October 2020

Cavan Monaghan Fire Department

TOWNSHIP OF CAVAN MONAGHAN

Have it all. Right here.

Master Fire Plan

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Acronyms

AED	Automatic External Defibrillator
AHJ	Authority Having Jurisdiction
CACC	Central Ambulance Communications Centre
CEMC	Community Emergency Management Coordinator
CFAI	Commission on Fire Accreditation International
CKL	City of Kawartha Lakes
CMFD	Cavan Monaghan Fire Department
CSA	Canadian Standards Association
OSM	Otonabee-South Monaghan
EAP	Employee Assistance Program
EMCPA	Emergency Management & Civil Protection Act
EMS	Emergency Medical Services
EMT	Emergency Management & Training Inc.
EOC	Emergency Operations Centre
EOETA	Eastern Ontario Emergency Training Academy
ERP	Emergency Response Plan
EVT	Emergency Vehicle Technician
FESO	Fire and Emergency Services Organization
FPO	Fire Prevention Officer
FPPA	Fire Protection and Prevention Act
FUS	Fire Underwriter's Survey
HQ	Headquarters
HVAC	Heating, ventilation, and air conditioning
IFSAC	International Fire Service Accreditation Congress
IRM	Integrated Risk Management
MFP	Master Fire Plan
MVC	Motor Vehicle Collision
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
OFC	Ontario Fire College
OFMEM	Office of the Fire Marshal and Emergency Management
OHSA	Occupational Health and Safety Act
OSI	Occupational Stress Injuries
PFSG	Public Fire Safety Guidelines
PPE	Personal Protective Equipment
PTSD	Post Traumatic Stress Disorder
RTC	Regional Training Centre

SOG	Standard Operating Guidelines
SRA	Simplified Risk Assessment
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TO	Training Officer

Executive Summary

This Master Fire Plan (MFP) consists of a review of the community and its fire service that culminates into a 10-year plan for future opportunities for organizational improvements. The plan assesses present and future population statistics and anticipated growth. It evaluates past and present service levels provided by the Fire Department, coupled with its service goals and expectations.

The overall goal of this document is to provide the fire service and the Township with a comprehensive look at how well the Cavan Monaghan Fire Department (CMFD) is meeting the needs of its staff and the community it serves. Once the plan is adopted, the next phase is implementation. Implementation will depend on the Township's resources and ability to move forward with the associated recommendations contained within the document.

While many of the recommendations in the MFP are operational, some of the recommendations are strategic and require the approval and support of Council to move forward on (e.g. capital investment). Further, the implementation of some of the recommendations are contingent on moving forward with other recommendations. For example, the replacement of the tanker and the support truck at Station 1 are limited by the ability of Station 1 to accommodate new vehicles. Another example is that improving fire prevention is closely tied to decisions on hiring a full time Deputy Chief to take responsibility for Operations and Training.

Some of the recommendations will fulfill other recommendations at the same time. For example, building a new station 1 will remove the requirement to add a vehicle exhaust system in the old building.

Other community decisions that may be seemingly unrelated, such as the type of development to occur in the Township, can also have an impact on the fire service, such as the type of firefighting apparatus required for multi-storey residential complexes.

Ultimately, all decisions on the services provided, the staffing, and equipping of the fire service are the decisions of Council. This document is to assist the Fire Chief and Council over the next 10 years in continuing to provide a high-quality fire service in an efficient, economical, and effective way.

Objectives

To ensure that they are meeting the needs of the community and their staff, the CMFD recognizes the importance of conducting this strategic review of the organization for the intention of providing high-quality fire services to the residents and businesses of the

community along with its visitors. With the creation of a MFP, the Township of Cavan Monaghan is evaluating all aspects of its service including the operational costs and capital budgets required to maintain or enhance the service.

Any recommendations arising from the plan will be used to develop strategies for 2020 through to 2030.

Based on the information received during our meetings, a review of supplied documentation, and reference to industry standards and best practices, there is a total of 21 recommendations that are identified within each section.

The scope of work noted in the Township's Request for Proposal has been utilized to guide this review. They include but are not necessarily limited to the following:

Address Fire Suppression activities including aspects of current and future delivery with recommendations and costing for the following:

- Current Facilities review for adequacies
- Administration
- Fire Prevention
- Public Education
- Communications
- Statistical and trend analysis
- Staffing operations and service levels
- Station locations and facilities assessment and resource distributions taking into consideration geography and topography of the Township and current deployment sites
- Emergency response and future growth
- Apparatus and fleet maintenance (including replacement cycles)
- Forecast Fire Service operational requirements including but not limited to, staffing deployment area locations, Fire Station locations that currently exist and future stations including apparatus requirements
- Matching resource to risk within the Township

A quick reference chart has been included within this Executive Summary, along with a more detailed chart found in Section 10 including timelines for implementation along with estimated costs.

While there are 20 recommendations, they can be grouped into two categories, operational and strategic. The Operational Recommendations are those that the Chief can address within the mandate and authority of the Fire Chief. The Strategic Recommendations are those that require direction/support from Council.

The Strategic and Operational recommendations have been ordered by EMT as Primary or Secondary priority. Further, the primary and secondary recommendations have been listed in order of significance.

The secondary recommendations are no less important, and although the primary recommendations should be addressed first, many can be done simultaneously. There is no need to wait for each recommendation to be completed before starting the next. For example, if budget funds are available, there is no need to wait for the primary recommendations to be completed before replacing Unit 5, a secondary recommendation.

It should be noted that addressing certain recommendations will fulfill or alleviate other recommendations within the MFP. For example, building a new station 1 would, based on modern fire station design, include a diesel exhaust system.

The following 10 strategic recommendations are for Council to consider over the next 10 years.

Strategic Recommendations

Priority	Strategic Recommendations	Rec. #
Primary	Build a new fire station in the Municipal Office area in Millbrook.	15
Primary	Increase the Deputy Chief position from a volunteer status to a full-time position with responsibility for training and operations. The Fire Prevention Officer will be dedicated for the FPO role full-time.	4
Primary	CMFD should evaluate the medical response calls to consider: • Change the tiered response criteria to 15 minutes • Not respond to Centennial Place LTC Home • Assign specific firefighters to respond to medical calls	13
Primary	It is recommended that the Fire Chief begin a planning process to replace the aging Tanker 1.	16
Primary	CMFD install diesel exhaust systems in both of its fire stations.	11
Primary	It is recommended that the Fire Chief begin a planning process to replace the aging Rescue 2. *(Mid-term 3-5 yrs)*	17
Primary	It is recommended that CMFD begin a planning process for the acquisition of an aerial apparatus should a three-storey (or	19

Priority	Strategic Recommendations	Rec. #
	higher) residential building be constructed within the Township.	
Secondary	Township should request that the County paramedic service provide a paramedic response unit based in Millbrook for a minimum of 12 hours a day during the day shift, at county cost.	14
Secondary	It is recommended that Unit 5 be replaced.	18
Secondary	The Township of Cavan Monaghan propose to EOETA member municipalities the creation of a County Training Coordinator for external training programs.	7

Operational Recommendations

Priority	Operational Recommendations	Rec. #
Primary	CMFD review the physical expectations of a firefighter for use in training and recruiting. 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.	8
Primary	CMFD develop a more wholesome approach to their PTSD Prevention Plan which may include peer support, intervention approach, professional services, clinical assistance and what a return to work plan may look like for a CMFD volunteer firefighter.	9
Primary	CMFD begin developing a cancer prevention program.	10
Primary	It is recommended that a PPE inspection plan be expanded to include washing bunker gear after every structure fire and hazmat exposure, and to allow for an annual inspection of all PPE, focusing on the structural firefighting ensemble.	12
Primary	The Fire Chief to review Cavan Monaghan's inspection program to identify levels of desired frequency in relation to the inspections noted in the Fire Underwriters Survey Chart.	20
Primary	CMFD work with dispatch partners to promote adherence to NFPA 1221 Standard on Emergency Communications Services.	2
Secondary	The E&R Bylaw be reviewed annually by the Fire Chief to ensure currency and compliance.	1
Secondary	CMFD periodically work with other automatic aid partners to ensure currency and consistency with all agreements.	3
Secondary	CMFD should enhance the training and certification of some of its volunteer firefighters in the areas of fire prevention and public education, trained and certified to at least: • NFPA 1031 – Fire Inspector I • NFPA 1035 – Fire and Life Safety Educator I	5

Priority	Operational Recommendations	Rec. #
Secondary	CMFD work with developers and the public to make the Home Sprinkler Systems initiative a part of its fire prevention and public education program.	6

Introduction

Review Process and Scope

Emergency Management & Training Inc. (EMT) has based its review process on the Township's initial Request for Proposal and the response document submitted by Emergency Management & Training Inc. The specific scope of work identified in the Request for Proposal was reviewed. The MFP review was completed by utilizing best practices, current industry standards, and applicable legislation as the foundation for all work undertaken. EMT also used both quantitative and qualitative research methodologies to develop a strong understanding of current and future needs and circumstances of the community.

Deliverables

Through a strategic planning process and by building upon the 2010 MFP, EMT has developed a new plan for 2020 - 2030. As noted in the Executive Summary, the scope of work shall include, but not necessarily be limited to a review of the following:

- Current facilities review
- Department administration
- Fire prevention
- Communications
- Statistical and trend analysis
- Staffing operations and service levels
- Current and future station locations
- Emergency response levels and future growth
- Apparatus and fleet maintenance
- Forecasted fire service operational requirements
- Matching resource to risk

Based on these criteria and through meetings with the Fire Chief, staff, Township Council 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 CMFD. Based on the review of the Fire Department's facilities, equipment, programs and related data, EMT has made recommendations for consideration by the Fire Chief, senior management, and Council to guide the CMFD into the future.

Performance Measures and Standards

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

- Office of the Fire Marshal and Emergency Management's (OFMEM) Public Fire Safety Guidelines.
- *The Fire Prevention and Protection Act* and its subordinate regulations, including the Ontario Fire Code O. Reg 213/07, Mandatory Assessment of Complaints and Requests for Approval O. Reg 365/13, and Mandatory Inspection – Fire Drill in Vulnerable Occupancy O. Reg 364/13. And O. Reg 378/18 Community Risk Assessment.
- Office of the Fire Marshal and Emergency Management's (OFMEM) Integrated Risk Management program.
- The *Ontario Health and Safety Act*, with reference to the National Institute for Occupational Safety and Health (NIOSH).
- Ontario Fire Service – Section 21 Guidelines:
    - The Section 21 Committee is based on Section 21 of the *Ontario Occupational Health and Safety Act* (OHSA). This committee is charged with reviewing industry safety concerns and developing recommended guidelines to reduce injuries for the worker.
- The National Fire Protection Association (NFPA) standards:
    - NFPA 921 – Guide for Fire and Explosion Investigations
    - 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 1221 – Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems
  - NFPA 1500 – Standard on Fire Department Occupational Safety, Health, and Wellness Program
  - NFPA 1521 – Standard for Fire Department Safety Officer Professional Qualifications
  - NFPA 1582 – Standard on Comprehensive Occupational Medical Program for Fire Departments
  - NFPA 1583 – Standard on Health-Related Fitness Programs for Fire Department Members
  - NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments
  - NFPA 1730 – Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations
  - NFPA 1851 Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting
  - NFPA 1901 – Standard for Automotive Fire Apparatus
  - NFPA 1911 – Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles
- The Commission on Fire Accreditation International (CFAI), which is a program that promotes fire service excellence by evaluating a fire department based on related National Fire Protection Association standards, local legislation and industry best practices (the parent organization for Commission on Fire Accreditation International is the Centre for Public Safety Excellence).
  - This program has been adopted by many fire departments in Canada as a measure of best practices. Within Ontario, Guelph, Kitchener, Toronto, and Ottawa are just a few fire departments that have obtained accreditation from the Commission on Fire Accreditation International.
- Fire Underwriters Survey (FUS) technical documents

Project Consultants

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

- Darryl Culley, President, Emergency Management & Training Inc.
- Jeremy Parkin, Fire Service Consultant
- Rick Monkman, Fire Service Consultant

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

Section 1: Community and Fire Department Overview

1.1 Community Overview
1.2 Fire Service Composition
1.3 Governance and Establishing & Regulating By-law
1.4 Fire Services By-Law, Policies, Directives, and Standard Operating Procedures
1.5 Fire Station Locations
1.6 Dispatching Services
1.7 Fire Service Agreements

Section 1: Community and Fire Department Overview

This MFP for the Cavan Monaghan Fire Department (CMFD) analyzes and identifies current and probable community fire risks and needs over the next 10 years and beyond. This will greatly assist CMFD with future planning relating to staffing and response, fire and life safety programming, and asset management. To ensure a comprehensive review is conducted, this review has examined and researched all aspects of CMFD operations including planning, fire prevention, training and education, communications, apparatus and equipment, human resources, station suitability and location, and large-scale emergency preparedness.

1.1 Community Overview

The Township of Cavan Monaghan is one of eight lower tier municipalities of Peterborough County. Located in the southwest corner of the county, Cavan Monaghan is the second largest township in population yet one of the smaller in land area. Nestled on the borders of the City of Peterborough, the Township is also served by important thoroughfares in Highway 115 and County Road 28.

With its history dating back to 1817, the Township of Cavan and the Village of Millbrook were once part of Durham County, but joined Peterborough County in 1974. An amalgamation in 1998 with North Monaghan would lead to a renaming in 2007 to its current title, the Township of Cavan Monaghan. There is several villages and hamlets residing in the township and they include Cavan, Five Mile Turn, Fraserville, Ida, Millbrook, Mount Pleasant, South Monaghan, Springville, and Bailieboro. Millbrook is the main community for commerce.

Figure 1a: Cavan Monaghan Township Map

With a population of 8,829 that has remained relatively steady over the years, Cavan Monaghan has shown limited growth in the census years of 2001 to 2016. Since 2001, the population has grown 4.4%, albeit with some rise and fall (Table 1a). The last reported growth rate of 2.7% was in line with Peterborough County, but fell below the provincial rate of 4.6%. The 2016 Census data also shows that 45.2% of the population was over the age of 50, with only 16.5% under the age of 29[2].

Table 1a: Cavan Monaghan Population 2001-2016

2001	2006	2011	2016
8,453	8,828	8,601	8,829
-	+4.4%	-2.6%	+2.7%

[2] Statistics Canada

1.2 Fire Department Composition

Cavan Monaghan Fire Department (CMFD) serves a population of 8,829 people (2016) over an area of 306.33 km², with a population density of 28.8 residents/km²[3]. Between 2016 and 2019 CMFD responded to an average of 606 incidents.

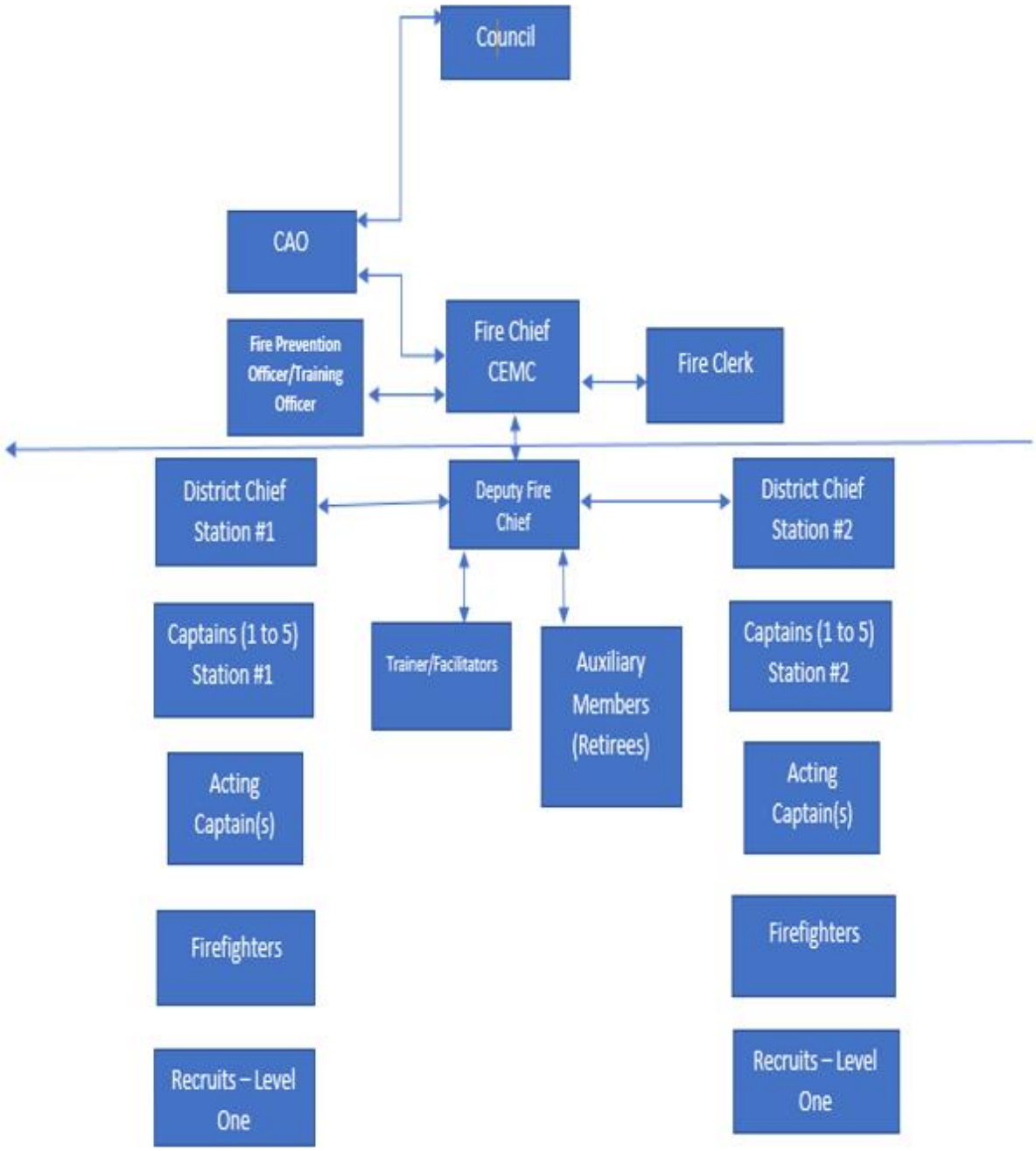
CMFD is comprised of 52 firefighters, with an additional 3 staff in management and administrative positions for a total complement of 55 staff. The Fire Department's operations are divided into five sections: Prevention and Public Education, Operations and Suppression, Apparatus and Equipment, Training, and Administration. Further, an Auxiliary unit provides additional logistical support to the fire department by assisting with the day to day maintenance of apparatus, equipment, and supporting various programs of the department.

In addition, the fire department and the chief are the lead in emergency preparedness and management for the community. Each one of these sections will be detailed further in the report. The organizational chart in Figure 1b reflects the general reporting structure within CMFD.

Serving a rural area with two central villages, the Township of Cavan Monaghan oversees the Fire Department through its municipal council. Cavan Monaghan Fire Department is able to provide a variety of emergency services from two stations: fire suppression, auto extrication, ice water rescue, and emergency medical response. CMFD also delivers public fire safety education, fire prevention inspections, and code enforcement under the Ontario Fire Code, as well as oversee the Township Emergency Management Program.

[3] https://en.wikipedia.org/wiki/Cavan_Monaghan

Figure 1b: CMFD Organizational Chart



Above chart from By-law 2017-87 (appendix B)

1.3 Governance and Establishing & Regulating By-law

An Establishing & Regulating By-Law (E&R) is a municipal Council document/ policy for fire departments. It can be used to show how the municipality delivers fire protection

services it has determined are necessary according to its needs and circumstances, as is required by the *Fire Protection and Prevention Act, 1997* (FPPA). An establishing and regulating by-law can state the type and level of fire protection services provided and may include policy direction in the following areas:

- legislative/ regulatory requirements that may affect the delivery of fire protection services (e.g., FPPA*, Occupational Health and Safety Act*, and *Environmental Protection Act*)
- Fire Marshal directives
- best practices (e.g., Ontario Fire Service Section 21 Advisory Committee guidance notes, National Fire Protection Association standards)
- general functions and core services to be delivered
- goals and objectives of the fire department
- general responsibilities of fire department personnel
- organizational structure
- authority to proceed beyond established response areas
- authority to apply costs to property owners for fire investigations
- authority to effect necessary fire department operations, in consultation with the municipality's legal resources

When setting or amending the levels of service in the Establishing & Regulating By-law, municipal council, in consultation with the Fire Chief, should keep in mind the following considerations:

- the current needs and circumstances of the municipality
- requirements and expectations, such as the following:
    - training requirements based on current standards and practices
    - acquisition and maintenance of appropriate equipment
    - appropriate record keeping
- the extent of fire department funding necessary to achieve and maintain the stated levels of service

The current Establishing and Regulating By-law (E&R) was approved at the end of 2017. The document is well structured, is clear and concise in its intent, and provides current and necessary information in the appendices. The E&R by-law is explanatory and accurately reflects the Department's official name, organizational structure and division names, duties of members, rules and regulations, recruit process, and services offered by CMFD.

There is no need to update the current E&R by-law, however, it is recommended that annual reviews of the document be completed by the Fire Chief. This is a standard business practice to ensure that the Fire Department is operating within the Council

approved parameters. This does not mean that an updated by-law be presented to Council annually, but that the document is kept current and accurate. By doing this, the Fire Chief can ensure that the Fire Department is providing the services required by the community. As part of the by-law update process, when changes are necessary, the draft should be vetted through the Township Solicitor prior to going to Council.

1.4 Fire Services By-law, Policies, Directives, and Standard Operating Procedures

Fire department policies and guidelines have enormous value for a department. In fact, they can be seen as the key foundation to a department's success. The backbone of any fire service is its policies, operating procedures (OPs), and operating guidelines (OGs), which govern and provide direction on its operations.

- A *policy* is a high-level statement that expects consistent compliance. There is very little to no leeway permitted with a policy.
- A *guideline* is a standard with an acceptable level of quality or attainment on how to act in a given situation, with non-mandatory controls.
- A *procedure* is a standard with an acceptable level of quality or attainment in a series of detailed steps to accomplish an end. There are step-by-step instructions for implementation.

Most fire services OGs are governed by Terms of Reference, the Policy, and an OG. Fire services first develop Terms of Reference for the committee to use as guidance for their purpose, then develop a policy, and then use that policy as a driver in developing the content to go into an OG.

Well-written, up-to-date fire department policies and guidelines:

- Help all members operate consistently by laying out clear direction and guidelines
- Keep members safe
- Enhance operational excellence by incorporating best practices so that firefighters do not have to keep repeating the same mistakes or reinventing the wheel
- Provide important defence for legal and personnel complaints, which can save money by shielding the municipality from lawsuits

How can a fire department start to prioritize policies and guidelines so that department members see it for the value it really holds? The following are a few suggestions:

- Review policies and guidelines on a regular basis.
- Incorporate training based on policies and guidelines.
    - Over time, this will help everyone better understand and comply with department policy.
- Research department policies and guidelines.
    - Do you know where your department's policies come from? What parts are required by law, and what parts wound up there as a result of a particular individual? Doing some research on your policies (tracking down legal requirements, going back through older versions if you have them, comparing them to other departments' policies) can create an understanding of how and why the policy got to where it is today.

An up-to-date policy and guideline manual have great intrinsic value: the ability to protect, guide and encourage, thus, creating a better, safer, more consistent organization. All OGs should be reviewed on a regular basis and updated as required. Many fire departments divide the OGs into thirds and review one-third each year so that all OGs are reviewed every three years (or more frequently for important updates).

In reviewing the CMFD's OGs and OPs, it was found that they were generally comprehensive, and it was obvious a significant amount of work went into updating them in 2017. Although the individual OGs show the date of the last revision there is not an indicator to show when they were last reviewed, as not all reviews require revision. A tracking sheet should be included in the OG manual to show when each OG had last been reviewed.

1.5 Fire Station Locations

Figure 1c identifies the locations of the two fire stations within the marked Township borders. Station 1 is located at 52 King Street East. Station 2 is located at 1047 Mount Pleasant Road.

Figure 1c: CMFD Station Locations

Figure 1d: CMFD Station Coverage Area

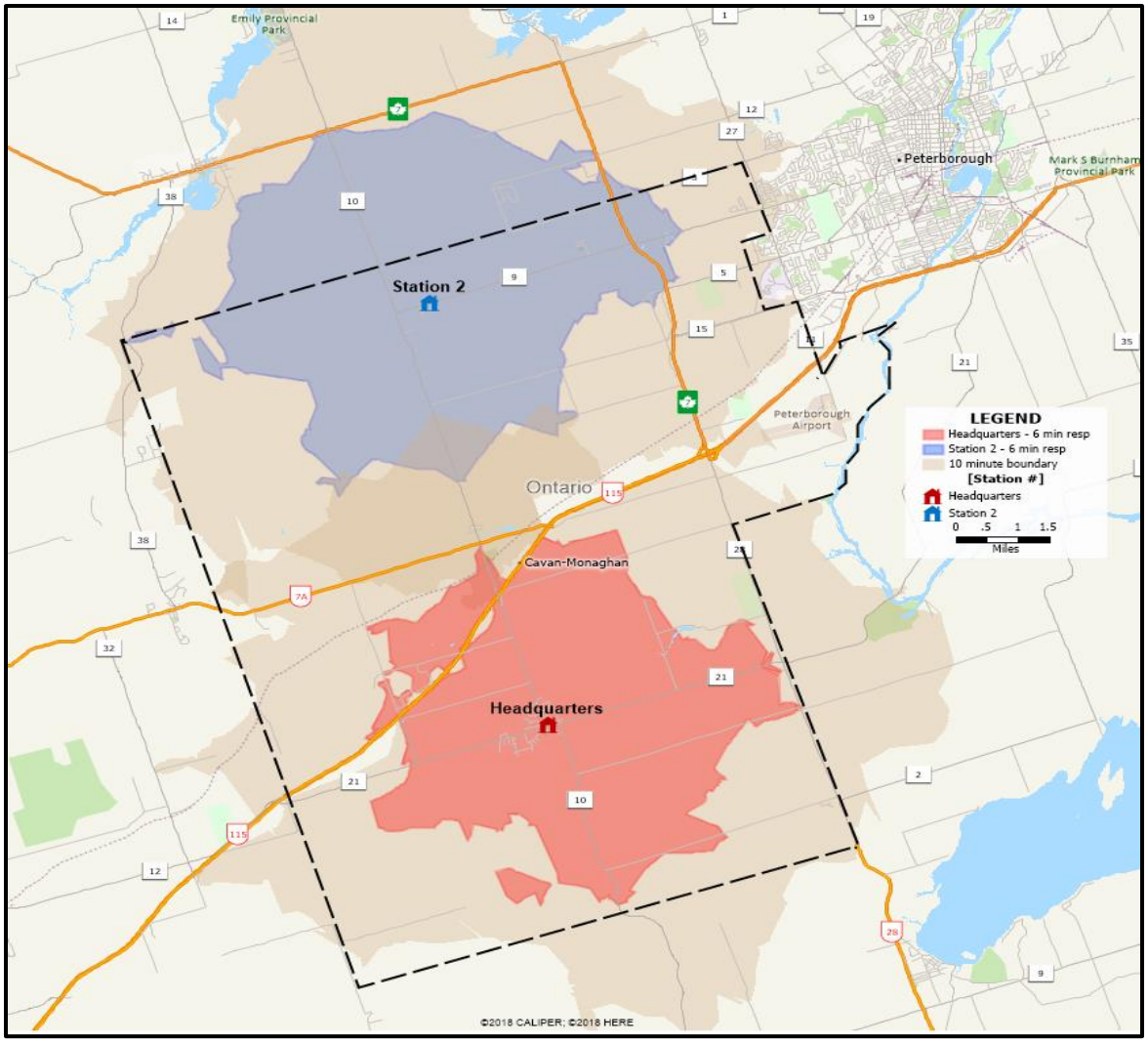


Figure 1d depicts the response coverage offered by the two fire stations in relation the National Fire Protection Association (NFPA) response recommendations of 10 and 14 minutes. The map's legend notes a 6 and 10-minute response. This is the drive time coverage by each station, considering that it takes an average of 4 minutes for the volunteer firefighters to respond to the fire station, get geared up, and depart from the station.

The recommended response time standard for suburban areas under NFPA 1720 is 10 minutes while the recommended standard for rural areas is 14 minutes.

As illustrated above, the two fire stations offer a good level of coverage for the community.

1.6 Dispatching Services

The Cavan Monaghan Fire Department receives its dispatching services from the City of Peterborough Fire Department, who provides services for all eight Peterborough County fire departments. The costing model is based on a share of households each township has, with proportionate payment according to those numbers. The County covers a percentage as well. CMFD is billed accordingly with a 2019 cost of $19,936.55, or 8.5% of the total amount. This is a very reasonable amount for the services provided. Based on 2018 call volumes, it equates to $35.04 per call.

EMT is not recommending any changes to this agreement as it is based on shared costing and actual costs are sensible. It is, however, recommended that CMFD work with Peterborough Fire to ensure that they are adhering to NFPA 1221 Standard on Emergency Communication Systems.

That standard under section 7.4 Operating Procedures, sets out a benchmark listed below:

> **7.4.1*** Ninety-five percent of alarms received on emergency lines shall be answered within 15 seconds, and 99 percent of alarms shall be answered within 40 seconds. *(For documentation requirements, see 12.5.2.)*
> **7.4.1.1** Compliance with 7.4.1 shall be evaluated monthly using data from the previous month.

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

In discussions with the Fire Chief, it was mentioned that CMFD is looking to upgrade their radio systems from analog to digital systems. As with all other fire departments, the upgrade to digital processing of radio communications offers a wide array of improvements. There is, however, a cost to switching. The Fire Chief has identified that this has been adequately budgeted for over the years.

CMFD 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.

1.6.1 Next Generation Communications (NG-911)

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 (NG9-1-1) 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 NG9-1-1 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 NG9-1-1, such that the ILECs will be responsible for the construction, operation, and maintenance of the NG9-1-1 networks, with Commission oversight, including through Commission approval of the ILECs' tariffs.*
>
> *The Commission **directs** all ILECs to establish their NG9-1-1 networks and to be ready to provide NG9-1-1 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 NG9-1-1 Voice throughout their operating territories by **30 June 2020***

wherever (i) their networks are capable of doing so, and (ii) PSAPs have launched NG9-1-1 Voice. The Commission determines that real-time text (RTT)-based NG9-1-1 Text Messaging is the second method of communication to be supported on the NG9-1-1 networks. The Commission ***directs*** *mobile wireless service providers to provide RTT-based NG9-1-1 Text Messaging throughout their operating territories by* ***31 December 2020*** *wherever (i) their networks are capable of doing so, and (ii) PSAPs have launched NG9-1-1 Text Messaging. The Commission also requests that CISC submit to the Commission, for information, its recommended public education campaign for each new NG9-1-1 service.*

During the transition to NG9-1-1, ILECs are ***directed*** *to support existing 9-1-1 voice services over the existing 9-1-1 networks in parallel with the new NG9-1-1 networks. As well, ILECs are to decommission their current 9-1-1 network components that will not form part of their NG9-1-1 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 NG9-1-1. These rates will be in effect until current 9-1-1 networks are decommissioned, at which time final NG9-1-1 network access tariff rates will be established.*

Finally, the Commission is imposing obligations related to (i) ensuring the reliability, resiliency, and security of the NG9-1-1 networks; (ii) reporting on NG9-1-1 network outages; and (iii) ensuring privacy in an NG9-1-1 environment.

Goals and Outcomes of Implementation

1. *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.*

2. *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.*

3. *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.

4. *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 (NG9-1-1) services. As such, the Commission announced its intention to conduct a comprehensive examination of NG9-1-1 in order to establish an NG9-1-1 regulatory framework.*

5. *With NG9-1-1, 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, 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.*

1.6.2 Current Condition

Dispatching Services:

- The current dispatch agreement with the Peterborough Fire Department is working well and meeting the needs of CMFD. 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.

Next Generation 9-1-1:

- As noted in the CRTC excerpt, June 2023 is a key date to work with. The Fire Chief must ensure that Cavan Monaghan is a stakeholder at the steering committee table through direct involvement or as part of the regional committee for this implementation plan.
- The Fire Department 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.
- At this time, no costs are estimated for this endeavour as much of the logistics are still being worked out by the upper level stakeholders (PSAPs, central dispatch centres and regional steering groups). Communication system upgrades will, however, have a financial impact on every community.

1.7 Fire Service Agreements

Preparedness and response capability are a key component of a fire department's organizational planning, however, events often occur that exceed a department's resources (i.e. a disaster or large-scale fire). As these events may be uncommon and unpredictable, assistance is sought and agreed to in advance in the form of ***Mutual Aid Agreements***. This type of agreement receives assistance from other neighbouring departments. Typically, the agreements are based on equal reciprocity. Such agreements are prepared and overseen by a County Fire Coordinator as established in Part II, Section 7 of the *Fire Protection and Prevention Act* (FPPA).

CMFD is part of the Peterborough County Mutual Aid Plan along with the eight other townships and the City of Peterborough. The CMFD Fire Chief was recently added as an Alternate Coordinator to the County Plan.

Another form of agreement used in fire and emergency services is based on response times and nearest available fire service. As jurisdictional borders are defined, often a neighbouring fire department may better serve a section near outlying borders. These agreements are called ***Automatic Aid Agreements*** and may incur costs as they fall outside the scope of Mutual Aid type calls for assistance. The *FPPA* defines Automatic Aid Agreements as:

> **Automatic aid agreements**
> (4) For the purposes of this Act, an automatic aid agreement means any agreement under which,
>
> (a) a municipality agrees to ensure the provision of an initial response to fires, rescues and emergencies that may occur in a part of another municipality where a fire department in the municipality is capable of responding more quickly than any fire department situated in the other municipality; or
>
> (b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and emergencies that may occur in a part of another municipality where a fire department situated in the municipality is capable of providing the quickest supplemental response to fires, rescues and emergencies occurring in the part of the other municipality. 1997, c. 4, s. 1 (4).

CMFD has five such agreements in place, with four neighbouring fire departments:

- City of Kawartha Lakes (CKL)
- Otonabee-South Monaghan (OSM), *two agreements*
- Selwyn
- City of Peterborough

The City of Peterborough agreements provides response to the Peterborough Municipal Airport which is located at 925 Airport Rd. within the Township of Cavan Monaghan.

EMT has reviewed these documents. The agreements with OSM and Selwyn are typical to agreements found across Ontario. The CKL agreement has “stand-by fees” and “call-out fees” which are higher than the other four agreements CMFD has in place. In fact, no other agreement has a stand-by fee, while the CKL agreement states a stand-by fee of $1,000 (paid in two payments a year). The call-out fees are over 2.5 times higher than the others. All other agreements with a fee schedule are set at $450 for a pumper crew of four while the CKL schedule sets a call-out fee of “$1,200 per hour or part thereof”. This fee schedule is not in line with the other agreements.

It is recommended that CMFD review the high fee schedule that CKL has set within their agreement. Mutually feasible costing should be established by all regional partners.

Most of the agreements in place for CMFD are between 15 to 18 years old, and as such require a review for currency. It is recommended that CMFD put in place a system to periodically review all automatic aid agreements to ensure that both parties are adhering to the agreed upon principles in the contract, and that all aspects of the agreement are still applicable. This would also assist in having one agreement with Otonabee-South Monaghan instead of two.

Recommendation(s)

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
1	The E&R Bylaw be reviewed annually by the Fire Chief to ensure currency and compliance.	Staff time	Short-term (1-3 years)
2	CMFD work with dispatch partners to promote adherence to NFPA 1221 Standard on Emergency Communications Services.	Dependent on potential changes to the agreement	Short-term (1-3 years)
3	CMFD periodically work with other automatic aid partners to ensure currency and consistency with all agreements.	Dependent on potential changes to the agreement	Short-term (1-3 years)

Section 2: Planning

2.1 Three Lines of Defence
2.2 Industry Standards and Best Practices
2.3 Strengths, Weaknesses, Opportunities, and Threats
2.4 Internal Staff Feedback Survey
2.5 External Feedback Survey

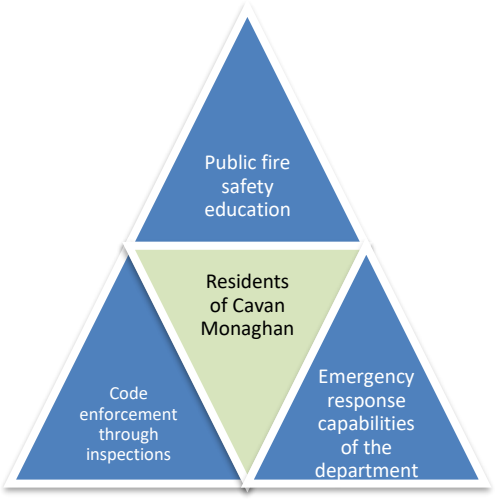
Section 2: Planning

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 fire department. 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 Three Lines of Defence

The Office of the Fire Marshal and Emergency Management (OFMEM) have identified "Three Lines of Defence" to be utilized by all fire departments in Ontario when planning to meet the needs of the community. By embracing and implementing these three lines of defence, the centre of focus is the safety of the community, based on education, enforcement, and response.

1. **Education** – Fire safety education is the key to mitigating the fire and life hazards before they start. With the growth of the community, how will the municipality continue to meet the fire safety educational needs of the community?
2. **Inspections and Enforcement** – If the public education program does not prove effective, the next step is for the fire department to enforce fire safety requirements through inspections leading to possible charges under the *Act*.



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

In conjunction with the three lines of defence, a key industry standard that outlines goals and expectations for a fire department is the National Fire Protection Association (NFPA). These standards are not mandated but do form the foundation of the fire services recommended best practices. These NFPA standards are also utilized by organizations such as the Fire Underwriters Survey group to conduct their assessments of a fire department and the community. The provincial Fire Marshal Offices and provincial fire schools also use them to form the foundation of their evaluation and training related programs.

2.2 Industry Standards and Best Practices

2.2.1 National Fire Protection Association 1201

In 2014, the Province of Ontario adopted a move to the NFPA Standards for training and certification courses at the Ontario Fire College. To assist with Emergency Management & Training Inc.'s review, reference has been made to key NFPA Standards that identify services that should be offered and how they are to be delivered based on the composition of the fire department. One of the foundational NFPA Standards is Standard 1201 as it sets out criteria for providing fire and emergency service to the public.

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

To accomplish this, a Fire and Emergency Services Organization (FESO) must ensure open and timely communications with the Chief Administrative Officer and governing body (Council), create a master plan 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 a 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 in fire departments. NFPA 1720 (refers to goals and expectations for Volunteer Fire Departments) has been incorporated into the evaluation of the fire department's response and staffing needs. More discussion in relation to these two standards will be presented in sections 3 and 4.

2.2.2 Commission of Fire Accreditation International

"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."[4]

In the fire service, the NFPA standards are considered by many as the benchmark to strive for. Many of these standards have, to a large degree, been adopted and supported by numerous fire departments. The Commission on Fire Accreditation International (CFAI) is an organization that has incorporated all national and local standards into an accreditation process, effectively becoming the model for best practices and fire service excellence.

To accomplish this excellence model, the CFAI program revolves around 10 categories:

1. **Governance and Administration** – Includes such things as organizational reporting structure, establishing and regulating by-law requirements, etc.
2. **Assessment and Planning** – Evaluating the organization in relation to future planning.
3. **Goals and Objectives** – What are the goals of the fire service? Do they have a strategic plan in place?
4. **Financial Resources** – Does the organization have sufficient funding in place to effectively meet the needs of internal and external stakeholders?
5. **Programs** – Includes fire prevention, fire suppression, training and emergency management.
6. **Physical Resources** – What is the state of the fire stations and are they located in the best location to respond to the community in a timely manner?
7. **Human Resources** – Includes staffing of the organization in all branches as well as 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.

[4] Commission on Fire Accreditation International overview.

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

These categories will be discussed within each related section of this MFP document.

2.3 Strengths, Weaknesses, Opportunities and Threats

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 they affect the operations and response capabilities of a fire department.

2.3.1 Strengths

- There are fire prevention, public education, and code inspections in place for Cavan Monaghan.
- The Department benefits from having the Eastern Ontario Emergency Training Academy (EOETA) in Norwood, a shared training facility that offers courses from the Ontario Fire College and NFPA certification in key disciplines. This allows for consistency and qualification in firefighting recruits joining CMFD.
- The use of a shared Specialized Rescue Support Program to offer increased levels of response, via trained and qualified responders from CMFD and neighbouring departments. This is a quality use of “economy of scale” approach to fire department needs.

2.3.2 Weaknesses

- There is a need for a new station to replace Station 1 based on the age and condition of the current structure in Millbrook. A further review of Station 1 is provided in Section 5 of this report.
- There is aging apparatus in Station 1 that cannot be replaced because of size constraints of the outdated station.

2.3.3 Opportunities

- With the need for a new station comes the opportunity to reassess the location of Station 1. With growth expected in the surrounding area and the high call volume of calls on Highway 115, moving the location closer to the Township Administration building can provide an improved response time area to better suit the forecasted growth in Cavan Monaghan. A further review of Station 1 is provided in Section 5 of this report.

- Based on the demands placed on the volunteer firefighters and the projected growth and increased call volume, it will prove helpful to review the call volume by type to reassess deployment options for medical calls to find efficiencies. This may assist in a balanced workload for staff and keep costs within expectations.

2.3.4 Threats/Challenges

- CMFD typically sees lower than normal turnover rates but may expect to see an increase based on firefighter ages within the department. This is particularly impactful in terms of succession planning.
- With the growing expectation on all firefighters within Ontario, maintaining a healthy work/ life balance is important in the wellness of fire department staff. The time spent on mandatory training and skills maintenance requires careful planning and delivery. Finding efficiencies in training can better utilize the limited time that volunteer firefighters have to offer.
- With expected growth in the Millbrook area, there is discussion of multi-storey buildings. This will create challenges in deployment, response, prevention, and public education, and may necessitate the need for an elevated apparatus to specifically deal with any suppression issues that these buildings present. More details in section 5.4.
- Recruiting and training firefighters is an increasing expense and therefore retention efforts are important to keep the investment and contain costs.

2.4 Internal Staff Feedback Survey

A survey was conducted to obtain feedback from CMFD staff. EMT received a total of 37 completed surveys. This equates to a 67% return. Because of the high return numbers, it is important to highlight some of the responses. When asked to rank the nine core services provided by CMFD, the respondents provided answers detailed in Figure 2a.

Table 2a: Internal Staff Survey Highlights

Top Rated Services	Top Rank	1 & 2 Rank	Top 3
Medical Response	35.1%	59.4%	78.7%
Firefighting	29.7%	59.4%	91.9%
Auto Extrication	13.5%	37.8%	62.1%
Viewed as Less Important Services	**Ranking by Percentages**		
Fire Origin & Cause Investigation	67.5%		
Emergency Planning	51.3%		
Public Assist/Non-emergency Calls	40.5%		

Of the respondents, over 90% feel that Firefighting is the top core service, while 35% feel that Medical Response is the single number one core service. Over two thirds of those asked feel that determining the cause and origin of fires is the least important core service, with half of the responses indicating Emergency Planning as a lesser service, with Public Assist (non-emergency calls) rounding out the bottom. The three services that filled in the middle third were: Fire Prevention & Safety Inspections, Community Outreach & Public Education, and Hazardous Materials & Technical Rescue Response.

The most stated challenges/ recommendations by staff were:

1. Replacing Station 1 in Millbrook
2. Creation of more fulltime positions
3. Replacement of aging equipment and apparatus
4. Training demands
5. Department turnover rates
6. Increased call volume
7. Growing community and looking forward

Based on the information gathered from the internal survey, there is a strong desire for Station 1 to be replaced. This, along with portions of the other challenges will be discussed further in the document.

2.5 External Feedback Survey

Given that a fire department is a public service, to gain an accurate scope of the connection that CMFD has with its community, it is essential to engage with the residents it serves. To better understand how the fire department is meeting the needs of the community an open house session and a follow-up external survey was planned, but due to COVID-19 restrictions only the survey was released. The response was strong and provided some valuable insight of the fire department from a public perspective. There were 152 surveys completed, and of which 46% of those had

actually received services from the fire department. Those that commented on their experience had many positive things to say.

Overall, the general impression of the CMFD showed that most residents are very satisfied. Also, public interaction with the fire department public education initiatives revealed that three out of five respondents were either satisfied or very satisfied. When asked to rank a series of statements for importance, both “how quickly the fire department gets to me in an emergency” and “continued and relevant training for firefighters” scored very high as extremely important with high percentages.

The top three issues identified by respondents were:

- New fire station
- Increased staffing
- Improved funding

Two items of interest did show up in the responses: an expected population growth with resultant increase in call volume, and a concern for response times to rural areas. Those who participated in the survey felt that the top core services of the fire department are firefighting, rescue, and medical response.

When asked what additional services they felt that CMFD required, the top answer was increased community engagement, public education programs, and services. Increased rescue training and an ambulance in Millbrook were also mentioned.

The survey also asked what the public thought would benefit the fire department in ten years. Overwhelmingly recommended was a new fire station. New or better equipment/apparatus followed, along with increased staffing with a keen focus on moving to full-time staffing over time.

The external survey results were quite positive and supportive of the fire department. Responses focused on ensuring that the department builds a new fire station and is able to meet the community needs as it expands, continuing to provide quality service to Cavan Monaghan.

Recommendation(s)

No recommendations in this section.

Section 3: Department Staffing

3.1 Staffing Considerations
3.2 Administration Division
3.3 Fire Prevention and Public Education Division
3.4 Training and Education Division
3.5 Mechanical/Maintenance Division
3.6 Suppression Division

Section 3: Department Staffing

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

3.1 Staffing Considerations

When a community considers the need for the number of fire service personnel, there is no standard that dictates how many personnel are required within a population or whether the fire service needs to be full-time, composite, or volunteer in its service delivery format.

As a general guide, some communities refer to other similar sized municipalities in the determination of firefighter staffing numbers and types (i.e. full-time or volunteer). It must be kept in mind, however, that every community is unique in its geographical composition, population demographics, and size of residential, commercial, and industrial sectors. Therefore, community comparisons should be utilized with all the aforementioned information in mind. As an example, although CMFD and Cavan Monaghan Township are similar in size to the comparable communities utilized for this review, there is an expected upturn in growth which could move them from one comparable municipality to another. Until the growth is stabilized, actual numbers for comparison are only estimated.

Emergency Management & Training Inc. has conducted its comparison and more information on this can be found later in the document in Section #4. It should be emphasized that each community is unique in its geography, population, industry, and access to support from other communities.

Having noted that there is no standard that recommends a firefighter per population quota, a department can refer to the National Fire Protection Association (NFPA) 1720 standard on Volunteer Fire Departments. This standard identifies on scene staffing and response times for different “demand zones” (determined by population density). Cavan Monaghan overall, including the Village of Millbrook are considered “rural” areas with less than 500 people per square mile. Section #4 of this report will further detail the call data of CMFD, and how they relate to this standard.

In 2017 Township Council approved increasing maximum firefighter staffing levels from 45 to 60. This was designed to create a larger pool of resources to increase minimum staffing at calls. CMFD experiences a low but steady turnover rate in recruit firefighters. From 2014 to 2020 there was a loss of 28 recruit firefighters in total, for an average of 4 per year. The department is managed by three full-time positions: Fire Chief, Fire

Prevention Officer/Training Officer, and an Administrator. These positions are responsible for the day to day operations, including but not limited to department management, fire prevention functions, training development and oversight, and administrative functions.

When considering the overall staffing needs for the CMFD, 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 or management staff to effectively deal with such things as records management and addressing day-to-day operations of the Department?
- Is there a need for additional suppression staff to increase on scene staffing?

3.2 Administration Division

The Administration Office is located at the Township Municipal Office at 988 County Road 10, in Millbrook. The Fire Chief and Fire Prevention Officer, along with the administrative support member are all located at this site.

Along with his regular duties, the Fire Chief under appointment by the Office of the Fire Marshal serves as an Alternate Fire Coordinator for the County Mutual Program, and the municipal Community Emergency Management Coordinator.

The CFAI accreditation program has a specific section that evaluates the administration component of a fire department. In this section, the following is noted:

> **Category 9C: Administrative Support and Office Systems:**
>
> Administrative support services and general office systems are in place with adequate staff to efficiently and effectively conduct and manage the agency's administrative functions, such as organizational planning and assessment, resource coordination, data analysis/ research, records keeping, reporting, business communications, public interaction, and purchasing.

Currently the Deputy Fire Chief has responsibility for two stations, 55 firefighters, and an Auxiliary program. The Deputy is fulfilling these duties on a casual basis around their regular employment, family responsibilities and personal time. This is a significant responsibility and demand on a person's time for a part-time casual role.

There will be additional discussions on the Fire Prevention and Training roles further in this section.

3.3 Fire Prevention and Public Education

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* (3.3.11) identifies fire and life safety education as a "comprehensive community fire and injury prevention program designed to eliminate or mitigate situations that endangers lives, health, property, or the environment."

The Fire Prevention Division consists of one Fire Prevention Officer (FPO) who is also the CMFD Training Officer. The working hours are based on typical Monday to Friday business hours. The FPO is responsible for ongoing inspections of industrial, commercial, vulnerable occupancy, and residential properties under the authority of the Ontario Fire Code. CMFD is committed to delivering fire and life safety education, juvenile fire setter intervention and programming for special interest groups, such as youth and seniors.

After reviewing data provided by CMFD, it was confirmed that there is an annual inspection and public education program in place. The Fire Chief monitors all facets of the program to ensure that the FPO is meeting their goals. In a three-year period from October 2016 to October 2019, the FPO closed 194 of the 202 assigned inspections for a rate of 96%. That averages to approximately 67 inspections conducted a year. These inspections are primarily those that are mandated such as vulnerable occupancies, complaint based, or by request. The FPO does not have the time due to the multiple roles and responsibilities to set out a proactive inspection program such as identified by FUS (see section 3.3.3). Similar municipalities such as Ramara, Gravenhurst, and Meaford have a full time Fire Prevention Officer.

With the limited time available, the Fire Prevention Officer should be commended for their efforts regarding the first and second lines of defence (public education and enforcement) as noted by the Office of the Fire Marshal and Emergency Management.

Based on recommendations by the Fire Underwriters Survey group, the fire prevention officer per population ratio should be approximately one fire prevention officer per 15 to 20 thousand population minimum. With a population under 10,000, CMFD is within this ratio. Fire prevention is seen as the first line of a defence; therefore, the more resources assigned to this endeavour, the more proactive a community and its fire department are regarding public safety.

The FPO is also the CMFD Training Officer and spends an equal amount of time managing the Training Division as well as Fire Prevention duties. A committed job

scope of fire prevention would allow a better use of time management and provide a singular vision on daily activities. The shared duties have created an imbalanced workload. Based on the workload, separation of these duties is necessary. It is recommended that the dual full-time position of Fire Prevention Officer and Training Officer be separated and that the Fire Prevention Officer remain a full-time position.

With the FPO position transitioning into a more singular focus on Fire Prevention/ Public Education, consideration should be given to increase the Deputy Chief position from a volunteer status to a full-time position. By doing so, the Deputy Chief could take on the responsibilities related to training, which would assist with maintaining training division goals and objectives.

3.3.1 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 process within Annex "C" of the standard. Ultimately, Council 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 National Fire Protection Association 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 Branch'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 Department in further identifying what services it not only wants to offer, but what can actually be delivered based on present staffing levels. More information on this staffing equation can be found in Appendix "B" of this document and within the National Fire Protection Association 1730 Standard.

The Fire Chief needs to ensure close tracking of the actual time spent on each of the fire prevention activity (ranging from site plan reviews, routine inspections, licensing, complaints, and requests, to name a few). Further, reporting should include clearly identifying the number of public education events as well as the number of adults and children reached through these events. By identifying the time spent on each project

and collating this into baseline (approximate) times, the Chief can then use those hours spent as a model figure in applying future initiatives.
The Fire Chief and the Fire Prevention Officer are highly encouraged to review the amount of inspections and associated orders/ fines issued on the concept of recidivism; that by which businesses are requiring more inspections, more follow-up and therefore more time of the FPO, versus those which require minimal assistance or interaction of the FPO. A business or owner with tendencies to relapse or ignore the primary concepts of fire prevention may tend to preoccupy the FPO unnecessarily.

Further to what has already been noted by the NFPA and the 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. To accomplish this, some fire departments have trained suppression staff to conduct inspections or assist in public education. This not only brings more resources to the table but also enhances the level of fire safety awareness by those trained staff.

For the immediate future, CMFD should enhance the training and certification of some of its volunteer firefighters in the areas of fire prevention and public education, so they are trained and certified to at least:

- National Fire Protection Association 1031 – Fire Inspector I, and
- National Fire Protection Association 1035 – Fire and Life Safety Educator I

This can improve engagement at public events and the quality and quantity of public education efforts.

3.3.2 Fire Underwriters Survey Suggested Inspection Frequency Chart

Through the utilization of the FUS Inspect Frequency Chart (Table 3a), the FPO can measure requirements to meet inspection benchmarks, developing a plan with 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's review for staffing needs.

Table 3a: FUS 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 Fire Underwriters Survey 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.

3.3.3 Targeted Residential Fire Risk Reduction

In 2016 the "Targeted Residential Fire Risk Reduction"[5] report was released. This report was prepared by Len Garis, Sarah Hughan, and Amanda McCormick through the University of the Fraser Valley School of Criminology and Criminal Justice and the Centre for Social Research. 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, not only are the campaigns more efficient but the effectiveness has measurable outcomes. The study team reviewed the Statistics Canada Census and National Household Survey and 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 at most 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

[5]https://www.researchgate.net/publication/307599464_Targeted_Residential_Fire_Risk_Reduction_A_Summary_of_At_Risk_Areas_in_Canada

residents of condominiums, apartments, or townhouses. Surrey Fire Rescue Service used this data to create a “HomeSafe” program that focused on installing smoke alarms in these identified homes.

The data shows that in the three measurable categories (At Risk Dissemination Areas, Private Single Detached Dwellings, and At-Risk Population), Cavan Monaghan Township is above the averages of both provincial and federal levels. Federally and provincially the number of At-Risk Dissemination Areas per Total Dissemination Areas ratio is roughly a 1 in 8. Cavan Monaghan has a ratio closer to 1 in 5. The ratios between federal and provincial data is slightly closer for both percentage of At-Risk homes and At-Risk populations, with Cavan Monaghan reporting between 4% and 5% higher. Figure 3b details the data as sorted within the report.

The comparison indicates that due to an aging demographic the Township has increased risks that should be addressed through public education.

Table 3b: Cavan Monaghan At-Risk Comparison

Garis et al Report Criteria	Cavan Monaghan	Ontario	Canada
Number of At-Risk Dissemination Areas	3	2,630	7,198
Total Dissemination Areas	14	19,964	56,154
Percent of At-Risk Dissemination Areas	**21.43%**	**13.17%**	**12.82%**
Number of Private Single Detached Dwellings in At-Risk Dissemination Areas	695	501,990	1,320,785
Total of Private Single Detached Dwellings	2,940	2,712,000	7,301,825
Percent of At-Risk Private Single Detached Dwellings	**23.64%**	**18.51%**	**18.09%**
Population of At-Risk Dissemination Areas	1,792	1,420,807	3,585,822
Total Population	7,990	7,488,061	19,325,962
Percent of At-Risk Population	**22.43%**	**18.97%**	**18.55%**

Based on this data, it would benefit Cavan Monaghan Fire Department with its limited resources to focus on targeting its public education campaigns. With an older population, there is the potential to create significant results from an approach like this. A dedicated Fire Prevention Officer could provide a better utilization of both time and resources within a program of this scope.

3.3.4 Home Fire Sprinklers

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

In a recent NFPA on-line article, it was noted that because fire sprinklers react so quickly, they can dramatically reduce the heat, flames, and smoke produced in a fire. Properly installed and maintained fire sprinklers help save lives, 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 don't realize is that the same life-saving technology is also available for homes, where roughly 85% of all civilian fire deaths occur.

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

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

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

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

[6] https://www.nfpa.org/News-and-Research/Data-research-and-tools/Suppression/US-Experience-with-Sprinklers

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

By working with the developers and the public in promoting the installation of home sprinkler systems, the Cavan Monaghan Fire Department 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 CMFD investigate this safety initiative as part of their fire prevention and public education initiatives.

3.4 Training and Education Division

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

The Training Division is comprised of one individual that is also tasked with delivering full-time Fire Prevention duties, as well as planning and coordinating delivery of high-quality learning to all 60 (approved complement) CMFD staff. The dual role creates scheduling issues with most training occurring during the evenings but most fire prevention activities during the daytime.

The Training Officer (TO) coordinates training for new recruits with the basic skills necessary to extinguish fires, perform rescues, provide medical assistance, protect the environment, offer public education, and ensure public safety via the Eastern Ontario Emergency Training Academy (EOETA) located in Norwood. New recruits spend up to a year training and certifying to NFPA 1001 Level I & II, including training in NFPA 1072 Hazardous Materials (awareness and Operations), provincial legislation training, and First Aid and CPR training before joining the suppression ranks in CMFD. There is a significant cost incurred by the department to acquire these certifications.

Based on data provided, the total cost for training and necessary resources is $2,755 per recruit. This does not include the rate of pay, which for a “Recruit Level One” is 75% of full firefighter pay. The commitment to quality training and certification to its members by CMFD is impressive. Many volunteer fire departments in Ontario struggle with the cost of training and certification. There is always a potential for members to use the paid training to apply for career opportunities in career departments. This can create a retention issue for many departments that follow the same path as CMFD. With the recent change in legislation by the provincial government to allow “two-hatters” (career firefighters who volunteer with another department, generally their home department),

there is a chance for CMFD to retain any member who gains employment with a career department but still lives within the Township.

The Fire Chief indicated that there is a gap occurring with NFPA 1002 (pumper operations) training and qualifications, that needs to be addressed. All medical training occurs quarterly and follows Red Cross (HCP – Health Care Provider), with additional training on administration of Epi-pens and Naloxone.

The Training Division is responsible for ensuring that all firefighters and officers meet the requirements for the appropriate NFPA Standards and other recognized industry standards such as Canadian Standards Association (CSA), *Occupational Health and Safety Act* (OHSA). Section 21, etc.

Cavan Monaghan Fire Department (CMFD) strives to deliver and maintain proper and adequate training to its members. In-house training (delivered by CMFD staff) consists of:

- Legislation, Policy, and Operating Guideline review
- Medical skills review
- Driver training
- Public education delivery
- FIT testing
- Suppression-based skills reviews
- Pumper Operator/Tanker Shuttle training

Cavan Monaghan Fire Department sufficiently plans, tracks, and documents all necessary training within the department. Data provided for in-house training delivered from October 2016 to October 2019 was reviewed. It showed that CMFD establishes a template of 31 competencies deemed necessary by the department with 9 of those competencies deemed “mandatory” and the following 22 as “essential/ required by the FD”. The annual training syllabus lists the competencies as they are applied throughout the year, and the plan is updated and completed at year end with success rates and hours involved.

Based on the syllabus and the training reports, EMT was able to consolidate the data into nine categories of training application. The training delivery hours were converted to percentages of total training to create a comparative chart of training delivery based on typical call response criteria. Figure 3c provides a summary glance at total hours spent in training.

Table 3c: 2017-2019 Total Training Hours by Criteria

Training Type	Sessions	Hours	%/Total Hours
Driver/Pumping	207	5,151	21.8
Medical	163	4,625	19.6
Administrative	222	4,608	19.5
Firefighting	128	4,232	18.0
Other	76	2,003	8.5
Prevention/Public Education	42	974	4.1
Hazardous Materials	42	928	3.9
Auto Extrication	28	778	3.3
Technical Rescue	9	296	1.3
Total	**917**	**23,595**	**100.0**

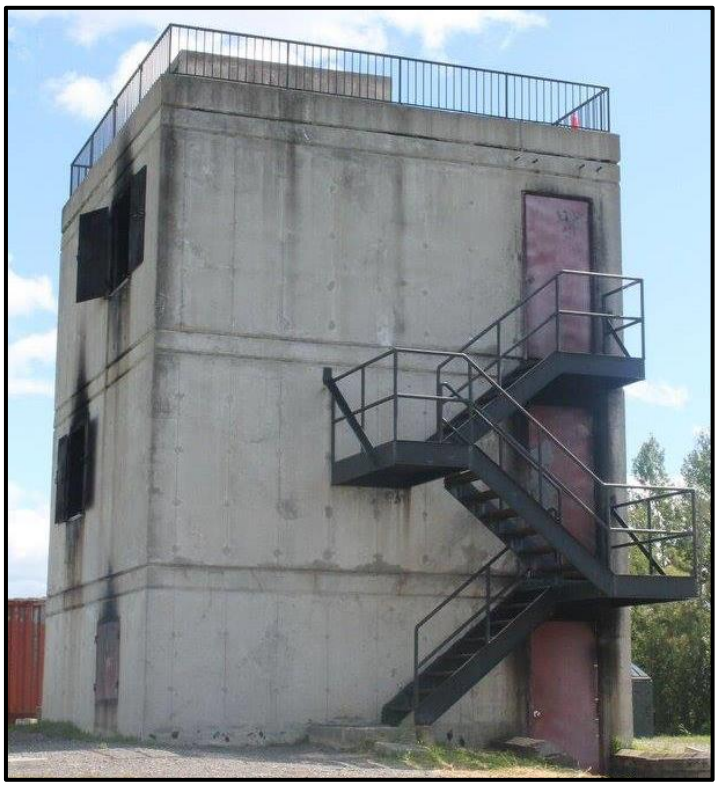
Data provided also detailed the completion rate as "# of students achieved/signed-off". Of all the sessions delivered with data available, the three-year summary shows that CMFD is completing 72% of its training target goals. Taking into consideration the limited resources possessed by the Fire Department, CMFD should be commended for this level of completion.

CMFD also uses external agencies to assist in training delivery. A summary of programs and/or certifications acquired via third-party resources was listed as:

- Eastern Ontario Emergency Training Academy
  - Firefighter Recruit (NFPA 1001 I&II)
  - Hazardous Materials (NFPA 1072 Awareness & Operations)
  - Fire Instructor (NFPA 1041 I&II)
  - Fire Officer (NFPA 1021 I, II, III)
  - Propane Operator for Training Props
  - Pump Operator (NFPA 1002)
  - DZ Driver Training
- Hespro
  - First Aid, CPR, AED, and Oxygen Delivery
- Public Services Health and Safety Association
  - Part 1 & 2 Fire Specific Certification Training for Joint Health and Safety Committee
- Ontario Association of Fire Chiefs
  - Road to Mental Readiness (R2MR)
- Office of the Fire Marshal and Emergency Management
  - Legislation
  - IMS 100 & 200

During Emergency Management & Training Inc.'s review of the training and education programs, it was evident that Cavan Monaghan Fire Department's FPO/TO is endeavouring to ensure that all required training programs are being addressed to the best of the Department's ability.

3.4.1 External Training



Cavan Monaghan is an equal partner with 11 other municipalities in the EOETA (Eastern Ontario Emergency Training Academy) training facility in Norwood, east of Peterborough. This provides CMFD access 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 stations. This training facility benefits the department by ensuring that all staff are properly trained to do their jobs. The costs associated with the EOETA are $1,000 per year, which in turn is distributed into a cache used to maintain and upgrade equipment. Having to replicate this type of training centre in the municipality would cost millions of dollars.

The work done by the Board that oversees the Academy (consisting of local Chiefs) are committed to providing quality training using an effective cost sharing model. Again, this is an excellent use of an "economy of scale" approach with benefits to all involved.

With the success of the EOETA training facility, demonstrating the cooperation of several municipalities, there may be opportunity for the Township of Cavan Monaghan to investigate, through County Council or through the lower tier municipalities, the creation of a shared full-time County Training Coordinator. This role could be utilized to develop and implement lesson plans, competency criteria, and firefighter evaluations as well as develop and coordinate mutual aid training sessions. The focus would be on training at the EOETA.

An important role and benefit would be to coordinate training sessions between fire departments so that firefighters, missing training sessions at their own department,

could make up training at other departments. This would give firefighters more flexibility in matching the training demands to their life and work schedules.

3.4.2 Internal Training

National Fire Protection Association 1201 – *Providing Fire and Emergency Services to the Public* notes, in relation to training and professional development, that:

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

The Fire Chief and Fire Prevention Officer/Training Officer are aware of the needs of CMFD pertaining to training and certification. In reviewing documents provided, it is clear that there is a commitment to delivering necessary training and qualifications to staff. However, the Fire Prevention Officer/Training Officer struggles to find adequate time to dedicate to both roles. Within the Fire Department, the Training Officer role includes developing lesson plans, identifying competency in each lesson plan, skill maintenance priorities, determining how to evaluate each firefighter on the individual competencies, and tracking each firefighter in maintaining those competencies.

Further, the Training Officer must devise a way to follow up on firefighters that have not met the individual competencies for whatever reason (e.g. missed a training session) to ensure that they meet the minimum standards. This may include providing or arranging additional training, coordinating training sessions/schedules with neighbouring fire services, etc.

Training Officers are often responsible for monitoring fire ground accidents, injuries, near misses, and safety issues to identify root causes and put training or procedures in place to minimize the risk in the future. Training officers must monitor changing technology and firefighting environments and create new training to address those evolutions (e.g. electric vehicles, solar panels, home generators linked into the power grid, home based hydroponics).

With smaller municipalities such as Cavan Monaghan, training sessions on a specific competency may only be offered once per year within the department due to the large number of topics that have to be covered. If that is a critical or mandatory topic and a firefighter is absent, there may be delays in obtaining training. Having a Deputy Chief with the role of Training Officer, would provide more time for the Training Officer to offer selected training more than once and outside of normal training sessions (e.g. daytime or weekend training). Further, the Training Officer could work with the neighbouring departments to collaborate on training schedules to provide greater flexibility for the firefighters.

3.4.3 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 is 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.*

Through consultation meetings, it was concluded that the Training Division is on the right track with its program development and training goals, however, the Fire Prevention Officer/Training Officer is challenged in dedicating adequate time to either role.

As noted in section 3.3 the ability of a single person to fulfill both the Fire Prevention Officer and the Training Officer roles has become a challenge and separation of these duties is necessary.

Consideration should be given to increase the Deputy Chief position from a volunteer status to a full-time position. By doing so, the Deputy Chief could take on the responsibilities of Training Officer, which would assist with maintaining training division goals and objectives.

3.5 Mechanical/ Maintenance Division

There is no specific Mechanical/ Maintenance Division within CMFD. All work is contracted out to local service providers. Apparatus annual safety inspections are conducted by Liftlock City Freightliner. Annual pump tests and service are completed by Carrier Truck Centres. In discussion with the Fire Chief, it was noted that they are happy with both companies, but the work done by the Emergency Vehicle Technicians (EVT) at Carrier Truck Centres are costly. The Fire Chief also stated that the Township is considering conducting annual safety inspections internally by their Roads Department. If Cavan Monaghan moves forward with this, the Fire Chief supports this endeavor.

Small motors, equipment, and tools are serviced by internal staff at each station. Currently the personnel involved are trained and qualified from external resources in other job functions. The Fire Chief has stated that the process is both efficient and cost-effective. There seems to be no issue with its continuation, keeping in mind that eventually a succession plan or alternate option should be considered.

3.6 Suppression Division

The Suppression Division is composed of 55 volunteer firefighters working out of two fire stations. The response area is divided into two districts, with one station in the north (Mount Pleasant) and one in the south (Millbrook). Each district has one District Chief, five Captains, and two Acting Captains. The District Chiefs report to the Deputy Fire Chief and ultimately the Fire Chief.

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

- Does CMFD have adequate staffing to meet its own response criterion?
    - CMFD has Operating Guidelines that establish minimum staffing levels to execute fire suppression activities, but how do they compare to industry standards on response times?
- What change in population, demographics, and industry is occurring that may precipitate the need for a modification in stations and staffing?

As already noted, there are four main standards and industry best practices that need to be considered:

- First, there are industry standards/ best practices in the form of the NFPA's 1720 and 1730 standards, which offer guidance regarding response times, staffing, fire prevention, and code enforcement.
- Second, the Department must consider the Public Safety Guidelines that are created and distributed by the OFMEM. These Guidelines advise fire services on aspects of delivering fire prevention, fire suppression, and fire station location programs. It must be noted that at the time of writing this report, the OFMEM still had the Guidelines "under review" but were made available for reference purposes.
- Third, the FUS, which is endorsed by the insurance industry as a tool for measuring the ability of a fire service in meeting the response time, staffing, and water supply needs of a community.
- Fourth, the CFAI, a program that has a fire service complete three key documents, including:
    1. A community risk assessment and standards of cover document
    2. A self-assessment manual based on the 10 categories that make up the program review
    3. A strategic plan for the service
        - The Master Fire Plan can be considered the strategic plan for the service.

3.6.1 National Fire Protection Association 1720 – Volunteer Fire Departments

To accomplish the National Fire Protection Association Standard, a fire department should endeavour to meet the stated minimum response standards based on responding to a 2,000-ft^2, two-storey, 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).

With the geographic dispersion of homes in Cavan Monaghan, there are both built-up areas in the villages and hamlets with a higher density of homes, and other rural areas with homes isolated from others. Most homes in Cavan Monaghan likely have basements and those in the built-up areas are often built close enough to each other to create that "exposure" for potential fire spread, which must be considered by the Fire Department in its response efforts.

Based on a review of the response data supplied, along with discussions with the Fire Chief, Cavan Monaghan is witnessing a varying level of success in meeting the NFPA response criteria. This can be seen in the charts found in Section 4: Community

Response along with other more detailed information regarding department goals and expectations in meeting industry standards.

3.7 Health and Wellness

Health and wellness of staff is a key focus for all municipalities and Cavan Monaghan is no exception. Due to the nature of volunteer firefighters 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 EMT, it was noted that neither of the stations have been equipped with workout facilities to ensure that staff have the ability to keep fit, which helps to reduce work related injuries. A fitness room could be added to the new station or the Township could provide all firefighters free access to the facilities at the Cavan Monaghan Community Centre if a room with fitness equipment and weights is added.

Many fire departments also routinely test their firefighters to meet occupational fitness tests delivered internally or by a third party. NFPA 1582 details basic expectations placed upon firefighters. CMFD is encouraged to review these and incorporate them into both candidate testing and firefighter fitness and functionality. It is recommended that, as part of a larger commitment to firefighter health and wellness, CMFD 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 including certain conditions that may pose a risk to firefighting, but everything is centred around the 14 essential job tasks. As the core determination for the physicality of firefighting, it is important for CMFD 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;
>
> 1. 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

2. 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
3. Exposure to toxic fumes, irritants, particulates, biological (infectious) and nonbiological hazards, and heated gases, despite the use of personal protective ensembles and SCBA
4. 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)
5. 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)
6. 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
7. 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
8. 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
9. 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
10. Operating fire apparatus or other vehicles in an emergency mode with emergency lights and sirens
11. 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
12. 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)

13. 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
14. 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 for Fire Department Members.* NFPA states that "this standard outlines a complete health-related fitness program (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 extent to which this standard is comprehensive, but the intent is paramount: firefighter health and wellness. The applicable portion of the standard comes from section 4.1 wherein it states:

4.1 Program Overview

4.1.1* The fire department shall establish and provide a health-related fitness program (HRFP) that enables members to develop and maintain a level of health and fitness to safely perform their assigned functions

A.4.1.1 The fire department needs to recognize that its members are its most valuable resource. The occupational safety and health program provided direction on performing assigned functions in a safe manner. The health-related fitness program provides another proves, one that 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:

(1) A proactive approach to health and fitness and a decrease in debilitating occupational injuries

(2) 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.

During the review by EMT, it was noted that none of the stations have been equipped with workout facilities to ensure that staff have the ability to keep fit, which helps to reduce work related injuries as explained in NFPA 1583. Many fire departments also routinely test their firefighters to meet occupational fitness tests delivered internally or by a third party based on the 14 essential job tasks from NFPA 1582. It is recommended that, as part of a larger commitment to firefighter health and wellness, CMFD 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.

Cavan Monaghan Township has included all its fire department staff in the Employee Assistance Program (EAP) offered through its municipal employee benefits. This is an important piece of employee wellness. CMFD should meet with administrative staff from the Township 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 Ministry of Labour to submit a Post Traumatic Stress Disorder (PTSD) Prevention Plan. This was to coincide with PTSD and Occupational Stress Injuries (OSI) to be considered as workplace injuries and compensable through the Workplace Safety & Insurance Board. In reviewing the submission from CMFD, it states that as of 2017, training was delivered to:

- Mental Health 101 – 34 personnel
- Traumatic Stress in the Emergency Service – 17 personnel
- Applied Suicide Intervention Skills Training – 2 personnel
- Road to Mental Readiness Training (Leadership Session) – 2 personnel

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 plan. They are encouraged to address four pillars of managing a PTSD/OSI event: prevention, peer support, treatment/recovery, and return to work programs.

In review of the CMFD PTSD Prevention Plan, there has been initial effort put forth to address some prevention and resiliency through awareness training. It is recommended that, as part of a larger commitment to firefighter health and

wellness, CMFD develop a more fulsome approach to their PTSD Prevention Plan. This may include things like peer support, intervention approach, professional services, clinical assistance and what a return to work plan may look like for a CMFD volunteer firefighter. Not all EAP services include accredited availability of trained mental health professionals (psychologists/ psychiatrists), and some only offer limited assistance through counselling and therapy.

3.7.1 Cancer Prevention

In recent years there has been a more intensive review of cancer prevention related 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 type exposure of carcinogens involved in fire scenes. It is recommended that, as part of a larger commitment to firefighter health and wellness, CMFD 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

Neither of the two stations are equipped with diesel exhaust systems to reduce exposure to vehicle exhaust. Diesel exhaust has been contributed to health-related issues when people are exposed to it over long duration. By having these systems in each station, the health concern is greatly reduced. The Ministry of Labour, through its Section 21 Committee sets out fire service guidance notes. Guidance note 3-1 Reducing Exposure to Diesel Exhaust states:

> **Actions for employers**
> Employers must:
> - make sure the fire station is adequately ventilated by either natural or mechanical means so that the atmosphere does not endanger the health and safety of workers.

This should be considered in both CMFD fire stations as an add on to Station 1 in the event the station is not replaced (or included in any new station design) and as an upgrade to Station 2*. It is recommended that CMFD install diesel exhaust systems in both of its fire stations.*
Exhaust system costs can range from $20,000 per bay with filtration systems to $40,000 per bay for direct source exhaust systems.

In reviewing the personal protective equipment (PPE), also known as structural firefighting ensemble, it was noted that some of the gear was nearing or past ten years of age. A plan should be 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:

> **10.1.2** 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 appendices to that 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". CMFD has a program that PPE is sent out for cleaning, and that there is a cache of used gear that can accommodate about 75% of the Department.

CMFD has an operating guideline on PPE/ Bunker Gear inspections and cleaning, however, it should be expanded to include the cleaning of bunker gear after every structure fire and hazmat exposure. Further, it is recommended that a PPE inspection plan be established, to allow for an annual inspection of all PPE, focusing on the structural firefighting ensemble. The benefits of a properly managed PPE maintenance and inspection program include improved firefighter safety, protection from exposures, and potentially manageable and predictable costs associated with PPE. This may include the introduction of a commercial washing machine to reduce the costs and turn around time of bunker gear cleaning.

The expectations placed on a firefighter are clear. The risks placed on them are not always as clear. The recent attention given to unseen dangers that firefighters face has indicated more effort is necessary to protect the protectors. While some protections are becoming legislated, with more likely to follow, it is prudent that CMFD find ways to better care for their fire department staff. Consideration given to firefighter fitness can reduce the likelihood of cardiac emergencies and reduce work related injuries. Focus given to mental health and cancer prevention is both necessary and expected.

Recommendation(s)

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
4	Increase the Deputy Chief position from a volunteer status to a full-time position with responsibility for training and operations. The Fire Prevention Officer will be dedicated for the FPO role full time.	$90,000 plus benefits for a Deputy Chief	Short-term (1-3 years)
5	CMFD should enhance the training and certification of some of its volunteer firefighters in the areas of fire prevention and public education, trained and certified to at least: • NFPA 1031 – Fire Inspector I • NFPA 1035 – Fire and Life Safety Educator I	Staff time	Short-term (1-3 years)
6	CMFD work with developers and the public to make the Home Sprinkler Systems initiative a part of its fire prevention and public education program.	Staff time	Short-term (1-3 years)
7	The Township of Cavan Monaghan propose to EOETA member municipalities the creation of a County Training Coordinator for external training programs.	Costs split between the municipalities $10,000 ea	Short-term (1-3 years)
8	CMFD review the physical expectations of a firefighter for use in training and recruiting. 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.	Staff time	Short-term (1-3 years)
9	CMFD develop a more wholesome approach to their PTSD Prevention Plan which may include peer support, intervention approach, professional services, clinical assistance and what a	Staff time	Short-term (1-3 years)

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
	return to work plan may look like for a CMFD volunteer firefighter.		
10	CMFD begin developing a cancer prevention program.	Staff time	Short-term (1-3 years)
11	CMFD install diesel exhaust systems in both of its fire stations.	$20-40,000 per bay dependent on the option selected	Short-term (1-3 years)
12	It is recommended that a PPE inspection plan be expanded to include washing bunker gear after every structure fire and hazmat exposure, and to allow for an annual inspection of all PPE, focusing on the structural firefighting ensemble.	Staff time	Short-term (1-3 years)

Section 4: Community Response

4.1 Fire Suppression & Emergency Response
4.2 Emergency Response Data
4.3 Fire Department EMS Response Options
4.4 Community/Fire Department Comparables

Section 4: Community Response and Comparables

4.1 Fire Suppression & Emergency Response

The Suppression Division is comprised of 55 volunteer firefighters working out of two fire stations. The response area is divided into two districts, with one station in the north (Mount Pleasant) and one in the south (Millbrook). Each district has one District Chief, five Captains, and two Acting Captains. The District Chiefs report to the Deputy Fire Chief and ultimately the Fire Chief.

4.1.1 National Fire Protection Association 1720

To provide a 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 by fire departments. The NFPA's 1720 Standard for Volunteer Fire Departments list response times in Chapter 4, and according to the definition Cavan Monaghan, including the Village of Millbrook are considered **rural**. The standard established response times are as such:

3.3 Staffing and Deployment

3.3.1 The fire department shall identify minimum staffing requirements to ensure that the number of members that are available to operate are able to meet the needs of the department.

3.3.2 Table 4.3.2 shall be used by the AHJ to determine staffing and response time objectives for structural firefighting, based on a low-hazard occupancy such as a 2,000 ft^2 (186 m^2), two-storey, single-family home without basement and exposures and the percentage accomplishment of those objectives for reporting purposes as required in 4.4.2.

Table 4a: NFPA 1720 Table 4.3.2

Demand Zone	Demographics	Minimum Staff to Respond*	Response Time (minutes)**	Meets Objective (%)
Urban area	>1000 people/mi² (2.6 km²)	15	9	90
Suburban area	500-1000 people/mi² (2.6 km²)	10	10	80
Rural Area	<500 people/mi² (2.6 km²)	6	14	80
Remote area	Travel distance ≥8 mi. (12.87 km (	4	Directly dependant based on travel distance	90
Special risks	Determined by AHJ	Determined by AHJ based on risk	Determined by AHJ	90

**minimum staffing includes members responding from the AHJ's department and automatic aid*
***response time begins upon completion of the dispatch notification and ends at the time interval shown in the table*

When considering the response times and related needs for a community, the fire response curve (Figure 4a) presents the reader with a general understanding of how quickly a 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 ways, which can increase or suppress the burn rate through fire control measures within the structure.

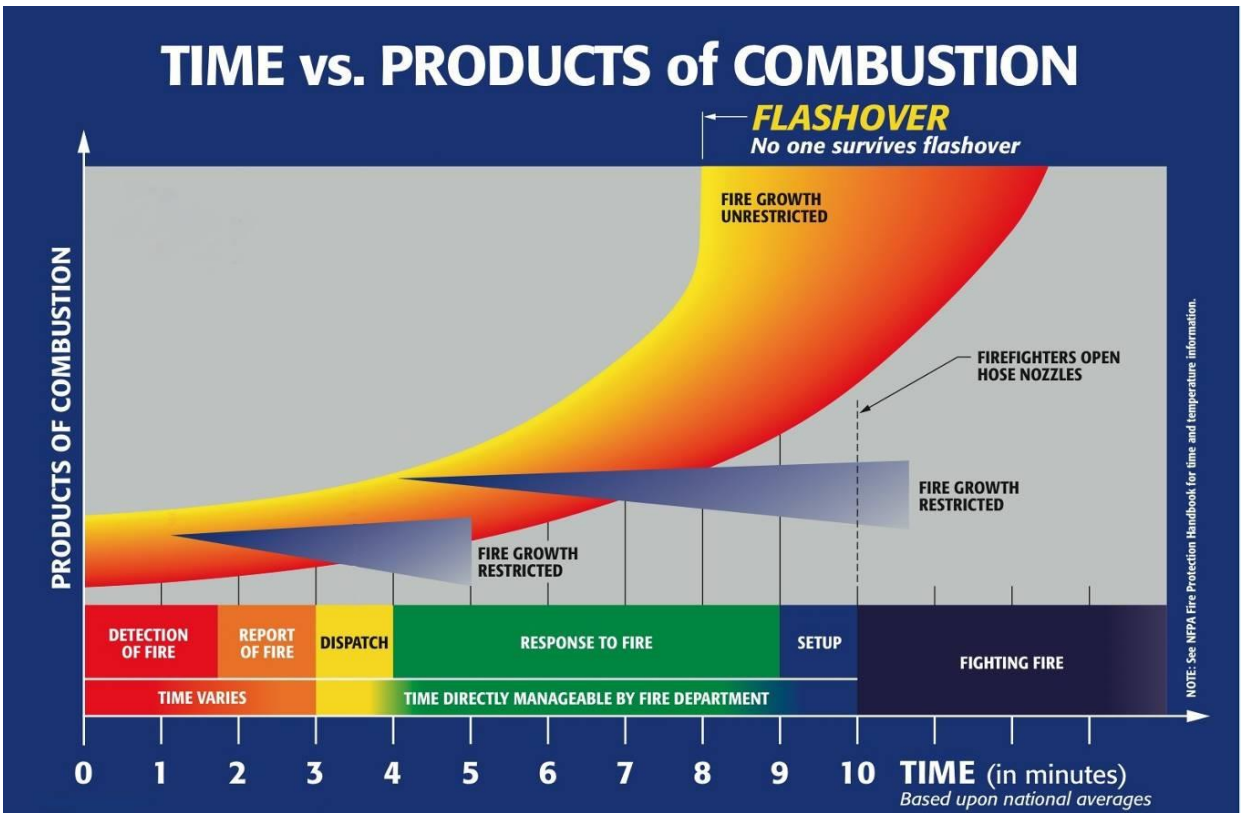
When we look at the response time of a fire department, it is a function of various factors including, but not limited to:

- The distance between the fire department and response/ incident 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

The criticalness of immediate initiation of fire suppression activities is illustrated in the following fire propagation diagram (Figure 4a). The curve within the chart notes the following time variables:

- **Detection of fire** – 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** – when someone has identified the fire and is calling 9-1-1 for help.
- **Dispatch** – the time it takes the dispatcher to receive the information and dispatch the appropriate resources.
- **Response to the fire** – from the initial dispatch to the fire department until the time they have the necessary resources on scene.
- **Setup time** – the time it takes for the fire crews to get ready to fight the fire.
- **Fighting the fire** – actual time on scene extinguishing the fire.

Figure 4a: Fire Response/ Propagation Curve



Based on fire growth, as illustrated in Figure 4a and the previously noted time variables, the overall goal of any fire department is to arrive at the scene of the fire and/ or incident as quickly and as effectively as possible. If a fire truck arrives on scene in eight minutes

or less, with a recommended crew of four or more firefighters, there is increased opportunity to contain the fire by reducing further spread of the fire to the rest of the structure.

Alternatively, if the first fire attack team arrives with fewer than four firefighters on board, it is limited to what operations it can successfully attempt. Based on studies and evaluations conducted by the National Institute of Standards and Technology (NIST) and the National Fire Protection Association, no interior attack is to be made in a *rural* area by the firefighters until sufficient personnel arrive on scene. The expectation is that a minimum of six personnel: four firefighters, one officer, and one pump operator are to arrive on scene to make up the initial fire suppression team. This team of six can effectively do an assessment of the scene, secure a water source (fire hydrant or other source), ensure the fire truck is ready to receive the water and get the fire pump in gear, as well as unload and advance the fire hose in preparation for entry into the structure.

Not having enough firefighters at an emergency scene can create an unsafe situation for the firefighters or, in a worst-case scenario, it can cause a delay in conducting fire suppression, lifesaving, and/or rescue operations. The NFPA 1720 standard on firefighting notes that for a typical two-storey, single-family dwelling (without a basement), the required response of 6 firefighters on scene is necessary to effectively battle the fire. Cavan Monaghan Fire Department meets these staffing requirements consistently.

It must also be noted that Cavan Monaghan Fire Department responds to more than just fires. For example, motor vehicle collisions can create a medical or fire emergency that also needs to be addressed urgently. Hence the reason to be as efficient and effective as possible in responding to calls for assistance.

The Office of the Fire Marshal and Emergency Management's (OFMEM) Comprehensive Fire Safety Effectiveness Model Considerations, notes the following:

- The fire department should strive to provide an adequate, effective, and efficient fire suppression program designed to control/ extinguish fires for the purpose of protecting people from injury, death, or property loss.
    - Does your fire department have a comprehensive training program and evaluation system for all positions?
    - Does the fire department have a system to ensure that an adequate number of trained personnel respond to all emergencies within a reasonable time period?
    - Is your fire department provided with adequate resources to safely and effectively handle the risks it will be called upon to mitigate?

- Does the fire department use standard operating guidelines (SOGs) to define expected fire department actions for the wide variety of situations it might encounter?
- Does your fire department have automatic response agreements to guarantee an adequate level of personnel at all times?

These considerations have been addressed and incorporated into the MFP document. As a regular practice, CMFD should review these questions annually to confirm if it has and continues to implement effective measures to meet the OFMEM Guideline considerations.

4.2 Emergency Response Data

4.2.1 Calls for Service 2016-2019

The Cavan Monaghan Fire Department responded to 662 calls for service in 2019. To comprehensively understand the scope by which a fire department operates, the types of calls and the means by which it responds must be reviewed. Table 4b illustrates the difference between population and calls for service in a common ratio of units per 1,000 people. Populations for 2017 and 2018 were estimated on the previous 2.7% growth in the 2016 census. The calls for service went up in 2017 by 2.7%, and in 2018 by 3.8%. The calls for service are outpacing the averaged growth, which shows as a rise in the ratio.

Table 4b: Calls for Service/Population 2016 to 2019

Year	Emergency Calls	Estimated Population	Calls/1,000 people
2016	569	8829*	64.45
2017	585	9067	64.52
2018	608	9312	65.29
2019	662	9564	69.22

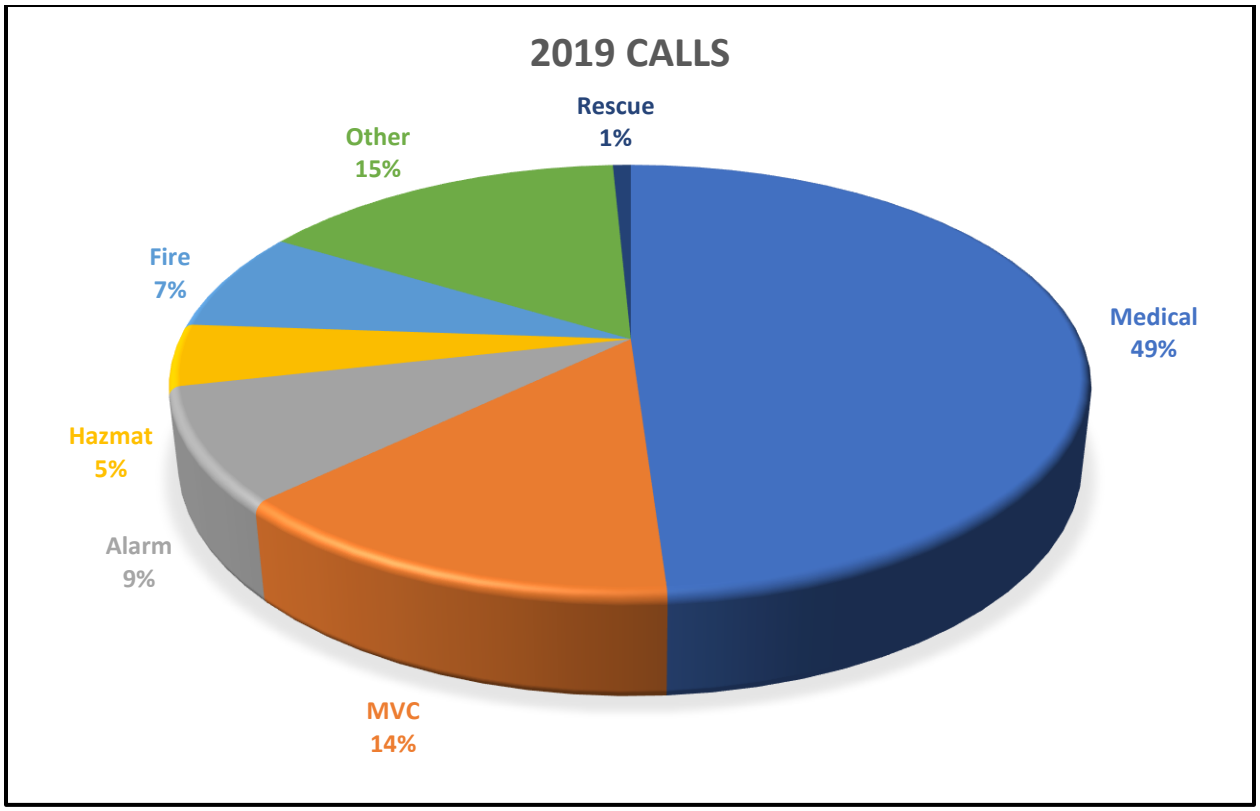
**actual number*

The types of calls that Cavan Monaghan Fire Department responded to in 2019 are detailed in Figure 4b. The calls were divided into seven categories for review:

- *Fires*: all fire or presumed fire types including wildland and vehicle
- *Hazardous Materials*: all spills, also including power lines down and carbon monoxide events
- *Medical*: all medical calls that meet response criteria not caused by another primary call response
- *Motor Vehicle Collisions*: MVC type events without fire as a primary concern

- *Rescue*: all technical rescues (i.e. water, ice, or anything not specific to another category)
- *Alarm*: all pre-fire conditions to initiate an alarm, without signs of fire
- *Other*: all non-emergency, public assist, or agency assist calls

Figure 4b: CMFD Calls for Service 2019



Call type variance is also another important factor to review on an annual basis. By monitoring call types from year to year, fire department management can look for increases and decreases. Determining anomalies in these variances may predict a sustainable change in call numbers. Identifying these changes allows for better budgeting, staffing, and improved response criteria. Table 4c depicts the call type volume for Cavan Monaghan Fire Department from 2016 to 2019.

Table 4c: Call Types 2016-2019

CMFD Call Volumes by Summary					
Call Type	**2016**	**2017**	**2018**	**2019**	**4 Year Total**
Medical	320	356	334	324	1334
MVC	92	91	92	92	367
Alarm	33	44	61	62	200

Fire	51	30	39	43	163
Other	38	38	37	103	216
Hazmat	29	22	41	33	125
Rescue	6	4	4	5	19
Total	**569**	**585**	**608**	**662**	**2424**

At first glance Medical, Alarm, and Hazmat calls are increasing and account for the increase in calls over the four-year span (+54). Fire and Rescue calls showed a reduction (-14), while MVC and Other were stable (-1). As population grows and call volumes increase, an annual review of call types will assist in managing the increase. A detailed look at the actual call volume is listed in TABLE 4d.

Medical calls stand out as the bulk of call volume accounting for 57.4% within the four-year span and averaging 334 per year. While it is a small sample set, the variance of calls from the mean number is -4.2% and +6.7% showing relative stability. Alarm calls increased by an average of 69% since 2016. A spike in automatic aid and mutual aid calls occurred in 2019 and pushes the Other call type higher than normal. Medical, Alarm, and Hazmat call types showed the only growth while other call types remained flat. Fire calls show unstable rise and fall.

In 2019 the CMFD responded to an average of 13 calls per week. Combining the demands of responding to emergency calls at all hours of the day along with the on-going training requirements the demands on the firefighters is increasing annually. As part-time on-call firefighters, these demands are in addition to their home and family responsibilities, full time employment (often out of town), recreational activities and other community/social commitments. Therefore, unnecessary calls can become frustrating for the firefighters who drop everything they are doing to respond and find that the call is a preventable false alarm, or the ambulance is already on the scene of a medical call. The constantly increasing demand may lead to higher staff turnover and / or the requirement to staff a fire truck with career firefighters.

The CMFD Fire Prevention Officer can be actively involved in following up with building owners where there are multiple false alarms, however, currently time constraints are a challenge. Section 4.3 will speak to the Medical Calls in an effort to contain the response to low acuity calls or where the ambulance has a similar response time as the fire department when considering the fire department turnout time.

Table 4d: CMFD Calls 2016-2019 Detailed

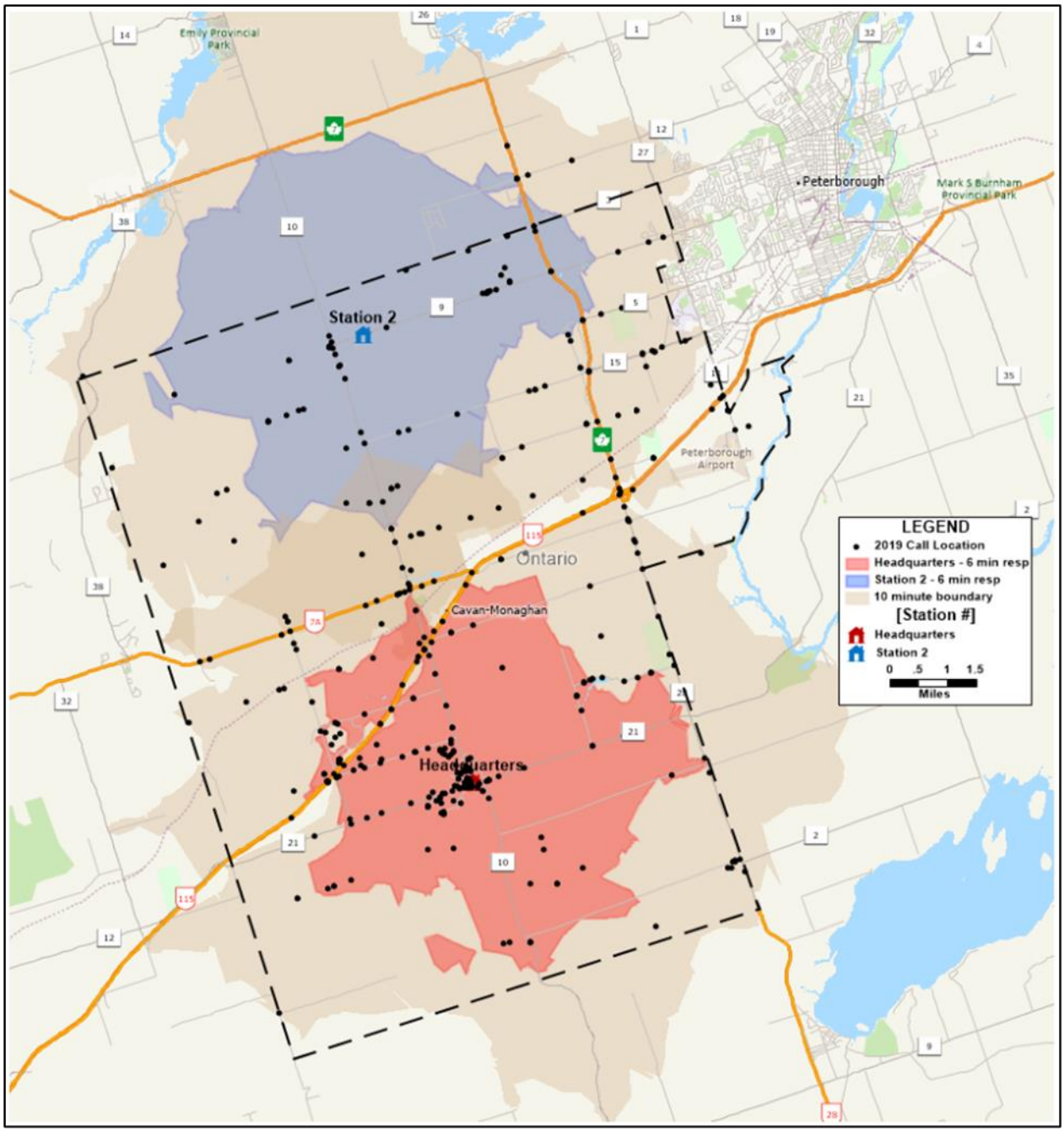
Call Type	2016	2017	2018	2019	Total
Fire Calls					
01 Fire	13	17	12	23	65
03 No Loss Outdoor Fire	14	3	12	5	34
11 Overpressure Rupture (no fire)	0	1	0	0	1
12 Munition Explosion (no fire)	0	0	1	0	1
21 Overheat (no fire)	2	1	1	1	5
22 Pot on Stove (no fire)	2	0	0	0	2
23 Open Air Burning/Unauthorized Controlled Burn	15	5	8	7	35
24 Other Cooking (no fire)	3	3	2	4	12
29 Other Pre-fire conditions (no fire)	2	0	3	3	8
Alarm Calls					
31 Alarm System – Malfunction	11	15	18	33	77
32 Alarm System – Accidental Activation	3	6	11	9	29
33 Human – Malicious Prank	1	3	0	0	4
34 Human – Perceived Emergency	3	4	4	3	14
35 Human – Accidental (activated by person)	7	9	11	10	37
36 Authorized Controlled Burn – Complaint	2	3	11	7	23
Hazmat Calls					
37 CO False Alarm – Perceived Alarm (no CO)	8	1	4	1	14
38 CO False Alarm – Equipment Malfunction (no CO)	5	7	9	13	34
39 Other False Fire Call	2	3	2	2	9
41 Gas Leak – Natural Gas	4	5	5	4	18
43 Gas Leak – Refrigeration	0	0	0	2	2
45 Spill – Gasoline or Fuel	3	0	1	2	6
47 Spill – Miscellaneous	0	0	1	1	2
49 Ruptured Water. Steam Pipe	1	0	0	2	3
50 Power Lines Down, Arcing	6	6	19	3	34

53 CO Incident, CO Present	5	2	4	1	12
58 Public Hazard, false alarm	0	2	0	0	2
59 Other Public Hazard	1	0	2	2	5
MVC Calls					
61 Vehicle Extrication	3	5	1	2	11
62 Vehicle Collision	89	86	91	90	356
Rescue Calls					
66 Persons Trapped in Elevator	0	1	0	2	3
67 Water Rescue	2	3	1	1	7
69 Other Rescue	3	0	1	2	6
698 Rescue no action required	0	0	2	0	2
699 Rescue false alarm	1	0	0	0	1
Medical Calls					
701 Oxygen Administered	4	0	1	1	6
702 CPR Administered	0	1	0	2	3
71 Asphyxia, Respiratory Condition	63	89	76	90	318
73 Seizure	18	21	24	15	78
76 Chest pains or suspected heart attack	73	56	65	50	244
82 Burns	1	1	1	0	3
84 Medical Aid Not Required on Arrival	0	1	1	2	4
85 Vital Signs Absent, DOA	11	8	12	10	41
86 Alcohol or Drug Related	4	5	7	9	25
88 Accident or Illness – cuts, fractures, fainted	41	41	41	32	155
89 Other Medical/Resuscitator Call	105	129	106	112	452
898 Medical/Resuscitator no action required	0	3	0	0	3
899 Medial/Resuscitator false alarm	0	1	0	1	2
Other Calls					
910 Assisting Other FD: Mutual Aid	1	0	0	3	4
911 Assisting Other FD: Automatic Aid	9	6	7	57	79
913 Assisting Other FD: Other	1	0	1	2	4

92 Assistance to Police	2	1	0	2	5
93 Assistance to Other Agencies	1	4	1	3	9
94 Other Public Service	7	3	10	7	27
96 Call cancelled on route	8	18	14	24	64
97 Incident not found	2	4	2	2	10
98 Assistance not required by other agency	2	1	1	1	5
99 Other Response	5	1	1	2	9
Total	**569**	**585**	**608**	**662**	**2,424**

Another important consideration in reviewing call data is location. The distribution of calls is essential for CMFD to fully understand the scope of their response expectations. Identifying call clusters, whether by location or type, is a useful tool. Implementing the first two lines of defence (public education and code enforcement) can aid in reducing the amount and severity of calls that occur in clusters. Call location is also useful is ensuring that station location is meeting the needs of Cavan Monaghan Township. If calls are consistently occurring beyond the range of efficient and reliable response times as identified in NFPA 1720, corrections and improvements must be addressed. Figure 4e highlights the calls for service for CMFD in 2019. It also has colour shading to display the six-minute travel time areas for each station, as well as the ten-minute travel time boundary areas.

Figure 4c: CMFD Calls by Location



4.2.2 Future Call Volume Expectations

The data provided in Table 4e shows that between 2010 and 2016, there was an average growth of 13.71 new housing units (net units per year). Based on the 2016 Census numbers, the Township has 2.77 people per household, which leads to an average population increase of 37.97 people per year. The average growth based on

the Census data was 45.6 people per year from 2011 to 2016. From 2017 to 2019, units created increased 2.99 times for an average growth of 198.9%. Using the original people per household data, that would equate to an increase of 265 people per year in new units. What we draw from this is that up until 2016, the Township averaged slow growth. After 2016, the growth is three times higher than previous years. This confirms that as the population grows, so will the call volumes for the Fire Department. This is another reason why close monitoring of call volume, response times, and turnout numbers of the Department's firefighters are important data sets to be reviewed by the Fire Chief.

Table 4e: New Units per Year 2010 to 2019

Years	New Units	Demolished	Net	AVG/Yr.	Pop. Growth
2010-2016	138	42	96	13.71	265.92
2017-2019	325	38	287	95.67	794.99

There is an expectation of growth in Cavan Monaghan, specifically in Millbrook with an anticipated 1,000 new units in and around the Village. An additional 355 units are forecasted throughout the Township in both the hamlets and the rural areas. As previously explained, it follows that there should be increased expectation of calls for emergency services.

Emergency calls to the fire department increased in the time period of 2016 to 2019, along with population and growth. Based on an estimation of maintaining the 2.7% growth from the 2016 Census data, it was determined in Figure 4b that the 2016 Calls per 1,000 residents was 64.45. This number was predicted to rise based on projected population increases. With call volumes increasing 2.7% in 2017, 3.8% in 2018 and 8.9% in 2019, that is above the estimated population growth rates.

In assessing these plans for growth (based on original data of 2.77 people per household) the total 1,355 units equated to an increase of 3,753 people above and beyond normal growth patterns. With a forecasted influx of new units, a baseline population of 13,065 (estimated 2018 population) will yield a projected call volume in the range of 845 to 851. Cavan Monaghan Fire Department is highly encouraged to begin monitoring call data to assess the percentage increase to ensure that the department is prepared and responding appropriately to the increase in emergency calls.

4.3 Fire Department EMS Response

Approximately 55% of the call volume for CMFD are medical calls. CMFD is part of a Tiered Response Agreement with Peterborough County EMS. Medical calls must meet a specific set of criteria to send the fire department. According to the agreement, those criteria are:

Life Threatening Emergencies

- Unconscious/ Arrest
- Real or Suspected Heart Attack
- Airway Obstruction
- Absence of Breathing
- Motor Vehicle Collision
- Seizure – NO History – 1st Time Seizure
- Or Other Life-Threatening Condition as deemed by the Ambulance Communications Officers best judgement

Other Code 4 Calls

- Approved by Municipal Council dependant on Fire Departments Response Level
- Options are: *"if the ambulance response time is greater than 10/15/25 minutes"*

CMFD has agreed to the Response 10 criteria, for ambulance responses anticipated longer than ten minutes.

Figure 4e showed that CMFD was responding accordingly to those criteria, and listed under the headings *Medical Aid Not Required on Arrival, Medical/ Resuscitator no action required, Medial/Resuscitator false alarm* only a total of 6 instances in three years. Yet, in speaking with the Fire Chief and firefighters, there is a perceived larger number of calls that CMFD is dispatched to unnecessarily.

The regional Central Ambulance Communications Centre (CACC) dispatch has stated it can only manage one master fire department response plan for all fire departments, and not separate criteria to be specific for each department.

There seems to be some confusion with partnering departments surrounding this dispatching agreement, and CMFD has stated it feels a portion of its medical calls are unnecessarily assigned to them. An agreement that is clear and direct in its expectations would benefit both dispatching parties (Ambulance and Fire) as well as the departments receiving notification, with CMFD as one. A reduction in unnecessary call volume would lower operating costs and reduce firefighter fatigue for low acuity medical calls.

While dispatching criteria is an operational issue for the CACC, it is a significant financial issue for the municipality, especially where more than half of the fire department call volume is dedicated to medical calls. Using the MTO reimbursement rate of approximately $477 per apparatus hour, the annual cost to the CMFD could be estimated at more than $150,000 for medical responses (e.g. 320 calls x $477 = $152,640). If the ability of the fire service to manage these calls results in the introduction of career firefighters, the cost to the municipality will be much greater.

As there is not an EMS base within the Township, most medical calls will automatically be more than the 10-minute response time for the ambulance service, creating tiered response calls for most code 4 calls. CMFD should consider moving response time criteria for tiered response from 10 minutes to 15 minutes. This would not change the response to the primary list of calls including unconscious, arrest, heart attack, absence of breathing, motor vehicle accidents, first seizures, etc., but just those calls that are outside of those where the ambulance is going to be delayed.

The Centennial Place Long Term Care Home is in Millbrook and has 128 residents. As it is staffed with on-duty nurses, trained at a higher level than firefighters, the Central Ambulance Communications Centre should not dispatch volunteer firefighters on medical tiered response calls to the Home.

Consideration should be given to reducing the firefighter turnout to medical calls by assigning firefighters to a platoon system for medical calls where 3 - 4 firefighters respond rather than a full station page out.

Further, the Township should request that the County paramedic service provide a paramedic response capability within the community at the county cost. The resource could be a fully staffed ambulance or a paramedic response vehicle staffed with one paramedic.

A paramedic response vehicle (SUV) is half the cost to the County of an ambulance but still provides a high level of care until the ambulance arrives on scene. Response vehicles are used in numerous communities such as Simcoe County, Huron County, and Greater Sudbury to provide local EMS response in smaller communities and reduce the demand on the Fire Department.

If the county funds were not available for 24-hour coverage, having a paramedic response 7 am to 7 pm would be a significant benefit to the community and would help contain the number of tiered responses for the Fire Department during times when most firefighters are at work or school. To staff a paramedic response vehicle (SUV) 12 hours a day 7 days a week would cost approximately $250,000, of which the province covers 50% (of the approved costs).

A further advantage of a paramedic response vehicle, over an ambulance, is that the resource is less likely to be pulled out of the community.

In designing a new fire station, space could be included to be cost shared/leased to the County to provide paramedic coverage to the community.

4.4 Community/Fire Department Comparables

The reported growth projections for the next 10 years have the Township population exceeding its previous normal rate of growth. Call volumes continue to grow at a steady rate, with an increase of 2.8% in 2017, 3.9% in 2018 and 8.9% in 2019. The ten-year period prior to that (2008-2018) say an overall increase of 43% from 424 calls to 608 calls.

To assist with the planning process, a fire service needs to look at other comparable fire services within its own region and other areas to help identify similarities and possible shortcomings in its organizational structure, staffing, and equipment. In completing this type of review, it needs to be emphasized that no two communities are identical. Each community has its own unique challenges due to demographics, topography, and percentage of residential, commercial, and industrial areas, along with transportation and road network challenges. As mentioned, Cavan Monaghan may be moving into a higher growth rate than its neighbouring municipalities, so local comparison should be viewed with that in mind.

The comparable chart found in Appendix B provides a general overview of comparable communities and fire departments, their staffing levels and type, along with call volumes for each fire department.

4.4.1 Comparisons with Other Similar Sized Communities

A review of the following municipalities and their fire service was conducted: Cavan Monaghan, Otonabee South Monaghan, Meaford, Ramara, and Gravenhurst.

These communities were chosen based on several factors including similar populations and fire department sizes, community composition, and call volume.

The chart offers an at-a-glance view of the data received from each fire department regarding the following topics:

- Population served
- Geographical area
- Number of Fire Stations
- Number of Firefighters
- Fire Service Agreements in place

- Call Volume
- Firefighter to Population Ratio

To assist with the planning process, a fire service needs to look at other comparable fire services within its own region or beyond, to help identify similarities and possible shortcomings in structure, staffing, and equipment. In completing this type of review, the Fire Chief and Council must be aware that no two communities are identical; each community has its own unique challenges due to demographics, topography, percentage of residential, commercial and industrial areas, along with transportation and road network challenges.

As illustrated in Appendix D, there is a range of population versus staffing ratios between the communities surveyed. No definitive conclusion or recommendation can be drawn from this comparison. This data does, however, offer a snapshot of information which can be used to identify whether Cavan Monaghan is in a similar situation relating to call volumes, population versus staffing, and composition of the service. Based on the fire departments surveyed, the Cavan Monaghan Fire Department employs a similar staffing level to most of the other comparable municipalities (in relation to population vs. staffing). CMFD also utilizes fire service agreements where required. However, Cavan Monaghan does have the highest calls per 1,000 people of all the departments included.

Recommendation(s)

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
13	CMFD should evaluate the medical response calls to consider: • Change the tiered response criteria to 15 minutes • Not respond to Centennial Place LTC Home • Assign specific firefighters to respond to medical calls	Reduce fire department response costs associated with tiered response	Short-term (1-3 years)
14	Township should request that the County paramedic service provide a paramedic response unit based in Millbrook for a minimum of 12 hours a day during the day shift, at county cost.	Reduce fire department response costs associated with tiered response	Short-term (1-3 years)

Section 5: Facilities, Vehicles, and Equipment

5.1 Fire Station Review
5.2 Apparatus and Equipment
5.3 Fire Apparatus – New and Replacement Schedules

Section 5: Facilities, Vehicles, and Equipment

5.1 Fire Station Review

The Cavan Monaghan Fire Department operates from two stations. Station 1 is in the Village of Millbrook at 52 King Street East. Station 2 is located at 1047 Mount Pleasant Road in the Village of Mount Pleasant.

5.1.1 Station 1

Station 1 is a two-bay garage with offices located on the second floor. The building was constructed in the 1960s and has had an addition to the back of the station to lengthen the garage bays allowing additional trucks to be accommodated at the station.

The station has served the community well but has many limitations for its ability to serve as a fire station in the future.

There appear to be cracks in the block walls and the apparatus floor, therefore it is recommended that a structural engineering assessment of the building take place if the building is to be retained by the Township.

The station houses four vehicles including a pumper, tanker, rescue, and support vehicle in very close quarters. When this station was designed and built, fire apparatus were not as large as they are today. Due to its original design, it is not able to house newer, larger fire apparatus unless some major renovations are made.

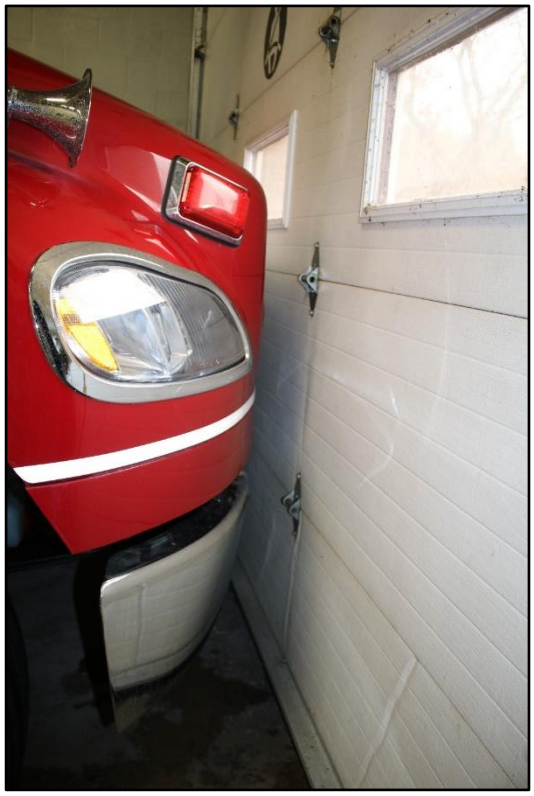
Increased door size, higher roofline, and longer bays are necessary. For example, some of the fire trucks located at Station 2 would not fit into Station 1 due to the small bay doors. This creates a challenge in purchasing any new apparatus. The trucks may have to be custom built to fit into the station increasing the cost of the apparatus and limiting the capabilities. Most pumpers and tankers with a large capacity water tank would not fit into the station, nor would an aerial device that may be considered in the future.

As the station continues to serve a large rural area without hydrants, having a pumper with a large water supply to make a quick fire attack and a tanker that can provide a larger volume of water (e.g. 2,500 – 3,000 gallons) are the preferred apparatus for structural fires such as a farm house or rural residence. This sized truck could not be housed in Station 1. Further, as the community grows and buildings become 3 or more

storeys, the need for an aerial apparatus will grow; however, one would not fit through the garage doors and there is inadequate space to house one.

There is no drive-through capability at the station. New station design includes drive-through bays to eliminate/ decrease the safety hazard of reversing apparatus.

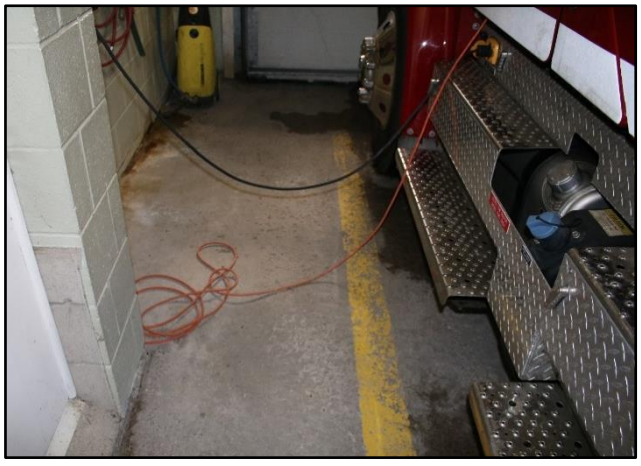
The truck bays have very little room, preventing firefighters from walking around or working on the apparatus and creating places where they could possibly be pinned between trucks, walls, and garage doors. There is also a high risk of damage occurring to the apparatus, trucks, or both while backing into the station or pulling out.



In the garage EMT found electrical outlets, panels, and extension cords that are exposed to water from washing the trucks or equipment. Outlets were observed that did not have ground fault protection, placing firefighters at risk of electrical shock.

Electrical and extension cords on the garage bay floor creates a trip hazard.

Bay doors do not have the safety stop pressure bar on the bottom, which would stop the door from continuing its downward movement if a person or vehicle is caught under the door.



These three items are Health & Safety concern that should be addressed.

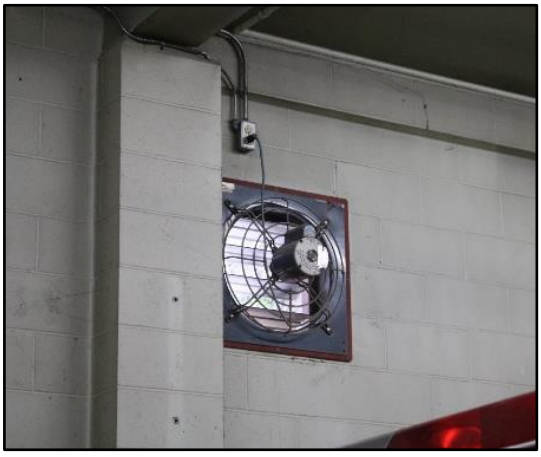
The floor drains in the garage bays do not have an oil separator creating a risk that oil, fuel, and other contaminant washed from fire trucks will enter the public waste-water system or be washed into the stream next to the fire station.

All the firefighters' bunker gear is stored on the apparatus floor, which exposes the gear to diesel exhaust and other contaminates, eventually degrading the efficiency of the equipment and reducing life span. The storage of the bunker gear in this manner also exposes the general area to contaminants obtained from fire responses and other types of calls.

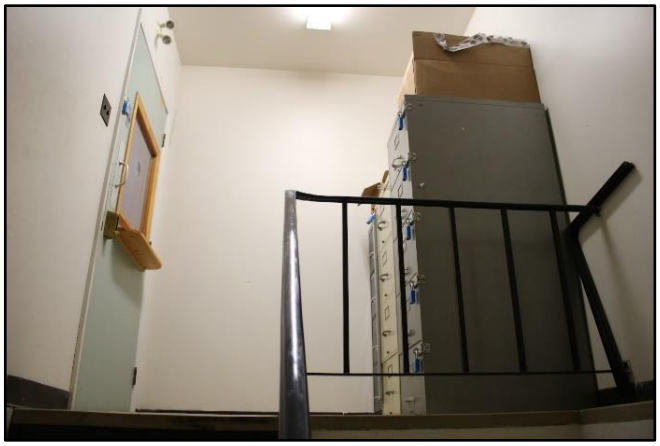
New station design incorporates a storage room that is properly ventilated whereby bunker gear is able to be laundered, dried, and returned to service limiting the exposure of toxic fumes to the other areas of the fire station.

There is a small exhaust fan for the garage bays but not an air filtration or at source exhaust system. Diesel fumes are highly toxic and have the potential to add to the cancer risk that firefighters face.

The station is not equipped with an "at source exhaust capture system" or alternate air filtration system, which helps to reduce contamination of firefighters' gear due to vehicle exhaust.



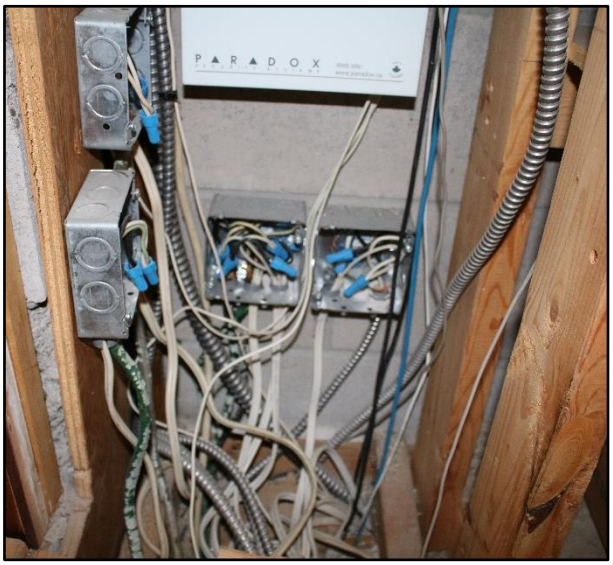
The station lacks proper male and female washroom and shower facilities. Reducing the risk to firefighters and their families, proper showers are recommended for use following calls to decontaminate from contaminates such as blood, smoke, and chemicals.



The station lacks adequate storage space. Every office, closet, crawl space, and even washrooms are being used for storage. A stairwell landing is being used for storage which is a fire code violation.

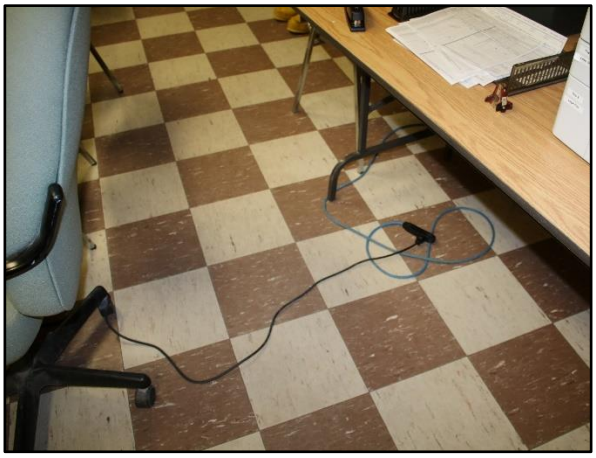
The electrical wiring in the station appears to create safety and fire concerns. We recommend that an assessment be done of the electrical wiring in the station by a professional electrical engineer.

Further, the station lacks an emergency generator to ensure the fire station can fully function during a power failure.



There are several locations where floor tiles are broken and falling apart. The age of the building creates a potential that these floor tiles contain asbestos. It is therefore recommended that a professional assessment of the station be conducted for asbestos or other hazardous materials.

The training room is cluttered with storage and has extension cords running across the floor as there are inadequate electrical outlets. Further, only a small undersized window air conditioner is used to cool the large training room.



There is evidence of water leakage into the fire station on ceiling tiles and along the walls. There appears to be difficulty in draining the water from the roof which may be a contributing factor.

There are numerous openings in the walls and ceiling throughout the building creating gaps in fire barriers and exposing electrical and network wiring. It is also reported that there has been evidence of rodents within the building.

Overall, the building no longer meets the needs of a modern fire department.

It is recommended that the Township invest in a new fire station that is designed to meet the growing needs of the fire service for the next 50-70 years.

Considerations for a new station should include:

- Adequate space in the garage bays with drive-through access
- Appropriately sized garage doors for larger vehicles
- Electrical system designed to eliminate the use of extension cords except for short term use
- Office space for the Fire Chief, Fire Prevention, and Training Officer
- Office space for the station duty officer
- Training room that can accommodate all of the firefighters in the station
- Bunker gear stored in a self-contained room with appropriate ventilation
- Appropriate exhaust / filtration system in the garage bays
- Proper male and female washrooms, showers, and locker rooms
- Oil / contaminate separation in the apparatus bay floor drains
- Storage rooms
- Emergency generator that can run all electrical needs within the station
- Adequate parking for responding volunteer firefighters

If the decision is made not to replace the station, it is critical to conduct an engineering review of the station including an in-depth structural assessment, electrical assessment, asbestos/ hazardous materials assessment, environmental assessment (floor drains running in the waterway), HVAC assessment, fire code assessment, roofing assessment, and plumbing assessment. EMT's assessments are from a visual perspective only; no engineering review was performed on the buildings.

EMT estimates the costs for the assessments to be up to $75,000.
Rough estimates to address the issues identified could range from $415,000-750,000 without addressing the issues of space or increasing the apparatus bay capability,

limiting the ability to purchase appropriately sized apparatus in the future. Even with this investment, the station would remain hampered by its ability to meet fire service needs.

Table 5a: Work Required with Cost Estimates

Description	Low	High
Male and female washrooms with decon showers	$80,000	$100,000
Garage door safety features	$5,000	$10,000
Electrical wiring	$60,000	$100,000
Floor drains with oil/ contaminate extractors	$60,000	$100,000
Roofing	$20,000	$40,000
Fire code issues	$40,000	$80,000
Exhaust extraction/ filtration	$50,000	$120,000
Emergency generator	$40,000	$100,000
HVAC	$60,000	$100,000
Estimate for short-term extension of building life	**$415,000**	**$750,000**

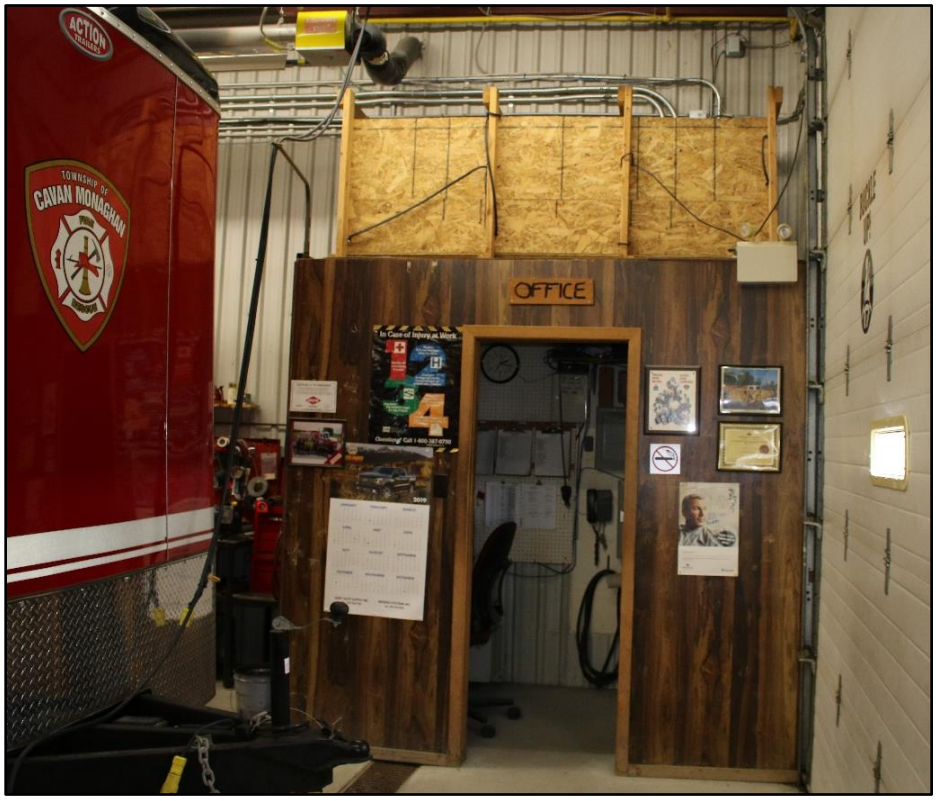
In EMT's opinion, the investment of funds into this station would be better spent in building a new station that will meet the needs of the fire department for decades to come in a growing community.

5.1.2 Station 2

Station 2 is a four-bay, steel garage structure located in a rural area with large value homes in the immediate vicinity.

The building is of a good size to accommodate the apparatus assigned to this station.

Within the station is a makeshift office. There is not an effective way to lock the office to protect files and reports that may be kept in the office. The office is not designed to keep toxic fumes out. This office should be rebuilt or retrofitted.

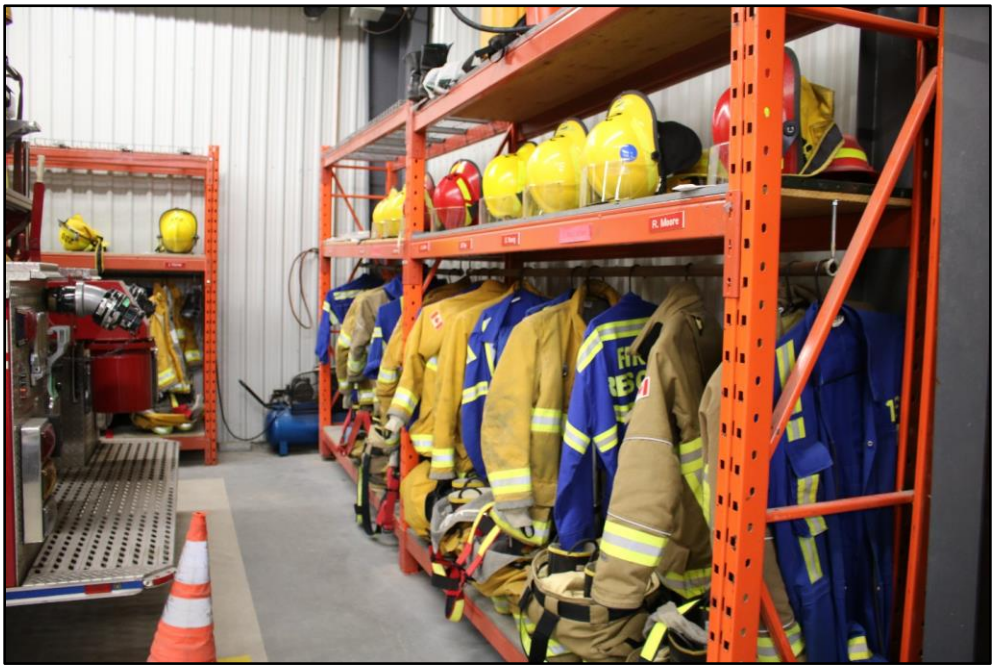


There is a second-floor storage room within the station but it cannot be locked.

The station does not have a training room.

There is a small exhaust fan for the garage bays but not an air filtration or at source exhaust system. Diesel fumes are highly toxic and have the potential to add to the cancer risk that firefighters face.

Firefighter bunker gear is stored on the apparatus floor exposing it to diesel fume contamination. It is recommended that bunker gear be stored in a separate ventilated room or at source exhaust capture is used to minimize the exhaust in the station.



5.2 Apparatus and Equipment

The Cavan Monaghan Fire Department is equipped with pumper trucks, tankers, and support vehicles required for primary response to calls within the Township. As vehicles near replacement age, they are identified in the Department's capital replacement plan. Based on the age and size of Station 1 in Millbrook, there is a challenge with acquiring replacements as standard new apparatus cannot fit in the station. Vehicles at Station 2 are newer and the floorspace is more accommodating to the size of newer units. Table 5b details the CMFD Apparatus Fleet.

Table 5b: CMFD Apparatus Fleet

Unit	Year	Make	Station
Pumper 1	2018	Fort Gary	1
Tanker 1	1999	GMC	1
Rescue 1	2003	Chev	1
Unit 5	1989	Chev	1
Car 1	2017	Ford	1
Car 3	2003	Ford	1
Pumper 2	2010	KW	2
Tanker 2	2013	INTL	2
Tanker 4	2015	INTL	2
Rescue 2	2000	Ford	2
UTV 1	2016	Polaris	2
Trailer	2016	Atlas	2

Note: *Vehicles shaded in RED are past the recommended replacement cycle and should be a priority to be replaced. Vehicle shaded in YELLOW should be in the planning stages for replacement.*

Based on the apparatus fleet and the recommendations as described next in both FUS and NFPA replacement recommendations, there needs to be consideration in the near future to replacing the aging unit Tanker 1.

Rescue 2 has reached a 20-year life span and should be in the planning forecast to be replaced by 2025.

Unit 5 is a 32-year-old pickup truck with miscellaneous equipment. Many municipalities provide light duty vehicles a life span of 7 to 15 years. Due to the age and required maintenance it is recommended that this vehicle be replaced in the near future. This vehicle is critical to the transportation of firefighters and equipment.

5.3 Fire Apparatus – New and Replacement Schedule

Reliability of 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 of the apparatus and can have an effect on insurance costs based on the fire department's FUS rating.

5.3.1 FUS – Vehicle Replacement Recommendations

When assessing a Fire Department's ability to respond and meet the needs of the community, the Fire Underwriters Survey (FUS) considers the age of a fire truck as one of its guidelines. The FUS recommendations are discussed later in Section 7 regarding capital budgeting.

The Small Communities and Rural Centres section (outlined in blue) is the recommendation for vehicle replacement for a township the size of Cavan Monaghan. This allows for up to a 20-year replacement cycle, in which the fire vehicle can be utilized as First Line response status. It is, however, recommended that all First Line units be replaced by a new or younger unit when it reaches 20 years of age at which time it may serve as a *reserve* unit.

Table 5c: FUS Vehicle Replacement Recommendations

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	First Line	First Line
16 – 20 Years	Reserve	Second Line	First Line
20 – 25 Years [1]	No Credit in Grading	No Credit in Grading or *Reserve* [2]	No Credit in Grading or *Reserve* [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 [1]	No Credit in Grading	No Credit in Grading	No Credit in Grading

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

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

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

FUS definition of 1st line, 2nd line 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 Fire Underwriters Survey is reviewed by insurance companies. Provided that the Fire Department adheres to the recommended replacement timelines through an approved capital replacement schedule, the Department will retain its fire rating for vehicle replacement. By working towards a standard replacement schedule for aging vehicles, Cavan Monaghan can demonstrate due diligence towards ensuring a dependable response fleet for the Fire Department and the community it serves.

5.3.2 NFPA – Vehicle Replacement Recommendations

The National Fire Protection Association 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 fire departments that are considering refurbishing their vehicles to extend the in-service life, reference can be made to NFPA 1912, *Standard for Apparatus Refurbishing*.

It should be noted that although the FUS do take refurbishment of vehicles into consideration, no credit rating is assigned to vehicles over 30 years of age.

During the station and equipment review, it was noted that the vehicles and small engines (pumps, generators, etc.) are on a standard replacement cycle and that maintenance and repair work is addressed as quickly as possible by Cavan Monaghan or other recommended facilities.

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.

It is recommended that the Fire Chief begin a planning process to replace the aging Pumper 1 and Tanker 1 as per the FUS and NFPA recommendations of a 20-year life span. The replacements should be timed to coincide with the building of a station that can accommodate the larger size of new apparatus.

5.3.3 Aerial & Elevated Apparatus

Aerials or any type of elevated device truck plays a vital role at the scene of a structure fire; securing building access for upper floors, rescue, assisting with rooftop ventilation, and suppression can be achieved from an aerial ladder. These factors are especially important when dealing with apartment buildings and/or other structures of 2 storeys or more, such as commercial buildings and industrial facilities.

Based on the projected growth in Cavan Monaghan, with potential multi-storey units and combined with the design and density of the Millbrook downtown area, there is an identified need for consideration of an aerial unit. Aerial units typically allow for egress and rescue above ground, or strictly for elevated master streams for suppression tactics, or a combination of the two.

As development of buildings three or more storeys proceeds within the Millbrook area, a forecasted need of an elevated apparatus will become necessary. Currently, the longest ladder that the fire department has (only one of) would reach a third-floor window (if the ground is level) and no higher.

Other implications of three-storey residential buildings include the requirement to have a additional firefighters on scene to fight the fire. NFPA 1710 standard for a Garden-Style (3 story) Apartment is a minimum of 27 members.

It is recommended that CMFD begin a planning process for the acquisition of an elevated apparatus should residential buildings of 3 or more stories be built within the Township. While proactive public education and prevention efforts may limit the impact and losses of a fire in a multi-storey structure, an aerial unit to provide rescue as well as mitigate the size and spread of fire is necessitated.

Based on the Fire Underwriters Technical document on elevated devices, Cavan Monaghan should have at least one elevated device. Refer to Appendix C for more information.

Aerial Verses Tele-squirt

The following two pictures help to display the difference between an aerial truck and a tele-squirt. The aerial truck (first photo) is specifically designed to be used for access to upper floors of a structure for rescue. As such, it has a very large ladder structure that is generally 30 meters or more in length. Most of these ladders are equipped with a large capacity nozzle to assist with fire extinguishment on upper floors of a building or roof tops that are out of reach of regular ground ladders.

Whereas the tele-squirt (second photo), in many cases, is a pumper fire truck style frame that has the ability to raise a large capacity water nozzle with a smaller ladder, generally 15 or 20 meters, that can be used for firefighting purposes.

The key differences between the two vehicles are the size of the vehicle (the aerial is much larger), the reach of the elevated device, and what the elevated device was designed for. Another key difference is the cost. Tele-squirts can range from $900,000 to $1,200,000, whereas the larger ladder trucks are $1,400,000 to $1,600,000.

Consideration can be given to purchasing a pre-owned vehicle, reducing costs by more than half.

The advantages of having an elevated device in a department's fleet are more than just having access to the upper floors of a building. They can also be used for rescues on angled slopes and to extend a firefighter beyond a shoreline to affect a water/ice rescue. By having a more stable platform to work from, the elevated device offers a greater level of firefighter safety as opposed to working from a smaller ground ladder.

A challenge with elevated devices is that they do require additional firefighter training. With the number of calls the fire department is responding to, any additional training, adding the evolutions for an elevated device become a significant pressure on the volunteers. It is recognized that the response, training, and other time demands on the volunteer firefighters cannot keep increasing in the current format.

A second challenge with elevated devices is the increased maintenance and ladder certifications. These costs can add $5,000-10,000 to the vehicle maintenance budget annually.

Numerous volunteer fire departments of similar size and mix of suburban and rural properties have elevated devices, including: Gravenhurst, Meaford, West Lincoln, Lincoln, demonstrating that a volunteer fire department can effectively add a ladder truck or telesquirt (quint) to the fleet. Meaford and West Lincoln have purchased used/pre-owned ladder trucks where Gravenhurst and Lincoln have purchased new.

More information on recommendations for aerial apparatus can be found in Appendix C. EMT is recommending that CMFD move forward with a plan to purchase an apparatus with an elevated device should a three-storey residential building be constructed within the Township.

Recommendation(s)

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
15	Build a new fire station in the Municipal Office area in Millbrook.	$5,000,000 to $6,000,000	Short-term (1-3 years)
16	It is recommended that the Fire Chief begin a planning process to replace the aging Tanker 1.	Tanker $500,000-600,000	Short-term (1-3 years)
17	It is recommended that the Fire Chief begin a planning process to replace the aging Rescue 2.	$350,000-$500,000	Mid-term (3-5 years)
18	It is recommended that Unit 5 be replaced.	$100,000	Short-term (1-3 years)
19	It is recommended that CMFD begin a planning process for the acquisition of an aerial apparatus should a three story (or higher) residential building be constructed within the Township.	Tele-squirt $900,000-1.2 M (new) $200-500,000 (used) Platform $1.4-1.6 M (new) $500-700,000 (used)	Long-term (6-10 years) To be moved up if multi-storey residential buildings are started.

Section 6: Risk Assessment and Emergency Management

6.1 Municipal Responsibilities
6.2 Community Risk Assessment – Current and Future Needs
6.2 Integrated Risk Management Approach
6.3 Emergency Management Program

Section 6: Risk Assessment and Emergency Management

The most effective ways to reduce injuries, death, and property damage due to fire are through public education, inspections, and enforcement. The Fire Prevention Program addresses these key components of fire safety which starts with conducting a Community Risk Assessment (CRA).

6.1 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, providing a framework for protecting citizens from fire:

2. (1) *Every municipality shall,*

> *(a) Establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and*
> *(b) Provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.*[7]

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

Methods of Providing Services

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

> (a) Appoint a community fire safety officer or a community fire safety team; or
> (b) establish a Fire Department.

Cavan Monaghan has established a Fire Department as outlined in Section 2.2(b) of the *Fire Protection and Prevention Act*, 1997, S.O. 1997, c. 4. The level of service that must thereby be provided is further outlined in Section 2.1(b) of the *Act*. The level of service to be provided is determined by the needs and circumstances of the community and can be derived from conducting an MFP for Council. The ‘needs’ can be defined by the type of buildings, infrastructure, and demographics of the local area which in turn can be extrapolated into the types of services that would be offered and needed. The ‘circumstances’ are considered 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. Cavan Monaghan is forecast to experience growth,

[7] https://www.ontario.ca/laws/statute/97f04

which is leading to an infill within the communities. While the majority of this growth is residential in design, it may also bring commercial and industrial prospects. This increase impacts the service delivery of the Fire Department, increasing the need for service along with the population.

To date, CMFD has been able to effectively keep the up with the call volumes, however, there is concern that future challenges in meeting reasonable response times could occur as call volumes increase. This poses a possible risk to the community and, as such, the Fire Chief will need to monitor response times including how often a full response component was not amassed. This type of information can be utilized to identify any future needs and/ or considerations for the incorporation of a partial full-time response component.

6.2 Community Risk Assessment

During this MFP review, a new Ontario Regulation through the *Fire Protection and Prevention Act* came into force requiring all communities to conduct a Community Risk Assessment every five years and update it annually.

Ontario Regulation 378/18 states the following requirement in relation to conducting a community risk assessment:

*"**Mandatory use***

1. *Every municipality, and every fire department in a territory without municipal organization, must,*

(a) complete and review a community risk assessment as provided by this Regulation; and

(b) use its community risk assessment to inform decisions about the provision of fire protection services.

What it is

2. *(1) A community risk assessment is a process of identifying, analyzing, evaluating and prioritizing risks to public safety to inform decisions about the provision of fire protection services.*

(2) A community risk assessment must include consideration of the mandatory profiles listed in Schedule 1. (NOTE: see appendix "F" of this MFP for OFMEM related Guideline)

(3) A community risk assessment must be in the form, if any, that the Fire Marshal provides or approves. (NOTE: see appendix "F" of this MFP for OFMEM related Guideline)

When to complete (at least every five years)

***3.** (1) The municipality or fire department must complete a community risk assessment no later than five years after the day its previous community risk assessment was completed.*

(2) If a municipality, or a fire department in a territory without municipal organization, comes into existence, the municipality or fire department must complete a community risk assessment no later than two years after the day it comes into existence.

(3) A municipality that exists on July 1, 2019, or a fire department in a territory without municipal organization that exists on July 1, 2019, must complete a community risk assessment no later than July 1, 2024.

(4) Subsection (3) and this subsection are revoked on July 1, 2025.

When to review (at least every year)

***4.** (1) The municipality or fire department must complete a review of its community risk assessment no later than 12 months after,*

(a) the day its community risk assessment was completed; and

(b) the day its previous review was completed.

(2) The municipality or fire department must also review its community risk assessment whenever necessary.

(3) The municipality or fire department must revise its community risk assessment if it is necessary to reflect,

(a) any significant changes in the mandatory profiles;

(b) any other significant matters arising from the review.

(4) The municipality or fire department does not have to review its community risk assessment if it expects to complete a new community risk assessment on or before the day it would complete the review."

Along with the newly published CRA document, the National Fire Protection Association (NFPA) 1730 Standard on *Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations*, also identifies that this type of review should be conducted at a minimum every five (5) years or after significant change. This standard also establishes a process to identify and analyze community fire risks.

There are seven (7) components of a Community Risk Assessment outlined in NFPA 1730. These components are:

1. Demographics
2. Geographic overview
3. Building stock
4. Fire experience
5. Responses
6. Hazards
7. Economic profile[8]

The CRA is a very time intensive document, however, EMT has completed the initial CRA for Cavan Monaghan. The CRA is presented in a separate stand-alone document and will need to be maintained annually.

6.2.1 Current Condition

The projected growth expected for the community will impact the demographic profile and, consequently, the needs and circumstances for the delivery of services by the Fire Department. All risks within the community need to be identified and evaluated by a team that is also tasked with the upkeep of the Township's Emergency Management Plan.

Vulnerable occupancies such as the elderly and people with physical and cognitive challenges need to be identified, along with railway crossings, major highways and industries that could create a hazardous environmental response. Based on resources available, the FPO is doing a good job in creating and updating this building stock profile, but more needs to be accomplished to meet the new legislation.

One person, responsible for both Fire Prevention and Training, conducting all of the legislated requirements for a community the size of Cavan Monaghan has created a situation in which the FPO has had to focus on the minimum inspection requirement set out by the *Fire Protection and Prevention Act*, which are inspections on complaint and

[8] https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1730

request, along with inspecting vulnerable occupancies. To increase and improve upon the numbers of inspections, the transition of the Training Officer's duties to someone else, and/or utilizing officers would help to alleviate some of the pressure on the present FPO.

6.2.2 Future Needs

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

According to the new provincial legislation and continued growth within the Cavan Monaghan, there will be an ongoing need for additional staff time spent in fire prevention and public education activities. These activities are not just related to public education; there should also be emphasis placed on assessing building stock within the community to identify types and number of hazards that may exist and doing preplanning for emergencies that may occur.

6.3 Integrated Risk Management Approach

The Integrated Risk Management (IRM) approach, that was introduced by the OFMEM. It reviews all facets of the fire service that is meant to combine a review of building stock, fire safety and prevention issues to be addressed, ability to effectively and efficiently respond to emergencies, and how well equipped and trained the firefighters are to deal with emergencies within the community.

Conducting a review of every building (as recommended by the IRM) within the Township of Cavan Monaghan may not be practical at this time; however, utilizing NFPA 1730 and 1300 definitions of risk categories may help to guide the Fire Chief and 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.

NFPA 1730 and 1300 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.
    - Examples: 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.
    - Examples: ambulatory health care, and industrial.
- Low-Risk – An occupancy that has a history of low frequency of fires and minimal potential for loss of life or economic loss.
    - Examples: storage, mercantile, and business.

6.3.1 Current Condition

Cavan Monaghan Fire Department staff have identified the vulnerable occupancies (care facilities) and schools within the community that are a high priority for annual inspections. CMFD has been as proactive as possible based on present staffing and available resources; however, a more formal proactive inspection program needs to be put into place that goes above and beyond conducting inspections on a request and complaint basis.

To help support this proactive initiative, CMFD should make note of and keep track of the following building stock within the Township to ensure that they are meeting the inspection recommendations outlined in the FUS chart below, or at the very least using these guidelines as a benchmark to aim for.

Table #3a: FUS Suggested Inspection Frequency Chart

Occupancy	FUS 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

The FUS Suggested Inspection Frequency Chart is highly aggressive and being able to provide inspection frequencies at the noted levels may be difficult to achieve. As a benchmark, however, the FUS chart provides an optimal set of goals for CMFD to strive

towards. Priority should be given to Vulnerable Occupancies, institutional facilities, hotels/ motels, multi-family dwellings (including basement apartments), and assemblies.

Utilizing the Integrated Risk Management approach in conjunction with the guidance from NFPA 1730 and 1300 standards will provide an overall picture of the resources, time, and tools required to keep the fire risks in the community to a manageable level (as defined by Council). The NFPA 1730 Standard also outlines a process in Appendix C of the standard to assist council in setting the level of fire prevention service within the community based on the local needs and circumstances.

It is recommended that the Fire Chief review Cavan Monaghan's inspection program to identify levels of desired frequency in relation to the inspections noted in the FUS Chart (Table 3a). The FUS strongly recommends that a level of frequency be identified by the Fire Service in its quest towards ensuring a fire-safe community. The CMFD may not be able to meet the FUS recommendations, but a set of goals and expectations should be outlined to identify staffing hours required to achieve these goals and expectations.

In relation to staffing (Fire Prevention) hour requirements, an initial assessment needs to be completed by the Fire Chief and the Fire Prevention Officer to identify hours presently spent on inspections along with identification of the annual goal. By doing this assessment, future hourly requirements can be consolidated into a report to Council.

> *Note: Due to the complexities with fire prevention inspections, along with the variety of building stock in a community, there is no industry standard formula for calculating number of hours based on building stock. This can only be accomplished through experience, familiarity, and understanding of the community's needs.*

6.4 Emergency Management Program

In this section, Emergency Management & Training Inc. conducted a review of Cavan Monaghan's Emergency Management Program, including existing training for Cavan Monaghan employees and response planning. As mandated by the *Emergency Management and Civil Protection Act* (EMCPA), all municipalities in Ontario must have an emergency response plan and an emergency planning program. For every community in Ontario, there must also be an identified Community Emergency Management Coordinator (CEMC). Within Cavan Monaghan Township, this role is fulfilled by the Fire Chief.

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

6.4.1 Current Condition

The primary and secondary Emergency Operations Centres (EOC) are functional spaces that can be set up, as needed, by the EOC group. The primary EOC is located at the Cavan Monaghan Community Centre at 986 County Road 10 and has served the community well. The alternate EOC is located at the Keene Fire Station (Otonabee South Monaghan Township) at 20 Third Street, Keene. Both locations are equipped with automatic backup generators.

Based on a review of the EOC facilities and the program in place, the Township appears to be well equipped in relation to its EOC location.

Recommendation(s)

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
20	The Fire Chief to review Cavan Monaghan's inspection program to identify levels of desired frequency in relation to the inspections noted in the Fire Underwriters Survey Chart.	Staff time	Short term (1-3 years) and ongoing

Section 7: Finance, Budgeting, and Capital Investment Plan

7.1 Operating & Capital Budgets

7.2 Overview of Recommendations Costing

Section 7: Finance, Budgeting, and Capital Investment Plan

7.1 Operating and Capital Budgets

Through the review, EMT concluded that the Fire Chief presents a very thorough annual budget report to Council for consideration and approval. The CMFD has an annual operating budget that appears to offer the Fire Chief the funds required to manage and support the Department's staff, facilities and equipment in an effective manner.

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

During the review of the budget process, it was found that CMFD appears to be well set up in both the operating and capital budgets (to meet the general needs of the Department). This would also indicate an adequate level of support by Council and the Township's senior management team in relation to assisting the Fire Department in meeting its service goals.

When reviewing this section, one of the key areas that EMT looks for is whether actual operating expenditures are identified and tracked by the Department. During the review of the operating budget, it was noted that all key accounts and operating sections are identified, such as:

Operating Budget Line Items:

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

Capital Budget Line Items:

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

7.1.1 Operating Budget

A review of the operating budget for CMFD shows that all general expenses and related revenues are accounted for.

7.1.2 Capital Forecasts

It would appear that the Fire Chief is endeavouring to adhere to a 20-year replacement cycle for the fire trucks with pumps that is based on the FUS recommendations (TABLE 5c) for frontline vehicles for a community the size of Cavan Monaghan. This replacement cycle mirrors the industry standards of 15 and 20 years, depending on the vehicle's function. As such, the Fire Department should be commended for its efforts in endeavouring to adhere to this industry standard.

For other support vehicles such as pick-up trucks or rescue trucks there is no FUS or NFPA recommended standard for replacement schedules. Most communities include these support vehicle replacements on the same cycle as the Township's other vehicles.

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

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

This would mean that if you have eight (or less) of a certain type of vehicle, you should have a replacement unit in reserve or access to a replacement (e.g. agreement from another municipality, rental) should one of those units go out of service.

FUS accepts that a pumper/tanker capable of pumping 1250 gpm and holding 2800 gallons of water is acceptable as being a spare pumper for the fleet, therefore the municipality has adequate spare coverage. Replacing tankers with pumper/tankers both gives the fire department greater flexibility as well as fulfill the spare pumper role.

Based on the review by EMT, it would appear that the Fire Chief and his staff are working hard to ensure that equipment is being replaced and/or upgraded on a regular cycle and also on an as needed basis. One of the Department's tankers is at or past the recommended replacement age, but the Fire Chief is well aware of this; replacement is limited by the capability of the fire station to house an new tanker. The Fire Chief, Council and Township staff should be setting aside capital funds to replace the tanker as soon as station 1 can accommodate.

7.2 Overview of Recommendations Costing

Comments relating to staffing, fire stations and new or updated equipment costs have been identified within each related section. As a brief review of associated costs, the associated recommendation has been noted again within this section.

Staffing Related Costs:

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
4	Increase the Deputy Chief position from a volunteer status to a full-time position with responsibility for training and operations. The Fire Prevention Officer will be dedicated for the FPO role full-time.	$90,000 plus benefits for a Deputy Chief	Short-term (1-3 years)

Facilities:

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
11	CMFD install diesel exhaust systems in both of its fire stations.	$20-40,000 per bay dependent on the option selected	Short-term (1-3 years)
15	Build a new fire station in the Municipal Office area in Millbrook.	$5,000,000 to $6,000,000	Short-term (1-3 years)

Vehicles:

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
16	It is recommended that the Fire Chief begin a planning process to replace the aging Tanker 1.	Tanker $500,000-600,000	Short-term (1-3 years)
17	It is recommended that the Fire Chief begin a planning process to replace the aging Rescue 2.	$350,000-$500,000	Mid-term (3-5 years)
18	It is recommended that Unit 5 be replaced.	$100,000	Short-term (1-3 years)
19	It is recommended that CMFD begin a planning process for the acquisition of an aerial apparatus should a three story (or higher) residential building be constructed within the Township.	Tele-squirt $900,000-1.2 M (new) $200-500,000 (used) Platform $1.4-1.6 M (new) $500-700,000 (used)	Long-term (6-10 years) To be moved up if multi-storey residential buildings are started.

Section 8: Review of Previous Master Fire Plan

8.1 Corfield & Associates 2010 MFP

Section 8: Review of 2010 Master Fire Plan

8.1 Corfield and Associates 2010 MFP

Cavan Monaghan Fire Department previously had an MFP conducted in 2010 by Corfield and Associates. Within that report, 13 items were identified in need of attention resulting in 13 recommendations. The Fire Chief was able to provide EMT with an update on the progress made towards those recommendations. It was noted that of the 13 recommendations, 8 recommendations have been completed.

Below, each recommendation is listed with the progress made. A brief review by EMT follows each item.

8.1.1 Detailed Recommendation Review

Recommendation	Progress
#1 – Weekday Availability of Sufficient Firefighters	
-increase overall availability of suppression staff -expand into Recruitment & Retention Program	-Expanded recruiting area in the northern end -increased firefighter complement from 45 to 60 -improved use of auxiliary unit
❖ **The Fire Chief advises the addition of 15 firefighters has helped to improve overall response. In section 4.1 it was identified that CMFD was meeting the response criteria for a volunteer fire department as per NFPA 1720.**	
#2 – Fire Stations	
-expand Station 2 -replace Station 1	-expanded Station 2 (double in size) -no formal station location study for relocating Station 1
❖ **The expansion of Station 2 in 2009 allowed for additional apparatus and more space.** ❖ **The replacement of Station 1 is still a priority item.**	

#3 – Aerial Ladder Truck	
-nothing available to rescue beyond 2 storeys -neither fire station can accommodate size of a unit	-with no station to house it, nothing has been done
❖ **The need for an elevated/ aerial device remains a requirement within the department, however, cost and space have been barriers.** ❖ **The comparison of alternative means for fire protection (sprinklers) versus the associated maintenance and training costs is a primary issue.**	
#4 – Fraserville Development and Fire Protection	
-expected developments in Fraserville would require increased fire protection	-Council abandoned the Fraserville development plans -north ward serviced by automatic aid agreement
❖ **With the cancelled development plans, this no longer requires consideration.**	
#5 – Emergency Communications System	
-phase II compliance of 6.25 kHz channels mandated for 2012 -aim to meet industry standards for 2012	-90% complete with new radios -final piece is new repeater (targeted for new fire station)
❖ **The final piece for completion is a new repeater, and with the replacement of Station 1 the item will be complete.**	
#6 – Safety Barriers for Station 2 Communications Tower	
-no safety barriers were in place	-completed
❖ **Completed and no longer an issue.**	
#7 – Radio Batteries	
-standardize charging, maintenance, usage, and replacement schedule	-completed as part of recommendation #5
❖ **Completed and no longer an issue.**	
#8 – Suggested Operating Guidelines	
-insert a disclaimer at the bottom of each	-completed
❖ **Completed and no longer an issue.**	
#9 – Fire Prevention Program for Commercial & Industrial Buildings	
-institute a self-inspection program for fire safety and code enforcement in commercial and industrial buildings	-not completed -Fire Chief is not supportive of inspections not conducted by trained FPO
❖ **EMT would support the Fire Chief that while owners should be reviewing their own properties for any issues, there can be no proper due diligence or compliance without proper inspection from a delegated authority.**	
#10 – Fire Safety & Education Outreach Program	

-fire safety and education program intended for areas with increased response times	-smoke alarm checks focus on outer boundaries -increased vigilance when roads are closed
❖ **Increased public education to those most at risk is a positive initiative and should be further enhanced and continued.**	
#11 – Fire Officer Qualifications	
-ensure that officer ranks are properly qualified	-all CMFD members are trained and certified to proper NFPA standards
❖ **CMFD has worked hard to ensure that all staff are properly trained and certified to their respective rank. All should be commended for their dedication to this task**.	
#12 – Recruitment/Retention/Retirement Policy	
-address staffing issues overall -forecast needs based on retirements -fill vacancies based on turnover rates	-Recruitment: expanded numbers, catchment area, and use of students -Retention: increased benefits to staff, and awards night -Retirement: developed auxiliary program to assist with non-suppression roles
❖ **A thorough plan put forth by the Fire Chief, with some positive results thus far. A continued effort is encouraged.**	
#13 – Fire Apparatus Maintenance & Replacement	
-institute an equipment and apparatus maintenance program -align with NFPA 1911 and 1915	-complete
❖ **Completed with continual effort encouraged.**	

Overall, a determined and sustained effort was put forth by the Fire Chief and his staff to move many of these items forward. The staff of CMFD should be commended for their hard work in implementing the majority of these recommendations. The Township of Cavan Monaghan is safer place now because of their commitment.

SECTION 9: Summary

Section 9: Summary

9.1 Summary

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

All costs and associated timelines noted in this report are approximate estimates that can be implemented through prioritization between the Fire Chief, Chief Administrative Officer, and Council.

This MFP 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.

9.2 Recommendations and 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. This MFP document is a culmination of 20 recommendations.

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
1	The E&R Bylaw be reviewed annually by the Fire Chief to ensure currency and compliance.	Staff time	Short-term (1-3 years)
2	CMFD work with dispatch partners to promote adherence to NFPA 1221 Standard on Emergency Communications Services.	Dependent on potential changes to the agreement	Short-term (1-3 years)
3	CMFD periodically work with other automatic aid partners to ensure currency and consistency with all agreements.	Dependent on potential changes to the agreement	Short-term (1-3 years)
4	Increase the Deputy Chief position from a volunteer status to a full-time position with responsibility for training and operations.	$90,000 plus benefits for a Deputy Chief	Short-term (1-3 years)

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
	The Fire Prevention Officer will be dedicated for the FPO role full-time.		
5	CMFD should enhance the training and certification of some of its volunteer firefighters in the areas of fire prevention and public education, trained and certified to at least: • NFPA 1031 – Fire Inspector I • NFPA 1035 – Fire and Life Safety Educator I	Staff time	Short-term (1-3 years)
6	CMFD work with developers and the public to make the Home Sprinkler Systems initiative a part of its fire prevention and public education program.	Staff time	Short-term (1-3 years)
7	The Township of Cavan Monaghan propose to EOETA member municipalities the creation of a County Training Coordinator for external training programs.	Costs split between the municipalities $10,000 ea	Short-term (1-3 years)
8	CMFD review the physical expectations of a firefighter for use in training and recruiting. 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.	Staff time	Short-term (1-3 years)
9	CMFD develop a more wholesome approach to their PTSD Prevention Plan which may include peer support, intervention approach, professional services, clinical assistance and what a return to work plan may look like for a CMFD volunteer firefighter.	Staff time	Short-term (1-3 years)
10	CMFD begin developing a cancer prevention program.	Staff time	Short-term (1-3 years)

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
11	CMFD install diesel exhaust systems in both of its fire stations.	$20-40,000 per bay dependent on the option selected	Short-term (1-3 years)
12	It is recommended that a PPE inspection plan be expanded to include washing bunker gear after every structure fire and hazmat exposure, and to allow for an annual inspection of all PPE, focusing on the structural firefighting ensemble.	Staff time	Short-term (1-3 years)
13	CMFD should evaluate the medical response calls to consider: • Change the tiered response criteria to 15 minutes • Not respond to Centennial Place LTC Home • Assign specific firefighters to respond to medical calls	Reduce fire department response costs associated with tiered response	Short-term (1-3 years)
14	Township should request that the County paramedic service provide a paramedic response unit based in Millbrook for a minimum of 12 hours a day during the day shift, at county cost.	Reduce fire department response costs associated with tiered response	Short-term (1-3 years)
15	Build a new fire station in the Municipal Office area in Millbrook.	$5,000,000 to $6,000,000	Short-term (1-3 years)
16	It is recommended that the Fire Chief begin a planning process to replace the aging Tanker 1.	Tanker $500,000-600,000	Short-term (1-3 years)
17	It is recommended that the Fire Chief begin a planning process to replace the aging Rescue 2.	$350,000-$500,000	Mid-term (3-5 years)
18	It is recommended that Unit 5 be replaced.	$100,000	Short-term (1-3 years)
19	It is recommended that CMFD begin a planning process for the acquisition of an aerial apparatus should a three story (or higher) residential building be constructed within the Township.	Tele-squirt $900,000-1.2 M (new) $200-500,000 (used)	Long-term (6-10 years) To be moved up if multi-storey

Rec. #	Recommendation	Estimated Costs	Suggested Timeline
		Platform $1.4-1.6 M (new) $500-700,000 (used)	residential buildings are started.
20	The Fire Chief to review Cavan Monaghan's inspection program to identify levels of desired frequency in relation to the inspections noted in the Fire Underwriters Survey Chart.	Staff time	Short term (1-3 years) and ongoing

Section 10: Appendices

Appendix A – Definitions and References

Appendix B – Five-Step Staffing Process

Appendix C – Fire Underwriters Survey Technical Document on Elevated Devices

Appendix D – Fire Department Comparables Chart

Appendix E – CMFD Training Hours 2016 – 2019

Section 10: Appendices

Appendix A – Definitions and References

Automatic Aid Agreements

For the purposes of this report an automatic aid agreement means any agreement under which,

a) a municipality agrees to ensure the provision of an initial response to fires, rescues and emergencies that may occur in a part of another municipality where a Fire Department in the municipality is capable of responding more quickly than any Fire Department situated in the other municipality; or

b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and emergencies that may occur in a part of another municipality where a Fire Department situated in the municipality is capable of providing the quickest supplemental response to fires, rescues and emergencies occurring in the part of the other municipality.
   - *Automatic aid is generally considered in other jurisdictions as a program designed to provide and/or receive assistance from the closest available resource, irrespective of municipal boundaries, on a day-to-day basis.*

Commission on Fire Accreditation International - Community Definitions

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

National Fire Protection Association Documents

- National Fire Protection Association 1201 - Standard for Providing Fire and Emergency Services to the Public
- National Fire Protection Association 1500 – Standard on Fire Department Occupational Safety and Health Program, 2013 editions
- National Fire Protection Association 1710 – Standard for the Organization and Deployment of Fire Suppression Operations, Medical Operations, and Special Operations to the Public by Career Departments

- National Fire Protection Association 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments

Mutual Aid

a) Mutual aid plans allow a participating Fire Department to request assistance from a neighbouring Fire Department authorized to participate in a plan approved by the Fire Marshal.

b) Mutual aid is not immediately available for areas that receive fire protection under an agreement. The municipality purchasing fire protection is responsible for arranging an acceptable response for back-up fire protection services. In those cases where the emergency requirements exceed those available through the purchase agreement and the backup service provider, the mutual aid plan can be activated for the agreement area.

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, taking into account the following:

- Local nuances
- Resources that affect personnel needs

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

Step 3: Required Personnel Hours

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

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

Step 4: Personnel Availability and Adjustment Factor

Average personnel availability should be calculated, taking into account 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:

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

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

Appendix C – Fire Underwriters Survey Technical Document on Elevated Devices

Fire Underwriters Survey™

TECHNICAL BULLETIN

FIRE UNDERWRITERS SURVEY™

A Service to Insurers and Municipalities

LADDERS AND AERIALS: WHEN ARE THEY REQUIRED OR NEEDED?

Numerous standards are used to determine the need for aerial apparatus and ladder equipment within communities. This type of apparatus is typically needed to provide a reasonable level of response within a community when buildings of an increased risk profile (fire) are permitted to be constructed within the community.

Please find the following information regarding the requirements for aerial apparatus/ladder companies from the Fire Underwriters Survey Classification Standard for Public Fire Protection.

Fire Underwriters Survey

Ladder/Service company operations are normally intended to provide primary property protection operations of

1.) Forcible entry;
2.) Utility shut-off;
3.) Ladder placement;
4.) Ventilation;
5.) Salvage and Overhaul;
6.) Lighting.

Response areas with 5 buildings that are 3 stories or 10.7 metres (35 feet) or more in height, or districts that have a Basic Fire Flow greater than 15,000 LPM (3,300 IGPM), or any combination of these criteria, should have a ladder company. The height of all buildings in the community, including those protected by automatic sprinklers, is considered when determining the number of needed ladder companies.
When no individual response area/district alone needs a ladder company, at least one ladder company is needed if the sum of buildings in the fire protection area meets the above criteria."

The needed length of an aerial ladder, an elevating platform and an elevating stream device shall be determined by the height of the tallest building in the ladder/service district (fire protection area) used to determine the need for a ladder company. One storey normally equals at least 3 metres (10 feet). Building setback is not to be considered in the height determination. An allowance is built into the ladder design for normal access. The maximum height needed for grading purposes shall be 30.5 metres (100 feet).

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Exception: When the height of the tallest building is 15.2 metres (50 feet) or less no credit shall be given for an aerial ladder, elevating platform or elevating stream device that has a length less than 15.2 metres (50 feet). This provision is necessary to ensure that the water stream from an elevating stream device has additional "reach" for large area, low height buildings, and the aerial ladder or elevating platform may be extended to compensate for possible topographical conditions that may exist. See Fire Underwriters Survey - Table of Effective Response (attached).

Furthermore, please find the following information regarding communities' need for aerial apparatus/ladder companies within the National Fire Protection Association.

NFPA

Response Capabilities: The fire department should be prepared to provide the necessary response of apparatus, equipment and staffing to control the anticipated routine fire load for its community.

NFPA *Fire Protection Handbook, 20th Edition* cites the following apparatus response for each designated condition:

HIGH-HAZARD OCCUPANCIES (schools, hospitals, nursing homes, explosive plants, refineries, high-rise buildings, and other high-risk or large fire potential occupancies):

At least four pumpers, two ladder trucks (or combination apparatus with equivalent capabilities), two chief officers, and other specialized apparatus as may be needed to cope with the combustible involved; not fewer than 24 firefighters and two chief officers.

MEDIUM-HAZARD OCCUPANCIES (apartments, offices, mercantile and industrial occupancies not normally requiring extensive rescue or firefighting forces):

At least three pumpers, one ladder truck (or combination apparatus with equivalent capabilities), one chief officer, and other specialized apparatus as may be needed or available; not fewer than 16 firefighters and one chief officer.

LOW-HAZARD OCCUPANCIES (one-, two-, or three-family dwellings and scattered small businesses and industrial occupancies):

At least two pumpers, one ladder truck (or combination apparatus with equivalent capabilities), one chief officer, and other specialized apparatus as may be needed or available; not fewer than 12 firefighters and one chief officer.

In addition to the previous references, the following excerpt from the 2006 BC Building Code is also important to consider when selecting the appropriate level of fire department response capacity and building design requirements with regard to built-in protection levels (passive and active fire protection systems).

Excerpt: National Building Code 2012

A-3 Application of Part 3.

In applying the requirements of this Part, it is intended that they be applied with discretion to buildings of unusual configuration that do not clearly conform to the specific requirements, or to buildings in which processes are carried out which make compliance with particular requirements in this Part impracticable. The definition of "building" as it applies to this Code is general and encompasses most structures, including those which would not normally be considered as buildings in the layman's sense. This occurs more often in industrial uses, particularly those involving manufacturing facilities and equipment that require specialized design that may make it impracticable to follow the specific requirements of this Part. Steel mills, aluminum plants, refining, power generation and liquid storage facilities are examples. A water tank or an oil refinery, for example, has no floor area, so it is obvious that requirements for exits from floor areas would not apply. Requirements for structural fire protection in large steel mills and pulp and paper mills, particularly in certain portions, may not be practicable to achieve in terms of the construction normally used and the operations for which the space is to be used. In other portions of the same building, however, it may be quite reasonable to require that the provisions of this Part be applied (e.g., the office portions). Similarly, areas of industrial occupancy which may be occupied only periodically by service staff, such as equipment penthouses, normally would not need to have the same type of exit facility as floor areas occupied on a continuing basis. It is expected that judgment will be exercised in evaluating the application of a requirement in those cases when extenuating circumstances require special consideration, provided the occupants' safety is not endangered.

The provisions in this Part for fire protection features installed in buildings are intended to provide a minimum acceptable level of public safety. It is intended that all fire protection features of a building, whether required or not, will be designed in conformance with good fire protection engineering practice and will meet the appropriate installation requirements in relevant standards. Good design is necessary to ensure that the level of public safety established by the Code requirements will not be reduced by a voluntary installation.

Firefighting Assumptions

The requirements of this Part are based on the assumption that firefighting capabilities are available in the event of a fire emergency. These firefighting capabilities may take the form of a paid or volunteer public fire department or in some cases a private fire brigade. If these firefighting capabilities are not available, additional fire safety measures may be required.

Firefighting capability can vary from municipality to municipality. Generally, larger municipalities have greater firefighting capability than smaller ones. Similarly, older, well established municipalities may have better firefighting facilities than newly formed or rapidly growing ones. The level of municipal fire protection considered to be adequate will normally depend on both the size of the municipality (i.e., the number of buildings to be protected) and the size of buildings within that municipality. Since larger buildings tend to be located in larger municipalities, they are generally, but not always, favoured with a higher level of municipal protection.

Although it is reasonable to consider that some level of municipal firefighting capability was assumed in developing the fire safety provisions in Part 3, this was not done on a consistent or defined basis. The requirements in the Code, while developed in the light of commonly prevailing municipal fire protection levels, do not attempt to relate the size of building to the level of municipal protection. **The responsibility for controlling the maximum size of building to be permitted in a municipality in relation to local firefighting capability rests with the municipality. If a proposed building is too large, either in terms of floor area or building height, to receive reasonable protection from the municipal fire department, fire protection requirements in addition to those prescribed in this Code, may be necessary to compensate for this deficiency.** Automatic sprinkler protection may be one option to be considered.

Alternatively, the municipality may, in light of its firefighting capability, elect to introduce zoning restrictions to ensure that the maximum building size is related to available municipal fire protection facilities. This is, by necessity, a somewhat arbitrary decision and should be made in consultation with the local firefighting service, who should have an appreciation of their capability to fight fires.

The requirements of Subsection 3.2.3. are intended to prevent fire spread from thermal radiation assuming there is adequate firefighting available. It has been found that periods of from 10 to 30 minutes usually elapse between the outbreak of fire in a building that is not protected with an automatic sprinkler system and the attainment of high radiation levels. During this period, the specified spatial separations should prove adequate to inhibit ignition of an exposed building face or the interior of an adjacent building by radiation. Subsequently, however, reduction of the fire intensity by firefighting and the protective wetting of the exposed building face will often be necessary as supplementary measures to inhibit fire spread.

In the case of a building that is sprinklered throughout, the automatic sprinkler system should control the fire to an extent that radiation to neighbouring buildings should be minimal. Although there will be some radiation effect on a sprinklered building from a fire in a neighbouring building, the internal sprinkler system should control any fires that might be ignited in the building and thereby minimize the possibility of the fire spreading into the exposed building. NFPA 80A, "Protection of Buildings from Exterior Fire Exposures," provides additional information on the possibility of fire spread at building exteriors.

The water supply requirements for fire protection installations depend on the requirements of any automatic sprinkler installations and also on the number of fire streams that may be needed at any fire, having regard to the length of time the streams will have to be used. Both these factors are largely influenced by the conditions at the building to be equipped, and the quantity and pressure of water needed for the protection of both the interior and exterior of the building must be ascertained before the water supply is decided upon. Acceptable water supplies may be a public waterworks system that has adequate pressure and discharge capacity, automatic fire pumps, pressure tanks, manually controlled fire pumps in combination with pressure tanks, gravity tanks, and manually controlled fire pumps operated by remote control devices at each hose station.

For further information regarding the acceptability of emergency apparatus for fire insurance grading purposes, please contact:

Western Canada	Quebec	Ontario	Atlantic Canada
Fire Underwriters Survey	Fire Underwriters Survey	Fire Underwriters Survey	Fire Underwriters Survey
3999 Henning Drive	255, boul. Crémazie E	175 Commerce Valley Drive, West	238 Brownlow Avenue, Suite 300
Burnaby, BC V5C 6P9	Montreal, Quebec H2M 1M2	Markham, Ontario L3T 7P6	Dartmouth, Nova Scotia B3B 1Y2
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Appendix D – Fire Department Comparators

**2016 Census population **2019 Call volume*

Municipality	Population Served (approx.)	Geographical Area	Number of Fire Stations	Firefighter Staffing Volunteer and Full-time	Fire Service Agreements in Place for Response by Other Fire Departments	Annual Incidents (Including Medical)	Firefighter to Population Ratio
Township of Cavan Monaghan	**8,829***	**306 km²**	**2**	**3 FT 52 VFF**	**5 Automatic Aid**	**662****	**169**
Otonabee South Monaghan Township	6,670	347 km²	4	2 FT 88 VFFs	4 Automatic Aid 1 Fire Protection	400	75
Meaford	11,000	588 km²	1	2 FT, 1 PT 34 VFFs *Does not factor ITFD covering 50% of land mass*	1 with ITFD and 1 with Georgian Bluffs	200+ *Does not factor ITFD covering 50% of land mass*	323* *Does not factor ITFD covering 50% of land mass*
Ramara	9,488	418 km²	3	1 FT fire chief, 1FT deputy chief, 73 VFFs	2 automatic, 5 other agreements	425	129
Gravenhurst	12,000	518 km²	3	2 FT, 50 VFFs	None	300+	230

Appendix E – CMFD Training Hours 2016 – 2019

Training Type	Sessions	Hours	%	Sessions	Hours	%	Sessions	Hours	%	Sessions	Hours	%
	2019			2018			2017			Total		
Medical	48	1395.5	18.1	63	1765.5	23.3	52	1464	17.7	163	4625	19.6
Driving	67	1701	22.0	68	1719	22.7	72	1731	20.9	207	5151	21.8
Pumping												
Firefighting	44	1556	20.1	45	1420	18.8	39	1256	15.2	128	4232	18.0
Hazmat	14	256	3.3	11	281	3.7	17	391	4.7	42	928	3.9
Auto Ex	10	264	3.4	8	230	3.0	10	284	3.4	28	778	3.3
Tech Rescue	2	76	1.0	2	76	1.0	5	144	1.7	9	296	1.3
Prevention & Pub Ed	1	344	4.4	12	242	3.2	16	388	4.7	42	974	4.1
Administrative	80	1366	17.7	70	1374	18.1	72	1868	22.5	222	4608	19.5
Other	32	772	10.0	19	471	6.2	25	760	9.2	76	2003	8.5
Total	311	7,730.5	100	298	7578.5	100	308	8286	100	917	23,595	100

% represents percentage of total hours

Training Completion Rates 2016 – 2018

2018		2017		2016		Total	
Sessions	% Complete	Sessions	% Complete	Sessions	% Complete	Sessions	% Complete
20	64.8	13	76.7	20	76.1	53	72