or a full-scale exercise. The disadvantage of an operations-based exercise is that they require a significant amount of time to plan and prepare for as resources will be required from multiple agencies. Operations-based exercises generally reveal gaps and weaknesses in training, inter-agency communications, resource allocation and operational procedures. Operations-based exercises include:
    - Drills -These are exercises that are intended to evaluate a specific operation. For example, the Fire Department and Police Service may conduct a drill of carbon monoxide leak in a long-term care home.
    - Functional exercises - These exercises can be complex with a high degree of realism and are used to test plans, procedures, and policies in the training scenario which is at a single site. These exercises are used by agencies to test their capabilities of performing multiple functions in a scenario that is located at a single site.

[22] Culley, Darryl, *Creating Chaos & Mayhem: The Ultimate Guide to Disaster Exercise Planning.* (Ontario: Emergency Management & Training Inc., 2014), 31-35.

- Full-scale exercises – This is a complex exercise that tests multiple agencies in a single scenario at multiple sites. These exercises are in real time, highly realistic and usually stressful for agency personnel participating in the exercise. A full-scale exercise can take from 6-10 months to prepare for and require a significant investment in resources and funds. Several facilitators are required to ensure safety and compliance to the storyline of the exercise. A full-scale exercise is developed with clear objectives to test multiple agencies. Upon completion of the exercise, a hot wash is conducted which is a formal discussion of the involved agencies performance during the exercise. An After-Action Report and a formal Improvement Plan are prepared and distributed that identify actions required to address and improve performance.

Many municipalities take advantage of social media platforms including their municipality's website to promote the need for residents to be prepared for an emergency. It may speak to being prepared in advance and having supplies readily available to take in an emergency, the differences between a weather watch and a warning, and supplies required to be self sufficient for up to 72 hours.

Each spring brings the threat of flooding from local watersheds. Flooding events are historically controlled and mitigated by way of a Flood Emergency Plan. The Town of Cobourg does not have a flood emergency plan in place and relies on the Conservation Authority's Flood Plan. Prior to the spring melt, the community should receive direction on what could occur, the resulting effects to expect, what they should be prepared for in the event of significant flooding, and ways to self prepare for such events. This could be achieved through social media, public messaging on radio and television stations, and print media.

Section 8 - Recommendations

Rec #	Recommendation	Rationale
41	Investigate a shared service with all Northumberland County Municipalities for a County CEMC supported by the current Municipal CEMCs being the Alternates.	A shared plan and resource will provide opportunity for the CEMC and Alternate CEMC to reallocate time to other matters. This focused Emergency Plan will allow for consistent training and planning throughout the whole County. For each municipality having the ability to share personnel and resources in the time of emergency will provide ability to manage longer term events.
42	As shared services within Northumberland County services are investigated, the CEMC for the Town of Cobourg should ensure that Town and the CFD personnel are trained in Basic Emergency Management, IMS, and other programs. In addition, the CFD officers take more advanced training so that they may act in the command structure within the EOC and on the emergency site.	As an interim and long-term measure this additional training will provide depth of personnel to manage emergency situations as they arise in the municipality.
43	Update the Town of Cobourg's Emergency Plan in accordance with the Provincial legislation, the 2021 Emergency Management Framework for Ontario, and to reflect current needs and circumstances of the municipality.	Due to the importance of the emergency planning, it is imperative that the Town of Cobourg's Emergency Plan be current and robust, with training and exercises that occur to test the plan and participants.

Rec #	Recommendation	Rationale
44	Due to the importance of staff understanding their roles and responsibilities in the EOC, implement a policy that identifies IMS 200 as the minimum standard for staff required to be in the EOC with IMS 300 being the goal for all department heads.	Training in relation to incident command and incident management will provide all EOC staff a consistent level of training and understanding of their roles within the EOC structure.
45	The Town of Cobourg should consider a complete review of the current EOCs, IT and facilities, funding, policy, designated staff roles and responsibilities in the EOC, and industry best practices. A third-party review and implement plan report would be of assistance.	Adequate and functioning EOC(s) are a requirement under the EMCPA and O. Reg. 380/04.
46	A schedule should identify EOC activation orientation an annual tabletop and operations-based exercises for the Town of Cobourg, including external agencies.	Ongoing training in identified community risks (as per HIRA) is not only a good practice but is mandated by the *Emergency Management and Civil Protection Act* and its regulations.

SECTION 9

Fire Service Agreements

9.1 Mutual & Automatic Aid

SECTION 9: FIRE SERVICE AGREEMENTS

Mutual aid, automatic aid and fire protection agreements are programs used to:

- Support a community's fire department at times when local resources are exhausted.
- Offer quicker response coverage to areas that may be closer to a bordering a fire department's response area than that of the host department.
- Create an automatic response by bordering fire departments to properties that are closer to their fire stations than that of the host fire department.

9.1 Mutual and Automatic Aid

Mutual aid is a reciprocal agreement whereby one department aids another in a significant incident. Mutual aid is not to be used to supplement shortcomings in fire protection. The Council of the responding fire service may notice that the municipality they are responding to has identified an exposure risk and should take appropriate action to make corrections.

Automatic aid agreements allow fire stations from other jurisdictions closer to an emergency to respond either first or in conjunction with the local municipal fire department. Automatic aid agreements are generally considered a program designed to provide or receive assistance from the closest available resource, regardless of municipal boundaries, allowing for a manageable and sustainable service level.

Automatic aid and response agreements are an appropriate means of identifying areas of the home department's response capabilities and filling in any existing gaps. Agreements may include responses to remote areas of a municipality or the provision of a hazmat or technical rescue team.

These agreements are like the mutual aid plan but differ as there is an expectation that a call for service will occur regularly and as expected. Any service level expectations need to be within agreements. Some examples are strictly for structure fires, whereas others may be an all-encompassing service. These agreements require the Town of Cobourg Council's approval in the form of a By-Law.

The Cobourg Fire Department is a member of the Northumberland County Mutual Aid Plan and Program, which includes all the fire services in the county and was last updated in 2018 and expires in 2022. The current plan is just the template provided by the OFM for County Fire coordinators to use in developing their program that is specific to their needs. Their document lacks content explicit to Northumberland County's needs.

The region's Mutual Aid Plan is to aid in the mitigation of any emergency that may arise and identify and provide the resources available to respond to the situation. It should be reviewed and updated on a predetermined schedule, with the updated version forwarded to the OFM.

EMG notes that in support of mutual aid efforts across the Province of Ontario, the OFM requires fire departments to update their equipment lists on what apparatus and equipment they have and could be available for mutual aid purposes. This list needs to be included in the Northumberland Plan when updated. However, it is incumbent upon each participating fire department to also have a clear understanding of what resources are available from its neighbouring fire department(s) and how to access these during times of need.

The CFD currently has no automatic aid or response agreements.

When developing these plans, consideration should be given to the following when formalizing an automatic aid agreement:

- The agreement should identify the resources that each fire department can provide.
- The agreement should identify and authorize the fire department to leave its jurisdiction for automatic aid.
- Include identification method for the Incident Commander by all parties, usually by wearing a coloured vest and "Incident Command" lettering.
- Fire departments must be suitably equipped to meet the functions expected in an emergency.
- All fire departments are legally obligated to serve and protect their community before engaging in mutual aid activities. The plan and the Mutual Aid By-Law must clearly state the obligation and full cost recovery.
- Insurance liability coverage and indemnification provisions must also be in any agreements.
- The standard review process seeks to identify considerations for improvements that support and strengthen the provision of fire protection services. That said, all parties generally achieve greater clarity by following a standard template around wording and structure for the various agreements.
- It is also in the best interest that fire departments in a fire protection agreement, automatic aid agreement or mutual aid plan identify annual training sessions where firefighters get acquainted with the equipment of other departments. These collaborative training sessions also build the working relationship and morale between

fire departments. Automatic aid and protection agreements bring fire departments together to work as a team for the benefit of the public. Still, without combined training sessions to practice as a team, the team cannot effectively function, and breakdowns can occur.

- A defined commitment to regular joint training sessions is essential when agreements are developed and approved. In addition, the contracts should lay out an obligation to hold ongoing meetings between the senior fire department leadership. These mutual aid/automatic aid meetings allow fire chiefs and chief officers from the participating departments to discuss issues or gaps in response protocols and to identify a collaborative path forward that enhances fire protection for all participating agencies and communities. Another benefit of the joint training session is the identification of gaps in equipment, communications, or training before a real emergency.
- Since Cobourg does not have a tanker at present, CFD should analyze opportunities of agreeing with a neighbouring fire department to respond with one of theirs into Cobourg when needed. A response agreement would be a cost-effective way of managing this shortcoming in fire fleet resources.

As mentioned in the CRA, the CFD does not have a technical rescue program to the operations level in any rescue discipline. It would be wise for the CFD to review their response capabilities to technical rescues. The CFD should look at opportunities of entering into response agreements with either outside fire services or a third party for these technical rescue services. The CFD should add full cost recovery for technical rescues in their fees by-law. Doing so will aid in covering any costs incurred when outside resources are required.

Section 9 – Recommendations

Rec #	Recommendation	Rationale
47	Cobourg Fire Department enter into a response agreement with the neighbouring fire department for a tanker response into the town to better serve the residents of Cobourg.	Agreeing would be fiscally responsible by the CFD when comparing the costs of purchasing a tanker vs the use of a tanker of a neighbouring department. A tanker response will aid the CFD in ensuring a constant flow of water at a fire.
48	The Cobourg Fire Department should enter into a response agreement with either an outside fire service or a 3rd party to provide support for technical rescues when the need arises.	If a technical rescue call requires additional resources from outside the CFD, a plan will already be in place ahead of time. The responding agency's response time will be shorter if agreements are in place in advance, as pre-response approvals will not be required.

SECTION 10

Finance, Budgeting, Fees & Cost Recovery Mechanisms

SECTION 10: FINANCE, BUDGETING, FEES, & COST RECOVERY MECHANISMS

The Town of Cobourg and the Cobourg Fire Department has annual operating and capital budgets and forecasts that are established based on the staffing, programs and equipment that have been identified for replacement. During the review of the operating and capital budget process, it was found that Town of Cobourg and the Cobourg Fire Department is well organized in both areas. This indicates a strong level of support by Council in assisting the Fire Department with meeting its service goals.

Upon further review of the emergency management operating budget, it was found that the allocation of funding to support this program, is funded with approximately $16,900 for emergency management which includes office supplies, equipment, training, conferences, Promotions for public education is $300 and $750 for the annual exercise. The fire station generator annual maintenance cost is currently $7,000. The funding forecast appears to be in line for the current program levels expected for the Town of Cobourg. Consider for any current emergency management program improvements as well as facilities enhancements as mentioned in section seven of the FMP must be factored into appropriate budget and emergency management program funding.

10.1 Operating Budget

During the review of the operating budget, it was noted that all key account operating sections are identified and tracked, such as:

Operating Budget Line Items:

- Staffing related costs
- Training
- Fire prevention and related fire safety education
- Vehicle and equipment maintenance
- Station maintenance
- Office expenses

Funding for vehicle replacements appears to be forecast in development charges with support coming from these financial reserves. There is also a transfer of operating funds to large vehicle replacements. This transfer may need to be increased with the expectation to fully fund the

vehicles. The industry has traditionally experienced approximately 4% increase in pricing on an annual basis. Since the pandemic, there has been tremendous increase in vehicle pricing and delivery times. In preparation for vehicle replacement adequate funds should be planned in accordance with scheduled replacements of vehicles. The fire apparatus manufacturing industry is currently establishing delivery times of at least 24 months for pumper/engines and aerial apparatus can be greater than 36 months.

Joint purchasing with Northumberland County Fire Departments may find savings with competitive bidding when purchasing numerous vehicles of the same style. The same could also be a factor for standardized equipment. This purchasing of the same style vehicles also provides opportunity for group firefighter training.

With the possibility of joint purchasing for apparatus and equipment within Northumberland County Fire Departments, consideration could be leveraged to investigate the shared services of mechanical officers. Due to the number of vehicles involved more than one mechanic would be recommended. This shared service has the possibility of maintaining several spare vehicles that could be brought into service when one of the Town of Cobourg's vehicles is scheduled for maintenance or has mechanical issues. This program would allow all fire departments in Northumberland County to maintain fire apparatus and not diminish the level of service within their home communities. In the capital forecasts section of this Fire Master Plan, it is noted, that FUS recommends that there should be at least one spare fire truck for every eight related units.

For example:

- One pumper truck for every eight (pumpers),
- One spare aerial truck for every eight (aerials),
- One spare tanker truck for every eight (tankers), etc.

While this may be their recommendation it is best to determine the in-service needs compared to the mechanical needs to ensure there are adequate spare vehicles of each type.

The fire chief and finance staff should review the development charges potential contributions in conjunction with the transfer to large vehicle replacements fund and consider the latter to be increased to ensure adequate funding is available based on the scheduled vehicle replacements and the increased costs.

In support of the joint purchasing recommendations presented in the 2021 Independent Review of the Northumberland Fire Services, joint purchases for all types of apparatus and equipment should be investigated through the Northumberland Fire Service Steering Committee to maximize cost savings and training opportunities.

In cooperation to investigate additional shared services the Northumberland Fire Service Steering Committee consider investigating the shared services for dedicated mechanical officers who will maintain a spare fleet, each of the fire department's apparatus, and all equipment within the Northumberland County Fire Departments.

During the review of the operating budget, it was noted that all key account operating sections are identified and tracked, such as:

Operating Budget Line Items:

- Staffing related costs
- Training
- Fire prevention and related fire safety education
- Vehicle and equipment maintenance
- Station maintenance

10.2 Capital Forecasts

It appears there is a year replacement cycle for the fire trucks, but it was not clear if this is based on the FUS recommendations for frontline vehicles. Also, no documentation was received that outlines an overall scheduling for vehicles and small equipment. As such, it is advisable that a long-range forecast be developed to ensure regular replacement of vehicles, small engines, rescue equipment, breathing apparatus and firefighting bunker gear.

As mentioned prior, the replacement schedule, FUS recommends that there should be at least one spare fire truck for up to every eight related units.

A reserve unit should always be available, should one of the primary units go out of service. This still applies if the department has less than eight vehicles. Alternate solutions include having agreements with neighbouring emergency services to provide apparatus on loan or through an automatic aid response when vehicles are out of service.

10.3 Reserve Funds

It is important to ensure that adequate annual contributions for small equipment, along with apparatus repairs, and contributions for future infrastructure (fire stations) are identified. If any shortfalls are determined, the fire chief should establish what effect this will have on operations and bring forward any recommendations (for funding adjustments), if necessary.

Based on information received from the fire chief, there is a business plan in place that incorporates all the department's general vehicle and equipment needs to support future goals and expectations.

10.4 Fees and Charges

A review of the current Fees & Charges was conducted. The following provides concepts and ideas for increasing the ability for the CFFD to invoice for services, cost avoidance, and in some cases provide increased protection from liability.

Consider incremental increases for each false alarm after the second alarm within a calendar year. The consideration of a fee such as this is to encourage the owner to fix their alarm system. In this matter there should also be a trigger for a fire prevention inspection so that Fire Prevention Orders may be placed on the property to comply with the OFC to fix the alarm system in a timely manner.

To ensure the property owner is not unnecessarily penalized for malicious activation of an alarm system by tenants or others, separating the types of false alarms may be prudent. This provides clear direction for fire administration when invoicing for these events. Some considerations of charges that could be levied to the property owner are:

- False alarms due to failure to properly maintain an alarm system.
- False alarms caused by a contractor or other person working in the building/residence.
- False alarms caused by service being done to the system.
- Failure to notify fire department of testing/maintenance of an alarm system.
- Failure to notify fire department of fire drills being conducted.

In providing automatic aid, many agreements throughout the province have established a set retainer fee for the agreement in addition to a per incident fee. The incident fees are generally set to the amount of the current MTO rates.

MTO rates that are set by the province are determined to increase by consumer price index (CPI) each November. This information is readily available through the Ontario Association of Fire Chiefs. Adding the 'current MTO rates as adjusted by CPI' to the Town of Cobourg's Fees & Charges would allow the corporation to stay current with the latest values. The fire department would adjust the values administratively without the need to present to council for each change.

Unapproved open air burning response is an example of a fee or charge that would benefit from being listed as 'current MTO rates as adjusted by CPI'. It would also be prudent to identify the number of apparatus that would be included in the invoice or simply establish a 'for each responding fire apparatus' clause. The latter would be the preferred method therefore leaving the response needs to the incident commander. Some larger fires may require additional apparatus and personnel to mitigate the issue thus leaving room for the corporation to redeem costs.

It is noticed that there is a Fire Safety Plan development fee. In accordance with Article 2.8 of the OFC Fire Safety Plans are required in certain buildings. It is therefore the responsibility of the fire inspector to ensure that a Fire Safety Plan is in place. The wording in the OFC directs the owner of the building to have an 'approved' fire safety plan. Approved, in the OFC means approved by the chief fire official. As such, the prepared Fire Safety Plan requires approval before being put into service at any given building. Having the ability to 'develop' and 'approve' a Fire Safety plan is a conflict of interest, especially where there is a charge for this service. This allowance can open the municipality to liability from unfair competition for the development of the Fire Safety Plans. In other municipalities a similar fee is established for the 'approval' of a Fire Safety Plan.

The fire department also has responsibilities to review and sign-off on emergency response assistance plans for propane and in some cases natural gas establishments. These plan reviews also take time and should be included as a fee for service, at a consistent rate to other plan reviews.

Requested inspections is also a fee that is currently in place. Fire safety throughout the community is the goal of all fire departments. People should be encouraged to ensure their establishments are fire safe. A business owner within the Town of Cobourg who knew that they would be charged a fee for an inspection because it was requested, may consider waiting until the fire inspector arrives to conduct a routine inspection, if at all. 'Required inspections for licensing' should be considered for establishments as an appropriate change in terminology. This would then allow those who have a wish to be fire safe request a fire inspection to partner with the fire department in community fire safety without having to pay a fee for service.

Those needing licensing or sale of property would then order an inspection and expect to pay the established inspection fee.

In regard to the Fire Watch and Standby fee it is prudent to change the terminology from 'per man' to 'per firefighter'. This will be in accordance with the 2019-2022 Strategic Plan, Action #2: leverage Equity, Diversity, and Inclusion (EDI) Strategy to promote inclusion in the community.

Emergency response to hazmat incidents is a set fee that is consistent with other municipalities. However, some changes to the wording are recommended. As outlined above, consider the rate to be set to 'current MTO rates as adjusted by CPI' per vehicle, and include the ability to replace consumable products such as absorbent, booms, soaker pads, rental of specialized equipment, etc.

It is recognized that there is no fee for responding to and providing service at a MVC involving road vehicles, all-terrain vehicles, watercraft, rail vehicles, and aircraft on roadways, waterways, or land. There are three points to consider for when including such a fee. Any fee should be set to 'current MTO rates as adjusted by CPI' per vehicle and include the ability to replace consumable products.

- MVCs on the Provincial Roads can be billed directly to the MTO.
- Some municipalities only invoice non-residents as they consider that taxpayers have already paid for the service.
- Some municipalities invoice all MVCs as they consider taxpayers pay for the service to be ready and not for the response. This consideration also considers that vehicle insurance is leveraged to pay for the response.

Regardless of which option is chosen there should be a delegated authority to the fire chief to rescind any invoice based off hardship circumstances that may arise from time to time.

Home and business insurance policies generally contain a clause that enables reimbursement for fire protection services in the event of a fire. An additional fee that would enable the fire department to invoice for services provided through the owner to the insurance company would allow the recovery of some fees for personnel, equipment, and consumables used on the event. Commonly these policy items range from a few hundred dollars available to recover to an unlimited amount. If this process is too great an administrative burden, there are companies that will conduct this work for the municipality at a percentage fee for service.

Consideration could be given to include a fee for redeeming costs for securing a structure after a fire has occurred. Additionally, vacant buildings are required to be secure as per the OFC. It is the owner's responsibility in both cases to ensure that security is in place. Being that there are times where the owner is not able to comply, there should be provision for the fire department to move forward with the security of the structure, considering public safety, and have an avenue to redeem these costs.

There may be opportunity to provide fire safety training, such as the use of fire extinguishers to the community. There are costs associated in providing such a service. Offering this service and allowing a fee to be charged for the redemption of the costs would help in getting fire personnel involved in community training and increase the fire safety within the community.

With the developing community there may be an occasion to review site plans and/or fire routes to ensure there is adequate consideration for fire protection within the plan. An established criteria for when to review, supported by a fee to redeem costs, would allow the Fire Department the ability to conduct such a review but would also aid in ensuring fire safety in the community into the future.

Consideration of incorporating fees and charges from the By-law No. 096-2010 “Sale and the Setting Off of Fireworks” into this single Fees & Charges By-law and align the permit application process for display and pyrotechnic fireworks to the fire inspection fee amount. Site review and display and/or pyrotechnic firework inventory review does take time to ensure compliance.

Fees for specialized rescues should be considered. Other municipalities include the fee as 'current MTO rates as adjusted by CPI' per vehicle and inclusive of consumables. This, amongst other fees is one that would allow the Fire Department to conduct pointed public safety messages that would centralize on safety, such as being on the ice, while expressing punitive costs for rescuing those who do not heed the safety warnings.

The inclusion of an overarching fee for 'extraordinary expenses for incident mitigation and investigation purposes' will provide the Fire Department with an avenue to redeem costs not contained in the Fees & Charges By-law. An example of such expenses could be the rental of heavy equipment for pulling apart structures to ensure fire suppression.

The fire chief should investigate the adjustments to, and the inclusion of fees and charges as outlined within the Master Fire Plan finance section.

Section 10 - Recommendations

Rec #	Recommendation	Rationale
49	The fire chief and finance staff should review the transfer to the large vehicle replacements fund and consider it to be increased to ensure adequate funding is available based on the scheduled vehicle replacements and the increased costs.	To provide for increased costs and delivery times of purchased fire apparatus.
50	In support of the joint purchasing recommendations presented in the 2021 Independent Review of the Northumberland Fire Services, joint purchases for all types of apparatus and equipment should be investigated through the Northumberland Fire Service Steering Committee to maximize cost savings and training opportunities.	Savings with competitive bidding when purchasing numerous vehicles of the same style and standardized equipment may be realized as well as increased shared training opportunities within the County, specific to apparatus and equipment.
51	In cooperation to investigate additional shared services the Northumberland Fire Service Steering Committee could consider investigating the shared services for dedicated Mechanical Officers who will maintain a spare fleet, each of the Fire Department's apparatus, and all equipment within the Northumberland County Fire Departments.	A single service for mechanical needs will provide the ability to maintain service levels within each community.
52	The fire chief should ensure that there is a long-range vehicle and equipment replacement schedule noted in the CFD's capital budget.	Having a long-range capital replacement plan in place will ensure equipment is replaced on a cycle that is based on industry standards and best practices.

Rec #	Recommendation	Rationale
53	The fire chief should investigate the adjustments to, and the inclusion of fees and charges as outlined with in the Master Fire Plan finance section.	Provides the ability for the Fire Department to invoice for services, promote cost avoidance, and in some cases provide increased protection from liability.

SECTION 11

Assessment of Previous Fire Service Review

11.1 Status of Previous Recommendations

SECTION 11: ASSESSMENT OF PREVIOUS FIRE SERVICE REVIEW

Listed below are the recommendations submitted in previous Fire Master Plans, Location Study, and Northumberland Municipal Fire Services Review. Most of the recommendations have not been actioned or are in the process of being actioned by the fire chief, as appropriate.

11.1 Status of Previous Recommendations

Recommendations from previous reports produced are referenced here along with the status of each recommendation. References are the *1999 Cobourg Fire Department Fire Protection Master Plan, as amended, the 2005 Fire Protection Implementation Schedule, the Monitoring & Evaluation – 2005 edition, and the, 1999 Fire Station Location Study conducted by the OFM.*

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

Based on the recommendations update it would appear, that most have not been addressed.

Recommendation	Specific Year for Completion	Current Status
That the Town of Cobourg conduct a review of existing communications capabilities to ensure the adequacy of the system	No Time Frame Identified	Incomplete
That the position of Training Officer be created and that a competent person be hired to develop and administer an adequate and comprehensive training program for the Cobourg Fire Department and that the Training Officer also be responsible to administer the training of other Town staff in areas of fires-aid/CPR, defibrillator use and emergency management training.	No Time Frame Identified	Incomplete

Recommendation	Specific Year for Completion	Current Status
That the hours spent by the fire chief and deputy fire chief on emergency management activities be reflected in the emergency management budget allocation and that additional staffing be provided to the fire department, in conjunction with the training officer position, to compensate for time spent on emergency management by fire department staff.	No Time Frame Identified	Incomplete
That additional human resources be provided to the fire department, which can be devoted to the development of pre-incident plans in conjunction with training and emergency management.	No Time Frame Identified	Incomplete
That additional funding be allocated to the fire department budget in 2005 to allow for the deployment of a minimum of 14 firefighters to automatic alarm calls at the Northumberland Hills Hospital and any long-term care facilities located within the Town of Cobourg.	Budget 2005	Incomplete
That, during 2005, the fire department conduct further assessment of responses to other occupancies identified in the Public Fire Safety guideline #PFSG 04-88-13, and that a report including any recommendation(s) be submitted to Council as part of the 2006 Master Fire Protection Plan.	2006	Incomplete

Recommendation	Specific Year for Completion	Current Status
That staff initiate discussions with the representatives of the New Amherst Development to determine an appropriate location and projected cost of property to be designated for a fire station.	No Time Frame Identified	Incomplete
That the Town of Cobourg assign the Cobourg Fire Department the responsibility of preparing, for Council's approval, a report detailing a corporate plan by which the community can achieve compliance with provincial emergency management legislation.	2003	Incomplete
That the Cobourg Fire Department develop a comprehensive post incident evaluation process	2003	Incomplete
That a training facility be constructed and equipped to meet the training needs of the fire department	2004	Incomplete
That a full-time chief training officer be hired to develop and administer the training program and related functions of the Cobourg Fire Department	2004	Incomplete
That the Town of Cobourg acquire a mobile incident command vehicle equipped and available for any municipal emergency.	2004	Incomplete
That the fire department re-evaluate the feasibility of a "direct to station monitoring" system for the Town of Cobourg	2005	Incomplete

Recommendation	Specific Year for Completion	Current Status
That the Cobourg Fire Department conduct a comprehensive review of existing fire protection and other emergency services provided by the fire department; the objective being to identify and evaluate the impact of the Fire Protection Master Plan as a whole	2005	Incomplete
That the Cobourg Fire Department evaluate the Fire Protection Master Plan against other instruments of planning to determine the most appropriate tool in planning for the provision of fire protections services in the community.	2005	Incomplete
That the Cobourg Fire Department evaluate options and develop specifications for replacement of the department's aerial apparatus.	2005	Incomplete
The option(s) to be considered by the Town of Cobourg Municipal Council and administration staff are as follows: (as it pertains to the station location study) *Option 1:* That the existing fire station be renovated to meet the needs and requirements of the fire department administration and operational staff for new millennium. That the existing Opticom program be maintained and funded at the appropriate level to maintain a timely response of fire department personnel and apparatus. That funding be provided for an enhanced fire prevention program for the Town of Cobourg Fire Department	1999	Incomplete

Recommendation	Specific Year for Completion	Current Status
Option 2: The construction of an additional fire station in the northwest corner of the municipality that would be required when annexations, restructuring or proposed development is identified and confirmed in the area. *Option 3:* The construction of a new fire station in the eastern portion of the municipality to compliment the renovated headquarters station. This could be a joint endeavour of the public works department and the fire department when a new public works complex would be constructed for the municipality. This fire station would be required when annexation restructuring or proposed development is confirmed in the area, however, it could also improve the Insurers' Advisory Organization rating for existing industrial area.		

The fire chief should review the past plans lists of recommendations as well as those listed in this document to ensure that all past relevant recommendations are not lost and can be incorporated into the list of recommendations noted in this 2023 Cobourg Fire Department Master Fire Plan.

A further County-wide plan and review was commissioned and conducted in 2021. This document was titled, *An Independent Review, Northumberland Municipal Fire Services.* In reviewing this plan, the following recommendations are noted along with the status of each recommendation.

Recommendation	Specific Year for Completion	Current Status
The Northumberland County Fire Chief's Association continues to support the Fire Prevention Committee and its programs financially.	On-going	Incomplete
The Training Committee focuses on ensuring that the recruit training program is successful and that the training needs and resources are provided to the Department.	On-going	Incomplete
When Department purchase new tankers, they will be required to have on-board pumps	On-going	Incomplete
The Northumberland County Fire Chief's Association finalize the radio communications project and develop standard SOG's on radio use to be adopted by all Departments	On-going	Incomplete
Municipalities considering building a new fire station would solicit input from the Fire Service Steering Committee before choosing a location	On-going	Incomplete
A County of Northumberland's Fire Service Steering Committee is established and comprised of CAO's, fire chiefs and treasurers mandated to work together on expanding shared services.	0-2 years	Incomplete

Recommendation	Specific Year for Completion	Current Status
The County of Northumberland Mutual Aid Association explore opportunities for utilizing technology to disseminate information for those firefighters who cannot attend the Mutual Aid meetings	0-2 years	Incomplete
Each Department implements the process for developing a Fire Master Plan for their Municipality	0-2 years	Underway and will be concluded with the finalization of CFD FMP 2022 document
The Northumberland County Fire Chief's Association works with the Fire Service Steering Committee to develop a process to review and consider social dynamics that may affect stakeholders.	0-2 years	Incomplete
The Northumberland County Fire Chief's Association work with the Fire Prevention Committee to develop an enhanced Countywide program for hoarding and mental health issues that would include providing the necessary logistics while working with external stakeholders.	0-2 years	Incomplete
Before July 1, 2024, each Municipality conducts a CRA as per the new regulations	0-2 years	Underway and will be concluded with the finalization of this document

Recommendation	Specific Year for Completion	Current Status
The Northumberland County Fire Chief's Association work with the Training Committee to develop SOG's and training on the Accountability Program	0-2 years	Incomplete
The Northumberland County Fire Chief's Association develop and adopt standard SOG's for water supply in non-hydrant areas.	0-2 years	Incomplete
The Northumberland County Fire Chief's Association adopt the three-phased approach water supply system for non-hydrant areas and budget to purchase the necessary equipment to participate in the program	0-2 years	Incomplete
A Fire Service Steering Committee develop the Countywide Emergency Management Program for all the Municipalities that would include a full-time resource to update, implement, and manage all the emergency management programs, including the conduction HIRA's and CI reviews for each Municipality	0-2 years	Incomplete
The Municipalities update their Emergency Response Plans to provincially recognized IMS model.	0-2 years	Incomplete
The Northumberland County Fire Chief's Association develop SOG's on the required use of the "Who's Responding" App to be adopted by all Departments.	0-2 years	Incomplete

Recommendation	Specific Year for Completion	Current Status
The Northumberland County Fire Chief's Association formalize agreements (service level or automatic aid) to access specialized services within Departments	0-2 years	Incomplete
The Northumberland County Fire Chief's Association designate two members to lead the Specialized Services Program and to develop working groups as required.	0-2 years	Incomplete
The Northumberland County Fire Chief's Association conduct a working session(s) to review the responsibilities of each chief officer within the departments to identify any duplication of services that could be shared and potential opportunities to manage current and future pressures	0-2 years	Incomplete
The Northumberland County Fire Chief's Association establishes a Compliance Committee that would develop a process to improve the standardization of collecting data and conduct regular quality assurance on data used to set responses and ERF.	0-2 years	Incomplete
The Northumberland County Fire Chief's Association works with the Fire Service Steering Committee to develop a policy that would allow firefighters to respond to an emergency call while working for the Municipality. This policy would then be presented to all Councils for consideration and adoptions.	0-2 years	Incomplete

Recommendation	Specific Year for Completion	Current Status
The Northumberland County Fire Chief's Association work with the Fire Coordinators to develop SOGs for the Dispatch Center to automatically call for Mutual Aid for station coverage or response to the scene.	0-2 years	Incomplete
The Northumberland County Fire Chief's Association work with the Mutual Aid Association to develop a countywide recognition program.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association works with the Fire Service Steering Committee to develop long-term recruitment and retention strategies for volunteer or part-time firefighters across the Municipalities	3-7 years	Incomplete
The Northumberland County Fire Chief's Association work with the Fire Prevention Committee to develop an inventory of County Fire Prevention material that can be shared among the Departments and develop a policy of joint purchasing of these materials and designate strategic locations for Public Educational material storage.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association work with the Fire Prevention Committee and the Fire Service Steering Committee to develop a proposal to be adopted by the Municipalities to hire a county fire inspector.	3-7 years	Incomplete

Recommendation	Specific Year for Completion	Current Status
The Northumberland County Fire Chief's Association, work with the Training Committee to: Establish a County Wide Recruit Training Program that all Departments participate in and support with instructors. Develop an annual training program that establishes goals and expectations for the firefighters. Develop specific SOG's for annual training requirements and signoffs. Develop and formalize an Officer Development Program to ensure those placed in a Supervisory role are qualified a competent under *the Ontario Health & Safety Act* requirements for a "competent supervisor'. Provide the opportunity for the Departments to conduct joint training together. Establish the development of instructors that could be utilized across the Departments.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association, working with the Training Committee and the Fire Service Steering Committee, develop a proposal to be adopted by the Municipalities to hire a county training coordinator.	3-7 years	Incomplete

Recommendation	Specific Year for Completion	Current Status
The Northumberland County Fire Chief's Association identify life cycle assets (i.e., bunker gear, fire apparatus, and safety equipment) that can be standardized across the Departments to find cost savings	3-7 years	Incomplete
The Northumberland County Fire Chief's Association (based on the identified standard for life cycle assets) establish working groups with the mandate to develop a specification for all Departments to follow.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association, working with the Fire Service Steering Committee, develops joint standing offers, requests for proposals, and tenders to purchase identified life cycle assets.	3-7 years	Incomplete
The Departments that currently have tankers without pumping capacity provide for the installation of on-board plumbed portable pumps.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association develop standards and protocols, to better obtain the Effective Response Force, for the Dispatch Centre to automatically notify additional resources wen the required number of firefighters are not responding based on information received from "Who's Responding" App.	3-7 years	Incomplete

Recommendation	Specific Year for Completion	Current Status
The Northumberland County Fire Chief's Association establish a Technology Committee that would look at all aspects of technology including the use of tablets for response vehicles or cell phones for firefighters.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association complete a review and use of Drone Technology that would increase the level of service to the Municipalities and the safety of firefighters.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association determines the location of specialized services based on statistics and actual calls for service.	3-7 years	Incomplete
All firefighters at a minimum are trained to the awareness level for Hazardous Materials, Trench, High/Low Angle, Confined Space and Water/Ice Rescue.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association, after determining what specialized services will be required to be delivered across the Municipalities develop a strategic plan that outlines the specific location of the response teams, the training required and any agreements that must be developed and approved by Council.	3-7 years	Incomplete

Recommendation	Specific Year for Completion	Current Status
Councils and the CAOs, prior to hiring a chief officer, review with the Fire Service Steering Committee any potential of sharing a position between Municipalities, or reallocating the FTE, due to a vacancy in the chief officers' ranks, to solve an identified pressure.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association develop an on-call chief's position that would have two chief officers on call for weeknights and weekends. This would provide support emergency incidents and the on-scene incident commander.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association work with the Fire Service Steering Committee to develop response standards for low, moderate, and high risk in different density areas using the effective response force model and submit to Council for approval.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association work with the County of Northumberland's GIS department to develop response areas to find the closest station response and automatic aid for structure fire calls, based on road networks and road speed.	3-7 years	Incomplete
The Northumberland County Fire Chief's Association develop standard critical tasks set up times based on their local abilities.	3-7 years	Incomplete

Recommendation	Specific Year for Completion	Current Status
The Northumberland County Fire Chief's Association works with the Training Committee to complete a feasibility study on the creation of a countywide training facility.	8-15 years	Incomplete
The Northumberland County Fire Chief's Association develop policies that would allow for the cross-border firefighters.	8-15 years	Incomplete

The fire chief should review those listed in this document to ensure that all past relevant recommendations are not lost and can be incorporated into the list of recommendations noted in this 2023 Cobourg Fire Department Fire Master Plan.

SECTION 12

Recommendations, Timelines, & Associated Costs

SECTION 12: RECOMMENDATIONS, TIMELINES, & ASSOCIATED COSTS

12.1 Conclusion

During the review conducted by EMG, it was demonstrated that the full-time staff and volunteer firefighters are dedicated to the community they serve. The Town of Cobourg Council, Chief Administrative Officer, and the Fire Chief are all sincerely committed to ensuring the safety of the community and the firefighters.

Based on the present staffing, equipment, and fire station location, the Cobourg Fire Department is endeavoring to offer the most efficient and effective service possible.

All costs and associated timelines noted in this report are approximate estimates that can be implemented through prioritization between the Town of Cobourg Fire Chief, Chief Administrative Officer, and Cobourg Council. And as noted earlier in this document the estimated costs can vary greatly due to many extenuating circumstances.

This FMP is a long-range planning document; however, it is recommended that annual updates be completed, along with a full review to be conducted at the five-year mark.

12.2 Recommendations & Estimated Costs

The following chart provides a detailed overview of the recommendations found throughout this report along with any estimated costs and suggested timelines for implementation. A section has also been added to the chart identifying potential efficiencies upon implementation of the recommendations presented by EMG.

This FMP document is a culmination of 53 recommendations.

Cobourg Fire Department Recommendations Chart

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
1	The E&R By-law be reviewed and updated to ensure that the services offered by the CFD align with Council's expectations. • The updated document should be reviewed annually, or as significant changes occur to the community to ensure that the noted services levels, and service expectations are properly aligned with the service needs of the community. • As part of any E&R update process, the draft should be vetted through the city solicitor prior to going to council.	Staff time	Immediate (0-1 year) ongoing	The updating of the E&R By-law document will legally confirm the level of services as provided to the community. It will also identify key performance indicators for response, fire prevention and public education programs, as well as levels of required training levels.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
2	Establish a By-laws and SOG committees with representation from the Town of Cobourg staff and the CFD that reviews and develops new By-laws as required, and reviews current SOPs annually.	Staff time	Immediate (0-1 year) ongoing	Establishing By-laws and SOG committees will aid in maintaining relevant information while allowing the participation of the Town of Cobourg and the CFD staff to assist in determine the documentation and guidelines that govern the delivery of services to the community.
3	Regular surveying and seeking internal CFD and Town staff, as well as external community stakeholders and partners should be part of the CFD ongoing satisfaction and operational assessment process.	Staff time	Short-term (1-3 years) ongoing	This recommendation should be seen as a proactive and positive initiative to work with Town of Cobourg and the CFD staff and community stakeholders to encourage feedback and collaborate on finding solutions to any issues/comments received.
4	The CFD develop a comprehensive Community Risk Reduction Plan that aligns with the Community Risk Assessment and the recommendations of the Fire Master Plan.	Staff time, much of this can be completed via an online questionnaire	Short-term (1-3 years)	Cobourg has identified the risk present within the community and needs to reduce or remove these risks. A CRRP needs to be developed to identify priority areas, formulate a plan to mitigate risks, implement programs and evaluate outcomes.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
5	CFD meet with relevant local community groups to form partnership and organize fire safety and public education events.	Staff time	Short-term (1-3 years) ongoing	The proactive nature of fire and life safety education to the community will enhance the CFD effectiveness and better manage the risks in the community.
6	CFD undertake a Fire Underwriters Assessment and Survey.	Staff time	Immediate (0-1 year)	Completing/updating the FUS will offer even more guidance to the CFD in relation to risks observed by FUS along with suggestions on how to address them. The CFD will have access the FUS Municipal Fire Portal to identify improvements and provide updates. This data could relate to new fire apparatus replacements, new fire stations, new construction, hydrants in new sectors, increased staffing levels etc.
7	The Town should create a second administrative assistant part-time position.	$45,000 to $55,000	Immediate to Short-term (0-3 years)	This recommendation supports senior leadership and department strategic and operational functions as well as addresses the risk liability of records management.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
8	The CFD needs to fill the full-time CFPO position with permanent staff as well as create and hire a Public Fire and Life Safety Educator (PFLSE)/ Fire Inspector (FI) to expand the current initiative in fire prevention and fire and life safety service level delivery. They need to be certified to the required NFPA credentials.	$100,000 to $120,000	Immediate (0-1 year) ongoing	Ensuring that staff possess the noted NFPA credentials will enhance a fire safe community and address the risk management liabilities that currently exist with the CFD and the Town of Cobourg.
9	Fire department personnel be qualified as per NFPA 1033 as certified fire investigators.	Staff time and course costs	Immediate to Short-term (0-3 years)	As a composite department with full-time staff, the fire prevention division staff as well as full-time officers should possess the qualifications to conduct their own initial fire investigations.
10	Efforts be increased to leverage social media platforms and develop partnerships with internal and external stakeholders that would support advancement of public safety messaging campaigns.	Staff time	Short-term (1-3 years) ongoing	This recommendation continues to support what is viewed as the first line of defence, which is public safety education.
11	Consideration be given to training all current Suppression personnel to NFPA 1035, *Fire & Life Safety Educator Level I.*	Staff time and course costs	Short-term (1-3 years) ongoing	Having more staff trained in fire safety education increases the opportunity to promote these lifesaving messages to the public.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
12	The CFD to identify, develop, and hire a full-time training officer position. That position should be filled with a qualified NFPA 1041 fire service instructor staff member to ensure the delivery of training and address the training risk-management liability of status of the CFD.	$100,000 to $120,000	Immediate (0-1 years)	The individual responsible for planning, developing the training programs, scheduling, documentation, implementing a learning management system, and ensuring all the CFD staff are adequately trained to consistent and competent levels. This also addresses the health and safety of all CFD staff.
13	Conduct an internal review of workflow compared with training outcomes. Gaps should be identified and addressed to ensure complete and consistent delivery of high-quality training.	Staff time	Immediate (0-1 years)	A full review of the CFD training programs is recommended to identify any possible gaps in the CFD training program.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
14	CFD to utilize an on-line training or learning management system which not only delivers training but maintains training records as well.	Costing for such a program can vary based on the level of program purchased. ($4,000 up to $10,000, with annual fees for maintenance and updates.)	Short-term (1-3 years)	With the advance of technology, many training programs can be offered and completed in an online/virtual format. This provides flexible options for both the Department and staff. Many of these programs have built in records management systems, which would be an improvement to the present paper-based system being utilized.
15	CFD should secure resources required to ensure annual live fire training is provided to all personnel in accordance with *NFPA 1403: Standard on Live Fire Training Evolutions*.	Costing would be based on response training needs.	Short-term (1-3 years)	A full assessment should be completed based on the level of services offered to the community, as per E&R By-law, coupled with training requirements.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
16	It is recommended that the CFD ensure adequate technical training resources (staff and programs) are funded to maintain qualified company officers, prevention, and education officers to NFPA 1021 Level II minimum.	Depending on whether the CFD brings in an outside instructor on an annual basis or has one of its officers trained and qualified to teach the program. The costs could range from $3,000 per course for an instructor, to a onetime cost of approximately $5,000 to certify and CFD staff member.	Short-term (1-3 years)	This level of training and certification is now mandated by the OFM, all fire officers and firefighters should be trained to ensure consistency in knowledge and skills.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
17	Utilizing talent assessment tools as a component of the Corporate and the CFD talent management strategy to update position profiles, define core competencies, recruiting, screening, promotion, and career development opportunities.	Staff time and possible unknown resource costs.	Immediate to Short-term (0-3 years) ongoing	Research reveals that utilizing talent assessment as part of your talent management strategy results in significant productivity increases, cost savings and decreased attrition.
18	CFD review and implement an enhanced recruitment and retention strategy and program with the objective to increase part-time/volunteer firefighter complement. Engage the community in the recruitment activities and sourcing of candidates	Staff Time	Short-term (1-3 years)	Provides surge capacity as well as on-scene staffing for large and/or lengthy emergency incidents. Filling positions with top talent and matching competencies is paramount to maintaining an employee value proposition talent management program.
19	Create an organizational development strategy program and plan that algins with corporate program and plans. Develop and communicate clear career development paths and program options that algin with positions.	Staff time	Immediate to Short-term (0-3 years)	Organizational development and career pathing programs create a learning and development culture and provides for clear direction and performance expectations and forms a major part of the performance management program.
20	Develop and formalize a leadership program with a focus on people planning and linking to performance plans.	Staff time	Immediate to Short-term (0-3 years)	People plans will create an organized approach to developing your people strategy for now and the future as well create human capital.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
21	Create a reward and recognition culture through surveying employees to know, understand and determine what they value, or what they feel is important to be recognized and celebrated.	Staff time	Short-term (1-3 years)	Engaging and listening to the thoughts and ideas of your employees will generate engagement, commitment, and advocacy for new rewards and recognition programs.
22	Opportunity to enhance employee engagement through developing a corporate rewards and recognition programs including a Service Awards – "Night of Honour".	Staff time	Short-term (1-3 years) ongoing	Provides a corporate collaboration with the CFD connecting the department and the people with the entire workplace community.
23	Determine and select municipal comparators based on appropriate criteria as noted above. This will present an opportunity to prepare for future bargaining by working collaboratively with municipal comparators by reviewing and understanding current trends in the sector. Review the current collective agreement regarding promotion processes acting and captain positions.	Staff time	Short-term (1-3 years) ongoing	An approved comparator criteria will provide market validation and benchmarking. Working in a collaborative bargaining approach allows for a regional consistent collective strategy based on current bargaining trends.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
24	Review and update MOU for the part-time / volunteer fire fighters including comparative compensation and benefit practices with the full-time fire fighters.	Staff time plus costs TBD dependant on comparative review results	Short-term (1-3 years) ongoing	Creating a fair and equitable treatment of positions through comparative compensation and benefit programs
25	A fitness room be incorporated into the fire station.	Estimated cost $10,000 to $15,000,	Short-term (1-3 years) ongoing	The inclusion of a well-equipped fitness room that focuses on cardio health and fitness maintenance has been a key component to the reduction of on-the-job injuries, along with promoting good health for the firefighters.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
26	The CFD invest in decontamination equipment and develop the appropriate policies and SOGs in performing decontamination of firefighters at the scene of a fire. The CFD should develop policies and procedures that reflect that gear is not to be: • Transported inside the cabs of fire department vehicles. • Taken into living quarters of a fire station (this should include any areas of the fire station other than the apparatus bays). • Taken into the firefighter's home. • Taken in private vehicle.	Costing would depend on equipment as determined required via policies and SOGs developed	Short-term (1-3 years)	The introduction and enforcement of the previously noted points will help to reduce contamination related to carcinogens, which in turn demonstrates a commitment to the health and wellness of its firefighters.
27	The CFD establish a committee to develop and implement a PTSD Awareness and Prevention program. It is also recommended that the Town of Cobourg, in co-operation with mental health professionals and develop a mental health awareness and treatment program.	Staff time	Short term (1-3 year)	Both recommendations are aimed at ensuring the mental health and wellness of the CFD staff. Investment in mental health programs have a correlation in the reduction in future disability claims.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
28	Review and assess the current corporate and departmental culture from CFD Service perspective in collaboration with Human Resources leadership with a goal to develop a departmental culture plan for now and the future. The review will include understanding current EDI approaches.	Staff time	Short term (1-3 year)	With a view for change and to understand the current corporate culture including EDI approaches an assessment and review is required for an updated corporate and CFD culture plan.
29	Create, develop, and implement employee surveys working in collaboration with human resources and the corporate employee survey programs.	Staff time	Short term (1-3 years) ongoing	Employee engagement surveys are designed to measure employee commitment, motivation and passion for their roles and responsibilities and provides employers with information on areas of that are thriving and areas to review and provide corporate change programs.
30	The CFD to maintain a minimum of four firefighters on the fire apparatus for each shift. This would bring CFD closer to being in line with the recommendations regarding the staffing of fire apparatus as identified in the NIST study and NFPA 1710. It would enhance the operational abilities of the CFD.	$100,000 to $120,000 per firefighter	Short term (1-3 years) contracted for this project.	Having more trained firefighters at the scene of a structure fire, and specialty operations incidents which enhances the opportunity of conducting a rescue, saving the structure, reducing damage, and most importantly, making the emergency scene safer for the firefighters.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
31	As a tool to evaluate response times, the CFD is to monitor its ability to meet effective response times as identified in NFPA 1710. This includes the following: • Achieve a goal of 80 seconds for firefighter turn-out time. • Four firefighters arriving on scene within four minutes of travel time. • Sixteen firefighters arriving on scene within an eight-minute travel time at a residential structure fire.	Staff time	Immediate (0-1 year) ongoing	While the NFPA timelines are not mandatory, they do identify an industry requirement based on studies conducted by NFPA and NIST. With the limited number of staff available for the CFD, meeting these goals may not be achievable. If this is the case, then the fire chief must decide what can be safely accomplished by the CFD firefighter staffing at the scene of a fire.
32	It is recommended that the CFD consider purchasing a pumper-tanker to supply water to areas that are not serviced by fire hydrants.	$600,000 to $750,000	Short-term (1-3 years)	Having access to a much-needed water source in a timely manner is paramount to the effectiveness of the fire department.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
33	It is recommended that the CFD work in conjunction with the medical oversight to review delegated medical acts including, but not limited to, the administration of glucagon.	Staff time and costing dependant on review of delegated medical acts outcome	Short-term (1-3 years)	Any opportunity for the CFD to provide an enhanced level of service to the members of the community should be investigated and adopted, where feasible.
34	It is recommended that the CFD should review the level of training, certification, and operational response costs that are required to provide the appropriate medical call response service level.	Staff potential cost avoidance should service level for medical call response		An opportunity for the CFD to determine if this level of service, as outlined in the E&R By-law, is sustainable as well as cost-justified in providing an enhanced level of service to the community or not.
35	CFD work with the City of Peterborough Fire Department to ensure that they are adhering to *NFPA 1225 Standard for Emergency Services Communications.*	Staff time	Immediate to Short-term (0-3 years)	Ensuring that the NFPA benchmark is being met will allow the CFD to respond to emergency calls as quickly and efficiently as possible, resulting in improved life safety for all residents in the Town of Cobourg.
36	The CFD hires a third party to complete a radio system audit and upgrade all radio system components, including the digital platform.	Approx $30,000 to $50,000	Short-term (1-3 years)	The radio system has seen a partial upgrade. A fully functioning radio system is a firefighter's lifeline during emergencies and is a health an

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
37	The CFD plans and builds a second fire station in the southern area of the Cobourg coverage area, over the term of this Fire Master Plan.	Approx $5M to $10M for fire station and property (depending on land purchase requirements)	Long-term (7-10 years)	The additional fire station will address the response times, emergency incident resourcing of firefighters and equipment, and any response delays or potential blocking of fire department resources traveling south or north of the railway that runs east/west through the approximate center of the Town of Cobourg.
38	The CFD initiate a tablet vehicle technology and pre-incident plan development program and that the program follows NFPA 1620.	Staff time and technology costs $15,000 to $20,000	Short-term (1-3 years)	Creating such a program will assist the incident commander/officer with information on the facility that they are responding to, along with any possible fire suppression equipment on site to facilitate suppression operations. The CFD currently has no pre-incident plans completed.
39	The Town of Cobourg maintain a certified EVT that is trained and provided the equipment to maintain and test the equipment of the CFD, as prescribed in NFPA standards and to manufactures specifications.	$100,000 to $120,000	Short-term (1-3 years)	Having a certified EVT on staff would greatly reduce both the timing of repairs and cost of repairs and maintenance on the fire apparatus and equipment.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
40	The Town of Cobourg needs to confirm and be in annual receipt of complete hydrant flow testing, maintenance, and NFPA compliance records.	Staff time	Immediate (0-1 year)	The Town of Cobourg needs to ensure there is adequate flow rates to sustain firefighting operations especially in high-risk areas in which vulnerable occupancies, schools, community centres, hospitals, youth residences and medical treatment centres are located.
41	Investigate a shared service with all Northumberland County municipalities for a County CEMC supported by the current municipal CEMCs being the alternates.	Staff time	Short-term (1-3 years) ongoing	A shared plan and resource will provide opportunity for the CEMC and alternate CEMC to reallocate time to other matters. This focused Emergency Plan will allow for consistent training and planning throughout the whole County. For each municipality having the ability to share personnel and resources in the time of emergency will provide ability to manage longer term events.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
42	As shared services within Northumberland County services are investigated, the CEMC for the Town of Cobourg should ensure that Town and the CFD personnel are trained in basic emergency management, IMS, and other programs. In addition, the CFD officers take more advanced training so that they may act in the command structure within the EOC and on the emergency site.	Staff time and potential costs for course materials and fee that may be required	Short-term (1-3 years) ongoing	As an interim and long-term measure this additional training will provide depth of personnel to manage emergency situations as they arise in the municipality.
43	Update the Town of Cobourg's Emergency Plan in accordance with the Provincial legislation, the 2021 Emergency Management Framework for Ontario, and to reflect current needs and circumstances of the municipality.	Staff time	Immediate to short-term (0-3 years) ongoing	Due to the importance of the emergency planning, it is imperative that the Town of Cobourg's Emergency Plan be current and robust, with training and exercises that occur to test the plan and participants.
44	Due to the importance of staff understanding their roles and responsibilities in the EOC, implement a policy that identifies IMS 200 as the minimum standard for staff required to be in the EOC with IMS 300 being the goal for all department heads.	Staff time	Short-term (1-3 years)	Training in relation to incident command and incident management will provide all EOC staff a consistent level of training and understanding of their roles within the EOC structure.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
45	The Town of Cobourg should consider a complete review of the current EOCs, IT and facilities, funding, policy, designated staff roles and responsibilities in the EOC, and industry best practices. A third-party review and implement plan report would be of assistance.	Staff time – however based on the team's recommendations, there may be equipment costs to consider. Third-party review approx. $25,000 to $30,000	Short-term (1-3 years)	Adequate and functioning EOC(s) are a requirement under the EMCPA and O. Reg. 380/04.
46	A schedule should identify EOC activation orientation an annual tabletop and operations-based exercises for the Town of Cobourg, including external agencies.	Staff time	Immediate (0-1 year)	Ongoing training in identified community risks (as per HIRA) is not only a good practice but is mandated by the *Emergency Management and Civil Protection Act* and its regulations.
47	Cobourg Fire Department enter into a response agreement with the neighbouring fire department for a tanker response into the town to better serve the residents of Cobourg.	Costing will be dependant on the agreement terms	Short-term (1-3 years) ongoing	Agreeing would be fiscally responsible by the CFD when comparing the costs of purchasing a tanker versus the use of a neighbouring department tanker. A tanker response will aid the CFD in ensuring a constant flow of water at a fire.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
48	The Cobourg Fire Department should enter into a response agreement with either an outside fire service or a 3rd party to provide support for technical rescues when the need arises.	Staff time and costs dependant on agreement terms	Immediate (0-1 year)	If a technical rescue call requires additional resources from outside the CFD, a plan will already be in place ahead of time. The responding agency's response time will be shorter if agreements are in place in advance, as pre-response approvals will not be required.
49	The Fire Chief and finance staff should review the transfer to large vehicle replacements fund and consider it to be increased to ensure adequate funding is available based on the scheduled vehicle replacements and the increased costs.	Staff time and costs will be based on staff review outcomes	Short-term (1-3 years) ongoing	To provide for increased costs and delivery times of purchased fire apparatus.
50	In support of the joint purchasing recommendations presented in the 2021 Independent Review of the Northumberland Fire Services, joint purchases for all types of apparatus and equipment should be investigated through the Northumberland Fire Service Steering Committee to maximize cost savings and training opportunities.	Staff time and costs will be based on staff review outcomes	Short-term (1-3 years) ongoing	Savings with competitive bidding when purchasing numerous vehicles of the same style and standardized equipment may be realized as well as increased shared training opportunities within the County, specific to apparatus and equipment.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
51	In cooperation to investigate additional shared services the Northumberland Fire Service Steering Committee could consider investigating the shared services for dedicated Mechanical Officers who will maintain a spare fleet, each of the Fire Department's apparatus, and all equipment within the Northumberland County Fire Departments.	Staff time and costs will be based on staff review outcomes	Short-term (1-3 years) ongoing	A single service for mechanical needs will provide the ability to maintain service levels within each community.
52	The fire chief should ensure that there is a long-range vehicle and equipment replacement schedule noted in the CFD's capital budget.	Staff time	Short-term (1-3 years) ongoing	Having a long-range capital replacement plan in place will ensure equipment is replaced on a cycle that is based on industry standards and best practices.
53	The fire chief should investigate the adjustments to, and the inclusion of fees and charges as outlined with in the Master Fire Plan finance section.	Staff time	Short-term (1-3 years) ongoing	Provides the ability for the Fire Department to invoice for services, promote cost avoidance, and in some cases provide increased protection from liability.

Appendices

Appendix 'A' FUS Suggested Inspection Frequency
Appendix 'B' Five-Step Staffing Solution

Appendix A – Fire Underwriters Survey Suggested Inspection Frequency

Fire Underwriters Survey Suggested Frequency Chart

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

Appendix B – Five-Step Staffing Process

Step 1: Scope of Service, Duties, and Desired Outputs

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

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

Step 2: Time Demand

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

- Local nuances
- Resources that affect personnel needs

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

Step 3: Required Personnel Hours

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

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

Step 4: Personnel Availability and Adjustment Factor

Average personnel availability should be calculated, considering the following:

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

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

Step 5: Calculate Total Personnel Required

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

Correct calculations based on the following:

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

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