



Municipality of Mississippi Mills

SPECIAL COUNCIL AGENDA

Thursday, June 20, 2019

6:00 p.m.

Council Chambers, Municipal Office

PLEASE REMEMBER TO SET YOUR CELL PHONE TO SILENT AND THAT NO RECORDING DEVICES ARE PERMITTED.

- A. CALL TO ORDER (6:00 p.m.)
- B. ATTENDANCE
- C. APPROVAL OF AGENDA
- D. DISCLOSURE OF PECUNIARY INTEREST OR GENERAL NATURE THEREOF
- E. DELEGATION, DEPUTATIONS, AND PRESENTATIONS
 - 1. Deputation by Interim Fire Chief Giberson Pages 2-113
Re: Emergency Management and Master Fire Plan-
- F. CONFIRMATORY BY-LAW – 19-69
- G. ADJOURNMENT



Mississippi
Mills



**MMFD
Special Session to Council
20 Jun 2019**

**Steve Giberson
Interim Fire Chief**

Agenda

- Basics of the Fire Protection and Prevention Act (FPPA)
- How Emergency Response By-Law 19-59 reflects FPPA requirements
- Community Emergency Management Co-ordination (CEMC) update
- Open Air Burning By Law Options
- Introduction of the Master Fire Plan (MFP)
- Guidance from Council

Reference: *Fire Protection and Prevention Act, 1997*

Municipal responsibilities:

- ***Shall*** establish a program to include public education and certain components of prevention (*fire code*)
- Provide such other services ***as deemed necessary***

Analysis:

- Cost/Benefit to the Township of MMFD services
- Political Capital/Risk to maintaining MMFD services

FPPA mandated services outlined in By-Law 19-59:

- Fire Inspection (requested/complaints)
- Public education (school engagements)
- Fire Prevention (by-law enforcement)

Notes:

- FPO duties are conducted by Trg O.
- Sporadic Public Education Initiatives
- Inspections are reactive vice proactive
- Cadet Program will target youth as part of education outreach

Deemed necessary Services outlined in By-Law 19-59:

- Basic/Structural /Rural/Vehicle Firefighting
- Interior Search and Rescue
- Mutual Aid
- Vehicle accidents (to include extrication)
- Assistance to other services/public

-
- Tierd Medical Response (currently no agreement with Lanark)
 - Hazardous Materials
 - Surface Water/Ice Rescue
 - Industrial and Machinery Rescue
 - Fire Investigation

Township Emergency Management is housed by MMFD

- Community Emergency Management Co-ordinator (CEMC)
- Township Emergency Operations Center (EOC)
- Co-ordination of Community Control Group (CCG)

Cost Factors:

- Single Points of failure: (Chief/CEMC, FPO/Trg O)
- 48hrs/year available for currency maintenance (\$60K)
- Aerial Operations
- Emergency Medical Responder (EMR) (\$40K to initialize)
- Water/Ice Rescue Operations
- Apparatus Maintenance
- Township Emergency Operations Center (EOC)

Risk Factors:

- Loss of life/serious injury to MMFD personnel
- Failed rescue attempts
- Credibility of Township governance (residents/County/Province)

Benefit Factors:

- Meet minimum FPPA standards for Township requirements
- Establishment of an Ontario Fire College (OFC) Regional Training Center (RTC) results in lower costs for MMFD training and potential income source to train outside agencies
- Potential Response Agreement with Lanark Highlands to provide services.
- Dedicated infrastructure for Emergency Management

Political Capital Factors:

- Protection of residents
- Dedicated Emergency Management at municipal level
- Credibility of Township governance (residents/County/Province)

Emergency Management:

- MMFD is the initiating agency to call in active partners both within the Township and outside support agencies at county and provincial levels
- Public Definition of what constitutes an Emergency for Township
- Township Emergency Communications (interactive/one-way)
- MM EM reference guide to be updated
- EOC is not properly furnished or equipped
- Separation of staff work and decision briefs
- Community Control Group activation and interaction
- Need for volunteer co-ordination mechanism.
(Good Samaritan/Lanark Social Services/MMFD?)

Open Air Burning By-Law

- Currently no burning within Almonte.
- Change to allow burning should require individual property assessment for proper clearances for each burn permit
 - Who will do this?
 - Burn permit fees?
- Could allow residents to self govern in accordance with stated clearance requirements. Increased risks assumed by Township.

Master Fire Plan

- Was contracted to an outside source. (10K)
- Resulted in a total of 67 recommendations. Very aggressive 5 year plan for a small volunteer department.
- Document is useful as a roadmap and many of the recommendation can be implemented at the station levels over time.
- Primary concern of council should be the integration of MMFD infrastructure and apparatus life cycle in to the Township capital asset management program.
- Near term major costs as recommended in MFP:
 - Pakenham Station upgrade/replacement (\$\$\$)
 - MMFD Medical First Responder Service (\$40K)
 - Apparatus replacement in 2020 (\$200K)

Guidance from Council Sought

- Does council desire to attend Ontario Fire Marshal and Emergency Management (OFMEM) 1-day training for Municipal Governments?
- Does council wish to pursue Tiered Medical Response in accordance with By-Law 19-59?
- Does Council desire MMFD to enter into a response agreement with Lanark Highlands?
- Mechanism of activation and conduct of the Community Control Group (CCG)?
- Does council wish to pursue changes to current open air burn by-law?



Mississippi
Mills



**MISSISSIPPI MILLS
FIRE DEPARTMENT**

**MASTER FIRE
PLAN**

2019-2024

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1.0 Foreword

The Mississippi Mills Fire Department was created as the result of the amalgamation of the town of Almonte with the Townships of Ramsay and Pakenham in 1998. At the time of amalgamation there were two fire departments, Almonte and Pakenham, each with a proud tradition of serving the community for many years.

Today, the Department consists of 47 volunteer and full-time firefighters and officers who remain dedicated to provide assistance to those who require help in time of their greatest need. Whether it is a medical emergency, a fire or providing public fire prevention education, all members of the Department strive to perform professionally and competently to exceed public expectations. There is a profound sense of duty to serve shared by all members.

To continue to advance and ensure that the services provided are appropriate, efficient and effective, the Department has undertaken its first Fire Master Plan. This Plan is the result of both an external review and internal analysis of the Department. The Plan benchmarks the performance of the Department against both Ontario Fire Marshal (OFMEM) and National Fire Protection Association (NFPA) standards. It also reflects a comprehensive internal analysis realized through a comprehensive engagement process to determine cultural, organizational or other issues that may adversely impact efficiency and effectiveness.

The Plan describes the current state of the Department and provides recommendations to improve service delivery. It has been developed for a five year time frame from 2019 to 2024. The Plan proposes strategic improvements that will enable the Department to continue its journey of continuous improvement in efficiency and effectiveness of service delivery. It addresses the challenges of recruiting and retaining volunteer firefighters. Infrastructure has been critically examined and need for priority remediation identified.

Fire departments in Ontario are evolving with growing emphasis on prevention rather than simply fighting fires. The legislative, regulatory and liability environment has changed markedly over the years with far greater emphasis on safety, accountability and risk management. As a result, performance expectations have increased dramatically and roles and responsibilities continue to change with new requirements.

To facilitate successful sustained continuous improvement, this Plan has been prepared with the participation of the Department's firefighters and officers. We are confident that the recommendations are supported, can be implemented and will result in continuation of our tradition of service excellence.

Scott Granahan, Chief,
Mississippi Mills Fire Department
March 26, 2019

2.0 Introduction

This Master Fire Plan will provide a framework to guide future policy, organizational, capital and operational planning decisions for the Mississippi Mills Fire Department (MMFD).

The Ontario Fire Marshal (OFMEM) has provided a concise summary of the objectives of a Master Plan as follows:

“Every fire department should be guided by a master or strategic plan. This Community Master Fire Protection Plan traditionally focused on the identification of fire hazards and planning an appropriate suppression force response. Today, hazard or risk assessment has expanded well beyond the fire problem in the community to include emergency medical incidents, hazardous materials incidents and many other emergency situations. Paradigms are being shifted to emphasize the concept of fire prevention and control systems as communities attempt to effectively reduce losses experienced. This document should include plans for human resources and program financial support as well as the many external influences that impact on the fire service. The information contained within the Community Master Fire Protection Plan should provide a clear and concise overview of the most recently adopted organizational goals and objectives, budgetary commitments, mission statements and assessments of organizational activity. The document should cover a long range planning period of five to ten years.”¹

The *Fire Protection and Prevention Act* (“FPPA”) makes municipalities responsible for the provision of fire protection services. Section 2(1) of the FPPA requires municipalities to provide: 1) public education with respect to fire safety and fire prevention; and 2) such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

Traditionally, many have assumed that the requirements under the FPPA can be met by simply creating a fire department. In the absence of a comprehensive hazard and risk assessment and a considered matching of service provision to needs and circumstances, this view may not address the requirement to provide fire protection services that *may be necessary in accordance with its needs and circumstances*.

Further, what may have been an appropriate response in the past may be out of date as a result of new developments, new standards, or changing legislative requirements. Thus, the determination of what “may be necessary in accordance with its needs and circumstances” is one of the key objectives of a Fire Master Plan.

¹ Personal Communication, Dan Koroscil, Advisor (ret.), Ontario Office of the Fire Marshal

Current challenges faced by MMFD are similar to those faced by many rural/urban interface fire departments in Ontario. Increased rigour from statutory and standards requirements related to firefighter health and safety, improved and more advanced suppression technology, increased skills and competencies required, changing work patterns where fewer firefighters are available for workday response, and increased emphasis on prevention and public education are examples of common themes. In addition, the presence of high risk institutional and commercial occupancies, high value residential occupancies, and extensive wildland areas present unique challenges.

3.0 Methodology

A great plan is more than the production of a report. For the document to truly ‘live and breathe’, be inspiring, and be successfully implemented the project methodology has incorporated the following objectives:

First, the Plan needs to reflect the collective energy of the team to build enthusiasm for a positive future and reflect both a shared sense of purpose (mission) and desired future (vision). As well, the plan needs to reflect and articulate shared values. Development of Values is critical to promoting a clear understanding of expected behaviours both in and outside the workplace.

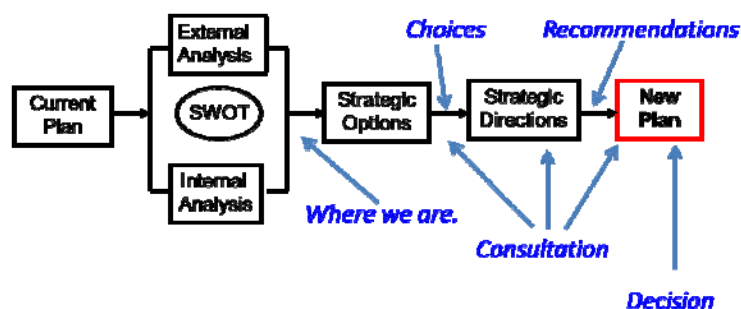
The second key objective in the development of the plan is to create a process that is inclusive, consultative and collaborative. Thus, the process has been designed to involve firefighters, Council members, Senior municipal leadership as well as fire department officers.

The third objective of the process is to build consensus and ‘buy in’ so there is enthusiasm, commitment and energy in the implementation of the plan. The process should not only lead to a robust Plan, it should also assist Firefighters, Council and the community to better understand and support the Department’s role and priorities.

The fourth objective is to base the plan on solid, quantitative information to ensure future direction and recommendations are based on objective evidence and recognized ‘best practice’.

This Plan addresses traditional strategic planning components including Mission, Vision and Values as well as multi-year strategic directions as outlined in Figure 1.

Figure 1: Fire Master Plan Strategic Planning Framework



also addresses multi-year capital requirements related to apparatus, station assessment and location as well as tactical objectives for training, suppression, public education, fire prevention, department organization and human resource planning.

The Plan development provides extensive documentation and analysis of data to fully understand the role, challenges and performance of the Department

Hazard identification and risk analysis is a critical component of the study and provides the foundation for the multi-year plan. It is the foundation by which the determination of what may be necessary in accordance with needs and circumstances. The risk analysis includes analysis of response coverage to reflect statistical need in terms of risk, population, demographics and call volume. The plan documents and evaluates emergency response times and deployment.

The existing apparatus replacement plan was reviewed and updated.

An extensive review of the existing fire stations has been conducted including consideration of location options. The review referenced National Fire Protection Association 1720 standards, Underwriters Insurance Dwelling Protection Grade standards, and Ontario Fire Marshal guidelines. Response travel time model was developed and an assessment of station location options was considered.

Recommendations are presented as a summary in Appendix I. As a future step, this Appendix can be utilized to develop an “Action Plan” with timelines to facilitate multi-year planning, implementation and budgeting.

A SWOT analysis was performed to identify the current and likely future risks to MMFD. This analysis utilized information from the interviews that occurred with firefighters and officers, CAO, relevant department heads and neighbouring Fire Chiefs.

Five key questions were used to guide the interviews: *What is working well today? What do you see as the key issues facing the Department? What would you like to see changed? What would you like to stay the same? Any other advice or comments?*

Recommendations and a draft report was then developed in consultation with the Chief. A final was then prepared.

4.0 Statutory, Regulatory and Policy Requirements

Fire departments in Ontario operate within a statutory and regulatory environment. A key purpose of the Strategic Master Fire Plan is to ensure continued compliance with legal requirements. Further, there are a number of policy statements provided by the Ontario Fire Marshal which, although not legally mandated, are important to acknowledge and implement as part of risk management, due diligence and compliance with ‘best practice’.

4.1 *Fire Protection and Prevention Act, 1997*

The relevant legislation for the operation of a fire department in Ontario is contained within the Fire Protection and Prevention Act, 1997 (FPPA).

The FPPA recognizes the importance of implementing the *three lines of defence* to achieve an acceptable level of fire safety within communities.

The three lines of defence are:

- I. *Public Education and Prevention:*** *Educating residents of the community on means for them to fulfill their responsibilities for their own fire safety is a proven method of reducing the incidence of fire. Only by educating residents can fires be prevented and can those affected by fires respond properly to save lives, reduce injury and reduce the impact of fires;*
- II. *Fire Safety Standards and Enforcement:*** *Ensuring that buildings have the required fire protection systems, safety features, including fire safety plans, and that these systems are maintained, so that the severity of fires may be minimized;*
- III. *Emergency Response:*** *Providing well trained and equipped firefighters directed by capable officers to stop the spread of fires once they occur and to assist in protecting the lives and safety of residents. This is the failsafe for those times when fires occur despite prevention efforts.*

The FPPA requires each municipality in Ontario to establish fire prevention and protection services as follows:

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

Further, Section 8 (1) of the FPPA provides that “*There shall be a Fire Marshal who shall be appointed by the Lieutenant Governor in Council*”. FPPA specifies the duties of the Fire Marshal which include responsibilities to assist in the interpretation of the Act, to develop training and evaluation systems and enforcement of the Act and its regulations.

4.2 Fire Code

The Fire Code is a regulation made under the Fire Protection and Prevention Act (FPPA). It provides the minimum legal requirements and measures for the fire safety of persons and buildings, including the elimination or control of fire hazards in and around buildings, the maintenance of life safety systems in buildings, the establishment of a fire safety plan in certain buildings and the installation of smoke alarms and carbon monoxide alarms.

The owner is responsible for complying with the Fire Code. The municipal fire department enforces the Fire Code. The FPPA Part III Section 11(1) specifies that the fire chief of every fire department and any member of a fire prevention bureau as part of a fire department can issue orders to owners/occupants to ensure compliance with the Ontario Fire Code.

Fines for violation of the Fire Code can be quite significant. Examples under the Provincial Offenses Act Part I Fines:

- Failure to install smoke alarms - \$295.00
- Failure to install carbon monoxide alarms -\$295.00
- Failure to make records available to Fire Inspectors - \$195.00
- Individual - Fire Code Violation – Maximum \$50,000 fine + 1 year in prison
- Corporation - Fire Code Violation – Maximum \$100,000 fine + 1 year in prison

4.3 Public Fire Safety Guidelines

The Ontario Fire Marshal (OFMEM) has developed Public Fire Safety Guidelines (PFSG) to assist municipalities in making informed decisions with regard to determining local “*needs and circumstances*” and achieving compliance with the FPPA. The guidelines are intended to be used to assist in the development of a municipal fire risk management program.

Relevant PFSG’s to the Strategic Master Fire Plan include:

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

PFSG 00-00-01 provides interpretation and advice regarding the delegation of responsibilities and relationship between the Province and municipalities regarding fire protection, suppression and public safety. The PFSG notes:

“Municipalities are compelled to establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention. The Act also states that municipalities are

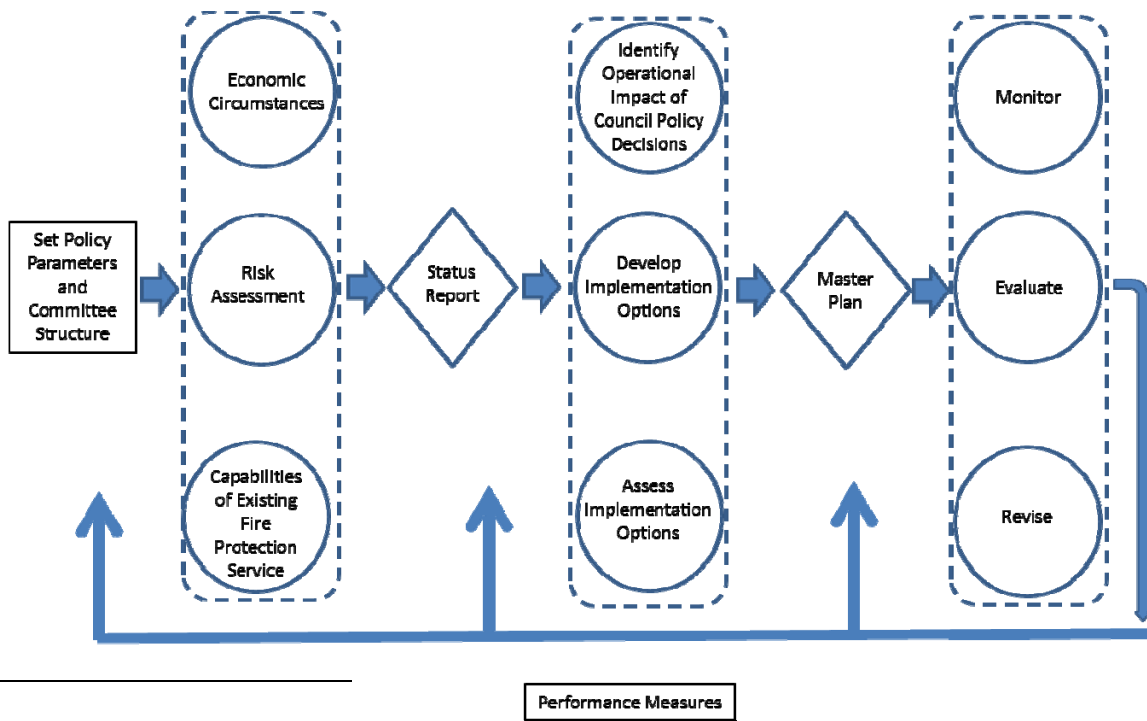
*responsible for arranging such other fire protection services as they determine may be necessary according to their own needs and circumstances. The relationship between the province and municipalities is based on the principle that municipalities are responsible for arranging fire protection services according to their own needs and circumstances”.*²

The PFSG has the following objectives:

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

Figure 2 illustrates the "Optimizing Public Fire Safety" model application of the guidelines.

Figure 2: Optimizing Public Fire Safety



²

<http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireserviceresources/publicfiresafetyguidelines/00-00-01.html>

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

PFSG 04-40-03 and 04-40-12 identify the four minimum requirements to comply with FPPA Section 2. (1) (a) *“establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention”*.

The requirements include: 1) Simplified risk assessment, 2) A smoke alarm program, 3) Fire safety education material distributed to residents/occupants; and 4) Inspections upon complaint or when requested to assist with code compliance.

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

PFSG 04-08-10 provides interpretation as to the requirements under the FPPA Section 2. (1) (b) *“provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances”*.

The key concept in this PFSG is that *“Fire suppression is one aspect of the three lines of defence; the other two lines are Public Education and Prevention and Fire Safety Standards and Enforcement. A municipality needs to evaluate its existing fire suppression capabilities to ensure that it is managing all fire risk levels within the community, responding to and addressing fires that occur, and meeting public and council expectations”*.³

PFSG 01-02-01 “Comprehensive Fire Safety Effectiveness Model”

PFSG 01-02-01 was developed to assist municipalities in evaluating their level of fire safety. It identifies eight key components, all of which impact on the fire safety of the community. The components include:

- 1. Assessing Risk** - identify potential fire risk scenarios such as older buildings, high rise, commercial and industrial occupancies, vulnerable occupancies, water supply, exposure risks, and the risk which the combination of these factors pose to the occupants.
- 2. Fire Prevention Program Effectiveness** - Enforcement of regulations (codes) and standards.
- 3. Public Attitude** - Improve public attitudes toward the prevention of fire.
- 4. Detection Capabilities** - Notify occupants to escape.
- 5. Built-in Suppression Capabilities** - Automatic sprinkler protection.
- 6. Intervention Time** - Fire Department intervention time is crucial in determining the consequences of a fire.

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<http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireservicerresources/publicfiresafetyguidelines/04-08-10.html>

7. Fire Ground Effectiveness - affects the degree of damage to the environment, property loss, personal injury and death from fire.

8. Impact of Fire - Properties whose loss would result in a significant financial burden to the community, significant impact of local employment, significant environment risk, impact of a major fire?

The components are seen as interdependent. Deficiencies in one of the components can be offset by enhancements in another component or components. For example, by developing programs and providing resources to effectively implement the first line of defence, a proactive public education and prevention program, the need for the other lines of defence can be reduced.

The Model acknowledges that municipalities must manage increasing public expectations as well as budget pressures. It suggests fire services within Ontario must critically assess their fire protection needs and identify new, innovative ways to provide the most cost effective service. There is more to providing fire protection services than fighting fires.

The Model suggests that every municipality should be guided by a master or strategic plan covering a planning horizon of five to ten years. It promotes shifting from the traditional focus of fire suppression to a more comprehensive risk assessment and use of fire prevention and control systems.

PFSG 01-01-01 “Fire Protection Review Process”

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

- *PFSG 02-03-01 “Economic Circumstances,*
- *PFSG 02-02-03 “Comprehensive Community Fire Risk Assessment” and*
- *PFSG 02-04-01 “Capabilities of Existing Fire Protection Services.*

Detailed analysis of these components are included within this report to provide the background and rationale to support the recommendations of this the Plan.

PFSG 04-40D-03 Inspections upon Request or Complaint

This PFSG⁴ is designed to assist fire departments in developing procedures to ensure that fire safety inspections are conducted, pursuant to the Fire Code, upon request or complaint. Although building owners are responsible for carrying out the provisions of the Fire Code, Fire Services have a public safety interest in ensuring that buildings are maintained in accordance with the provisions of the

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<http://www.mcscs.jus.gov.on.ca/english/firemarshal/fireservicerresources/publicfiresafetyguidelines/04-40d-12.html>

Fire Code to prevent fires, protect occupants as well as firefighters should a fire occur.

Inspections of properties must be conducted, or arranged for, by the municipality when:

- A complaint is received regarding the fire safety of a property;
- A request is made by a property owner or occupant for assistance to comply with the Fire Code where the involvement of the Chief Fire Official is required; and
- The fire department becomes aware of Fire Code violations and/or other fire hazards at a particular property. ***This clause is particularly important as it is increasingly being interpreted as rational for pro-active fire inspections of occupancies where there are known fire hazards.***

The PFSG provides interpretation regarding the following key Regulations that must be enforced by fire services in Ontario

Ontario Regulation 365/13 – Mandatory Assessment of Complaints and Requests for Approval – requires that fire safety assessments and inspections, if necessary, be undertaken as directed by the Fire Marshal for:

- (1) every building or property for which a fire safety complaint is received; and
- (2) every building or property for which a request for assistance to comply with the Fire Code is received and the involvement of the Chief Fire Official is required.

Ontario Regulation 364/13 – Mandatory Inspection – Fire Drill in Vulnerable Occupancy – Requires that fire safety inspections be undertaken, as directed by the Fire Marshal, for every care occupancy, care and treatment occupancy and retirement home for which an annual fire drill is required by Sentence 2.8.3.2.(2.1) of Division B of the Fire Code.

Further, the following directives have been created as part of this Guideline to assist municipalities in understanding and complying with their responsibilities regarding:

- Fire Marshal Directive 2014-001, Registry of Vulnerable Occupancies
- Fire Marshal Directive 2014-002, Vulnerable Occupancies – Fire Drill Scenarios, Fire Drill Observations, Fire Safety Inspections
- Fire Marshal Directive 2014-003, Inspections of All Buildings

The guideline states that the fire department's fire prevention policy and operational guidelines should contain criteria to determine how quickly and in what manner a complaint/request is addressed as well as appropriate follow-up with enforcement may be required to ensure corrective action has been taken.

The following factors should be considered when developing Fire Department Prevention Guidelines and Policies:

- The type of inspections to be conducted and the buildings to be inspected.
- The methods of inspection appropriate for the circumstance. This will have implications for the amount of time required to inspect, as more comprehensive inspections require more time.
- The classification of buildings being inspected and the skills and knowledge required to inspect them. The more complicated the building, the more skill and knowledge required.
- Technical assistance required to assist with conducting the inspection, e.g. Electrical Safety Authority, Professional Engineer.
- The seriousness of the complaint received.
- Records management policies (Inspection history of the building including non-compliance or Inspection Orders issued).

Fire departments are expected to respond to requests to assist owners to comply with fire safety legislation in accordance with Directive 2014-003.

Conducting complaint inspections will assist communities and their fire departments to mitigate liability concerns. A complaint may be received from a number of sources including: the public, fire suppression crews, outside agencies or government ministries. Complaints are often initiated as a result of a dispute. Therefore it is important that the inspector must demonstrate impartiality and remain focused on the fire safety concern that has been raised. Any fire code violations or other fire and/or life safety hazards identified during the inspection must be reported to the property owner or other person having responsibility for the property.

When a fire department becomes aware of a Fire Code violation or other fire and/or life safety hazard at a property, it is necessary to conduct an inspection to confirm the violation or hazard, and take the required steps are taken to ensure the owner corrects the violation or eliminates the hazard.

When an owner is unwilling to comply with the Fire Code or correct a fire and/or life safety hazard voluntarily, the fire official should exercise their enforcement authority provided by the FPPA. *Failure to do so could expose the municipality to potential liability for failing to exercise due diligence.*

The PFSG strongly encourages Code enforcement inspections of high risk properties. High risk properties identified include:

- Properties where a fire would have a significant impact on the community, (employment, social, environmental impact);
- Assembly occupancies;
- Multi-unit residential occupancies;
- Industrial occupancies;
- Older buildings in downtown core;
- Care and treatment occupancies;

- Care occupancies; and
- Retirement homes.

Once a community's fire risks have been identified, inspection programs which are most likely to address these risks should be implemented. Inspection priority should be based on the degree of risk. The frequency of the inspections will depend on the resources provided by the municipality or as regulated.

The following are other relevant PFSG's which are available at the [OFMEM](http://www.ofmem.ca) web site - <http://www.mscs.jus.gov.on.ca/>.

04-38-15	Role of Assistant to the Fire Marshal
04-39-12	Fire Prevention Effectiveness Model
04-40-12 & 03	Selection of Appropriate Fire Prevention Programs
04-40A-12 & 03	Simplified Risk Assessment
04-40B-12 & 03	Smoke Alarm Program
04-40C-12 & 03	Distribution of Public Fire Safety Education Materials
04-40D-12 & 03	Inspections upon Request or Complaint (Fire Code)
04-41A-13	Community Fire Safety Program
04-45-12 & 03	Fire Prevention Policy
04-47-12	Development of Fire Prevention By-laws
04-48-12	Liaison with Building Department
04-49-12	Liaison with Other Government Agencies and Individuals
04-50-12	Fire Safety Inspection Practices
04-52-12 & 03	Fire Investigation Practices
04-60-12	Records Management
04-80-01 & 23	Fees for Services
TG-01-2012	Fire Safety Inspections and Enforcement

5.0 Community Profile, Hazard Identification and Risk Assessment

5.1 Community Profile

The Municipality of Mississippi Mills was incorporated on January 1, 1998, as a result of the amalgamation of the town of Almonte with the Townships of Ramsay and Pakenham.

Mississippi Mills is located in the eastern portion of the County of Lanark and shares its south-eastern boundary with Lanark and its south-western boundary with the Town of Carleton Place and Beckwith.

The north-western boundary is shared with the City of Ottawa and the north-eastern boundary is shared with the Township of McNab-Braeside.

Mississippi Mills is approximately 50 kilometres from downtown Ottawa.

First settled in the early 1800's, the area attracted woollen mills and other industry due to the abundance of water power from the Mississippi River.



Figure 3: Mississippi Mills & Surrounding Municipalities.

The Town of Almonte thrived with a peak of seven woollen mills thirty stores and forty other businesses by the mid 1800's.

The early development of the rural areas of the Municipality was based primarily on agriculture and forestry. In addition to the mills located in Almonte, other mills were developed along the rivers resulting in the development of the villages of Pakenham, Clayton, Appleton and Blakeney.

Although the woollen and other mills have long been closed, the community has continued to thrive. The close proximity to the City of Ottawa, scenic beauty of the area, impressive heritage buildings, cultural richness, and availability of schools, health care, retail amenities as well as commercial and industrial

employment provides a quality of life that continues to attract investment and significant population growth.

The land area of Mississippi Mills is 525 square kilometers. The physical landscape is defined by the Mississippi River which bisects the Municipality. Most of the agricultural land is located on either side of the Mississippi River. The north-eastern portion of the Municipality is dominated by more rugged land associated with the Canadian Shield.

Almonte has developed as the urban center of Mississippi Mills with a hospital, high school, municipal offices and commercial occupancies. Surrounding villages and hamlets include Appleton, Bennies Corners, Blakeney, Cedar Hill, Clayton, Galbraith, McCrearys, Montgomery Park, Pakenham, and Snedden, The Tannery, Uneeda, and Union Hall.

The Pakenham area is known for Mount Pakenham, a popular skiing location and the five-arch stone bridge across the Mississippi River. Built in 1901, it is the only five-arch stone bridge in North America.

There are two fire stations in Mississippi Mills. Station #1 in Almonte and Station #2 in Pakenham

The vision of Mississippi Mills is:

“Mississippi Mills is an outstanding urban and rural community that is recognized for its natural and architectural beauty, high quality of life and respect for its heritage and environment. In its vision of the future, the community will be seen to promote and manage balanced economic growth.”⁵

⁵ Mississippi Mills Official Plan, 2017

5.2 Demographic Profile

Table 1, 2 and 3 presents a demographic summary of the Municipality. In 2011, the population was 12,385. The population was 13,163 in 2016, a growth of 6.3%.

Growth is expected to continue predominantly in the serviced areas of Almonte resulting in a population of 15,115 by 2016 and 17,357 by 2036.⁶

Table 1: Mississippi Mills Historic and Projected Population Growth

	1991*	2001*	2011*	2016*	2021**	2026**
Almonte	4,382	4,649	4,822	5,039	5,604	6,210
Ramsay	3,624	4,874				
Pakenham	1,782	2,124				
Total	9,788	11,647	12,385	13,163	14,105	15,115

* Statistics Canada

** Municipality of Mississippi Mills Water and Wastewater Master Plan Update J.L. Richards 2018

As shown in Table 2, the proportion of elderly in Mississippi Mills is 21.3% which is significantly higher than the Provincial average of 16.7%.

Table 2: Mississippi Mills Population Age Distribution (2016 Census)

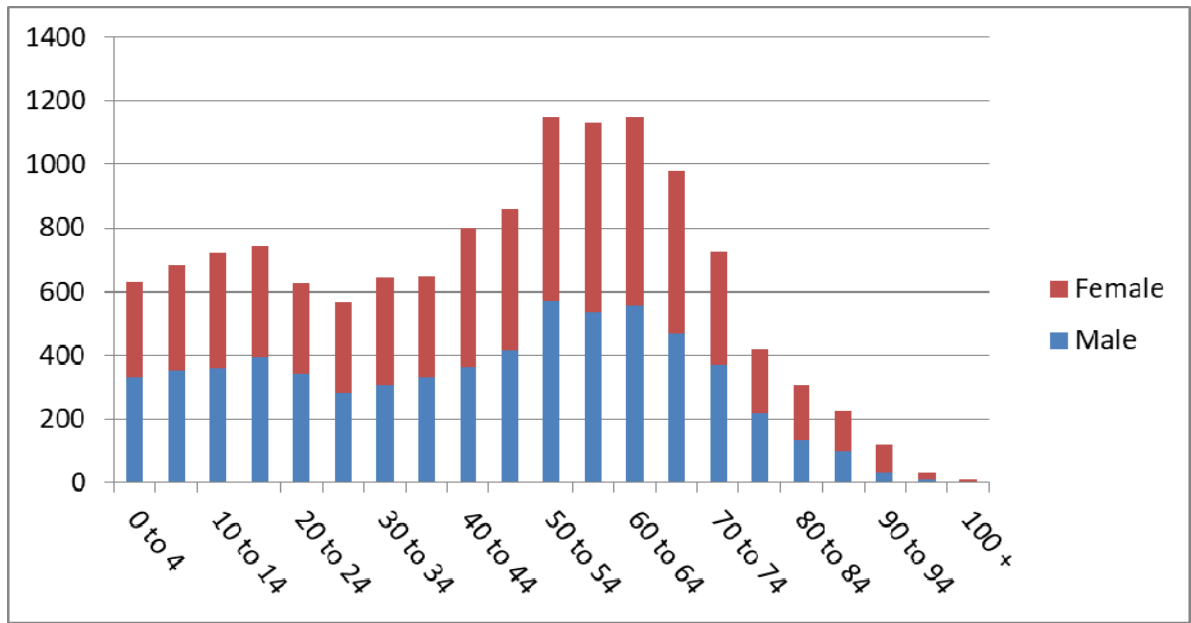
Age Group	Population	Mississippi Mills Percent	Ontario Percent
0-14	2,040	15.5%	16.4
15-65	8,315	63.2%	66.8
65+	2,810	21.3%	16.7
Total	13,165	100%	100%

Source: Statistics Canada

Figure 3 illustrates the population distribution by five-year age groups.

⁶ Municipality of Mississippi Mills Water and Wastewater Infrastructure Master Plan Update, J.L. Richards & Associates, February 2018

Figure 4: Mississippi Mills Population by five-year age Age Groups



Source: Statistics Canada (2016 Census)

One of the challenges volunteer departments face is the increasing number of firefighters who no longer work in the community. The trend in many rural areas is that the employed labour force often commutes considerable distances to their work place which means that work day response times with adequate personnel may be compromised.

Table 4 presents a summary of commuting times for the employed labour force of Mississippi Mills. Although the majority of employed residents have a commute of greater than 15 minutes, there is still a substantial number (1,445) who have a commute of 15 minutes or less.

Table 3: Commuting duration for the Mississippi Mills Employed Labour Force (2016 Census)

Commuting Duration	Number of Residents
Less than 15 minutes	1,445
15 to 29 minutes	1,460
30 to 44 minutes	1,450
45 minutes and over	1,320
Total	5,875

Source: Statistics Canada

5.3 Occupancy Profile

Table 5 presents the occupancies identified by the Ontario Municipal Property Assessment Corporation (MPAC). The occupancies reflect the predominantly rural nature of the Municipality with relatively few assembly or industrial occupancies.

Table 4: Mississippi Mills MPAC Identified Properties

Occupancy	Number
Single Family Detached	3822
Multi-Story Residential	14
Residential with Commercial	29
Residential Semi-Detached/Duplex/Town/Row	491
Multi-Unit Residential (3 Units +)	37
Condominium	98
Mobile Home	24
Seasonal	88
Bed & Breakfast	3
Office	18
Retail - Small	53
Retail-Large	3
Retail-Mixed	51
Restaurant	5
Automotive Fuel & Specialty Automotive	16
Campground	4
Golf Course	3
Ski Resort	1
Communication buildings	4
Industrial	24
Transformer Stations, Generating Stations	7
Solar Generating Facility	2
Pipelines	2
Water Treatment Facility	1
Sewage Treatment Facility	1
Gravel, Sand, Quarry Pit	5
Railway Buildings, Lands	4
Schools, Day Care	7
Hospital	1
Nursing Homes	2
Retirement Homes	2
Place of Worship	15
Funeral Home	2
Sport and Other Clubs	6
Exhibition/Fair Grounds	1
Sports Complex	2
Museum, Library	3
Assembly, Community Hall	1
Medical Research	1
Fire Hall, Police Station	1
Farms	626

Source: MPAC Property Code Report, 2018. Note: Does not include vacant lands

5.4 Hazard Identification

Almonte has experienced rapid growth over the past 20 years with new residential sub-divisions and large retail stores. There remains a traditional business area in Almonte with Type 3, ordinary construction (masonry exterior walls and combustible interior beams).

There are no high rise buildings in the Municipality. There are institutional occupancies including schools, a hospital, two nursing homes and two retirement homes. Care facilities such as hospitals, nursing homes, retirement homes and seniors housing facilities where residents may not be able to self-evacuate have received recent legislative attention due to numerous fatalities and are designated as “Vulnerable Occupancies”.

The Pakenham Mountain area has a ski hill and number of occupancies which are difficult to access with heavily forested areas and rough terrain. This area also has numerous trails which are used by hikers, hunters, ATV’s and snowmobiles.

In compliance with the Emergency Management Act, Mississippi Mills has completed an identification of hazards and assessed their associated risks to determine which hazards are most likely to result in an emergency. This has resulted in creation of Hazard Identification and Risk Assessment Sheets (HIRA) which identify the type of hazard, probability of occurrence and relative consequence.

Risks identified by the Community Risk Profile that impact the Fire Department include:

- Forest and wildland fires
- Multi-casualty events related to weather.
- Multi-casualty events relate to transportation accidents
- Flood control, dam failure
- Hazardous materials (insecticides, propane, ammonia, chlorine)
- Trans Canada Pipeline, Enbridge Gas Line
- Swift water/ water rescue
- Wilderness search & rescue
- Structural collapse (Heavy Urban Search & Rescue, HUSAR)

5.5 Historic Call Volumes

Analysis of emergency response calls over time provides a useful perspective on the type and frequency of hazards. Table 6 illustrates the type and frequency of calls between 2015 and 2018 including the 4 year average.

Table 5: Mississippi Mills Fire Annual Call Volume

Response Type	2015	2016	2017	2018	Average
Structure Fire	12	25	7	29	18
Outdoor Fire (grass/wildland)	1	15	3	13	8
Controlled Burn	13	21	9	16	15
Alarm Activation	27	32	42	27	31
Carbon Monoxide	11	8	11	20	13
Gas Leak	1	3	1	2	2
Power Lines Down	11	10	19	13	13
Motor Vehicle Collision	9	23	14	25	18
Persons Trapped in Elevator	1	0	2	0	1
Water Rescue	0	0	2	0	0.5
Other Rescue	1	1	0	1	1
Medical	4	5	10	5	6
Assistance to Other Agencies/Other Public Service	0	11	7	5	6
Mutual/Automatic Aid	3	8	7	13	8
Calls Cancelled on Route	15	13	24	20	18
Other	15	30	19	29	24
Total	124	205	177	218	181

Based on the most recent 4 year period, MMFD responds to an average of 181 calls per year, with an average of 18 structure fires, 18 motor vehicle accidents, 6 medical calls and 8 grass/wildland fires.

Alarm activations average 31 per year with a peak of 42 in 2017. This volume of calls for alarms activated is not unusual for an urban community with a number of commercial and institutional occupancies that are equipped with alarms. Medical calls are infrequent compared to many peer Fire Departments, however, the number of calls is not unexpected as there is an EMS Station in Almonte.

It appears that the number of calls is increasing over time which is expected as the Municipality continues to grow and develop. Ongoing fire prevention efforts should decrease the number of structure fires and ongoing liaison between the Fire Department and commercial and institutional occupancies should facilitate a reduction of activated alarms.

Global warming may result in an increase in grass/wildland fires. Mutual aid participation can also be expected to increase as the County municipalities continue to work together.

5.6 Hazard Analysis and Risk Assessment

Over the past four years, MMFD has had to respond frequently (once per month on average) to:

- Structure Fires
- Wildland and Grass Fires
- Carbon Monoxide Calls
- Motor Vehicle Accidents

Over the same period MMFD occasionally (1 to 11 times per year) has had to respond to medical calls, elevator rescue, propane and natural gas leaks, power lines down and water/ice rescue.

In the past four years, MMFD has not required advanced technical rescue services such as trench, confined space, hazmat, rope or high angle rescue.

It is reasonable to assume that a Fire Department should be authorized and funded to provide services for events that occur frequently. Infrequent events require judgement depending on frequency of occurrence, risks involved, training and equipment expense and availability of specialized rescue services from nearby Departments.

Specialized rescue services including Water, Ice, Trench, High Angle, CBRN, HUSAR and Confined Space are available from Ottawa Fire Services.

Medical calls, elevator rescue, propane and natural gas leaks, power lines down occur with sufficient frequency that they should continue to be authorized with appropriate training.

Water and Ice Rescue is a challenge for a small department in terms of the competency required on the part of the trainers and firefighters as well as initial cost and ongoing maintenance and inspection of equipment.

The presence of well-travelled County Roads and proximity to Hwy 7 and Hwy 417 as well as potential weather related events such as tornados create the potential for multi-casualty scenarios. Although the probability of such events is

low, the consequences are significant. Thus, planning and training for multi-casualty and major environmental events should be incorporated in the annual training curriculum.

The documentation of building occupancies identified a number of risk concerns including a hospital and other vulnerable person occupancies, schools and legacy buildings. Although pre-plans as well as specific inspection and other fire-prevention strategies have been developed for these occupancies, continued review and specific training evolutions should be maintained.

Specific recommendations will be provided in the “Strategic Directions” section of the Master Plan.

5.7 All Hazards Approach

Section 5.6 illustrates that the Mississippi Mills Fire Department has a much broader mandate than fighting fires. Fire departments have evolved from primarily fighting fires to becoming increasingly competent in managing a wide range of responses including emergency medical services and incidents requiring highly skilled technical rescue.

At the same time, except perhaps in the Nation’s largest cities, Fire Departments cannot be all things to all people. Smaller municipalities simply do not have the financial resources to train and equip firefighters for every potential emergency. Fire Departments must critically examine the breadth and depth of services they provide in light of risks and resources available.

The challenge that presents as a result is the paradox of, on one hand, restricting capability to those services that can be afforded and delivered safely yet, on the other hand, still providing the services that the public requires.

The strategy that has emerged to meet this challenge is an integrated emergency management system known as “All-Hazards”.

In Canada, the federal, provincial and territorial governments have jointly published “*An Emergency Management Framework for Canada*”⁷ which establishes a common approach for collaborative emergency management.

As a core principle, the Framework supports a comprehensive approach to emergency management which is proactive, integrates risk-based measures and is all-hazards. The Framework defines the all-hazards approach as the method by which vulnerabilities exposed by both natural and human-induced hazards and disasters are addressed.

⁷ (<http://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/mrgnc-mngmnt-frmwrk/index-eng.aspx#a02>)

The *Emergency Framework for Canada* articulates the expectation that all emergency management partners in Canada will work in collaboration to keep Canadians safe. The Framework acknowledges that in an emergency, the first response is almost always by the local authorities as that is where incidents occur. When required resources exceed the capacity of local responders at the municipal level to cope in an emergency or disaster, nearby municipalities should be prepared to assist. If further assistance is required, the Province will respond. The Federal Government is prepared to respond to requests for assistance by a Provincial or Territorial government. For major disasters, the international community may also respond.

The key steps to implementing an “All Hazards Approach” are:

- 1) Understand the potential emergencies that could arise in the community that would require a response that exceeds local capability.
- 2) Develop competencies to manage the initial response.
- 3) Identify the resources that may be required for a major event.
- 4) Develop the protocols and agreements to access services that may be required for a major event.

5.8 Risk Assessment Summary

Using an “All Hazards” and considering the identification and probability of incident occurrence, the following response framework is proposed:

Incident Type	Incident
Frequent (What we Do)	Structure Fires, Wildland Fires, Medical, MVC, CO, Lines Down, Natural Gas/Propane, Water/Ice Rescue
Infrequent (What Others do)	High Angle, Trench, Confined Space, HazMat, HUSAR,
Preparedness (What we prepare for)	Multi Casualty, CBRN, Weather (floods, ice storms etc.)

6.0 Mission, Vision and Values

A compelling theme in the academic analysis of great organizations is that there is a shared understanding of the organization's purpose, the organizations vision as to where it wants to be, and the values that drive service excellence. This common understanding is fundamental to a positive, constructive organizational culture where performance thrives. Clear articulation of a compelling, inspirational Mission, Vision and Values that genuinely reflects the aspirations and beliefs of the organization is fundamental to this goal.

MISSION (*What we do*)

The Mississippi Mills Fire Department is dedicated to the citizens, businesses, and visitors of the Municipality of Mississippi Mills We will promote, educate, and demonstrate fire safety to our customers with the ultimate goal of reducing fires and the impact fire has on our community.

Mission Statement from Appendix A of the E & R By-Law:

The Mississippi Mills Fire Department is dedicated to protecting life, property and the environment through education, fire prevention and emergency preparedness programs and when called upon, we will provide a safe, rapid and professional response to emergencies.

The Mississippi Mills Fire Department's goals and objectives help us provide the best emergency response possible to our community:

- *Reduce the incidence of injury, loss of life, and property damage by providing public education programs, fire cause investigation, and prevention services to secure public safety and code compliance.*
- *Be responsive to local and global economics so that our service model reflects the needs of the community we serve and the changing technologies that influence cost effective delivery of services to recognized standards.*
- *Provide a timely response for all services through highly trained, skilled, and efficient firefighters.*
- *Promote highly motivated and well-trained volunteer firefighters.*

VISION (*What we aspire to do*)

Mississippi Mill's Fire Department's pursuit of excellence will be never ending. The goal is to be the best at what we offer our citizens with our services.

VALUES (*Who we are*)

The people who serve on our Department are proud and honoured to serve the community. We hold Pride, Honour, Respect, Service Excellence and Courage as our core values. The success of our Department is driven by team work, and that team work is driven by our belief in our values.

We train, plan, and respond to our customers' needs with the anticipation of exceeding our customers' expectations. We understand the importance of cooperation and working together, valuing the contribution of each other and recognize the value of diversity.

We are empathetic and sensitive to the needs of every customer, realizing that those involved in an emergency situation did not want to be in that position. Mississippi Mill's Fire Department will continue to strive to be known as THAT fire department, the department that others can look to in order to achieve the highest level of service excellence.

We are dedicated to creating and sustaining a culture of safety. In all we do, our first priority is the safety of the Public, our community and ourselves.

7.0 Strategic Directions:

The following Strategic Directions have been developed to provide a framework to guide the further achievement of the Department's Vision over the next 5 years.

- 1) Safe Community – Commitment to deliver effective Public Education, Fire Prevention, Fire Suppression and Rescue Services*
- 2) To Support a Culture of Safety.*
- 3) Accountability*
- 4) Supporting Innovation*
- 5) Strategic Management*
- 6) Collaborative Relationships*

7.1 Strategic Direction #1: Safe Community – Commitment to deliver effective Public Education, Fire Prevention, Fire Suppression and Rescue Services

The strategic Direction “Safe Communities” recognizes the primary imperative of achieving optimal implementation of the three lines of defense as defined by the Ontario Fire Prevention and Protection Act (FPPA). Section 2 of the FPPA provides that:

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.

This section of the Act refers to what is known as the three lines of defence required to keep communities safe:

I. Public Education and Prevention:

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

II. Fire Safety Standards and Enforcement:

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

III. Emergency Response:

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

In the following section, current status of the program elements will be discussed and opportunities for further development will be noted.

7.1.1 Fire Prevention and Public Education

Public Education and Prevention as well as promoting and enforcing fire safety standards are critical strategies to reducing loss of life and property due to fires. Public education regarding smoke and carbon monoxide detectors, fire prevention, reducing fire hazards and having home escape plans is a proven method of preventing fires and reducing injuries and deaths.



Working collaboratively with emergency response providers such as police, emergency medical services and hospitals can extend this approach to reduce injuries, death and property loss due to motor vehicle and other accidents.

In recent years, fire prevention, inspection and public education have been led by a Deputy Chief. Although some elements of public education are in place, there is recognition that public education requires specific organizational focus. With the resignation of the Deputy Chief in 2018, recruitment of a full time Training/Fire Prevention Officer to take the lead in public education and fire inspections was undertaken.

Specific Public Fire Education and Safety Programs that should be addressed include:

- **Institutional Visits:** Yearly visits to Schools to teach fire safety with ‘Sparky’ and do a Fire Drill. Visits to Nursing Homes, Retirement Homes, Seniors

Homes, Hospital to observe Fire Drills and provide specific advice and consultation.

- **Social Media:** Spread Fire Prevention Messages throughout the year through the Newspaper and social media including Facebook, Twitter as well as the municipal and Department website.
- **Smoke Alarm Program:** Mississippi Mills Fire Services provides a Smoke Alarm Program that promotes the installation and maintenance of working smoke alarms in dwelling units. The smoke alarm program includes home escape planning. firefighters will test smoke alarms when they respond to dwelling units and will ensure that the dwelling unit is provided with a working smoke alarm prior to their departure. Further, information regarding the installation and maintenance of smoke alarms and the preparation and practicing of a home escape plan will be distributed to the public.
- **Carbon Monoxide Detectors:** Regulation 194/15 to amend the Fire Code came into effect October 15, 2014 which requires carbon monoxide alarms near all sleeping areas in residential homes and in the service rooms, and adjacent sleeping areas in multi-residential units. Carbon monoxide detectors are checked along with smoke detectors as noted above.

Penalties for non-compliance are the same as those for failing to have a smoke detector. Inspectors can issue tickets or lay charges that could result in fines of up to \$50,000 for individuals and \$100,000 for companies. Although it is possible to issue fines, the emphasis is on public awareness and education.

- **Home Inspections:** Various methods are being introduced by Fire Departments across the Province to implement home inspections. For example, The City of Ottawa has a “Wake Up” program which was implemented for smoke detectors. During weeklong blitzes in the spring and fall, fire inspectors visit homes and ask occupants to voluntarily admit them to see if they have smoke and carbon monoxide detectors as required by law.
- **Distribution of Fire Safety Information:** Includes distribution of fire safety educational material to the public at community events and other opportunities. Fire Safety pamphlets and/or other education materials, public service announcements utilizing the available media and through instructions to the public on fire safety matters at various group functions and public events are examples of public education and awareness activities undertaken.

Another opportunity is having a Fire Station Open House during Fire Prevention Week have to hand out Fire Prevention Material and answer questions. Fire Prevention displays can be set up at major retail stores. Participation in parades can also and other special events provide an opportunity for public education.

Excellent resources to address specific fire safety issues related to rural properties can be found at <http://www.equineguelph.ca/Tools/fireprevention.php>

- **Fire Safety Education for Children:** This is a specific program to provide and/or support a variety of fire safety education programs for children in the community such as the *Learn Not to Burn Program*.

The *Learn Not to Burn* initiative is based on the Canadian edition of the

National Fire Protection Association's popular children's educational series. The program has been released by the Canadian Council of Fire Marshals and Fire Commissioners and is in use in many Canadian Fire Departments. The program encourages teachers, preschool educators and parents from Ontario to use the free access to the made-for-Canada edition of the *Learn Not to Burn* curriculum. Teachers can download free *Learn Not to Burn* lessons at www.safeathome.ca/lntb, and parents can support the effort at home by using the online family fire safety activities.

Another example of a relevant Fire Safety Program is the "*Hear the Beep Where You Sleep: Every Bedroom Needs a Working Smoke Alarm*". This program reinforces the importance of being able to hear smoke alarms at night when families are sleeping.



The website and classroom lessons target children aged three to eight to learn how to recognize the smoke alarm beep, what to do when it sounds, the fundamentals of a home fire escape plan, and how to tell between things that are hot and cold.

- **Fire Safety Education for Seniors:** This initiative provides public fire safety education programs such as the Older & Wiser Program in the community to address the fire safety concerns facing seniors. Continuing to focus on this age group and implementing the fire and falls prevention program such as “*Remembering When*” will be an important priority for future development. This can be done in partnership with community agencies that provide support services to seniors. The focus of the program is on group presentations and home visits including fire and falls safety presentations and assisting with home visit inspections and smoke and carbon monoxide alarm installations.
- **Guest Speakers:** Fire Services Personnel can provide fire safety lectures and/or demonstrations for various audiences such as industries, community groups, service clubs, business groups, day care facilities and schools, upon request and where resources are available.

Section 6 of the MMFD’s Operating Guidelines addresses public Education and there is a specific OG for Station Tours. As the Public Education Program develops, additional Operating Guidelines should be developed to address the activities noted above.

Although there is little public policy direction or regulatory requirement to collaborate with other local organizations concerned with community life safety, there is a clear leadership opportunity for fire departments to work collaboratively with police, EMS

and others to focus on local priorities to reduce injuries and fatalities. Collaborative programs to address ice safety, school bus safety, and not driving when using drugs or alcohol are examples of collaborative community risk reduction programs.

Recommendation #1: *Following best practice examples, a comprehensive public education program designed to prevent fires, injury, death and property loss should be developed with specific policy statements and operating guidelines as appropriate.*

Recommendation #2: *The public education program should identify priority objectives targeted to areas of greatest risk identified through risk assessment including review of fire cause analysis, focus on provincial priorities including smoke and CO Alarms and should address high risk populations including children and seniors. In partnership with other first responders, the program should address public education priorities designed to reduce injury and fatalities due to motor vehicle and other accidents.*

7.1.2 Fire Inspection and Enforcement:

Building owners are responsible for ensuring buildings are maintained according to the requirements of the Fire Code. By working collaboratively with building owners, fire departments can create awareness, and where necessary enforce fire safety standards to ensure that buildings have the required fire protection systems and are properly maintained.

In so doing, fires are prevented and resulting damage or loss of life associated with fires that do occur is reduced. Fire Departments have a significant interest in ensuring buildings are maintained according to the Fire Code not only to ensure public safety and meet legislative requirements but also to protect the safety of their personnel who have to respond to a fire.

Fire departments are required to have a program in place to address inspections based on request or complaint or otherwise provided by specific law. A department may develop and implement additional fire safety inspections protocols to include a routine fire safety inspection program for other occupancies as determined by the community risk assessment.

OFMEM-TG-01-2012 “Fire Safety Inspections and Enforcement” provides an overview of inspection and enforcement authority under the Fire Protection and Prevention Act (FPPA) and the Provincial Offences Act (POA).

A summary of the type and frequency of fire inspections is presented in Tables 7 & 8. Fire inspections were active in the past several years but dropped off in 2018 due to the resignation of the Deputy Chief. Data regarding number of inspections prior to 2016 was not available.

Table 6: Mississippi Mills Fire Inspections by Type 2016 - 2018

	Total by Year		
	2016	2017	2018
Follow-up	86	132	48
Routine	88	41	11
Request	29	126	31
Licensing	20	40	8
Complaint	7	15	14
Safety Concern	30	8	2
Vulnerable Occupancy	4	2	0
Total	264	364	114

Table 7: Mississippi Mills Fire Inspections by Occupancy and Type 2016 - 2018

Occupancy Type	Assembly			Institutional			Residential			Business			Mercantile			Industrial			Miscellaneous		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Follow-up	23	24	14	24	24	3	32	67	14	2	2	5	2	10	5	3	5	5	0	0	2
Routine	19	1	2	1	5	0	50	31	8	5	0	1	9	2	0	4	2	0	0	0	0
Request	6	29	7	1	6	4	18	70	14	1	4	2	1	9	2	2	6	2	0	2	0
Licensing	6	5	1	7	0	2	3	30	4	1	0	0	3	4	0	0	1	0	0	0	1
Complaint	2	4	1	1	5	1	3	4	0	0	0	0	0	1	4	0	1	4	1	0	4
Safety Concern	2	0	1	5	1	0	22	5	1	0	0	0	0	0	0	1	1	0	0	1	0
Vulnerable Occupancy	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	58	63	26	43	43	10	128	207	41	9	6	8	15	26	11	10	16	11	1	3	7

With the recruitment of a full time Training/Fire Prevention Officer, MMFD should develop a comprehensive fire inspection program that will identify the type of occupancies and priority for formal inspections (required) and proactive

“consultations”⁸. The fire safety inspection program should reflect the community risk assessment, historic incident report and fire investigation data, fire hazards that are reported by the public and other officials as well as legislated requirements.

Inspections on complaint or request basis should continue as set out in O. Reg. #365/13.

Fire Prevention Officers (FPO) have various enforcement options available to them such as Inspection Orders, Part I Certificates of Offence, and Part III Information and Summons. The FPOs should have the ability to use discretion when applying measures to enforce fire code requirements depending on the circumstances and in keeping with Departmental policy.

MMFD does not currently address inspection in its Operating Guidelines or Policies. As the Fire Inspection Program is developed with the recruitment of an FPO, policies and procedures should be created for Fire Code inspections including procedures for:

- The requirement that a copy of an inspection order that requires repairs alterations or installations made to a building be provided to the Chief Building Official.
- A system and related processes for the management of fire prevention documents and records to be kept in a secure location and allow rapid retrieval of follow-up inspection reports and other related information that may be required.
- Follow-up inspections including a database that provides a method for tracking and highlighting due dates.
- Ongoing tracking and reporting of number and type of inspections including high-risk type occupancies, Group C multi-residential, Group B care and care and treatment, retirement homes and Group F industrial.
- Involvement of suppression staff conduct annual in-service smoke alarm checks along with home escape planning and checking for carbon monoxide alarms during the site visit.
- Development and use of Residential and Apartment Fire Safety Program tracking sheets to be completed by the suppression crews and given to the Training/Fire Prevention Officer.
- Procedure for the Fire Prevention Officer to follow- up with any occupancy that is not compliant with the Fire Code.
- Development of a home inspection program is focused on Class C residential occupancies and other high risk occupancies identified through the Risk Assessment as representing the highest risk for loss of life and property.
- Identifying backlog of inspections and delays in Fire Code enforcement measures.

⁸ *There can be great resistance to cooperation on the part of property owners if there is a threat of fines or other punitive measures associated with fire inspections. Whether or not there is authority under law to undertake an inspection, compliance and good will is greatly facilitated with an approach which is based on education and “I’m here to help”. Thus the word “consultation” is used to suggest a helpful approach where inspections are voluntary and one wishes to encourage an invitation.*

- Communication and management of occurrences of multiple alarms at the same property
- Assessment and determination of the need for a fire safety inspection when a complaint or request is received.
- Specific inspection (consultation) process and schedule for high risk agricultural facilities (barns, equestrian facilities, major livestock operations).
- Specific fire safety inspection practices including content of inspection files which should include inspector’s notes, building audits, fire alarm and protection systems verifications, photographs, building plans, occupancy permits, fire safety plans, and enforcement records as applicable as per OFMEM “Technical Guideline #01-2012: Fire Safety Inspections and Enforcement”.⁹

Due to the number of buildings and structures and limited resources, it is not possible to conduct proactive inspections of all buildings every year. Thus, inspections need to be priority ranked based on risk. Table 9 illustrates the occupancies that can be prioritized to support this risk-based approach. The suggested frequency of inspections is noted for each occupancy type.

Table 8: Suggested Format to Identify Target Objectives for Proactive Inspection based on Limited Resources.

Occupancy	Total Number of Occupancies	Ave. Hours for Inspection (including travel time)	Total Hours (Annualized)	Re-Inspection
Assembly Occupancies				Annual
Rooming Houses / Group Homes/ Residences >7 Units				Annual
Motels				Annual
Industrial Occupancies				Annual
Farm Occupancies				Every 5 years
Commercial				Every 2 years
Total Hours Required per year				

Table 8 enables the opportunity to predict the time required to do inspections. This will be helpful in assessing required resources. It can be anticipated that comprehensive inspection, public education and other fire prevention activities will

⁹ <http://www.mcscs.jus.gov.on.ca/english/FireMarshal/Legislation/TechnicalGuidelinesandReports/TG-2012-01.html>

likely exceed what can be provided with one full-time Training/Fire Prevention Officer. Additional staff, therefore, will likely be a future budget priority.

In addition to the inspections noted in Table 8, opportunities to do joint inspections with the appropriate authority such as Hydro sub-stations, solar farms and pipelines should be actively pursued.

There has been an excellent and close relationship with the Building Department and Chief Building Official. This relationship should continue and the FPO and Fire Chief should continue to be involved as appropriate with building inspections and building permit applications.

Recommendation #3: *MMFD develop Policies and Operating Guidelines for a Fire Inspection Program which requires that:*

- *Fulfills the Requirements of Ont. Reg 150/13, The Fire Code.*
- *Augments the statutory requirements for fire inspection with pro-active, risk-based ‘consultation’ visits with annual targets established.*
- *Includes a home inspection program for residential dwelling units for installation and maintenance of smoke alarms and carbon monoxide detectors.*
- *Specifies the appropriate involvement and role of fire prevention personnel in the examination of plans and specifications of permits for new or renovated buildings for compliance with applicable fire regulations.*

To compliant with the FPPA requirement that “Every municipality shall, (a) establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention, the Municipal Establishing and Regulating By-Law should reflect the requirement to develop an effective fire prevention, inspection and public education programs.:

Recommendation #4: *It is recommended that the Establishing and Regulating By-Law be reviewed and revised as required to require the Chief to develop and provide an effective fire prevention program that will:*

- a) *Ensure, through plan examination and inspection, that required fire protective equipment is installed and maintained within buildings,*
- b) *Reduce or eliminate fire hazards,*
- c) *Ensure compliance with applicable Municipal, Provincial and Federal fire prevention legislation, statutes, and codes in respect to fire safety, and*
- d) *Develop and maintain an effective public information system and educational program, with particular emphasis on school fire safety programs, and commercial, industrial and institutional staff training.*

7.1.3 Fire Origin and Cause Determination

Investigation to determination cause and origin of fires is an important component of a comprehensive fire prevention and protection strategy to achieve the following objectives:

- Compliance with Fire Marshal Directive 2015-002: “Reporting of Fires and Explosions Requiring Investigation” which requires that Assistants to the Fire Marshal must follow and complete a standard incident report for every response made by a fire department following Fire Marshal Directive 2015-001: “Standard Incident Report (SIR) Filing.”
- Fire investigation information is essential to developing and setting priorities for fire safety education programs,
- Fire investigations may identify need for criminal investigation and prosecution
- Ensure that there is follow-through on identified fire safety issues from municipal and OFMEM assisted investigations, and

OG 3017 provides the procedure for gathering pictures for suspicious fire scenes and comments on preserving continuity of evidence. OG 1017 outlines the MMFD process for taking notes and documenting evidence during a fire investigation. An additional or augmented OG is required to describe a comprehensive fire cause and investigation program including fire investigation/fire scene assessment practices and procedures, required staff training (firefighter, company officer, senior officer, and Training/Fire Prevention Officer), documentation requirements, secure storage for documents, scene security, and procedure to contact senior officers and the Ontario Fire Marshal¹⁰.

It is anticipated that the Training/Fire Prevention Officer will be the designated MMFD lead for fire investigations and will have or receive advance training through recognized courses i.e. training in fire and explosion investigations from the National Association of Fire Investigators International (NAFI).

Recommendation #5: OG 1017 Fire Cause Determination should be reviewed and/or augmented to address:

- *The need to investigate and report on cause and determination.*
- *Process and procedures to be used to investigate fires.*
- *Protocol for notification for the Training/Fire Prevention Officer and other senior officers.*
- *Protocol for notifying the Ontario Fire Marshal and police.*
- *Required documentation and procedure for secure storage of records.*

¹⁰ Fire Marshal’s Directive 2015-002 regarding thresholds for dispatching an OFMEM Investigator.

- ***Process for review as part of ongoing development of fire prevention and public Education Strategies.***

7.1.4 Fire Safety Plans

Under Section 2.8 of the Fire Code, an approved fire safety plan (FSP) is required for specific buildings or premises. Fire safety plans for occupancies that require them are submitted to the fire department for evaluation and approval.

Fire safety plans need to be approved by fire department officers who are authorized to do so. There should be a signed letter of designation from the fire chief designating members of the department as chief fire officials for the purpose of approving fire safety plans.

Officers approving fire safety plans for vulnerable occupancies need to have the required *“Improving Fire Safety for Vulnerable Ontarians: Training for Chief Fire Officials”* on-line course offered through the Public Service Health & Safety Association

There should be a specific policy/operating guideline that outlines the procedure for fire safety plan review and approval which references a fire safety plan audit checklist. The policy/OG should include the requirement that Fire safety plans should be shared with fire suppression staff as part of ongoing training. The policy/OG should also reference that applicable information from the fire safety plans should be incorporated into pre-incident plans, i.e. utility shut-offs, floor plans and emergency contacts.

Recommendation #6: A specific operating guideline should be developed for fire safety plans which require that 1) an inventory of all occupancies in the municipality which require fire safety plans be identified as well as the frequency of inspection, and 2) sets out the requirement for reporting to Council that required occupancies have a fire safety plan in place.

7.1.5 Pre-Planning

Pre-Planning refers to a process of identifying high-risk residential, industrial, institutional and commercial buildings and providing information to assist potential suppression and/or rescue requirements. Information regarding access, nature of the occupancy, potential hazards, entrances and exits as well as potential water supply can be difficult to obtain during an emergency incident and should be identified in a manner that is readily accessible and useful to succession personal.

Pre-planning can be effectively combined with inspection activates and review of fire safety plans. Pre-Planning can provide an opportunity for firefighters and fire protection officers to work with building owners and/or management to gather information prior to an emergency. It provides an opportunity to develop familiarity with the layout of buildings, size, type of construction, number of stories, and

occupants as well as the type of life safety systems, location of water shutoffs, controls, response points, road access and any hazardous materials.

An operating guideline should be in place to formally assign organizational responsibility for developing fire pre-plans, sets out a schedule, priorities and targets for the development, review and revision of pre-plans and incorporates firefighters in the development and on-going review of pre-plans.

As part of their ongoing professional development, firefighters should receive training on developing pre-incident plans and receive training on the actual pre-plans during training exercises.

The pre-plan OG should refer to a pre-plan checklist that contains best practice components including:

- estimated fire flow requirements, apparatus placement, hazards present and information regarding exposures
- processes to access additional resources through mutual aid or other agreements
- utility shut-offs, floor plans, and emergency contacts

Recommendation #7: MMFD should ensure the development of an operating guideline for pre-incident planning as well as target objectives for the number of pre-plans to be developed annually.

Recommendation #8: That pre-plan development be coordinated with suppression training to facilitate effective and safe emergency response.

Although there is a close, collaborative working relationship with the Building Department, this relationship can benefit from a more formal undertaking. Written policy and procedures can help define the respective roles of building and fire officials and provide a protocol regarding the review and approval of building permits, plans and proposed developments. Kingston Fire has an excellent policy document in this regard. This document can serve as a reference document to begin the conversation regarding a policy and procedure appropriate for the Mississippi Mills Fire Department.

Recommendation #9: That a policy and procedure be developed regarding the respective roles of the Fire and Buildings Department with respect to building permit and planning application approvals as well as building inspections.

7.1.6 Vulnerable Occupancies:

As of January 1, 2014, Ontario Regulation 150/13 amended the Ontario Fire Code to enhance the fire safety of occupants in care facilities such as nursing homes, retirement homes and other care occupancies where residents may not be able to self-evacuate. The new requirements include the requirement for:

- An up-to-date and approved fire safety plan,
- An annual fire drill using a scenario prepared by the occupancy owner and approved by the Chief Fire Official which will include a fire service assessment of performance targets for the drill, and recording of the drill by the Chief Fire Official.
- Mandatory Inspections to ensure fire protection systems are up to date.

Under the new regulation, persons responsible for implementing fire safety plans in vulnerable occupancies to have successfully completed a qualification course. Fire Officials who are responsible for approving fire safety plans must also complete a qualification course.

Fire Marshal Directive #2016-001 provides direction regarding Notification Requirements for Serious Fire Risks in Long Term Care and Retirement Homes.

Recommendation #10: *A specific OG should be in place for the inspection program for vulnerable occupancies which addresses:*

- *Identification of vulnerable occupancies and registration with the OFMEM*
- *Review of fire safety inspections files and required updates to the Vulnerable Occupancy Registry.*
- *Requirement that the Fire Officials who are responsible for approving a fire safety plan for a building containing a care occupancy, a care and treatment occupancy or a retirement home has successfully completed a program or course acceptable to the Fire Marshal*
- *Procedure for conducting spot audits*
- *The use and understanding of applicable legislation and Fire Marshal Directives as demonstrated through documentation and records,*
- *Use of a Fire safety inspections checklist to conduct inspections as per Fire Marshal Directive 2014-002*
- *Procedures for the approval of fire drill scenarios and evaluation and approval of fire safety plans.*
- *Monitoring compliance with new Fire Code requirements as applicable such as Self-closing devices, emergency lighting sprinkler Systems, automatic notification of the Fire Department Smoke alarms in each suite*

Although not required by law, expansion of the annual inspection program to multi-residential facilities or Group Homes which may be housing vulnerable individuals would be prudent. Further, as noted in the Hazards Identification section, resident needs may change such that the vulnerable occupancies requirements may apply.

7.1.7 Fire Station Building Assessment

The Department has two stations:

Station #1 – Almonte

Built in 2003,

- 26 Firefighters & Officers
- 2 single bays, 3 drive through, double bays
- Pumper, 100' Aerial, Tanker, Rescue, UTV, Pick-up Truck, Parade

Station #2 – Pakenham

- Built in 1970's. Addition in 2003
- 22 Firefighters & Officers
- 4 single bays
- Pumper, Tanker, Rescue, Pickup Truck,

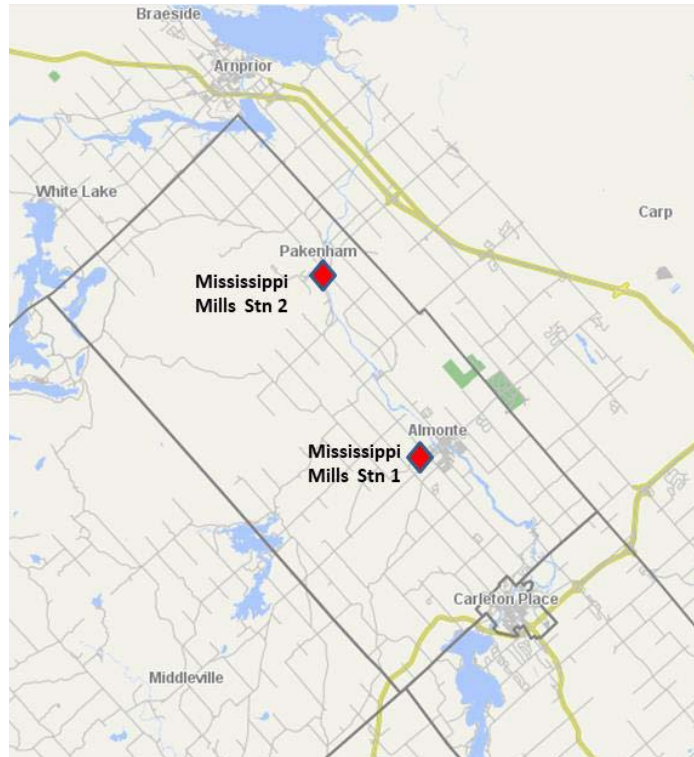


Figure 5: Location of Mississippi Mills Fire Stations

Figure 9 illustrates the location of the stations.

Station #1 Assessment

Station #1 is located proximate to Almonte. Although constructed almost twenty years ago, the building has many contemporary features including 3 double drive-through bays, two large single bays, dedicated bunker gear room with dedicated entrance, administrative offices, and dedicated training room with excellent kitchen facilities.



Figure 6: Mississippi Mills Station #1 Almonte

Compliance with current post disaster standards is unknown and should be investigated to determine feasibility and costs to upgrade. Shower facilities are adequate. A shower facility located in the bay area designed specifically for rapid decontamination would be an asset.

MMFD does not have an air compressor to fill SCBA cylinders. MMFD currently fills cylinders at the Carleton Place (Ocean Wave) Fire Department Station. Station #1 has the space to house an air fill station and compressor in existing rooms. The purchase of an air compressor and fill station with associated renovations should be a budget priority to ensure operational readiness and effective use of volunteer's time.

Recommendation #11: *A study should be initiated to investigate potential upgrades to Station #1 to 1) comply with post-disaster requirements, 2) to provide rapid decontamination showers and related amenities and 3) accommodate an SCBA air compressor and fill station.*

Station #2 Assessment

Station #2 is located in the hamlet of Pakenham approximately 19 kms from Station #1. It was built in the 1970's and expanded in 2003. It has 4 small single bays, meeting room, washrooms and a small work area.

The building does not meet post-disaster criteria and the apparatus bays are very small by contemporary standards. The current apparatus assignment within the bays results in exceedingly tight clearances and difficulty accessing the newly acquired tanker. There is no dedicated space for bunker gear storage or firefighter decontamination. Shower facilities are not available and the building is not air conditioned. The tables and chairs need to be replaced in the training room.



Figure 7: Mississippi Mills Station 2, Pakenham

With some renovations, provision of air conditioning, change in apparatus location within the station and possible reduction/change of apparatus, these deficiencies can be somewhat addressed and building can continue to be serviceable for the short term.

However, the age of the building, not being built to post disaster standards, lack of apron space for entry/exiting and building overall condition suggests that it will be prudent to consider a replacement station within the next 10 years.

Recommendation #12: *As a short term strategy, renovations should be completed for Station #2 to determine the feasibility and cost of renovations to safely accommodate required fire apparatus and other equipment as well as provide appropriate decontamination, bunker storage and other requirements. A longer term study should be undertaken to address the requirement for a replacement station that will meet post disaster requirements and potential apparatus requirements that may be required in the future as the community develops.*

7.1.8 Fire Station Location Analysis

Fire stations in rural areas often were constructed as a result of concerned citizens responding to a tragic fire loss in the community or simply as a result of proactive advocacy. The historic development may or may not make sense in terms of current response requirements or standards.

This section will review current standards and comment on current location in the context of the standards, current hazards and response experience.

The two primary references for response time guidelines are the National Fire Protection Association (NFPA) 1710 and 1720 standards and the Ontario Fire Marshal (OFMEM) guidelines. These references are summarized as follows:

The OFMEM Fire Ground Staffing Guideline requires the arrival of 10 firefighting personnel (with appropriate apparatus) in 10 minutes total response time for 90 percent of incidents.

NFPA 1710 applies to full-time fire services and is not applicable in this circumstance. NFPA 1720 is applicable to volunteer firefighter departments. NFPA defines a volunteer fire department as one having volunteer emergency service personnel comprising 85 percent or greater of its department membership. NFPA 1720 provides response times based on population density as follows:

- Urban Zones with greater than 1000 people/sq. mi. call for 15 staff with a response time of 9 minutes, 90 percent of the time;
- Suburban Zones with 500 to 1000 people/sq. mi. call for 10 staff with a response time of 10 minutes, 80 percent of the time;
- Rural Zones with less than 500 people/sq. mi. call for 6 staff with a response time of 14 minutes, 80 percent of the time; and,
- Remote Zones with a travel distance greater than or equal to 8 mi. call for 4 staff 90 percent of the time. Upon assembling the necessary resources at the emergency scene, the fire department should have the capability to safely commence an initial attack within 2 minutes 90 percent of the time.

While the NFPA standards generally ¹¹ have no legal status in Canada, they are based on the collective experience of professional fire-fighters and technical research and are widely accepted as defining best practice.

The implication is that if there is litigation, NFPA standards may be used to identify the baseline against which to measure. An expert witness testifying in a lawsuit against a volunteer department for negligence resulting in the loss of life or property may cite

NFPA 1720 as the standard for organization and operations for a volunteer

¹¹ There are some specific NFPA requirements specified by Statute.

department. Although other experts can argue that they represent a standard not necessarily reflecting standard practices, it is more difficult to make that argument.

Mississippi Mills can be considered to have two zones with respect to the NFPA standard. The historic Town of Almonte has a population density of more than 1,000 persons per sq. mi., so the Urban Response Time. Thus, the NFPA performance target would be *15 staff with a response time of 9 minutes, 90 percent of the time.* Station #1 is located within the built up area of Almonte and is ideally located to enable achievement of the standard. Staffing to achieve this standard is another matter and will be addressed in the section on “Staffing”.

The remainder of the Municipality is rural with population density of less than 500 persons per sq. mi. The NFPA Response standard for a rural population of less than 500 persons per sq. mi. is *6 staff with a response time of 14 minutes, 80 percent of the time.*

To consider the theoretical distance stations need to be located within Mississippi Mills to achieve the applicable NFPA 1720 standard for rural areas of 6 staff with a response time of 14 minutes, 80 percent of the time the following assumptions are used:

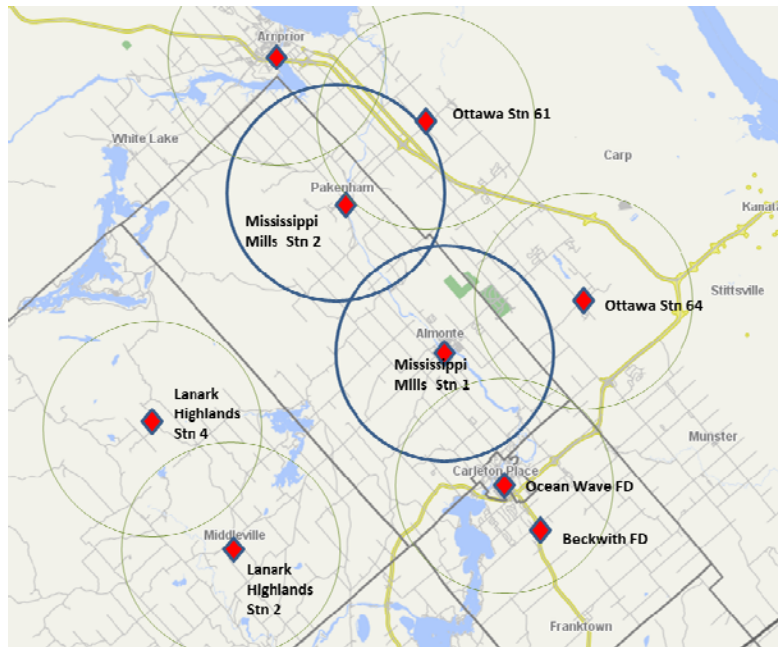
- As specified by NFPA 1720, response times are measured starting when the call is dispatched to when crews have established the resources for initial attack.
- 4 minutes to arrive at station and leave with a minimum crew of 4 in a pumper and two in a tanker, 8 minutes to travel to the scene and 2 minutes to set up initial attack for a total of 14 minutes
- At an average speed of 60 km per hour, the potential distance travelled in 8 minutes is 8 kms.

It is acknowledged that responding fire apparatus will respond at speeds well in excess of 60 km per hour. The speed of 60 kms per hr is used as a conservative estimate of average speed recognizing variable weather conditions, night operations and presence of gravel roads.

Utilizing the above assumptions, station location should be considered with the objective of having populated areas within 8 kms of a station.

Figure 10 illustrates the distances between stations at the 8 km distance. The location of nearby fire stations is also illustrated. Most of the populated areas of the Municipality fall within the 8 km distance. The one exception is the south west quadrant of the Municipality where the hamlet of Clayton is located.

Figure 8: Distances between Stations - 8 km distance.



The other factor that should be considered in the location of stations is impact on home insurance. The cost of insurance may vary greatly from one property to the next, based on the community's fire insurance grade.

The system of determining fire insurance rates in personal lines insurance is the Dwelling Protection Grade (DPG) system. The system uses a scale of one to five, in which one represents the maximum possible credit for fire protection programs and five represents an unrecognized level of protection or no protection at all.

In the rural areas, Mississippi Mills Fire meets the requirements for a 3B rating. Further, Mississippi Mills Fire maintains Superior Water Shuttle Accreditation which enables additional insurance discount consideration. To achieve this accreditation, fire departments must demonstrate the ability to deliver a flow rate of not less than 950 LPM for personal lines and 1900 LPM for commercial lines within 5 minutes of arriving at a test site.

To be eligible for the benefit, the protected property must be located **within 8 km of a fire station and 5 km of an approved water supply** (Commercial Lines - 5 km of a fire station and 2.5 km of an approved water supply). The water-delivery system must be available and accessible 24 hours per day/365 days per year.

The current location of the Fire Stations does not enable all residents of the rural areas to be eligible for the superior water shuttle discount due to the distance to the station exceeding 8 kms.

The use of 8 km ‘as the crow flies’ range does not precisely reflect actual driving distance. Nonetheless, it is a reasonable approach in considering station location in a rural context.

Optimal station location is often a compromise between a number of factors including:

- Location in populated areas to enable local firefighters to respond to the station promptly.
- Historic presence of a firehall.
- Location proximate to major hazards.

An important consideration in evaluating station response time is actual performance.

Current data regarding response times and number of personal responding is limited and there is concern regarding the quality of the data.

Recommendation # 13: MMFD should develop an Operating Guideline that addresses procedures for documenting, recording and reporting response times excluding calls cancelled on-route or incident not found such that the average response time for the first arriving apparatus and responding personal can be determined as a percent of calls and by type of call can be determined.

The current location of the fire stations appears to be appropriate based on applicable standards and available data regarding call location and response times. Ongoing monitoring of call volumes by geographic area and response times as well as future residential and other development will be important to ensure station number and location remains adequate.

7.1.9 Water Supply

Within the urban area of Almonte, a municipal water supply including hydrants is available to enable effective fire protection and fire suppression. Proximity of hydrants in Almonte also assists fire suppression in the rural areas of the Municipality by providing a readily accessible water source for tanker shuttles. Hydrants are also available in Carleton Place.

Routine testing and maintenance as well as marking of hydrants to indicate flow capability are critical requirements to ensure that effective water supply will be available when required.

The Ontario Fire Code requires that municipal hydrants shall be maintained in operating condition.¹² Hydrants are to be inspected annually¹³ and Hydrants are to be

¹² Fire Code Part 6 Subsection 6.6.4

¹³ Fire Code Part 6 Subsection 6.6.5

colour-coded indicating their respective available liters-per-minute capacity.¹⁴ NFPA requires flow testing of underground and exposed piping at least once every 5 years¹⁵.

The Public Works Department should have a policy and procedure for annual inspection, flow testing and colour coding. The policy should address the requirement for hydrants are to be accessible and clear from snow, procedure for inspection, procedure for Fire Flow Testing based on AWWA M17 “Flow tests”, Frequency of flow testing, process whereby the fire service is advised of a hydrant that is out of service and when the hydrant is back in service, documentation and reporting.

Recommendation #14: *That the MMFD collaborate with the Public Works Department to ensure that there is a comprehensive Policy and Procedure for the maintenance, accessibility, inspection, flow testing and colour coding of both public and private hydrants in the Municipality.*

For rural areas of the Municipality, water supply is provided by a water shuttle using tankers. The steps in a shuttle operation are as follows:

1. Set up pumper apparatus at fire event and deliver water from temporary storage facility (ex. portable tank) through fire pump to fire;
2. Draft water (from a location where water supplies are known to be reliable and accessible) into a mobile water supply apparatus
3. Move water from source location to fire event using mobile water supply apparatus
4. Dump water into temporary storage facility (ex. portable tank) at fire event location. (*Note: MMFD has the ability to use the advanced technique of pumping directly from Tankers*)
5. Repeat shuttle cycle.

The water source can be nearby creeks, rivers, ponds or lakes as well as municipal hydrants. Access to pressure or dry hydrants or other means of gaining rapid and safe access to water source in winter condition is a key factor in ensuring safe and effective fire suppression and rescue operations. Although it is possible to access natural water sources in the winter by cutting through the ice, this is not ideal as it is time-consuming, exposes firefighters to the risk of operating on ice, and may be difficult to access by trucks due to snow conditions.

A dry hydrant is a non-pressurized pipe permanently installed in existing lakes, ponds, or streams that provides a supply of water, by means of suction, to a tanker truck. The same function is obtained by a constructed well connected by a pipe to a natural body of water or a hydrant connected to a large storage tank.

Mississippi Mills has two dry hydrants, one is located at the Clayton Lake Dam in Clayton, and another is located at the Clayton Senior’s Housing Facility. There is a cistern with unknown water capacity in the Pakenham Fire Station.

¹⁴ Fire Code Part 6 Subsection 6.6.6.1

¹⁵ NFPA 25, Table 7.1.1.2, 2014

The key standard for Suburban and Rural Water Source construction, location and other parameters is the National Fire Protection Association Standard 1142 “Standard on Water Supplies for Suburban and Rural Fire Fighting” and the Underwriters Insurance Rating system. NFPA 1142 does not provide specific commentary on distance to dry hydrants leaving the determination to the “Authority having Jurisdiction”.

Tanker Shuttle Service Accreditation

The Fire Underwriters Survey (FUS) is responsible for publishing the Canadian Fire Insurance Grading Index which is used by insurers to base insurance rates upon. The FUS offers a Tanker Shuttle Accreditation Program which enables property owners in communities with accredited Tanker Shuttle Service to be eligible for reduced property insurance rates.

The Fire Underwriters Survey recognizes three Levels of Service:

- **Unrecognized Shuttle Service:** If the level of shuttle service does not meet the minimum benchmarks set out in NFPA 1142, then the level of service will not be recognized for fire insurance grading purposes.
- **Standard Tanker Shuttle Service:** The fire department has adequate equipment, training and continuous access to approved alternative water supplies to deliver standard tanker shuttle service in accordance with NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting. A formal plan for use of alternative water supplies is in place and available for review detailing the alternative water supply sources and characteristics. To be credited, access to alternative water supplies must be 24 hours per day and 365 days per year. Refill capacity from alternative water supplies using drafting techniques requires a pump that has a minimum capacity of 450 LPM at 275-415 kPa.
- **Accredited Superior Tanker Shuttle Service:** Superior Tanker Shuttle Service is recognized as equivalent to hydrant protection and allows property owners to have insurance rates similar to urban properties with hydrants. To be accredited, fire departments must commit to maintaining a high standard of organization, and practice delivering the service regularly. The fire department must be able to show through testing and documentation that it can continuously provide water supplies in excess of the minimum required for municipal-type water supplies. The system of delivery of water supplies must be well-designed and well-documented.

The system of delivery must meet all of the requirements specified for Standard Tanker Shuttle Service and must exceed the requirements in several key areas:

- For personal lines insurance, the fire department must be able to deliver a flow rate of not less than 950 LPM (200 IGPM) within 5 minutes of arriving at the test site with the first major piece of apparatus.
- For commercial lines insurance, the fire department must be able to deliver a flow rate of not less than 1900 LPM (400 IGPM) within 5

minutes of arriving at the test site with the first major piece of apparatus.

- The fire department must be able to deliver the flow rate which will be accredited within 10 minutes of arriving at the test site with the first major piece of apparatus.
- The volume of water available be adequate to sustain the accredited flow rate for a duration as specified by the Fire Underwriters Survey.

To be recognized for fire insurance grading purposes, the protected property must be:

- Commercial Lines (PFPC) - located within 5 km of a fire station and 2.5 km of an approved water supply point
- Personal Lines (DPG) - located within 8 km of a fire station and 5 km of an approved water supply point.
- Available and accessible 24 hours per day and 365 days per year.
- Have the water capacity of alternative water supply sources documented for a 50-year drought cycle.

It is proposed that a multi-year plan be adopted to add additional year-round dry hydrants in the north east area of the Municipality with Pakenham as a high priority location.

Typically, installation of dry hydrants is not complex and can often be incorporated into routine road/bridge maintenance or upgrade projects. Although the Mississippi River flows through the hamlet of Pakenham, seasonal flow levels are such that achieving depth for a functional, year-round dry hydrant may require an engineered solution.

Recommendation #15: That a multi-year plan be developed to add additional dry hydrants to ensure the populated areas of Mississippi Mills have year-round access to dry or pressurised hydrants within 5 kms. Installation of a dry hydrant in the Hamlet of Pakenham should be an immediate priority.

Recommendation #16: That MMFD set achievement of Superior Water Shuttle Accreditation as a 2020 objective.

Recommendation #17: NFPA 1120 “Standard on Water Supplies for Suburban and Rural Fire Fighting” be used to guide any future commercial, industrial or multi-occupant residential development.

7.1.10 Dispatch and Radio Communication

The Department participates in the Lanark County Fire Dispatch and Radio system. Dispatch services for the County including MMFD are provided by the Smith Falls Fire Department. Emergency Calls are received by the dispatch center from the 911 Central Emergency Reporting Bureau (CERB) located in the OPP Communication Centre in North Bay. The Dispatch Centre notifies, the appropriate fire department of

that emergency by pager. The Computer Aided Dispatch (CAD) system receives details from the 911 CERB of Municipality name, location (number and street and/or road name), and phone number.

The Smiths Falls Fire Department Fire Dispatch Centre follows NFPA 1221 Standard such that emergency calls are answered within 15 seconds for 95% of calls and within 40 seconds for 99% of the call. NFPA 1221 requires that the communications center must dispatch the emergency call to the appropriate fire department within 60 seconds.

The radio system used for fire communications consists of a Dispatch to hub microwave link and a microwave link from the hub to eight Towers located within the County including one in Pakenham. VHF transmissions are simulcast to fire department mobile and portable radios as well as pagers. There is a dedicated, common frequency for dispatch including paging and one tactical frequency for operations. Both the dispatch and operations frequencies are recorded The OFMEM provincial common frequency is available from one tower and is available for local communication.

Protocols exist to implementing the Lanark County Mutual Aid Plan for major or multiple incidents whereby additional resources may be dispatched as required.

There have been reception issue concerns with Lanark County's fire communications system identified by Mississippi Mills. In February, 2018 the former Mississippi Mills Fire Chief presented these concerns to the County's Corporate Services Committee. It was noted that although the County Fire Radio System works well in most areas, there are reception issues in some concerns with specific areas and buildings in Mississippi Mills.

In response to the concerns, the Lanark County initiated a Fire Communications Infrastructure Review. This review was presented in August 2018 to the Corporate Services Committee (Report #ESC-04-2018). The review concluded that overall the system was working well based on Fire Department feedback and field testing. The Review noted that there was radio system function limitations associated with steel clad buildings, areas of low terrain or areas below grade.

The review recommended that the a program be developed to 1) enable understanding of communication system limitations, 2) continue ongoing monitoring of the limitations that exist when using portable and/or mobile radios and 3) improve radio operating procedures including relocation of responder transmitting location and utilizing relay from portable to mobile devices.

Recommendation #18: MMFD continue to monitor and document radio transmission issues, identify known locations where radio transmission may be compromised, continue with training and awareness regarding procedures to minimize impact of radio transmission limitations and investigate options to improve transmission reliability including mobile repeaters and/or additional towers.

The County Radio System utilizes one frequency for dispatch and paging and has another frequency for operations. In practice, Crews responding to an incident indicate their response status on the dispatch frequency and when on scene, may request use of the operations/tactical frequency as required.

There have been numerous issues reported of excessive radio traffic over the dispatch frequency that can interfere with dispatch priority transmissions including booking trucks out of service and firefighters/officers responding on portable radios. Protocols have been put in place to reduce unnecessary transmissions.

The other issue that has been reported is management of simultaneous issues where the single operations frequency has to be shared. This is a critical safety issue as prompt transmission and response is required during an emergency response such as a 'Mayday' call for a trapped firefighter. This issue will become more acute as emergency response incidents increase with additional growth in Mississippi Mills and the County.

Recommendation #19: In collaboration with the Lanark County Fire Departments and Lanark County Officials, MMFD request that additional operational (tactical) frequencies be made available for the safe and effective management of simultaneous fire and rescue emergencies.

All Officers are assigned portable radios. Apparatus are provided with mobile radios and sufficient radios for crew available in the Apparatus or Station for all responding personnel. Thus there are sufficient portable radios to ensure each Firefighter team in the 'Hot Zone' has a radio and ensure all Firefighters operating in an interior search and rescue or fire attack should have a radio in case a Firefighter becomes trapped or separated. .

Recommendation # 20: On an ongoing basis, the annual budget includes the purchase of a number of portable radios and pagers to 'evergreen' the current inventory.

Fire radio communication systems have evolved significantly over the past twenty years and larger municipalities (i.e. York Region) as well as some County Systems (i.e. Leeds & Grenville) have migrated to a digital system. There are 3 basic digital system upgrade paths for Fire Radio Communications:

- Third Party Analogue/Digital Systems offered by third party vendors (e.g. Turris Communications).
- P25 Systems: systems that conform to the P25 standards enable the transfer data as well as voice and control of transmission by specific radios over a limited number of frequencies. This technology allows multiple "talk channels" for multiple incident management without increasing the number of frequencies available, allows identification of specific radios including an identifiable "Man Down" alarm, and improved security as unauthorized monitoring can be restricted. However, the equipment associated with these systems is expensive.

- FleetNet: FleetNet is the provincial government system which is used by the Ontario Provincial Police and EMS. This system may offer a number of significant advantages over other systems including interoperability with Police and Paramedic Services.

Recommendation #21: *In collaboration with the Lanark County Fire Departments, MMFD continue to monitor the availability and implementation for fire radio technology advances and plan for future technology upgrades.*

7.1.11 Apparatus

The Department has a modern fleet of equipment sufficient to provide the services authorized by By-Law. In recent years, older, surplus apparatus has been disposed of or replaced. Each station has a pumper, rescue apparatus, pumper/tanker and wildland truck. In addition, Station #1 has a 100' aerial and ATV side by side with trailer. A detailed inventory list of Apparatus is provided in Appendix III which notes anticipated replacement dates.

The Department has implemented contemporary practice by replacing the two-person pumpers with five or six person crew pumpers. The Department is also following contemporary practice in replacing single axle, 6,000 litre tankers with dual axle, 10,000 litre tankers. This provides a significant amount of water during the initial stages of a fire and facilitates a sustained, high flow water shuttle. The Pumper/Tanker configuration provides flexibility for relay pumping directly from a water source as well as redundancy as a first-run pumper if the dedicated pumper is out of service.

The recently purchased ATV side by side is equipped with both tracks and wheels allowing year round deployment for wildland fires and rescue operations. The ATV is equipped with a pump, hose reel and tank to enable a quick attack wildland response. A dedicated 16' enclosed trailer is available to transport the ATV.

Each station has a 4x4 pick – up truck equipped to support grass, forestry and wildland fire suppression requirements.

The interior of the rescue truck in Station #2 is largely dedicated to the storage and transport of Bunker Gear. This is a result of a legacy perspective that firefighters need to respond directly to the scene to improve response times. This is a perspective is not in keeping with current practice and standards to ensure operational effectiveness and safety.

Contemporary practice of responding to the station is consistent with OFMEM direction that it is preferable to take an extra minute or two to leave the station with a crew and coordinate operations during transit rather than have firefighters potentially arrive independently on-scene faster, but not have the equipment, supervision or ability to carry out a safe and effective response. This direction is also reflected in NFPA 1720 4.3.5 *“Personnel responding to fires and other emergencies shall be organized into company units or response teams and shall have required apparatus and equipment”*.

In any volunteer Department, there will always be a number of firefighters who can respond to the station within 3 minutes, a number who will arrive in 4 – 6 minutes, and those who will respond in the next 7 or more minutes. The first responding firefighters can take a reasonable amount of time (i.e. 4 minutes) to fill the first run pumper, subsequent responders can fill the tanker and additional vehicles. Firefighters who arrive after all required vehicles have left the station can take their bunker gear from the station and drive to the scene if required.

Recommendation #22: The current practice of storing and transporting bunker gear in Rescue 551 should cease. Bunker gear should be stored in a dedicated room in the Station and Firefighters should be directed to respond to the station.

7.1.12 Equipment

The Ontario Occupational Health and Safety Act (OHSA) provides that the employer as well as those in a supervisory position have a legal responsibility to ensure that staff are trained and provided with the necessary equipment needed to safely conduct the tasks they are assigned.

Personal Protective Equipment

Structural Firefighting as well as certain emergency responses such as CO calls exposes firefighters to life threatening risks. Personal Protective Equipment (PPE) such as bunker gear and self-contained breathing apparatus (SCBA) are essential to the protection of firefighters from hazards. The care and maintenance of structural firefighting personal protective equipment (PPE) is, therefore, of utmost importance.

The requirements for employers to provide firefighters who may be required to perform interior structural fire suppression duties with structural firefighting garments is set out in O. Reg. #714/94: Firefighters - Protective Equipment.

All PPE should be kept clean as soiled or dirty elements may expose firefighters to hazardous chemicals and reduce the effectiveness of the protection it is intended to provide. It is also important that soiled or contaminated PPE not be transported in a personal vehicle, taken into the firefighter's home or into the living quarters of a fire station unless in an approved gear bag or container.

Operating guidelines (OG #2005) Personal Protective Equipment describes the policy and procedures regarding the minimum level of protective clothing to be worn during emergency operations and training sessions.

An OG is required to address practices and procedures related to the issue, care, maintenance, inspection procedures, inspection frequency, inspection documentation and replacement of personal protective equipment (PPE). This operating guideline should be based on and reference O. Reg. #714/94 71, National Fire Protection Association (NFPA) 1971 "Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting" and Section 21 Guidance Notes including:

- 2-7: Reporting Exposures to Biological, Chemical or Physical Agents”,
- 4-1: Firefighter Protective Equipment”,
- 4-2: Eye Protection”,
- 4-6 Firefighter Helmets”,
- 4-8: Care, Maintenance, Inspection and Replacement of Structural Firefighting Personal Protective Equipment”,
- 4-9: Respiratory Protection Program (SCBA)”,
- 4-13 Personal Protection During Fire Investigation Operations”, and
- 6-23: Safety during Salvage and Overhaul”.

The medical component of OG #2005 should be cross referenced to specific and criteria regarding Infectious Disease and Opioid Protocols (glove, gown, mask) including donning and doffing procedures.

OG 4006 addresses the procedure for gear service or repairs including a “tag out” system and process for communications when the equipment is removed from service and when returned to service.

Recommendation #23: OG 4006 should be amended to reference appropriate OSHA Sec. 21 Guidance Notes and address practices and procedures related to the issue, care, maintenance, inspection procedures, inspection frequency, inspection documentation and replacement of personal protective equipment (PPE) not referenced in other policies.

Use and Maintenance of Respirators; The Respiratory Protection Program

Firefighters may be exposed to hazardous dust, mist, fumes, gas, vapour and smoke as a condition of their work. To prevent exposure to such hazards, and protect workers when exposure cannot be prevented it is required to have a Respiratory Protection Program includes operating guidelines.

MMFD has recently developed a respiratory program based on CSA Standard Z94.4-11 *Selection, Use, and Care of Respirators* to address:

- N-95 & SCBA Fit Testing
- Respirator Training
- SCBA/ Face piece/ Cylinders
 - Requirements and Use
 - Cleaning and Sanitizing
 - Inspection
 - Maintenance and repairs
 - Bench testing/Hydrostatic testing
 - Storage
 - Transportation

- Refilling/ Air Exchange
- Air quality
- Air compressor/Purge Panel operations, maintenance and repairs
- Pass devices inspection and maintenance
- Use of N95 Masks

The Respiratory Program references relevant Section 21 Guidance Notes including Guidance Note #4-9: *Respiratory Protection Program*.

Guidance Note #4-8 *Care, Maintenance, Inspection and Replacement of Structural Firefighting Personal Protective Equipment* is not referenced and should be in the next revision of the program document.

Relevant NFPA Standards including NFPA 1851 *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting* are cited in the Program. NFPA 1971 *Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting* should be referenced in the next revision of the Program Document.

Breathing Apparatus Log Books should be available at each Station recording the date, time, and use of SCBA use and that each has been inspected and returned to service.

There should be a Maintenance log to document air quality tests, filter replacement tests, repairs and overhauls, and routine scheduled service.

The Respiratory Program should have a specific procedure regarding review and updates require regular review of the program and related OGs.

Permanent workplace records should be kept for all real and suspected exposures to biological, chemical or physical agents and guidelines for exposure reporting that meets the intent of GN 2-7 *Reporting Exposures to Biological, Chemical or Physical Agents*.

Recommendation #24: *The Respiratory Program Document should be amended to include a schedule for review and updates.*

Self Contained Breathing Apparatus

MMFD currently uses MSA SCBA (4,500 psi) equipment which was purchased in 2010. Expected timeframe for replacement is 2022 -2015. Each firefighter is assigned their own personal facemask and some are an older version. SCBA facemask replacement should be a high budget priority.

Recommendation #25: *The replacement of SCBA facemasks should be a high budget priority.*

MMFD does not have a facility to fill SCBA cylinders. After use, MMFD personnel must refill SCBA cylinders at the compressor facility located at the Carleton Place (Ocean Wave) Fire Department. Transporting cylinders and filling them in Carleton Place is an inefficient use of volunteer firefighter's time. This issue is particularly salient after a major incident when volunteers face pressure to return home or work. Further, the time required to transport the cylinders and potentially wait while the host department fills cylinders increases the time the MMFD may be compromised in responding to another incident.

Thus, an SCBA air compressor and fill station for Station #1 is a high capital equipment priority. Adequate facilities at Station #1 are available to accommodate a compressor and fill station so renovation costs should be minimal.

Recommendation #26: *The acquisition and installation of SCBA air compressor and fill station should be a high budget priority.*

Other Equipment

MMFD is well equipped with equipment required for the services authorized by the E. & R. By-Law including:

- Extrication and roof power saws
- Hydraulic Extrication Equipment
- Scene Lighting
- Air Bags
- Cribbing
- Hoses & related appliances
- Thermal Imaging Cameras
- Hand Tools
- Positive Ventilation Fans

Thermal imaging cameras are now being used extensively for scene size-up, ongoing assessment and development of foreground tactics as well as use by interior crews. The number of thermal imaging cameras available should be evaluated with the objective of equipping Command, Safety Officer, Rapid Intervention Team (RIT) and each entry team.

Recommendation #27: *The need to acquire additional thermal imaging cameras should be evaluated in context of current and future fireground protocols.*

The use of positive pressure fans has become a recognized fire ground tactic to rapidly remove smoke from a content or structure fire and facilitate search and rescue as well as salvage and overhaul procedures. Larger positive pressure fans are beginning to be deployed more frequently particularly where big box stores, warehouses and other large structures are found.

Recommendation #28: *MMFD should evaluate the effectiveness of the capability of the current positive pressure fans in context of current and future requirements.*

7.1.13 Apparatus and Equipment Inspection and Maintenance

For trucks, tractors or trailers, or a combination of these vehicles that have a registered gross vehicle weight of more than 4,500 kilograms, the Ontario Highway Traffic Act (HTA)¹⁶ requires:

- A written schedule to periodically inspect and maintain vehicles.
- Documentation to ensure that inspections and maintenance are carried out in accordance with the written schedule.
- Drivers conduct daily inspections.
- Valid annual or semi-annual inspections on all applicable vehicles are maintained.

For Fire Apparatus, the HTA provides an exemption that pre-trip inspections can be conducted post-trip.

Section 4 of the MMFD Operating Guidelines provides specific Guidelines for Inspection, Care and Maintenance of Vehicles, Equipment and Gear.

OG 4001 provides specific procedures for pre-trip inspections (non-emergency) and post-trip inspections (emergency response). Documentation is required but not kept in a log book on the Apparatus floor. Having a log book with the record of previous inspections assists in tracking deficiencies and ensuring follow-up. Procedure should ensure officer notification of any deficiencies found and formal process for follow-up.

OG 4002 is titled “8 Week Vehicle Inspection” but specifies monthly inspections. Monthly inspections are common in volunteer departments as providing a reasonable process when there are relatively few resources and calls. Monthly Inspections should augment pre-and post-trip inspections by completing a comprehensive vehicle inspection, inventory of all equipment as well as testing and inspection of all equipment according to the manufacturer’s recommendation. This is a time consuming process and will often require 1 to 2 hours for a team of 4 firefighters.

It is highly advantageous for firefighters to do the monthly checks as it enables ongoing familiarization and practice in the use of the equipment and enhances knowledge of what equipment is available on what truck and in what compartment.

It is essential that firefighters can rapidly access equipment on an emergency scene. In relatively low call volume departments, certain equipment may be used infrequently. Monthly truck checks can be extremely valuable for to ensure there is an ongoing

¹⁶ Prescribed Performance Standards for the vehicle are set out in the following *Highway Traffic Act (HTA)* Regulations;

- HTA Regulation 199/07 (Commercial Motor Vehicle Inspections).
- HTA Regulation 611 (Safety Inspections) Schedule 1 and 2
- HTA Regulation 587 (Equipment)

memory refresh as to where equipment is located as well as how to use it safely and efficiently.

Monthly equipment reporting forms that identify all equipment by compartment should be created and kept in a vehicle specific log available on the apparatus bay. OG 4002 should ensure that there is a formal sign off by the supervising officer and formal procedure for notification, remedy and follow –up of deficiencies.

The monthly checks can be organized as a separate night (i.e., two nights a month for training and one for truck checks). Another alternative some Departments use is to assign teams (platoons) to do monthly truck/equipment checks at a time of their choosing.

OG 4006 addresses the policy for repairing cleaning bunker gear. This OG should be amended to require monthly checks of personal PPE including bunker gear and SCBA facemasks as per manufacturer’s directions. Each firefighter should maintain a prescribed log to document the monthly checks. A procedure for notification of defects should also be prescribed.

Recommendation #29: MMFD should require monthly truck, equipment and PPE inspections as per manufacturer’s instructions that includes log book documentation and a procedure for Officer sign-offs and remediation as appropriate.

7.1.14 Medical Response

MMFD responds to relatively few medical calls as there is an Ambulance base station located in Almonte. The current 911 protocol results in medical calls first being relayed to the Central Ambulance Coordination Centre (CACC). The CACC will dispatch a local Emergency Medical Services (EMS) and, after EMS has been dispatched, will notify fire dispatch as required. The end result is that MMFD responds to few medical calls as EMS can routinely arrive several minutes before the ambulance arrives.

Although the number of calls may be infrequent, emergency medical skills as an Emergency First Responder with CPR at the Health Care Provider level should be a requirement for all active duty firefighters. The rationale for this requirement includes the need to:

- Respond to life-threatening medical emergencies such as cardiac arrest when EMS may be delayed.
- Provide assistance to EMS in managing patient care including assessment, packaging, bleeding control, as well as cardiac and pulmonary resuscitation.
- Provide emergency medical response on-scene to assist firefighters as well as the public.

Recommendation # 30: Emergency First Responder with CPR at the Health Care Provider level should be the minimum requirement for all active duty firefighters.

7.1.15 Current and Proposed Staffing

Over the past several years, there have been numerous changes in roles, responsibilities and staffing levels as the Department has evolved with the changes generally in the Fire Service as well as responding to the population growth and development within the community. In addition, there have been changes in the organization with changes in leadership over the past several years.

Significant recent changes include recruitment of a new Chief, creation of a full-time Training/Fire Prevention Officer, Retirement of the previous Deputy Chief, addition of a part-time District Chief, and the Administrative Assistant position changing from part-time to full-time.

The 2019 Staffing of the Department is as follows:

- Chief (F/T)
- Deputy Chief (P/T) Note: Council approved research to budget F/T for FY20
- District Chief (2, P/T)
- Training/Fire Prevention Officer (F/T)
- Administrative Assistant (F/T)
- Station #1: 4 officers, and 21 firefighters,
- Station #2: 4 officers, and 17 firefighters,

There is an on-call system in place to ensure that a senior officer is always available to respond to calls.

A challenge for rural municipalities with volunteer fire departments is meeting response time performance targets during business hours, Monday to Friday. Many people who live in Mississippi Mills work in Ottawa and are not able to leave work to attend calls.

One tactic to improve work day response is to increase the number of volunteer firefighters. This may increase the probability of firefighters who can respond particularly if the process is designed to recruit those who are able to respond during the work day. This has been done with the increase in the Station #2 complement from 16 firefighters to 22 including officers.

There are a number of Mississippi Mills public works employees who serve as Volunteer Firefighters. This is an important tactic to achieve optimal staffing and response times during the work-day and should be encouraged.

The recruitment of the full time Training/Fire Prevention Officer will also assist with achieving optimal staffing and response times during the work-day. With the continuing growth of the municipality as well as need to improve fire inspection, fire prevention and public education programs, it can be predicted that there will be a need

for an additional Fire Prevention Officer (FPO) in the near future. The recruitment of an additional FPO will further enhance daytime staffing.

Recommendation #31: *With the continuing growth of the municipality as well as need to improve fire inspection, fire prevention and public education programs, the Department and Council should plan for the recruitment of an additional Fire Prevention Officer (FPO) in 2020.*

Recommendation # 32: *Response Staffing level targets should be established and monitored to determine if additional firefighters or other strategies are required to achieve desired on-scene staffing.*

7.1.16 Current and Proposed Services.

As authorized by the Establishing and Regulating By-Law 15-35 (E & R Bylaw), the services offered by the Department include:

- *fire prevention and education,*
- *structural firefighting,*
- *vehicle firefighting,*
- *grass, bush and forestry firefighting,*
- *Basic Medical assist with defibrillation,*
- *Hazardous materials- awareness level,*
- *transportation incidents including vehicles,*
- *aircraft and watercraft,*
- *Shore-based water and ice rescue with controlled ice/water entry,*
- *public assistance,*
- *other Agency assistance,*
- *Community emergency Planning,*
- *Participation in the County Mutual Aid Program, Automatic Aid, and Fire protection Agreements.*

The E & R By-law was been amended in 2017 to authorize administration of Naloxone

From a risk management perspective, it is important that the Establishing and Regulating By-Law specifically identify the services the Department is authorized to provide. Ideally, the By-law should also identify which services that the Department will not provide and which will be provided through mutual aid or other agreement.

Examples of services MMFD does not provided include technical rescue services such as hazardous materials, high angle, confined space, silo rescue, heavy urban search & rescue, or trench rescue. These services are required infrequently (occurrence of incidents less than once every 5 years) and require extensive training and specialized equipment. Local or Provincial agreements should be in place to provide these services as required.

Water and ice rescue is a specialized technical rescue service currently offered by MMFD. The bylaw is not clear as to the distinction between shore-based, controlled ice/water entry and using a rapid response rescue craft as is the current practice. The certification and on-going training requirements for this service for both the firefighter and officer (supervisor) are significant.

The applicable standards that apply to water/ice rescue standards include NFPA 1670 which outlines the level of functional capability, including technical rescue training, equipment and operations, for organizations that respond to technical search and rescue incidents. NFPA 1006 provides the specific performance criteria for the purpose of certifying a “rescue technician”.

Department members appear to be committed to maintaining the current level of “Go” water and ice rescue service. The presence of lakes and rivers with active recreational use certainly presents a hazard and, while not frequent, calls do occur.

Recommendation #33: Identification and evaluation of the required competencies required to deliver water and ice rescue is required together with a risk assessment to determine whether it is appropriate to continue the current level of service or consider a shore based service with a protocol to call in another fire department when required.

With the increased emphasis on fire prevention and public education, it is appropriate to be more specific in terms of the specific activities that Council authorizes in this regard.

The current by-law authorizes “basic medical assist”. The administration of oxygen and defibrillation together with expected first response competencies of firefighters require more than “basic medical assist”. Firefighters in Ontario are generally certified as Red Cross “First Responders” with CPR/AED Health Care Provider or equivalent.

The authorization to respond to transportation incidents should be modified to include motor vehicles, ATV’s, Snowmobile, and Farm machinery. Specifically noting watercraft and aircraft emergencies implies a response capability which may not be practical for MMFD.

Recommendation #34: That the Establishing and Regulating By-Law be reviewed to ensure that the approved range of services provided by Mississippi Mills Fire are specified including:

- *Structure, vehicle, hydro pole, grass and wildland fires.*
- *Hydro lines and trees down.*
- *Water and Ice Rescue (specific scope to be determined)*
- *Emergency Medical Response including Defibrillation.*
- *Propane, Carbon Monoxide, and Natural Gas leaks.*
- *Auto, ATV, Snowmobile and Farm Extrication and Rescue.*

Recommendation #35: That the Establishing and Regulating By-Law identify that the approved services not provided by Mississippi Mills Fire and are provided by others by agreement.

7.2 Strategic Direction #2: Supporting a Culture of Safety

7.5.1 Building a Culture of Safety

Firefighting and other emergency response presents extraordinary hazards to firefighters as well as the public. Training, routine hall maintenance, truck and equipment checks also present significant hazards. Constant vigilance and adherence to best practice safety procedures are essential to achieving the objective of “Everyone goes home safe”. We recognize the importance of safety in all we do and recognize that this commitment must be reflected in our culture. It is who we are and what we do!

Today, we recognize that Health and Safety does not simply refer to physical health. Mental health and particularly the effects of Post Traumatic Stress Disorder (PTSD) are a major concern in the fire service.

The Ontario Occupational Health and Safety Act provides the legislative requirements that employers must follow including the general duty requirement to ensure that *everything reasonable under the circumstances is done to protect the safety of the worker.*

Our commitment to safety extends to the public as well. Section 217.1 of the Canadian Criminal Code has expanded this duty to include any other person as follows: *"Every one who undertakes, or has the authority, to direct how another person does work or performs a task is under a legal duty to take reasonable steps to prevent bodily harm to that person, or any other person, arising from that work or task."*

7.5.2 Joint Occupational Health & Safety Committee

The Municipality of Mississippi Mills has a Joint Occupational Health and Safety Committee (JOHSC) and there is a Sub-Committee for the Fire Department. The Fire Department has 4 members on the Sub-Committee, one from management and one worker representative from each station. The Sub-Committee is active and meets four times per year.

There is one management and one worker members on the Fire Department JOHSC sub-committee who are formally trained. Additional members should have the opportunity for training.

The designated Safety Officer should be invited to attend Fire JOHC meetings as well as actively serve as a resource to the Department.

The Sub-Committee should develop a schedule for routine station inspections as well as participate in the development of specific safety related training.

Recommendation # 36: *The Fire Department Joint Occupational Health & Safety Sub-Committee meet at least every 3 months, and the frequency of meetings, number of workers trained, and number of station inspections be reported to Council on a quarterly basis.*

7.5.3 IMS and Personnel Accountability

Section 1 of the MMFD Operating Guidelines provides a series of comprehensive guidelines regarding implementation of Command procedures including Incident Management, Radio Use, Activation of Mutual Aid, Role of the Safety Officer, Mayday procedures and Rapid Intervention Team implementation.

A core component of Incident Management is to insure a system of personnel accountability is in place at every incident¹⁷. A personnel accountability system is required to insure knowledge of the location, task and identity of all on-scene firefighters during emergency operations. A properly functioning personnel accountability system is essential to safe scene operations as it ensures that personnel are acting as directed and efficient rescue can be implemented if required.

OG # 2002 provides the specific procedures for implementation of the MMFD accountability and entry control system. OG #2002 requires that upon entering the apparatus, all personnel shall attach one accountability tag to the Passport mounted on the dash of each apparatus for all responses. The officer or senior firefighter in each responding apparatus is then responsible to deliver the Passport to the Incident Commander or to Accountability. Personnel that arrive by other means must report to the IC or Accountability to tag in. Each Station has an Accountability Board to manage larger events.

To ensure familiarity and compliance, the MMFD Accountability protocol should be incorporated in all 'live' training evolutions.

Recommendation #37: *OG #2002 be amended to require that the Accountability System be activated during training evolutions.*

7.5.4 Safety During Fire Suppression and Rescue Operations

OG # 2005 provides comprehensive direction regarding use of PPE for specific emergency responses.

OG # 1005 provides the procedures for notifying outside agencies such as Ministry of the Environment and CANUTEC. Agencies routinely contacted for structure fires such as natural gas, propane, or hydro are not listed or noted as requiring mandatory notice under certain circumstances. Specific contact information is not provided and is assumed to be available through Smith Falls Dispatch.

¹⁷ Guidance Note 5-1, Section 2-6 of NFPA 1561 and Section 6-3 of NFPA 1500

Recommendation #38: OG #1005 be amended to specify mandatory reporting (hydro, natural gas) as well as identify where specific contact information for outside agencies is available.

By their nature, firefighters will do whatever is required to save lives and property even if they are not specifically trained and equipped to respond safely or authorized. Thus, it is critical to have well understood Operating Guidelines that establish the protocols for obtaining resources to respond promptly to emergencies not authorized by the Municipal E & R By-law.

Recommendation # 39: That written protocols be developed regarding access to specialized technical rescue team including trench, rope, high angle, confined space, haz mat, swift water, CBRN, and HUSAR.

7.5.5 Firefighter Response to Station

Historically, volunteer fire departments were often in rural areas and depended on firefighters who lived on farms and small villages to respond directly to the scene. Firefighters who live near the station responded to the station to respond with a truck. Pumpers in rural areas only needed a two person cab as only one or two firefighters would respond quickly to the station.

This practice was appropriate in the days when the majority of firefighters lived on farms, the response was largely for defensive structure fire operations, and equipment and tactics were based on simply “putting the wet stuff on the hot stuff”

Today’s world is vastly different where safe operations require organized teams under a formal command structure before commencing suppression or rescue activities. Further, there is increasing awareness of potential hazards of storing potentially contaminated bunker gear in personal vehicles. As more people who reside in rural Ontario live in or close to villages and hamlets, there is an increased likelihood of firefighters being able to respond directly to the station.

Thus, the recommended practice supported by NFPA and OFMEM standards is that it is preferable to take an extra minute or two to have a pumper and rescue truck leave the station with a crew of four to six firefighters than to have firefighters respond directly to the scene.

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* requires rural areas such as Mississippi Mills, to have 6 Firefighters assembled within 14 minutes 80% of the time. Section 4.3.4 states “Upon assembling the necessary resources at the emergency scene, the fire department shall have the capability to safely commence an initial attack within 2 minutes 90 percent of the time.” Section 4.3.5 of the standard states “Personnel responding to fires and other emergencies shall be organized into company units or response teams and shall have required apparatus and equipment.”

The Ontario Fire Marshal Fire Ground Effectiveness Sub-Model¹⁸ states:

- “To provide effective, efficient and safe fire protection services, the delivery system chosen must ensure a virtually simultaneous arrival of a minimum of four fire fighters”.
- “The OFMEM recommends, where practical, a minimum of four persons be dispatched on the initial apparatus”.
- “A total complement of no less than ten fire fighters, including supervisor(s), and, if possible, a minimum of two vehicles one of which is a triple combination pumper, must assemble at the fire ground”.
- “It may be preferable to dispatch fewer vehicles with more fire fighters rather than the vice versa”.

The NFPA bench mark of an assembled crew of 6 within 14 minutes and the desired practice of having firefighters arrive on responding apparatus can be achieved with residence to station time of 3 minutes, 1 minute to load the truck and 8 minutes to arrive on-scene. To achieve 3 minutes from residence to station in 3 minutes or less, a firefighter needs to reside within approximately 3 km of the station.

Recommendation # 40. *An Operating Guideline should be developed to require firefighters who live within 4 kms of a station to respond directly to the station for emergency response.*

7.5.6 Safety During Salvage, Overhaul and Fire Cause and Origin Investigations.

Although OG #2005 provides some direction regarding PPE for salvage and overhaul operations, these directions should be reviewed to ensure compliance with relevant standards including Section 21 Guidance Note 6-23 ‘Safety practices during Salvage and Overhaul’ and Guidance Note 4-13 ‘Personal Protection During Fire Investigation Operations’.

7.5.7 Safety Officer

NFPA 1521 ‘Standard for Fire Department Safety Officer’ and Guidance Note 2-4 ‘Incident Safety Officer’ provide information regarding the importance of establishing a safety officer at major incidents to assist Command with managing scene safety. MMFD OG 1012 addresses the role and deployment criteria for a Safety Officer.

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http://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/ComprehensiveFireSafetyEffectivenessModel/FireGroundEffectivenessSub-Model/AssemblingFireAttackTeams/assemble_fire_attack_teams.html
Assembling Fire Attack Teams

7.5.8 Incorporating Safety in Training Lesson Plans

Safety has to be an integral component of all training. Formal Lesson/Training Plans need to be in place that includes specific safety procedures including designation of a safety officer. Training/lesson plans need to be approved by the Chief. Contracted out training also requires formal lesson plans with designated qualified instructors approved by the Chief.

Recommendation # 41: *Formal Lesson/Training Plans, approved by the Chief, need to be in place that include specific safety procedures including incorporating a safety officer.*

7.5.9 Mental Health and Post Traumatic Stress Disorder

First Responders are required to manage situations involving death and serious injuries. The result can be Post-Traumatic Stress Disorder (PTSD), a mental health condition that is caused by witnessing or experiencing actual or threatened death, serious injury or violence. Someone with PTSD can experience nightmares, uncontrollable memories, persistent fear and severe anxiety. PTSD can lead to depression, work and marital difficulties, and suicide

The Province has recognized the impact of PTSD on First Responders and has implemented the Supporting Ontario's First Responders Act. PTSD diagnosis for first responders and certain workers such as correctional officers, youth service workers, and emergency dispatchers is now presumed to be work-related – they no longer need to prove it to access WSIB benefits and resources.

The Act also requires employers of workers covered by this presumption to develop PTSD prevention plans and provide information about their plans to prevent PTSD in their workplaces.

A toolkit is available to help employers prepare their PTSD prevention plans and programs.¹⁹

Recommendation # 42: *MMFD develop a PTSD Prevention Plan as required by the Ontario Supporting Ontario's First Responders Act.*

7.5.10 Issues for Further Investigation

There are a number of occupational health and safety issues which should be monitored to determine the need for change in procedures or policy. These issues include:

- Fall restraint requirements i.e. loading hose on top of pumpers/tankers,
- CO removal in stations – Is ventilation and automatic detection adequate? Should direct exhaust systems be considered?

¹⁹ <https://www.ontario.ca/page/post-traumatic-stress-disorder-prevention-plans>

- Decontamination at scene and post-fire bunker gear management. There is growing evidence of skin contamination through bunker gear and need for on-scene as well as in-station decontamination. OG 2014 provides comprehensive and up-to-date procedures. These procedures need to be reviewed on an annual basis as the science is evolving. The need for on-site decontamination, post-incident showers, bunker gear cleaning procedures and other protection strategies needs to be evaluated on an annual basis or as further knowledge/directives requires.

Recommendation # 43: *Health and safety issues, policies and practices be continually monitored and reviewed including review and circulation of OFMEM communication and encouraging senior officers to attend the annual Ontario Association of Fire Chiefs Health & Safety Conference.*

7.3 Strategic Direction #3: Accountability

7.3.1 Linking Mission, Vision, and Strategy to Results

Great organizations understand their purpose (mission) and desired future (vision). They understand that achieving their vision is dependent on having a clear strategy to move forward from the present to a desired future state. And they understand that they are accountable for their actions and deliverables in achieving the strategy.

The concept of accountability is particularly relevant in the public sector where funding is predominantly provided by the taxpayer. Excellence in the public sector can be defined as the concept of delivering the best possible service within the resources allocated and providing evidence that this objective is being accomplished.

Many organizations have adopted the “Balanced Scorecard”²⁰ as a tool to translate long-term strategy in to day-to-day management through the mechanism of measurement. The Balanced Scorecard translates vision and strategy into a tool that effectively communicates strategic intent and motivates and tracks performance against tactical objectives.

Typically, organizations report on financial and activity indicators. The paradigm shift created by the Balanced Scorecard was to look at the entire organization described as four dimensions:

- *Financial Perspective* – How do we look to our funders?
- *Customer Perspective* – How do our customers see us?
- *Internal Business Perspective* – What must we excel at?
- *Innovation and Learning Perspective* – How do we continue to improve?

²⁰ Kaplan, R.S. and Norton, D.P, the Balanced Scorecard, Measures that Drive Performance. Harvard Business Review, 1995.

Within each dimension, reporting addresses relevant objectives, measurements, targets and initiatives that flow from the Strategic Directions.

The Mississippi Mills Fire Department has provided monthly and annual reporting to Council in the past that documents the number of calls by major type. It is recommended that a more comprehensive report be designed with quarterly rather than monthly reporting. Reporting quarterly will provide a better perspective of trends and will balance the workload associated with a more detailed report with one that is produced less frequently.

Suggested measures include:

- Financial:
 - Quarterly actuals vs budget and forecast
 - Capital expenditures actual vs budget and forecast

- Customer Performance:
 - Types and frequency of calls
 - Response times
 - Public Education events vs target
 - Fire Inspections vs target
 - % of structure fires with fire investigation completed
 - Pre plans completed vs target

- Internal Processes
 - % calls with Accountability System in place
 - % structure fires with RIT Team established
 - Calls with formal debrief
 - Number of building permits/plans reviewed
 - Department recruitment and attrition
 - Number of exit interviews completed

- Growth & Development:
 - YTD training hours actual vs target
 - Number of firefighters/officers achieving certification
 - Number of SOGs and policies reviewed/developed

Recommendation # 44: *That the Mississippi Mills Fire Department develop and implement quarterly reporting based on the Balanced Scorecard accountability framework.*

It is important to note that measuring performance is a sizable task. It requires ongoing effort to develop and update annual objectives, develop the performance metrics, record activities and create and maintain reports.

The FirePro automated system utilized by the Department will continue to be of great value in the collection, recording, and analysis of data. Significant support, however, from the leadership team as well as financial and staff resources, will be required to develop comprehensive quarterly reporting from the FirePro data.

In addition to reporting performance metrics, the Quarterly reporting will also allow Council to be apprised by the Chief on changes in legislative obligations, training requirements, best practices, and incidents of concern or other pertinent matters.

Through comprehensive and structured reporting, Council will be sufficiently informed so as to satisfy itself that the fire protection services being provided to the community are adequate and effective and that the Fire Department is meeting required standards.

7.3.2 Mandatory Public Reporting

Ontario Regulation 377/18 under the Fire Protection and Prevention Act, requires effective January 1, 2020 that Fire Departments must provide a public report to the Municipal Council and the Fire Marshal. The Regulation has separate reporting requirements for Volunteer and Career Departments. For Volunteer Departments such as MMFD, the public report must provide the time interval value that the fire department achieves or exceeds 90% of the time as set out in Table 6:

Table 9: Ont. Reg. 377/18 Public Reporting Requirements for Volunteer Fire Departments Effective Jan. 1, 2020

Item	Time interval
1.	Alarm transfer time: The time interval from the receipt of the emergency alarm at the Public safety Answering Point (PSAP) until the alarm is first received at the fire department communication centre
2.	Alarm answering time: The time interval that begins when the alarm is received at the fire department communication centre and ends when the alarm is acknowledged at the communication centre
3.	Alarm processing time: The time interval from when the alarm is acknowledged at the fire department communication centre until response information begins to be transmitted via voice or electronic means to fire department facilities and fire department units
4.	Alarm handling time: The time interval from the receipt of the alarm at the PSAP until the beginning of the transmittal of the response information via voice or electronic means to fire department facilities or the fire department units in the field
5.	Turnout time: The time interval that begins when the fire department facilities and fire department units notification process begins by either an audible alarm or visual annunciation or both and ends at the beginning point of travel time
6.	Travel time: The time interval that begins when a fire department unit is en route to the incident and ends when the fire department unit arrives at the scene
7.	Initiating action/intervention time: The time interval from when a fire department unit arrives on the scene to the initiation of emergency mitigation
8.	Total response time: The time interval from the receipt of the alarm at the PSAP to when the first fire department unit is initiating action or intervening to control the incident

Note: The public report does not have to set out information for items 1, 2, 3, 4 and 8 if the information is not available from the fire department's records.

Recommendation # 44: That the Mississippi Mills Fire Department develop and implement an annual public report that provides an overview of Department activity and fulfills the requirements of ONT. REG. 377/18 Ont. Reg. 377/18 Public Reporting Requirements for Volunteer Fire Departments.

7.4 Strategic Direction #4: Supporting Service Excellence and Innovation

7.4.1 The Learning Organization

Over time, many organizations lose their capacity to learn, change and adapt as structures and processes are established. When problems arise, the solutions are often short-term based on previous practice, and problems continue to re-emerge.

Expectations, methods of service delivery and technology, however, are constantly evolving. Organizations need to develop knowledge about new technologies and processes, understand what is happening in the outside environment and facilitate creative solutions using the knowledge and skills of all within the organization. This requires co-operation, communication, and a culture of trust. It requires a fundamental attitude change that effort and energy must be dedicated to a constant review of how one does work and always asks the question; *Is there a better way?*

This concept has been reflected in the concept of a **learning organization**²¹ which can be defined as one which facilitates the learning of its members and continuously transforms itself to best serve the customer. This process of supporting transformation is synonymous with supporting innovation.

Mississippi Mills Fire has in place many of the core attributes of a Learning Organization. There is a serious commitment to learning. Comprehensive Operating Guidelines (OG's) do exist and there are many examples of 'best practice' that have been adopted by the Department

To support innovation and assist in the continued development as a Learning Organization, the following recommendations are proposed:

Recommendation # 45: *That the review and updating of Operating Guidelines (OG's) continue with a specific target performance metric regarding number to be developed, reviewed and updated be identified as part of the Departments annual objectives and be monitored in the quarterly report.*

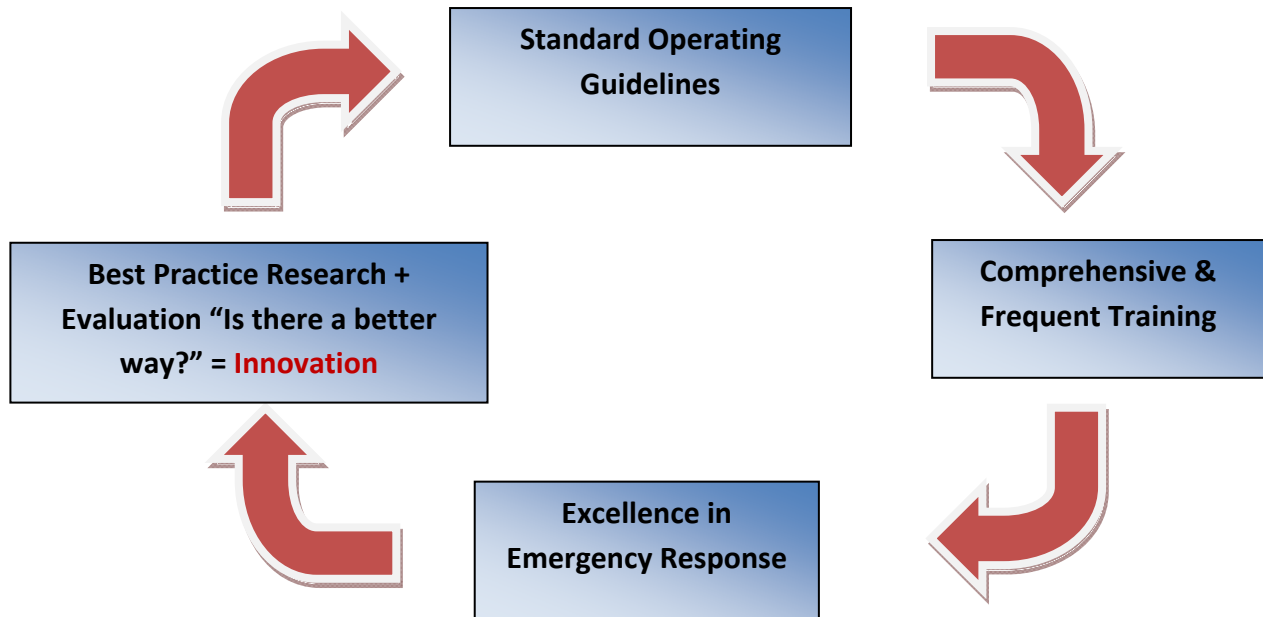
The review of OG's should build on and reference peer group 'best practice', current and emerging concepts from the professional literature, OFMEM directives and communiqués, and Sec. 21 Guidance Notes. The time required to undertake such a review should not be underestimated. Workload, however, can be shared with other departments who share a common dedication to achieving excellence.

The above recommendation is intended to support the relationship between best practice, OG's, training, and performance. This relationship can be thought of as an interdependent linkage where best practice and ongoing evaluation informs OGs. OGs

²¹ Senge, P. M. (1990) *The Fifth Discipline. The art and practice of the learning organization*, London: Random House.

are the foundation for training, and training is the critical foundation for achieving excellence in efficient and effective performance in managing an emergency situation.

Figure 9: Relationship between Inquiry, Operating Guidelines, Training and Operational Excellence



7.4.2 Training Delivery

Quality training delivery is essential to build competency and teamwork to enable suppression and rescue operations to be effected efficiently and safely. Instructors must be competent and there needs to be sufficient time and frequency of training to build and maintain skills.

Effective training is a requirement under the Ontario Occupational Health and Safety Act (OHSa). The Act prescribes that the Employer (Municipality) must ensure all members of their fire department are trained and equipped to provide the services delivered.

Section 21 of the OHSa provides that the Minister may appoint committees to provide specific advice and guidelines. Under this authority, an Ontario Fire Service Advisory Committee exists with the responsibility to advise and make recommendations on matters relating to the occupational health and safety of all firefighters in the Province of Ontario.

The Committee is also responsible for the development of a manual of Health and Safety Guidance Notes for fire services in Ontario. The manual provides policies and

procedures that are recommended to be used by workers in the fire service to prevent injury or illness, and will comply with the intent and provisions outlined in the Act.

To ensure due diligence with respect to fulfilling the requirements of the OHSA, each training session should have a comprehensive lesson plan developed in compliance with NFPA 1041 Standard for Fire Service Professional Qualifications. All training lesson plans should be developed with specific reference to the applicable Section 21 Guidance Notes.

Examples of specific Guidance Notes that should be referenced in the Training OG's include, GN 7-1 Health and Safety during Practical Training Sessions and GN 7-2 Training Requirements.

The Chief or designated senior officer should approve and sign-off on all lesson plans.

The training program curriculum and specific content should be based on NFPA 1410 Standard on Training for Emergency Scene Operations. The training curriculum should be reviewed and published annually including a reference calendar

Training is a key factor in maintaining the morale and *esprit de corps* of the firefighters. Effective training needs to not only enable skill development and protect worker safety, effective training requires that the program delivery should be engaging, enjoyable and embraces the best practice principles of adult education.

Training should include external training opportunities at regional centres such as Lyndhurst or the Ontario Fire College as well as regular in-house training.

A program of professional development should be in place for each firefighter to plan for individual advancement in areas such as technical rescue, officer development, training, fire inspection, fire prevention and public education, fire cause determination or medical training.

Lesson plans, training safety plans and training records are documented in Section 7 of the Departmental Operating Guidelines. There are specific Operating Guidelines for records, safety in training, driver training, health & safety training and minimum attendance for training & fire calls.

Recommendation # 46: *The MMFD Training Operating Guidelines be reviewed to ensure that there is a clear requirement for:*

- ***Formal lesson plans to be developed in compliance with NFPA 1041 and approved by the Chief for each training module.***
- ***All training lesson plans reference applicable Section 21 Guidance Notes.***
- ***The training program curriculum and specific content should be based on NFPA 1410 Standard on Training for Emergency Scene Operations. The training curriculum should be reviewed and published annually including a reference calendar***

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A program of professional development should be in place for each firefighter to plan for individual advancement in areas such as technical rescue, officer development, training, fire inspection, fire prevention and public education, fire cause determination or medical training.

Every call provides a training opportunity. An opportunity for a ‘debrief’ after calls should be encouraged to reflect on what went well as well as consider ‘lessons learned’. This ‘debrief’ should be a formal component of a Post Traumatic Stress Management Program to assist in early identification of a need for potential further interventions.

Recommendation # 47: A process for debriefs after calls and related documentation process to identify issues, questions and ‘lessons learned’ should be encouraged with a formal OG.

A challenge for all fire departments dependent on volunteer firefighters providing sufficient training hours to maintain core competencies, auto extrication, medical response, officer development, pump operations , HAZMAT and water rescue. Upwards of 100- 120 hours if not more is required annually to accomplish this objective.

Recommendation # 48: To maintain core competencies, the training curriculum and calendar needs to reflect a basic commitment of 100 to 120 training hours per annum.

7.4.3 Documentation, Communication and Records Management

Participation in training activities as well as specific demonstration of required knowledge and competency needs to be documented with records kept organized, secure and readily accessible by authorized personal. Comprehensive documentation is essential to the evaluation of individual performance and learning requirements as well as demonstrating that the employer has taken all reasonable actions required should litigation arise,

Training records are retained as prescribed in OG 7001. This OG should be reviewed to ensure compliance with GN 7-3 Documentation of Training.

Minimum attendance for training & fire calls is prescribed in OG 7005.

There should be prescribed processes in place for sharing of workplace communication and information such as Fire Marshal Directives and Communiqués, and new or revised fire service operating guidelines and notices.

7.4.4 Training Leadership

Historically, the lead for training was the Deputy Chief. With the retirement of the Deputy Chief and recruitment of a Training/Fire Prevention Officer (TFPO), there will be an opportunity for renewal of the training program.

The workload associated with developing and delivering a comprehensive training program far exceeds the capability of a single person. As well, the TFPO will be responsible for fire prevention, public education and fire inspection.

Thus, the TFPO should focus on curriculum requirements and schedule, external liaison in supporting initiatives such as the joint recruit training program, and direction of lesson plan requirements and presentation formats.

Actual preparation of lessons and training delivery should be delegated to the greatest extent possible. Subject matter experts or teams should be identified to develop lesson plans and deliver common training to each station to ensure a consistent interpretation of the OG's. This concept has the potential to considerably improve morale and learning by involving officers and firefighters directly in the learning process. *Learn, Do, Teach!*

The subject matter experts can most likely be found within the Department. In some cases, it may be appropriate to contract with another Department or individual to provide the required expertise.

Recommendation #49: Subject matter experts/teams be identified and supported to assist in the review and development of OGs, lesson plans, and to deliver common training to each station to ensure a consistent interpretation of OGs.

7.4.5 Transition to NFPA Standards and Certification

A key challenge for the Fire Service in Ontario is the transition from training standards, program development and delivery previously led by the Ontario Fire College and Office of the Fire Marshal to a program based on NFPA standards and certification. Examples of current certifications include:

- NFPA 1001 Firefighter Level I and II.
- NFPA 1021 Company Officer
- NFPA 1041 Fire Service Instructor
- NFPA 1031 Fire Inspector,
- NFPA 1035 Fire & Life Safety Educator

Currently there is no mandatory certification required by statute for firefighters. In May, 2018, the Ontario Government announced new regulations under the Fire Protection and Prevention Act which mandated certification of firefighters, fire inspectors and dispatchers. The Regulations were created after recommendations from three coroner's inquests and years of pressure to increase safety standards.

However, In October, 2018, the new PC government rescinded the requirement for mandatory certification.

Although there is no longer a legal requirement for mandatory certification, MMFD, like many progressive fire departments in Ontario has already initiated mandatory certification for all new recruits and is committed to an ongoing program such that all firefighters and officers are certified.

7.4.6 Advanced Training

NFPA 1001 provides the Standard for Firefighter Professional Qualifications. This Standard identifies the criteria for Firefighter Qualification at the Entrance, Firefighter I and Firefighter II levels

NFPA Standard 1670, Standard on Operations and Training for Technical Search and Rescue Incidents describes three levels of competency for technical rescue:

- *Awareness Level* This level represents the minimum capability of organizations that provide response to technical search and rescue incidents.
- *Operations Level* This level represents the capability of organizations to respond to technical search and rescue incidents and to identify hazards, use equipment, and apply limited techniques specified in this standard to support and participate in technical search and rescue incidents.
- *Technician Level* This level represents the capability of organizations to respond to technical search and rescue incidents and to identify hazards, use equipment, and apply advanced techniques specified in this standard necessary to coordinate, perform, and supervise technical search and rescue incidents.

NFPA 1021 provides the Standard for Fire Officer Professional Qualifications.

As part of a comprehensive Training Program, ongoing professional development should be encouraged. Upon completion of Firefighter I and II, firefighters should be encouraged to undertake Awareness Level Training relevant to the risk assessment profile. This will assist MMFD in providing an "All Hazards" approach where the Department can safely and competently respond to a variety of potential incidents, take initial steps to ensure scene safety, and for incidents requiring specialized resources, assist responding Departments.

For firefighters who wish to continue to advance, an individualized program should be developed that matches personal interest with Departmental requirements.

For specialized rescue operations as permitted by the E. & R. By-Law, upon completion of awareness level courses, Firefighters should be encouraged to seek additional training and certification at the operations and technician level.

Firefighters who wish to advance in other areas such as Company Officer, Trainer/Facilitator, Public Education, Fire Inspection and Prevention, Safety Officer or Fire Investigation should be encouraged to do so.

7.4.7 Fire Training Collaboration

Although the Province has indicated that NFPA certification will no longer be mandatory, there is no indication that there will be funding that was once available for Ontario Fire College programs. Thus, it appears that fire departments in Ontario are on their own in terms of designating required standards, developing and implementing training curriculum and securing the required funding.

All Ontario fire departments have this challenge, however, the larger departments have the staff and financial resources to adapt existing training protocols to meet the NFPA standards. Smaller Departments will find this task daunting and will need to consider partnerships and other methods to meet this challenge with available resources.

Not having training programs in place that are based on recognized standards and not providing documentation that recognized competencies are achieved leaves fire departments in a precarious position from a risk management and safety perspective.

The general duty clause in the Ontario Occupational Health and Safety Act section 25(2) (h) provides “*that an employer shall take every precaution reasonable in the circumstances for the protection of a worker*”. The definition of “*reasonable precaution*” is often based on generally accepted standards.

While the Province has chosen not to make the NFPA standards mandatory, the general adoption of NFPA standards by peer fire departments, may in effect, establishes NFPA standards as the definition of a “*reasonable standard*”.

For small, rural fire departments, collaborative efforts whereby resources are pooled amongst geographically proximate departments can enable common curriculum, lesson plans and training to be implemented in a cost effective manner to achieve certification over time.

MMFD and together with other Lanark County Fire Departments have already implemented this strategy in training new recruits. New recruits undertake joint training based on the International Fire Service Training Association ‘**Essentials of Fire Fighting**’ with 70 hrs of in-class, practical lessons and scenarios as well as 70 plus hours of at-home learning. Recruits graduate with NFPA 1001 Firefighter I certification following the required tests.

Other joint training initiatives should be encouraged.

Recommendation #50: *Mississippi Mills Fire Department continue to support regional training initiatives including the joint recruit program.*

7.4.8 Fire Training Centre

To safely and effectively train for interior search and rescue as well as suppression activities a properly engineered facility that can replicate a smoke filled environment is required. Larger departments have such facilities and other dedicated facilities have been developed for regional use by smaller and rural departments. There are other training centres in Ontario that are fulfilling a regional mandate.

For example, the Meaford Firefighting Training Centre serves as a regional training centre for the Ontario Fire College and offers accredited courses to volunteer and full-time fire departments and other emergency service organizations. The Eastern Ontario Emergency Training Academy based in Norwood provides a similar role in the Peterborough, Northumberland, Hastings, Prince Edward Counties and the cities of Kawartha Lakes region. The Training Centre in Lyndhurst provides a regional resource to the County of Leeds and Grenville Fire Departments.

There are no specialized training facilities available in Lanark County. MMFD has used the training facilities in Lyndhurst and the Ontario Fire College in Gravenhurst. Lyndhurst is approximately 80 kms distant and has no overnight facilities nearby. Gravenhurst is over 340 kms distance. Ottawa does have a comprehensive training facility, however, it is fully booked for internal use. Thus, MMFD and the other Lanark County fire departments do not have a readily accessible specialized training facility available for routine use.

Therefore, it is a high priority of MMFD to develop a dedicated training facility on the lands available at Station #1.

It will be worthwhile to engage in discussions with other Lanark County fire departments to see if mutual investment and development is possible. Shared financial investment in capital costs as well as sharing resources such as instructors and other forms of collaboration would be ideal. However, such discussions should not impede efforts to develop a proposal to construct a MMFD Training Centre.

Recommendation # 51: *That a Business Case Proposal be developed and presented to Council to propose a construction of a dedicated Fire Training Centre.*

7.4.9 Medical Training

NFPA 1001 requires that firefighters have as a standard of entry, minimum emergency medical skills including infection control, CPR, bleeding control and shock management.

In Ontario, fire departments generally require additional first responder certification including bleeding control, oral airway, nasal airway, supplemental oxygen administration, suctioning, CPR, use of an automated external defibrillator (AED), manual stabilization of fractures, and assisting in the administration of basic medications such as epinephrine auto-injectors, oral glucose, and inhalers. Naloxone

administration has recently been authorized. As well, Ontario firefighters are often trained in packaging, moving and transporting patients. This level of training is supported by Mississippi Mills Fire.

Recommendation #52: That Mississippi Mills Fire Department continues to encourage and support Emergency First Responder or equivalent certification for all firefighters and require Emergency First Responder or equivalent certification for advancement to Firefighter II and officer positions.

As MMFD responds to few medical calls annually, it is a challenge to maintain medical response competency unless dedicated time is made available to train and run scenarios. This is particularly challenging with only two nights of training per month that need to cover structural firefighting, auto extrication and other requirements.

Not all firefighters will be able or willing to devote an extra night a month to additional training, however, it is likely a number will wish to further develop their medical and other competencies. Thus, to enhance medical and other firefighter competencies for those firefighters who wish to advance and maintain competency as NFPA Firefighter II, it is recommended that an additional monthly training session be implemented.

Recommendation #53: An optional third monthly training night be added to enhance medical and other firefighter competencies for those firefighters who wish to advance and maintain a high level of competency.

Recommendation #54: Specific Operating Guidelines should be developed regarding medical response qualifications, training and response procedures.

7.4.10 Enhanced Training for Mass Casualty Events

Mass casualty events, fortunately, are not a frequent occurrence. Nonetheless, mass casualty events do occur. As the fire department is likely one of the first responders to a mass casualty event, Fire Services will have a key role to play in the immediate management of such events.

Recommendation # 55: That an OG and Training Program be developed and implemented for on-scene initial management of mass casualty events such as school bus rollovers, tornadoes, long term care facility fires, and multi-vehicle accident.

7.5 Strategic Direction #5 – Effective Leadership and Strategic Management

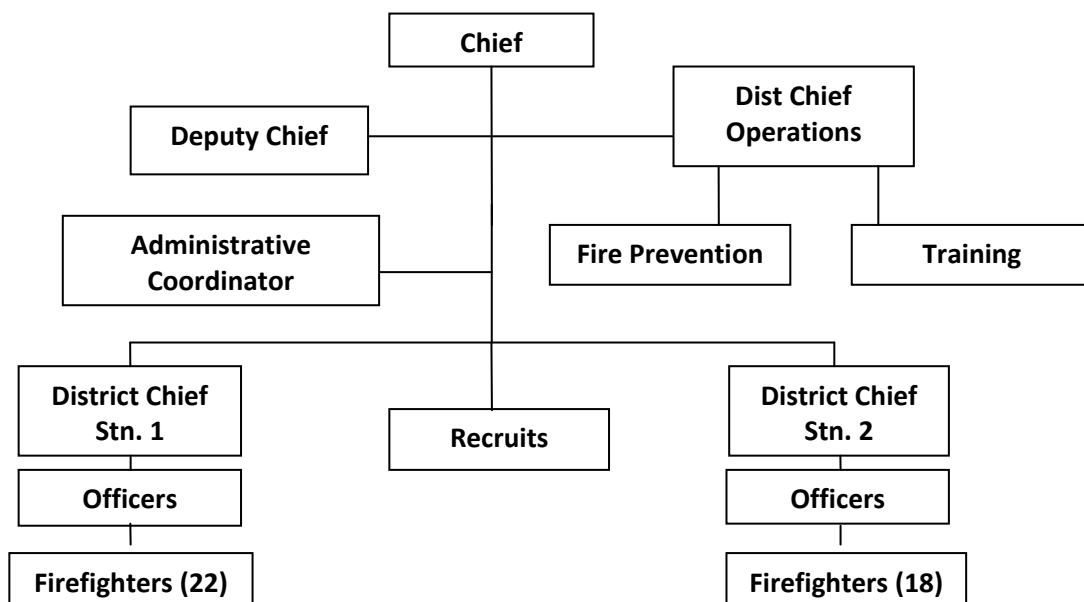
7.5.1 Current Department Organization

Over the past decade, MMFD has had numerous changes in roles and responsibilities with changes in senior leadership as a result of an evolution from a Department that was primarily concerned about suppression to one that reflects current direction to include fire prevention and public education as core responsibilities. In addition, MMFD has been granted Regional Training Center (RTC) status by the Ontario Fire College (OFC) and as a result requires dedicated fire officer leadership to ensure NFPA standards are maintained for all potential training audiences.

The 2019 proposed staff compliment for MMFD is:

- Fire Chief (1) - Full-Time
- Deputy Fire Chief (1) – Full Time
- Training /Fire Prevention Officer (1) - Full-Time
- District Chief (2) - Volunteer
- Administrative Assistant - Full Time (1)
- Captains (6) - Volunteer
- Lieutenants (6) - Volunteer
- Firefighters (40) - Volunteer

Figure 10: Mississippi Mills Fire Department Organization Chart



7.5.2 Future Organization

The way organizations are structured can have a profound impact on culture and organizational effectiveness as well as ability to realize the organizations mission, vision and values. Thus, it is important to continually evaluate the organizational structure to determine if it is efficient and effective in context of present and future circumstances.

The current positions as noted in Figure 10 have been implemented to help stabilize the organization and assist in rapid and effective implementation of priority projects including implementation of the Master Plan Recommendations. The roles and number of positions will be evaluated to determine whether optimal efficiency and effectiveness is being achieved.

It is anticipated that there will be a need for additional Fire Prevention Officers and/or dedicated Training Officer as Department priorities evolve and the community continues to grow.

As the organization continues to stabilize and develop, the following objectives may be useful in considering options for organizational design:

- To promote an organizational culture that develops effective leadership now and for the future;
- Supports the three lines of defense – prevention, public education and suppression/emergency response.
- Supports clear accountability.
- Enhances the power of the team.
- Facilitates continuous quality and improvement initiatives.
- Ensures the contributions of each member are respected and valued.
- Supports the synthesis of a variety of perspectives and processes for the successful completion of tasks.
- Builds on individual and group strengths to create an environment that reinforces dedication to delivering professional and customer-oriented services
- Supports positive environment that supports retention and recruitment and pride in being a firefighter

7.5.3 Human Resources Practices and Procedures.

The historic evolution of volunteer fire departments is that they have often been more of a self-governing ‘club’ and operated at arms-length from the host municipality. Today, the term ‘volunteer’ continues to exist, however, the relationship of the firefighter and officers to the municipality is more accurately described as an employer/employee relationship with volunteer firefighters effectively being part-time employees.

Thus, it is important that the Municipality's Human Resource Policies and Procedures are understood and followed.

MMFD does actively promote and follow the Corporate Human Resource Policies and Procedures. Officers and firefighters are hired and promoted in accordance with the relevant policies.

Position Descriptions are in place. The requirement for Performance Reviews is understood and will be undertaken as current senior officer vacancies are filled. Harassment and workplace violence policies and procedures are in place.

Recommendation # 56: Awareness of the Municipal Human Resource Policies and Procedures should be encouraged and access to the Policies and Procedures by hard copy or intranet should be available to all firefighters.

Recommendation # 57: The Department should continue its efforts to welcome and support female firefighter recruits.

7.5.4 Retention and Recruitment

Retention and recruitment of fire department volunteers is becoming increasingly difficult. This is not simply a local issue; it is national and international in scope. Today, the expectation is that the volunteer firefighter will have the same level of training and competencies as a career firefighter. Further, the breadth and depth of training and response capability has grown significantly.

Society has changed as well. Fewer people in rural areas live and work in the same community. Thus daytime response can be a serious issue. Work and family pressures make it a challenge to undertake the intense training required as well as to respond to calls.

Volunteer fire departments have, in the past, been able to be relatively passive regarding recruitment and retention. There were always eager candidates anxious to join and many stayed on the department for 30+ years.

Today, it's becoming increasingly difficult to recruit and retain. Further there is significant investment in firefighters who have developed advanced skills, firefighters who have advanced skills, have sufficient ability and commitment to respond to calls, participate in fire inspection, pre-planning and public education and have the potential become tomorrow's leaders need to be respected, valued and supported.

One of the prominent retention and recruitment methods is to be a 'magnet organization'. Simply described, this concept asks the question: "*Do our policies, procedures, activities, actions and decisions assist us in recruiting and retaining staff*"?

More specifically, questions can be asked such as:

- *Do we have training programs that are informative, well presented, engaging and relevant? Lecture style PowerPoint presentations generally are not as helpful as a participative conversation. Hands-on doing is generally preferable to classroom teaching.*
- *Do we have fun when training or is there a culture of fear & intimidation where people are afraid to show initiative or ask questions?*
- *Do we support diversity? Do we have a culture that promotes gender and cultural diversity and eliminates harassment and other behaviours that lead to a toxic workplace?*
- *Do we use public education events at village fairs and other such events to provide information on being a volunteer firefighter?*
- *Do we actively provide training and promotional opportunities to firefighters who wish to advance?*
- *Do we have a compensation system that is fair and appropriate?*
- *Do we provide other incentives and rewards to acknowledge the contribution of firefighters?*
- *Is there a clear and supported plan for advancement?*
- *Do we consistently engage in a formal exit interview with firefighters who are leaving to identify opportunities for improvement?*

Examples of activities that can promote a positive workplace that contributes to retention and recruitment include regular ‘town hall’ meetings with the Chief, recognition such as provision of hats and other fire department clothing, and annual ‘awards’ night

Recommendation #58: That a formal Retention and Recruitment Strategy be developed using community and firefighter focus groups to identify issues and propose recommendations.

7.5.5 Compensation.

In the past, being a volunteer was just that; there was no compensation. Training was minimal and calls were infrequent. Today’s volunteer is expected to attend:

- Approximately 72 hours of scheduled training sessions per year, 16 hours required to cover CPR & First Aid Course every 2 years.
- Additional hours are required for driver training and specialty courses such as Company Officer, Pump Operations and NFPA courses.

This commitment is in addition to actual calls.

In reality, the commitment required is more accurately described as a part-time job than volunteer.

MMFD has already adopted a compensation method of hourly reimbursement with a minimum of one hour. This system provides a more appropriate and fair method of compensation as opposed to the traditional point system. There are also certain insured benefits provided under a group plan (loss of life, disability, etc.).

7.5.6 Succession Planning and Retirement Policy

A formal succession plan should be developed to plan for development of firefighters to replace officers as they retire, leave or transfer. This plan should identify likely retirements over the next 5 years on an on-going basis and include a specific education and graduated responsibility map for individuals who wish to pursue advancement.

Clear path career advancement is an important incentive to maintain morale, engagement and retention. It is also very important in volunteer fire departments where an Officer may not always be present at a call. Developing leadership capability and competency with senior firefighters enables calls to be well managed when Officers may not be present or are limited in numbers.

Retirement in a volunteer department may be a difficult issue as senior firefighters and officers are committed and may not wish to end their involvement at a certain age. On the other hand, there can be situations where a member's health, physical fitness or willingness to actively learn and implement new procedures may be an issue.

From a risk management perspective, there is merit in considering a means to encourage retirement at a certain age. Some Departments have a by-law requirement that all firefighters over the age of 60 require an annual medical assessment to state that they are able to perform the tasks expected of a firefighter. Some Departments impose a mandatory retirement age. Another tactic is to have annual conversations with senior firefighters and officers to discuss retirement and develop a mutually agreeable, documented plan.

Recommendation # 59: *That a formal Succession plan and Retirement Policy be developed.*

7.5.7 Policies and Operating Guidelines

Policies and operating guidelines (OGs) are used by the fire services to ensure that services and functions are performed in a specific and routine manner. Adherence to policy and procedural operating guidelines promotes operational continuity, safety of personnel, operational effectiveness and consistency in the delivery of fire protection services. Comprehensive and current Operational Guidelines demonstrate due diligence and reduce potential municipal liability.

A policy is a principle or rule to guide decisions and achieve rational outcomes. A guideline is a statement that prescribes a course a course of action. In the Fire Service "Guidelines" are used rather than "Procedures" to allow some degree of flexibility to adapt to specific circumstances associated with emergency events.

MMFD has comprehensive set of operating guidelines that were reviewed in 2018. The operating guidelines include an index to assist with locating the needed document and are organized by subject area.

Previous recommendations have noted that a specific number of operating guidelines should be subject to detailed review annually, lesson plans should incorporate specific reference to the relevant OG, and OG's should specifically refer to source documents including Section 21 Guidance Notes and OFMEM communiqués.

Recommendation # 60: *A target number of OGs to be reviewed annually be established as well as an annual target for new OG development.*

Recommendation # 61: *OGs be developed for solar installations, propane gas emergencies, multi-casualty events, and B.L.E. V.E.*

7.5.8 Records and Documentation

Concurrent documentation and effective record keeping is essential to effective evaluation of individual and departmental performance, ensuring worker safety, ensuring that equipment operates when needed and as designed as well as protecting individuals and the Municipality from liability. A comprehensive records management system will:

- identify the records to be maintained,
- identify the location of records and methods of securing records
- clearly identify the levels of authorization to access records,
- defines the back-up process to ensure business continuity in the case of an adverse event and,
- identify the retention period for records.

Fire service records are municipal records and are subject to the Municipal Act, 2001 and the Municipal Freedom of Information and Protection of Privacy Act, 1990. The Municipal Act requires that municipality shall retain and preserve the records of the municipality and its local boards in a secure and accessible manner, and may establish retention periods during which the records of the municipality must be retained and preserved.

Specific OGs should be in place to require that fire department records shall be maintained systematically in written documents, computer systems, staff notebooks and other formats. Specific records should be identified that are required to meet various legislative requirements, demonstrate due diligence, and document actions taken. These documents are essential in legal proceedings and assist in planning for future needs, and evaluating programs and services.

The OGs should also address:

- how record storage is secured and access controlled,

- responsibility for management of records
- procedures for recording of vehicle and equipment logs, training and incident records
- back-up procedures and systems for digital data,

The Department uses “FirePro” software package for document management and statistical analysis. There are comprehensive reports filled out for each call and the information is entered into FirePro. Paper copies are kept in a file at Station #1. Personnel Files are kept in kept in paper copy at Station #1.

Training Records for each firefighter are kept in a folder at Station #1 folder with all the certificates/courses they have completed. Last 4 years of training records maintained in ‘FirePro’. Each training session has a folder with the signed attendance sheet in it which is kept at Station #1.

Documentation exists regarding capital equipment, however, compliance with the Municipal Capital Inventory Policy is unknown. Further investigation is required to determine how to develop a capital inventory process and documentation that is consistent with the Municipal policy.

Fire Inspections reports are kept in paper copy at Station #1. Each inspection is filed by address.

Each Vehicle has a folder with all documents in it, manuals, oil changes, safety’s, etc. The paper copy is kept at Station #1. Although there are routine inspections carried out on an annual basis, a formal preventative maintenance program should be developed based on the manufacturer’s recommendations.

Firefighter hours are tracked in ‘FirePro’ based on training and emergency response records.

The documentation and filing process is supported by the Department Administrative Assistant.

‘FirePro’ is a very comprehensive information management tool. Excellent work has been done to utilize this capability and efforts should continue to automate as many records as possible. It is useful to maintain paper records as well for ease of access to originals and as a backup.

There would be benefit in having documentation regarding the location and system associated with both electronic and paper filing. This would facilitate identifying what records are being kept and where they are located and the retention period. This is particularly important as records and documents are often electronic and are kept in multiple data bases and locations.

From a business continuity perspective, this analysis is critical to understanding where there are risks and if there are appropriate back-up and alternative sites available should normal access be disrupted.

Recommendation #62: *That office procedures, processes, record location and access methods be documented and reviewed to ensure that complete records are being maintained, are readily accessible and the FirePro program is being used to it's potential.*

Recommendation # 63: *That office procedures, processes, record location and access methods be reviewed to determine if adequate back-up and alternative measures are in place to maintain business continuity should normal access or procedures be disrupted.*

IPads have the potential to improve fire inspection and pre-plans. Data can be collected on-site and uploaded in real-time eliminating delays and simplifying the documentation process. IPads can also be used by Senior Officers as a communication, information sharing, and Command resource tool.

Recommendation # 64: *That electronic tools such as iPads as well as existing or enhanced capability of 'FirePro' be explored to better keep track of performance measures and field documentation including fire inspections.*

7.5.7 Electronic Communication and Access to Documents

Effective communication including full access to documents such as Policies, Reports, SOG's, Notices and Training lesson Plans vital to keeping all firefighters informed and engaged. Social media such as Facebook and Twitter can be useful for rapid communication. To facilitate access to documents, email, and scheduling software, MMFD has adopted Microsoft Office be adopted as the MMFD standard.

To ensure all firefighters and officers have access to a laptop and required software, an affordable employee purchase plan could be developed.

Recommendation #65: *To facilitate communication and access to OGs, training materials and other documents it is recommended that an employee purchase plan for laptops/tablets be considered.*

7.6 Strategic Direction #6 – Collaborative Relationships

*No man is an island, entire of itself*²²

Few endeavors are more reliant on the assistance of others than emergency response. Effective relationships with responders within ones community as well as neighbouring communities are essential to serving the public interest in the most efficient and effective way.

Although the principle applies to even the largest and most sophisticated Fire Service, it is particularly true with volunteer services where coverage of large geographic areas and limited human and technical resources are present. The challenge is particularly compounded by the public expectation that the same level of emergency response service will be available whether you live in the city or country.

This Strategic Direction will review the formal and informal relationships that exist with neighbouring fire departments and other emergency response partners.

7.6.1 Mutual Aid Agreements.

The purpose of Mutual Aid Agreements is to enable requests for assistance from neighbouring communities support the fire department when additional resources are required.

Mississippi Mills Fire Department is an active participant in the Lanark County Mutual Aid Agreement. This formal agreement is based on the OFMEM template and provides for a Mutual Aid Coordinator, identifies the key resources each participating Department has and outlines the protocol for activation. The purpose of the agreement is to facilitate the rapid deployment of resources from one municipality to another should they be required.

Mississippi Mills also has a number of automatic aid agreements whereby MMFD or a neighbouring fire department will be automatically dispatched to respond when they are the closest department. For example, Ocean Wave Fire Department will respond to incidents in the south-west area of Mississippi Mills automatically as they are the closest station.

OG 1006 addresses the procedures for response outside municipal boundaries. OG 1007 addresses Mutual Aid activation and OG 1008 addresses Automatic Aid Command procedures.

The fire chiefs that participate in the Lanark County Municipal Aid Agreement meet regularly as a Lanark County Mutual Aid Committee under the leadership of a Mutual

²² John Donne *Devotions upon emergent occasions and seuerall steps in my sicknes - Meditation XVII*, 1624

Aid Coordinator appointed from the participating chiefs. MMFD should continue to actively support this Committee in addressing issues such as:

- Joint training initiatives,
- Improved Identification system of firefighting apparatus.
- Compatibility/interoperability of equipment (i.e. SCBA),
- Opportunity for shared purchasing to enhance interoperability and achieve purchasing efficiency,
- Opportunities to share expertise among departments,
- Continued development of common policies and operating guidelines for such subjects as: initial response, communications, and IMS integrated command protocols,
- Review of process for requesting resources,
- Continuity of coverage,
- Specific technical rescue service access protocols and related OGs - High Angle, Trench, Confined Space, Heavy Extrication, Haz Mat, and Swift Water.
- Radio technology plan.
- Development of an inventory of departmental resources.
- Regular liaison meetings with OPP and Lanark EMS to discuss first responder issues.

Recommendation # 65: *MMFD should continue to actively participate in the Lanark County Mutual Aid Committee to improve Emergency Response capability.*

7.6.2 Access to Provincial Resources.

There are protocols contained in OG 1005, Outside Agencies, to access provincial resources such as Chemical, Biological, Radiological, Nuclear Explosive (CBRNE) and Heavy Urban Search and Rescue (HUSAR), Ministry of Environment and Ministry of Natural Resources as well as resources for a major disaster.

Opportunities to work with the Lanark County Mutual Aid Committee, OPP, Lanark EMS, OFMEM officials and Ottawa Fire should be sought to exercise major response capability associated with a CBRNE, HUSAR, Multi-Casualty or other large scale event that requires local, regional and provincial resources.

Recommendation # 66: *MMFD should seek opportunities to participate with the Lanark County Mutual Aid Committee, OPP, Lanark EMS, OFMEM officials and Ottawa Fire to exercise major response capability associated with a CBRNE, HUSAR, Multi-Casualty or other large scale event that requires local, regional and provincial resources.*

8.0 Implementation, Ongoing Planning, and Strategic Opportunism

The challenge associated with implementation of the recommendations contained in this Master Plan should not be underestimated. Change is often difficult as there are limited resources, competing priorities and inertia associated with comfort in maintaining the status quo. Nonetheless, creating momentum to achieve continuous improvement is essential to maintain a dynamic, progressive organization that provides optimal service to the community and is a source of pride to its members.

To implement the Master Plan recommendations, it is recommended that a monthly Officers Meeting be held to

- Translate Master Plan Directions and Recommendations into a three-year business plan
- Adopt a project management framework to create an annual work plan that identifies and tracks objectives by timeline, dependencies, specific tasks, and most responsible person (MRP).
- Prepare an Annual Report to Council to identify specific objectives accomplished during previous year and objectives to be accomplished in next year.

By formally monitoring the Master Plan Implementation on a monthly basis, the MMFD Officers will ensure that

- An annual training plan is produced, approved and implemented
- Public education, prevention and enforcement objectives are included in the annual work plan as well as proposed staffing and required operating and capital investments.
- A schedule for review for OG's and by-laws to maintain currency and distribute workload over time is developed and implemented.
- There is a review and update of position descriptions as required and annual performance reviews are completed for all staff.

The annual work plan should be developed in consultation with the firefighters and opportunities to allow firefighters to take responsibility for tasks should be encouraged as a means to develop engagement and leadership skills.

Recommendation #67: To implement the Master Plan recommendations, it is recommended that a monthly Officers Meeting be held to incorporate the Master Plan Directions and Recommendations into a three-year business plan, provide an annual report to Council, and monitors recommendation implementation using a project management framework.

This Master Plan is designed to provide macro level direction for a five year period. It is, however, prepared at a point in time based on information representing what is known and can reasonably be assumed. Much, of course, is not known and the

environment is constantly changing as technology, science, attitudes, and priorities evolve.

Thus, this Master Plan should be seen as a guide that will need to be evaluated on an ongoing basis and changes will be required as circumstances evolve. Knowing the Mission, Vision, Values, and Directions of the Department will assist in the determination of an aligned response to the challenges and opportunities ahead such that required changes are strategic.

9 Appendices

Appendix I: List of Recommendations:

Recommendation #1: *Following best practice examples, a comprehensive public education program designed to prevent fires, injury, death and property loss should be developed with specific policy statements and operating guidelines as appropriate.*

Recommendation #2: *The public education program should identify priority objectives targeted to areas of greatest risk identified through risk assessment including review of fire cause analysis, focus on provincial priorities including smoke and CO Alarms and should address high risk populations including children and seniors. In partnership with other first responders, the program should address public education priorities designed to reduce injury and fatalities due to motor vehicle and other accidents.*

Recommendation #3: *MMFD develop Policies and Operating Guidelines for a Fire Inspection Program which requires that:*

- *Fulfills the Requirements of Ont. Reg. 150/13, The Fire Code.*
- *Augments the statutory requirements for fire inspection with pro-active, risk-based 'consultation' visits with annual targets established.*
- *Includes a home inspection program for residential dwelling units for installation and maintenance of smoke alarms and carbon monoxide detectors.*
- *Specifies the appropriate involvement and role of fire prevention personnel in the examination of plans and specifications of permits for new or renovated buildings for compliance with applicable fire regulations.*

Recommendation #4: *It is recommended that the Establishing and Regulating By-Law be reviewed and revised as required to require the Chief to develop and provide an effective fire prevention program that will:*

- a) *Ensure, through plan examination and inspection, that required fire protective equipment is installed and maintained within buildings,*
- b) *Reduce or eliminate fire hazards,*
- c) *Ensure compliance with applicable Municipal, Provincial and Federal fire prevention legislation, statutes, and codes in respect to fire safety, and*
- d) *Develop and maintain an effective public information system and educational program, with particular emphasis on school fire safety programs, and commercial, industrial and institutional staff training.*

Recommendation #5: *OG 1017 Fire Cause Determination should be reviewed and/or augmented to address:*

- *The need to investigate and report on cause and determination.*

- *Process and procedures to be used to investigate fires.*
- *Protocol for notification for the Training/Fire Prevention Officer and other senior officers.*
- *Protocol for notifying the Ontario Fire Marshal and police.*
- *Required documentation and procedure for secure storage of records.*
- *Process for review as part of ongoing development of fire prevention and public Education Strategies.*

Recommendation #6: *A specific operating guideline should be developed for fire safety plans which requires that 1) an inventory of all occupancies in the municipality which require fire safety plans be identified as well as the frequency of inspection, and 2) sets out the requirement for reporting to Council that required occupancies have a fire safety plan in place.*

Recommendation #7: *MMFD should ensure the development of an operating guideline for pre-incident planning as well as target objectives for the number of pre-plans to be developed annually.*

Recommendation #8: *That pre-plan development be coordinated with suppression training to facilitate effective and safe emergency response.*

Recommendation #9: *That a policy and procedure be developed regarding the respective roles of the Fire and Buildings Department with respect to building permit and planning application approvals as well as building inspections.*

Recommendation #10: *A specific OG should be in place for the inspection program for vulnerable occupancies which addresses:*

- *Identification of vulnerable occupancies and registration with the OFMEM*
- *Review of fire safety inspections files and required updates to the Vulnerable Occupancy Registry.*
- *Requirement that the Fire Officials who are responsible for approving a fire safety plan for a building containing a care occupancy, a care and treatment occupancy or a retirement home has successfully completed a program or course acceptable to the Fire Marshal*
- *Procedure for conducting spot audits*
- *The use and understanding of applicable legislation and Fire Marshal Directives as demonstrated through documentation and records,*
- *Use of a Fire safety inspections checklist to conduct inspections as per Fire Marshal Directive 2014-002*
- *Procedures for the approval of fire drill scenarios and evaluation and approval of fire safety plans.*
- *Monitoring compliance with new Fire Code requirements as applicable such as Self-closing devices, emergency lighting sprinkler Systems,*

automatic notification of the Fire Department Smoke alarms in each suite

Recommendation #11: *A study should be initiated to investigate potential upgrades to Station #1 to 1) comply with post-disaster requirements, 2) to provide rapid decontamination showers and related amenities and 3) accommodate an SCBA air compressor and fill station.*

Recommendation #12: *As a short term strategy, renovations should be completed for Station #2 to determine the feasibility and cost of renovations to safely accommodate required fire apparatus and other equipment as well as provide appropriate decontamination, bunker storage and other requirements. A longer term study should be undertaken to address the requirement for a replacement station that will meet post disaster requirements and potential apparatus requirements that may be required in the future as the community develops.*

Recommendation # 13: *MMFD should develop an Operating Guideline that addresses procedures for documenting, recording and reporting response times excluding calls cancelled on-route or incident not found such that the average response time for the first arriving apparatus and responding personal can be determined as a percent of calls and by type of call can be determined.*

Recommendation #14: *That the MMFD collaborate with the Public Works Department to ensure that there is a comprehensive Policy and Procedure for the maintenance, accessibility, inspection, flow testing and color coding of both public and private hydrants in the Municipality.*

Recommendation #15: *That a multi-year plan be developed to add additional dry hydrants to ensure the populated areas of Mississippi Mills have year-round access to dry or pressurised hydrants within 5 kms. Installation of a dry hydrant in the Hamlet of Pakenham should be an immediate priority.*

Recommendation #16: *That MMFD set achievement of Superior Water Shuttle Accreditation as a 2020 objective.*

Recommendation #17: *NFPA 1120 “Standard on Water Supplies for Suburban and Rural Fire Fighting” be used to guide any future commercial, industrial or multi-occupant residential development.*

Recommendation #18: *MMFD continue to monitor and document radio transmission issues, identify known locations where radio transmission may be compromised, continue with training and awareness regarding procedures to minimize impact of radio transmission limitations and investigate options to improve transmission reliability including mobile repeaters and/or additional towers.*

Recommendation #19: *In collaboration with the Lanark County Fire Departments and Lanark County Officials, MMFD request that additional*

operational (tactical) frequencies be made available for the safe and effective management of simultaneous fire and rescue emergencies.

Recommendation # 20: *On an ongoing basis, the annual budget includes the purchase of a number of portable radios and pagers to ‘evergreen’ the current inventory.*

Recommendation #21: *In collaboration with the Lanark County Fire Departments, MMFD continue to monitor the availability and implementation for fire radio technology advances and plan for future technology upgrades.*

Recommendation #22: *The current practice of storing and transporting bunker gear in Rescue 551 should cease. Bunker gear should be stored in a dedicated room in the Station and Firefighters should be directed to respond to the station.*

Recommendation #23: *OG 4006 should be amended to reference appropriate OSHA Sec. 21 Guidance Notes and address practices and procedures related to the issue, care, maintenance, inspection procedures, inspection frequency, inspection documentation and replacement of personal protective equipment (PPE) not referenced in other policies.*

Recommendation #24: *The Respiratory Program Document should be amended to include a schedule for review and updates.*

Recommendation #25: *The replacement of SCBA facemasks should be a high budget priority.*

Recommendation #26: *The acquisition and installation of SCBA air compressor and fill station should be a high budget priority.*

Recommendation #27: *The need to acquire additional thermal imaging cameras should be evaluated in context of current and future fireground protocols.*

Recommendation #28: *MMFD should evaluate the effectiveness of the capability of the current positive pressure fans in context of current and future requirements.*

Recommendation #29: *MMFD should require monthly truck, equipment and PPE inspections as per manufacturer’s instructions that includes log book documentation and a procedure for Officer sign-offs and remediation as appropriate.*

Recommendation # 30: *Emergency First Responder with CPR at the Health Care Provider level should be the minimum requirement for all active duty firefighters.*

Recommendation #31: *With the continuing growth of the municipality as well as need to improve fire inspection, fire prevention and public education programs, the Department and Council should plan for the recruitment of an additional Fire Prevention Officer (FPO) in 2020.*

Recommendation # 32: *Response Staffing level targets should be established and monitored to determine if additional firefighters or other strategies are required to achieve desired on-scene staffing.*

Recommendation #33: *Identification and evaluation of the required competencies required to deliver water and ice rescue is required together with a risk assessment to determine whether it is appropriate to continue the current level of service or consider a shore based service with a protocol to call in another fire department when required.*

Recommendation #34: *That the Establishing and Regulating By-Law be reviewed to ensure that the approved range of services provided by Mississippi Mills Fire are specified including:*

- *Structure, vehicle, hydro pole, grass and wildland fires.*
- *Hydro lines and trees down.*
- *Water and Ice Rescue (specific scope to be determined)*
- *Emergency Medical Response including Defibrillation.*
- *Propane, Carbon Monoxide, and Natural Gas leaks.*
- *Auto, ATV, Snowmobile and Farm Extrication and Rescue.*

Recommendation #35: *That the Establishing and Regulating By-Law identify that the approved services not provided by Mississippi Mills Fire and are provided by others by agreement.*

Recommendation # 36: *The Fire Department Joint Occupational Health & Safety Sub-Committee meet at least every 3 months, and the frequency of meetings, number of workers trained, and number of station inspections be reported to Council on a quarterly basis.*

Recommendation #37: *OG #2002 be amended to require that the Accountability System be activated during training evolutions.*

Recommendation #38: *OG #1005 be amended to specify mandatory reporting (hydro, natural gas) as well as identify where specific contact information for outside agencies is available.*

Recommendation # 39: *That written protocols be developed regarding access to specialized technical rescue team including trench, rope, high angle, confined space, haz mat, swift water, CBRN, and HUSAR.*

Recommendation # 40. *An Operating Guideline should be developed to require firefighters who live within 4 kms of a station to respond directly to the station for emergency response.*

Recommendation # 41: *Formal Lesson/Training Plans, approved by the Chief, need to be in place that include specific safety procedures including incorporating a safety officer.*

Recommendation # 42: *MMFD develop a PTSD Prevention Plan as required by the Ontario Supporting Ontario's First Responders Act.*

Recommendation # 43: *Health and safety issues, policies and practices be continually monitored and reviewed including review and circulation of communication and encouraging senior officers to attend the annual Ontario Association of Fire Chiefs Health & Safety Conference.*

Recommendation # 44: *That the Mississippi Mills Fire Department develop and implement quarterly reporting based on the Balanced Scorecard accountability framework.*

Recommendation # 44: *That the Mississippi Mills Fire Department develop and implement an annual public report that provides an overview of Department activity and fulfills the requirements of ONT. REG. 377/18 Ont. Reg. 377/18 Public Reporting Requirements for Volunteer Fire Departments.*

Recommendation # 45: *That the review and updating of Operating Guidelines (OG's) continue with a specific target performance metric regarding number to be developed, reviewed and updated be identified as part of the Departments annual objectives and be monitored in the quarterly report*

Recommendation # 46: *The MMFD Training Operating Guidelines be reviewed to ensure that there is a clear requirement for:*

- *Formal lesson plans to be developed in compliance with NFPA 1041 and approved by the Chief for each training module.*
- *All training lesson plans reference applicable Section 21 Guidance Notes.*
- *The training program curriculum and specific content should be based on NFPA 1410 Standard on Training for Emergency Scene Operations. The training curriculum should be reviewed and published annually including a reference calendar.*

Recommendation # 47: *A process for debriefs after calls and related documentation process to identify issues, questions and 'lessons learned' should be encouraged with a formal OG.*

Recommendation # 48: *To maintain core competencies, the training curriculum and calendar needs to reflect a basic commitment of 100 to 120 training hours per annum.*

Recommendation #49: *Subject matter experts/teams be identified and supported to assist in the review and development of OGs, lesson plans, and to deliver common training to each station to ensure a consistent interpretation of OGs.*

Recommendation #50: *Mississippi Mills Fire Department continue to support regional training initiatives including the joint recruit program.*

Recommendation # 51: *That a Business Case Proposal be developed and presented to Council to propose a construction of a dedicated Fire Training Centre.*

Recommendation #52: *That Mississippi Mills Fire Department continues to encourage and support Emergency First Responder or equivalent certification for all firefighters and require Emergency First Responder or equivalent certification for advancement to Firefighter II and officer positions.*

Recommendation #53: *An optional third monthly training night be added to enhance medical and other firefighter competencies for those firefighters who wish to advance and maintain a high level of competency.*

Recommendation #54: *Specific Operating Guidelines should be developed regarding medical response qualifications, training and response procedures.*

Recommendation # 55: *That an OG and Training Program be developed and implemented for on-scene initial management of mass casualty events such as school bus rollovers, tornadoes, long term care facility fires, and multi-vehicle accident.*

Recommendation # 56: *Awareness of the Municipal Human Resource Policies and Procedures should be encouraged and access to the Policies and Procedures by hard copy or intranet should be available to all firefighters.*

Recommendation # 57: *The Department should continue its efforts to welcome and support female firefighter recruits.*

Recommendation #58: *That a formal Retention and Recruitment Strategy be developed using community and firefighter focus groups to identify issues and propose recommendations.*

Recommendation # 59: *That a formal Succession plan and Retirement Policy be developed.*

Recommendation # 60: *OGs be developed for solar installations, propane gas emergencies, multi-casualty events, and B.L.E.V.E.*

Recommendation #61: *That office procedures, processes, record location and access methods be documented and reviewed to ensure that complete records are being maintained, are readily accessible and the FirePro program is being used to it's potential.*

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Recommendation #64: *To facilitate communication and access to OGS, training materials and other documents it is recommended that an employee purchase plan for laptops/tablets be considered.*



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Recommendation # 66: *MMFD should seek opportunities to participate with the Lanark County Mutual Aid Committee, OPP, Lanark EMS, OFMEM officials and Ottawa Fire to exercise major response capability associated with a CBRNE, HUSAR, Multi-Casualty or other large scale event that requires local, regional and provincial resources.*

Recommendation #67: *To implement the Master Plan recommendations, it is recommended that a monthly Officers Meeting be held to incorporate the Master Plan Directions and Recommendations into a three-year business plan, provide an annual report to Council, and monitors recommendation implementation using a project management framework.*

Appendix II: Apparatus Plan

Station	Unit	Description	Year	Scheduled Replacement	
1	510	KME Kovatch AerialCat100' Aerial	2011	2031	
1	520	International Eastway Pumper	2014	2034	
1	524	Freightliner Battleshield Pumper/ Tanker	2018	2038	
1	580	Wildland/ Forestry	2002	2021	
1	Lanark County Rescue 2	Heavy Rescue	2009	2029	
1		Kubota ATV & 16' Response Trailer	2018	2038	
2	521	Pumper	2007	2027	
2	531	Pumper/ Tanker	2017	2037	
2	581	Wildland / Forestry	2000	2020	

2	551	Rescue/ Rehab/ Command	2000	2020	
	570	Training/ Fire Prevention Officer	2016	2026	
	571	Fire Chief	2017	2027	