# Mississippi Mills Fire Master Plan




Prepared by:

THE LOOMEX GROUP

# Municipality of Mississippi Mills
# Fire Master Plan

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## Executive Summary

The Municipality of Mississippi Mills (the Municipality) contracted The Loomex Group to develop a fire master plan (FMP). This FMP will provide the Municipality and the Mississippi Mills Fire Department (the Department) with the information they need to make informed decisions regarding the life safety of the community's residents, businesses, visitors, and firefighters. The Loomex Group designed the FMP's content to reflect the Municipality's current needs as well as its anticipated future needs.

There are many factors to consider when developing a fire master plan, such as:

- community makeup
- economic status
- population
- demographics
- building stock
- fire services delivery and capabilities

Although similarities may exist, each municipality and fire department in the Province of Ontario is unique, which means no one review process will work for each community. To ensure that the Municipality's FMP covered the required topics, The Loomex Group used a development process (the Review) that examined all aspects of the Department. The Review included the following:

- reviewing the Department's organizational structure
- analyzing the community's current needs and risks
- assessing if the Department can continue providing an appropriate level of service to the community in the future (based on anticipated trends)

Unfortunately, there are no easy solutions that allow fire departments to significantly reduce operating costs while still providing sufficient protection from fires and other emergencies. Fire departments must devote time and effort to improve effectiveness and yield cost efficiencies.

This FMP contains 19 recommendations for the Department and the Mississippi Mills Municipal Council (Council) to consider. The Loomex Group based the recommendations on the results of the Review and analyses of other relevant factors, including current legislation, bylaws, and agreements. Overall, the recommendations suggest a variety of proactive changes, such as modifications to the Department's organizational structure and staffing levels. The Loomex Group also recommends that the Department assess the feasibility of upgrading or relocating the Pakenham fire station.

Throughout its history, the Department has provided high-quality services. For generations, volunteer firefighters served the former Almonte, Pakenham, and Ramsay townships. Now, that same tradition continues in the amalgamated Municipality. In order to continue serving the Municipality's growing community effectively, the Department should aim to build upon its existing strengths, improve efficiencies, and react proactively to anticipated needs. This process will require the Department and the Municipality to invest their time and resources and make changes in the coming years. Planning for these changes now will allow the Department to uphold its standards of service and meet the Municipality's current and future demands.

Every municipality must view its fire department as an essential service. Due to the nature of emergency services, the safety of first responders is at higher risk than that of workers in other occupations. Therefore, protecting volunteer firefighters is crucial. Communities must ensure that their fire departments have access to the necessary equipment to perform their jobs. Furthermore, this equipment must be available for service at all hours of the day, each day of the year, should its immediate use be required. All municipalities must also provide their volunteer firefighters with respect, reasonable compensation, and appropriate benefits for their service.

Council should continue supporting the Department's volunteer firefighters, as they provide vital services that protect the community. The recommendations in this FMP are designed to make the Municipality safer now and as it grows and develops. By choosing to invest in the Department's firefighters, the Municipality is investing in safety.

**Disclaimer**

This FMP is a living document. It should be reviewed and adjusted annually, as the needs and circumstances of the Municipality change, and should be completely updated every five years. The Loomex Group has made every effort to ensure that the information provided herein is accurate and comprehensive.

## Summary of Recommendations

### Overview of the Recommendations

Each recommendation in this FMP has its own set of considerations. The legend below defines the different considerations and indicates how they are noted in the summary of recommendations (beginning on the following page).

Table 1. Legend for the summary of recommendations.

| Consideration | Definition | Indication Used |
|---|---|---|
| Mandatory | Is the recommendation mandatory for legislative compliance? | Yes or No |
| Term | When should the recommendation be addressed? | IM (Immediate term, 0-1yr.)<br>ST (Short-term, 1-4 yrs.)<br>LT (Long-term, 5-10 yrs.)<br>OG (Ongoing) |
| Council approval | Does Council need to approve the recommendation before it is implemented? | Yes or No |
| Budget impact | Will the recommendation have to be included in the Department's budget through the regular budgeting process? | Yes or No |

**Summary of Recommendations**

Table 2. Summary of recommendations.

| Section | Recommendation | Considerations |
|---|---|---|
| Legislation, Bylaws, and Agreements | The Fire Chief should review the Municipality's current fire protection agreements and automatic aid agreements. The Fire Chief should then notify Council of any changes needed to ensure the Municipality remains compliant with municipal regulations. | Term: ST<br>Mandatory: Yes<br>Council approval: Yes<br>Budget impact: Yes |
| Legislation, Bylaws, and Agreements | If the Department implements any of this Fire Master Plan's recommendations that affect the establishing and regulating bylaw, the Fire Chief should provide Council with an updated version of the bylaw for consideration and approval. | Term: ST<br>Mandatory: Yes<br>Council approval: Yes<br>Budget impact: Yes |
| Occupational Health and Safety | The Fire Chief should consider ways to keep the PPE washing area at Station 1 separate from the PPE storage area. | Term: ST<br>Mandatory: Yes<br>Council approval: No<br>Budget impact: Yes |
| Occupational Health and Safety | The Fire Chief should develop a policy and process for reviewing Section 21 Guidance Notes with the Department's officers and firefighters during regular training sessions. | Term: ST<br>Mandatory: No<br>Council approval: No<br>Budget impact: No |
| Occupational Health and Safety | The Fire Chief should review the Department's health and wellness programs and establish a formalized health and wellness policy. | Term: ST<br>Mandatory: No<br>Council approval: No<br>Budget impact: No |

| Section | Recommendation | Considerations |
|---|---|---|
| SWOT Analysis | The Fire Chief and the officers should review the SWOT analysis results and determine if the Department should incorporate those findings into its strategic planning. | Term: IM<br>Mandatory: No<br>Council approval: No<br>Budget impact: No |
| Social Dynamics | The Fire Chief should schedule regular engagement sessions with the Department's officers and firefighters to open lines of communication within the Department and allow all sections to voice suggestions. | Term: IM<br>Mandatory: No<br>Council approval: No<br>Budget impact: Yes |
| Social Dynamics | The Fire Chief should use social media to promote the Department, develop brand recognition, encourage firefighter pride, and help strengthen the Department's existing community trust. | Term: ST<br>Mandatory: No<br>Council approval: No<br>Budget impact: No |
| Fire Prevention and Public Education | The Fire Chief should develop a fire prevention policy that includes a smoke/CO alarm program, a public education program, and a schedule that sets inspection frequency by occupancy type. The Fire Chief should then submit the policy to Council for consideration and adoption. | Term: IM<br>Mandatory: Yes<br>Council approval: Yes<br>Budget impact: Yes |
| Fire Prevention and Public Education | The Fire Chief should develop a policy to ensure the Department completes the pre-planning process for the Municipality's high-risk occupancies. | Term: ST<br>Mandatory: No<br>Council approval: No<br>Budget impact: No |
| Training | The Fire Chief should develop a process for appointing volunteer trainers/para-trainers who can work with the Deputy Chief to deliver consistent, effective lesson planning and training. | Term: ST<br>Mandatory: No<br>Council approval: No<br>Budget impact: No |

| Section | Recommendation | Considerations |
|---|---|---|
| Training | The Fire Chief should form a training committee to work with the Deputy Chief and the station captains to help plan and develop the Department's training program. | Term: ST<br>Mandatory: No<br>Council approval: No<br>Budget impact: No |
| Training | The Fire Chief should work with the Department's mutual aid partners to establish a joint training program to ensure operational and tactical consistency. | Term: ST<br>Mandatory: No<br>Council approval: No<br>Budget impact: No |
| Response Times and Resource Deployment | The Fire Chief should use the Department's historical response data to develop a baseline regarding response standards. The data should include information from the Department's low-, moderate-, and high-risk responses, as well as population density. The Department should then compare the baseline data with its effective response force model and present its findings to Council. Council should then establish an appropriate level of service for the Department. | Term: LT<br>Mandatory: No<br>Council approval: Yes<br>Budget impact: No |
| Water Supply | The Department should continue to deliver water in non-hydrant areas as per the standards of Superior Tanker Shuttle accreditation. | Term: ST<br>Mandatory: Yes<br>Council approval: No<br>Budget impact: Yes |
| Water Supply | The Fire Chief should review the NFPA's fire hydrant classifications and markings system and ensure the Municipality complies with applicable standards. | Term: IM<br>Mandatory: Yes<br>Council approval: No<br>Budget impact: Yes |

| Section | Recommendation | Considerations |
|---|---|---|
| Fire Apparatus and Equipment | The Municipality should review the Fire Underwriters Survey's technical bulletin regarding the replacement of used and refurbished apparatus. | Term: LT<br>Mandatory: No<br>Council approval: No<br>Budget impact: No |
| Fire Stations | The Fire Chief should complete a cost analysis for Station 2. The Fire Chief should also complete a facility assessment to evaluate the station's current location and needs and verify that the facility complies with current building codes. The Fire Chief should use the results to compare options for upgrading, replacing, or relocating the station. | Term: ST<br>Mandatory: No<br>Council approval: Yes<br>Budget impact: No |
| Emergency Management | The Fire Chief and applicable municipal staff should review the Municipality's community emergency management coordinator (CEMC) and alternate CEMC positions. The review should verify at least one of these roles is filled by someone with an administrative background who can assist with provincial compliance documentation. | Term: OG<br>Mandatory: No<br>Council approval: No<br>Budget impact: No |

# 1.0 Introduction

## 1.1 Context

This FMP provides information and recommendations for Council, the Department's Fire Chief, and the Department's administrative staff. Those groups can use this FMP as a guide when making policy, organizational, capital, and operational decisions that will affect the Department in the immediate term (0 to 1 year), short-term (1 to 4 years), and long-term (5 to 10 years).

This FMP reflects the requirements of the following legislation:

- Fire Protection and Prevention Act, 1997 (FPPA)
- Occupational Health and Safety Act (OHSA)
- Ministry of Labour Fire Service Section 21 Guidance Notes
- National Fire Protection Association Standards (NFPA)
- Fire Underwriters Survey (FUS)
- Ontario Fire Marshal (OFM) Public Fire Safety Guidelines (PFSG)

## 1.2 Definition of Fire Protection Services, Fire Chief, and Council

The following three concepts are essential to a fire master plan's development.

### Fire Protection Services

According to Part II, Section 2 of the FPPA, "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."

### Fire Chief

Part II, Section 6.3 of the FPPA defines a fire chief as "a person who is ultimately responsible to the council of [the] municipality that appointed him or her for the delivery of fire protection services." As part of this role, a fire chief reviews the services their fire department must provide to comply with governing legislation. After completing that review, a fire chief must make recommendations to their council about required services. Fire chiefs are also responsible for providing their council with recommendations about the services needed to meet the community's needs.

### Town/Municipal Council

A council is a governing body that oversees various operational decisions in a community. One of those responsibilities is determining the type of fire protection services the local fire department must deliver to its municipality. A council also determines the level of service a municipality expects its fire department to provide.

## 1.3 Role of The Loomex Group for the Fire Master Plan

As a third-party consultant, The Loomex Group developed this FMP by thoroughly examining the core functions of the fire service and specific fire department operations, including changes in the fire service. After completing that review, The Loomex Group created recommendations for Council and the Department. Those recommendations provide strategies for managing and mitigating issues currently impacting the Department. The recommendations also include ways the Department might incorporate best practices and efficiencies into its operations. The Loomex Group also provided baselines and benchmarks that the Department can use to evaluate its service. Finally, The Loomex Group developed recommendations regarding the potential issues that will affect the Department and the Municipality in the future.

The Loomex Group based its recommendations on two primary sources:

- consultations with the Municipality's fire and emergency services administration and the Department's officers and firefighters
- reviews of applicable legislation, standards, best practices, and the PFSG

The Department must understand that Council and the Municipality's residents, businesses, and visitors expect it to run effectively and efficiently. In turn, these groups need to know the Department's capabilities and limitations, which are based on the Department's available resources. To satisfy those expectations, the Department and Council must evaluate the level of service the Department provides. Therefore, the FMP considers the current and future resources that the Department will require to provide Council-approved fire protection services to the community.

The Department may or may not support the recommendations presented in this FMP, and some recommendations may require additional study or consideration.

# 2.0 Approach and Methodology

## 2.1 Overview of Approach and Methodology

The Loomex Group assembled a project team (the Loomex Team) expressly suited to complete this FMP. The team included experts with experience in the following areas:

- managing emergency services providers
- managing fire departments
- conducting organizational reviews
- developing strategic plans

The Loomex Team's knowledge and commitment to advancing community life safety are evident throughout this document.

The Loomex Group believes that document review and stakeholder engagement are both necessary components of the FMP process. Therefore, The Loomex Group's approach and methodology included the following:

- background reviews of documents and maps
- direct observations of the local community and environment
- engagement sessions with staff from the Department and the Municipality

## 2.2 Fire Master Plan Development Steps

The Loomex Team used the following steps to develop this FMP:

1. Establish terms of reference.
2. Conduct stakeholder engagement sessions.
3. Conduct a SWOT analysis.
4. Collect, review, and analyze data.
5. Complete a community risk assessment.
6. Draft the fire master plan.
7. Finalize the fire master plan.

### Step 1: Establish Terms of Reference

In this stage, the Loomex Team met with the Fire Chief to review the scope of work needed to develop the FMP. During this meeting, The Loomex Group and the Fire Chief established the project's terms of reference.

The Loomex Team also developed a framework to meet the FMP's requirements and sent that framework to the Fire Chief for review and approval.

**Step 2: Stakeholder Engagement**

In this stage, the Loomex Team held an initial engagement session with the following stakeholders:

- the Fire Chief
- the Deputy Chief
- the Municipality's fire administrative staff
- the Department's officers and firefighters
- the Municipality of Mississippi Mills Steering Committee

The goals of the engagement session were as follows:

1. Introduce the Loomex Team.
2. Present the framework for developing the FMP.
3. Outline the role of each member of the Loomex Team and identify what each member will contribute to the FMP.

**Step 3: SWOT Analysis**

The Loomex Team met with the Deputy Chief and organized SWOT analysis sessions with the Department's officers and firefighters. During the sessions, the Loomex Team asked questions related to the Department's strengths, weaknesses, opportunities, and threats. The SWOT analysis was an essential component of the FMP's development, and the results of the analysis informed some of The Loomex Group's recommendations about the Department's operations.

Any officers and firefighters who were unable to attend a SWOT analysis session had the option of providing their thoughts and suggestions through an online survey or a face-to-face meeting.

**Step 4: Data Collection, Review, and Analysis**

The Loomex Team worked with the Fire Chief and the Deputy Chief to review and analyze numerous documents containing both current and relevant historical information about the Department. For The Loomex Group to provide the Department with informed recommendations, it was essential for the members of the Loomex Team to understand the developments that led to the structure of the Department's current operations.

The Loomex Group reviewed the following documents:

- applicable bylaws
- asset management plans
- response protocols
- operating and capital budgets
- firefighter compensation
- applicable agreements
- organizational structure
- mapping of municipal boundaries, station locations, and response data
- population development data and studies

During these reviews, the Loomex Team members maintained an open mind regarding how the Department conducts business.

Throughout the analyses, the Loomex Team sought to identify collaborative opportunities and determine ways for the Department to incorporate shared services, cost savings, and cost avoidance strategies into its operations. At the same time, the team members considered the safety of the Department's firefighters and ensured that the recommendations would keep the Department's operations aligned with its Council-approved level of fire protection services.

During this step of the FMP's development, the Loomex Team also analyzed the following topics:

- governance and applicable legislation and bylaws
- operating budgets, capital budgets, and purchasing
- community risk profiles
- community growth
- fire protection agreements
- best response practices (per NFPA 1710, NFPA 1720, and the PFSG)
- administration
- human resources, job descriptions, and succession plans
- recruitment, retention, and compensation
- firefighter training and education programs
- fire stations, apparatus, and equipment

- fleet and equipment maintenance
- fire prevention programs (related to public education and code enforcement)
- fire suppression
- dispatch and radio systems
- technology and future needs

In addition to data collection and stakeholder engagement, the Loomex Team spent time in the community to observe the Municipality from a first-hand perspective.

**Step 5: Complete a Community Risk Assessment**

In this stage, The Loomex Group completed a community risk assessment (CRA). The CRA's development involved reviewing the following profiles to identify the Municipality's public safety risks:

1. Geographic
2. Demographic
3. Economic
4. Building Stock
5. Critical Infrastructure
6. Community Services
7. Public Safety Response Entities
8. Past Events and Loss History
9. Hazards

**Steps 6 & 7: Draft and Final Fire Master Plan**

The Loomex Group held regular meetings with the Department's staff to ensure the FMP benefited from continual reviews throughout its development. After completing the draft version of the FMP, The Loomex Group provided the document to the acting Fire Chief. The Fire Chief reviewed the draft, made comments, and returned the document to The Loomex Group. The Loomex Group reviewed all comments from the Fire Chief and updated the FMP accordingly. The Loomex Group then issued the finalized version of the FMP to the Fire Chief and presented Council with highlights and recommendations from the document.

# 3.0 Overview of the Municipality of Mississippi Mills

## 3.1 Demographics and Statistics

The Municipality is situated in eastern Ontario. It is located within Lanark County, on the Mississippi River (an area that is at least partially located within the region known as Canada's National Capital Region).

The following communities comprise the Mississippi Mills area:

- Almonte
- Appleton
- Bennies Corners
- Blakeney
- Cedar Hill
- Clayton
- Galbraith
- McCrearys
- Montgomery Park
- Pakenham
- Ramsay
- Snedden
- The Tannery
- Uneeda
- Union Hall

According to the 2021 Statistics Canada Census, the Municipality has a total landmass of 511.25 $km^2$ and a population of 14,740 residents, with approximately 28.8 residents per $km^2$. Figure 1 shows the location and geographic borders of the Municipality.

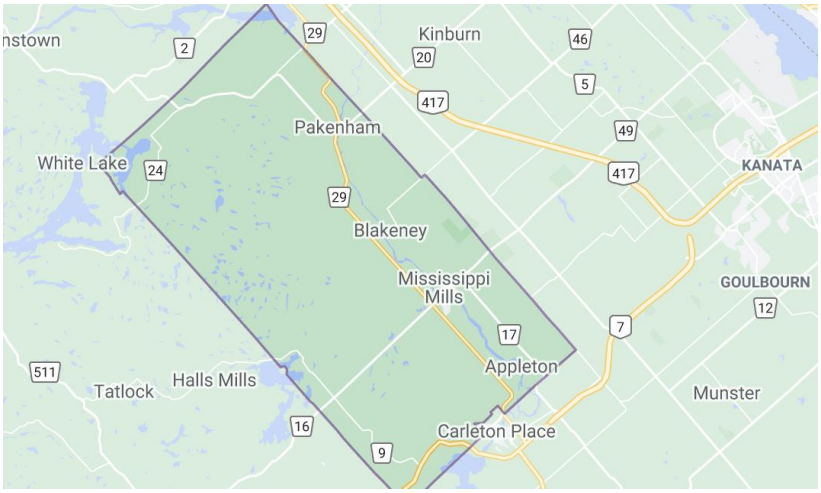


Figure 1. Location of the Municipality of Mississippi Mills.[1]

One of the most prominent physical features in the area is the Mississippi River, which is a tributary of the Ottawa River. The portion of the Mississippi River that intersects with the Municipality is noteworthy for the abundance of flora and fauna that it supports. The Mississippi River also feeds many swamps and marshlands. Figure 2 shows the portion of the Mississippi River that passes through the Municipality's Pakenham area.

Figure 2. Mississippi River passing through the Pakenham area.[2]

## 3.2 Community and Culture

The Municipality offers a wide range of events and festivities for residents and visitors alike. Some of the most popular events include the North Lanark Highland Games, the Naismith 3-on-3 Basketball Festival, the Almonte Fair, and CeltFest.

[1] Google Maps, http://maps.google.com.
[2] P199 (https://commons.wikimedia.org/wiki/File:Pakenham_ON.JPG), "Pakenham ON", https://creativecommons.org/licenses/by-sa/3.0/legalcode.

In addition to its various annual events, the Municipality houses several museums, including the Dr. James Naismith Museum and the Mississippi Valley Textile Museum. The Municipality is also home to areas that combine the region's history and natural surroundings, such as the Mill of Kintail Conservation Area and Metcalfe Geoheritage Park.

The Pakenham area of the Municipality is known for Mount Pakenham, a popular skiing location that houses a resort and areas for skiing, snowboarding, tubing, and hiking. There are also three scenic golf courses and several beaches in the area. These sites and other attractions ensure that the Municipality has something to offer its residents and visitors year-round.

### 3.3 Mississippi Mills Fire Department: Fire Services History

Before The Loomex Group could develop a vision for the Department's future, the Loomex Team needed to understand how the Department arrived at where it is today. As such, The Loomex Group reviewed the history of the Department with the Fire Chief, Deputy Chief, and the Department's officers and firefighters. During this review, The Loomex Group noted the significant developments that helped shape the Department's structure.

In its early years, the Department was known as the Almonte Ramsey Fire Department. In 1998, the Almonte, Ramsay, and Pakenham communities amalgamated their fire services under one fire service provider. Such a move was common for many communities in the Province of Ontario at that time. The new fire department was named the Mississippi Mills Fire Department and was guided by the leadership of its first full-time fire chief, Art Brown. Under Fire Chief Brown, the Department began integrating its services.

Over the past 25 years, a dedicated group of volunteers consisting of community-minded firefighters has supported the Municipality of Mississippi Mills region. These volunteer firefighters have upheld a fire department built on the tradition of doing what is best for community residents. A timeline of the Department's fire chiefs is as follows:

- Fire Chief Art Brown: 1997–2014
- Fire Chief Pascal Meunier: June 2014–June 2018
- Fire Chief Scott Granahan: October 2018–April 2019
- Fire Chief Steve Giberson: April 2019–August 2019
- Fire Chief Chad Brown: September 2019–December 2021
- Fire Chief Mike Williams: June 2022–present

# 4.0 Legislation, Bylaws, and Agreements

## 4.1 Municipal Liability Policy vs. Operational Decisions for Fire Protection

Over the years, many municipalities across Canada have been challenged in court over the decisions of their councils. These challenges often relate to the operational policies determining how fire departments provide their services and operate at fire scenes. One such challenge in the Province of Quebec resulted in a precedent-setting decision by the Supreme Court of Canada (SCC).

In the 1989 case of Laurentide Motel Ltd. v. Beauport, the SCC found that Beauport, Quebec, was liable for a sizable portion of the fire loss that occurred at the Laurentide Motel in 1972. This case was precedent-setting because, prior to this time, municipalities and fire departments were largely considered free from civil liability for firefighting efforts. An important aspect of determining liability was the issue of "Policy Decisions v. Operational Decisions." As a result of the SCC's 1989 decision, the City of Beauport had to pay over $500,000, plus interest.

A summary of the Supreme Court Judgments reads as follows:

> A client's negligence led to a fire that damaged the appellants' hotel complex in the city of Beauport. As soon as they arrived, the firefighters sprayed water from the fire truck onto the fire, but the water soon ran out owing to the impossibility of connecting with the hydrants. The latter, which were difficult to reach and covered with snow, were unusable because they were frozen or broken. It was not until some forty minutes later that water was finally obtained from the hydrants. The appellants brought an action for damages against the person who had set the fire and the respondent, alleging fault by the latter in fighting the fire, namely that its equipment had not been maintained and did not function properly, as well as fault by its employees in the performance of their duties.[3]

This FMP includes a summary of the Laurentide Motel Ltd. v. Beauport case as an object lesson for Council to consider when making decisions about fire protection services. Council should note that the case summary identified water supply and negligence in firefighting operations as crucial issues. While there is no question that a client in the motel was responsible for causing the fire, the city's failure to maintain and operate effective fire protection services (in this case, water supply and firefighting) meant that the city was partially responsible, and therefore liable, for most of the ensuing costs.

In the Beauport ruling, the SCC determined that policy decisions made by a council are mostly free from liability. The SCC made that decision because a council is an elected body that communicates its decisions in ways that should be familiar and accessible to

[3] Judgements of the Supreme Court of Canada - Laurentide Motel vs. Beauport (City) http://scc-csc.lexum.com/scc-csc/scc-csc/en/item/436/index.do

its community's citizens (such as bylaws, council minutes, or news reports). If most citizens are unhappy with the council's decisions, they can elect different councillors at the next election. Conversely, when operational decisions are made by fire departments, the public may not be aware of the specifics of those decisions. As a result, the public may have limited or no opportunity to question or change decisions that could adversely affect them.

Following the SCC ruling in the Laurentide Motel Ltd. v. Beauport case, many municipalities have updated their bylaws related to fire protection. This is a step to help ensure that the local council decides on services and policies rather than leaving these matters exclusively to the local fire department. Among those fire protection bylaws is the establishing and regulating bylaw (E&R Bylaw). An E&R Bylaw specifies the services a local fire department must provide and the level of service its community expects. An E&R Bylaw also outlines various other fire prevention bylaws, including:

- open burning bylaws
- false alarms bylaws
- fireworks bylaws
- fire routes bylaws
- service agreements (such as mutual aid and automatic aid agreements)

## 4.2 Legislation

In general, the Department's operations are guided by provincial legislation, industry standards and best practices, and municipal bylaws, agreements, and policies.

The primary legislation and standards guiding the Department's operations are as follows:

- Fire Protection and Prevention Act, 1997
- OFM Public Fire Safety Guidelines
- Emergency Management and Civil Protection Act, R.S.O. 1990 (EMCPA)
- Ontario Building Code (OBC)
- Ontario Fire Code (OFC)
- NFPA standards
- Occupational Health & Safety Act
- Section 21 Committee Guidelines
- Highway Traffic Act, R.S.O. 1990 (HTA)
- Municipal Act

- Municipal Freedom of Information and Protection of Privacy Act
- municipal bylaws
- corporate policies and guidelines

Of those examples, the FPPA is particularly important. The FPPA outlines the minimum standards that fire departments must meet regarding the provision of life safety systems. In order to comply with the FPPA, municipalities must have the following documents and practices in place:

- a simplified risk assessment
- a smoke alarm program
- a vulnerable occupancy program
- the distribution of fire safety education materials
- the completion of inspections upon complaint or when requested to assist with OFC compliance

### 4.3 Bylaws

To meet the requirements of the FPPA and other legislation, Council must approve the level of service that the Department provides to the Municipality's residents, businesses, and visitors. Council makes its decision through an E&R Bylaw, which is based on recommendations from the Fire Chief. As per the Municipality's E&R Bylaw, Council is responsible for approving the following core fire department services:

- emergency response
- fire prevention and public education
- fire administration
- communications/resource centre
- training and education
- maintenance
- support services

The Review found that the Municipality's current bylaws are comprehensive and applicable to the community's needs. However, some of the recommendations made in this FMP will require the Municipality to update its E&R Bylaw. Therefore, if the Department implements any recommendations from this FMP that affect the E&R Bylaw's current content and form, the Fire Chief must provide Council with an updated version of the bylaw for consideration and adoption.

## 4.4 Types of Agreements

Under the authority of the FPPA and municipal bylaws, a municipality can enter into an agreement with another municipality to provide or receive a service. As outlined in the PFSG, there are several differences regarding the requirements for such agreements. The following subsections discuss those differences.

### 4.4.1 Mutual Aid Plan

PFSG 04-05-12: Mutual Aid states that mutual aid plans allow a participating fire department to request assistance from a neighbouring fire department that is also authorized to participate in a plan approved by the Fire Marshal.

A mutual aid plan specifies that municipalities providing service to the designated areas agree to assist each other in the event of an emergency. Section 7 of the FPPA states that the Fire Marshal may appoint fire coordinators to “establish and maintain a mutual aid plan under which the fire departments that serve the designated area agree to assist each other in the event of an emergency.”

According to the FPPA, a mutual aid plan should involve the following:

- activating mutual aid during a major emergency where the home fire department is committed or the situation cannot be contained or controlled with available resources
- activating the provincial Chemical, Biological, Radiological, Nuclear (CBRN) or Heavy Urban Search and Rescue (HUSAR) response system
- activating a county, district, or regional automatic aid program (optional)
- activating a county, district, or regional hazardous materials support response (optional)
- activating a county, district, or regional extrication support response (optional)
- activating a county, district, or regional specialized rescue support response (optional)

Mutual aid is not immediately available if an area receives fire protection through a fire protection agreement (see below). The municipality purchasing fire protection is responsible for arranging an acceptable response for backup fire protection services. In cases where the emergency requirements exceed those available through the purchase agreement and the backup service provider, the mutual aid plan can be activated for the agreement area.

### 4.4.2 Automatic Aid

PFSG 04-04-12: Automatic Aid states that automatic aid agreements are considered in municipal areas to provide the first response to a location that has another fire department in closer proximity, regardless of municipal boundaries.

An automatic aid agreement aims to ensure that residents receive the quickest response possible. These agreements reduce the time it takes for firefighters to arrive and extinguish a fire, which helps minimize property loss and maximize the protection of residents.

### 4.4.3 Fire Protection Agreements

PFSG 04-09-12: Fire Protection Agreements defines fire protection agreements as contracts between participating municipalities that address the specifics of providing or receiving fire services at a cost.

A municipality may enter into a fire protection agreement if it does not have an existing fire department and does not want to establish one. Through an agreement, a municipality might gain access to or support for the following:

- specialized equipment
- staffing
- public education
- code enforcement
- various services

A municipality may also enter into a fire protection agreement to have multiple departments operating and managing a fire department jointly. The local council must approve all fire protection agreements its municipality looks to establish.

## 4.5 Agreements Currently in Place with the Department

As of this FMP, the Department has the following agreements in place:

- The Department has an automatic aid agreement to receive support from Carlton Place and Arnprior.
- The Department has an automatic aid agreement to provide support to the White Lake area of Lanark County and the areas not covered by McNab Township.
- The Municipality has an agreement with the Ministry of Natural Resources (MNR). The MNR agreement provides the Municipality with air tankers, Twin Otter aircraft, helicopters, and other support services when needed.

The Department receives additional support through oral agreements with local municipalities and the County Coordinator. The Department has also participated in the County's rescue program, which includes a heavy rescue agreement with the members of Lanark County.

### 4.6 Recommendations

After assessing legislation, bylaws, and agreements in the Municipality, The Loomex Group developed the following recommendations:

1. The Fire Chief should review the Municipality's current fire protection agreements and automatic aid agreements. The Fire Chief should then notify Council of any changes needed to ensure the Municipality remains compliant with municipal regulations.

2. If the Department implements any of this Fire Master Plan's recommendations that affect the establishing and regulating bylaw, the Fire Chief should provide Council with an updated version of the bylaw for consideration and approval.

# 5.0 Occupational Health and Safety

## 5.1 Legislative Compliance

The Department must comply with several health and safety governance models that address workplace safety, such as:

- the OHSA (also known as the Green Book)
- the Ministry of Labour's Ontario Fire Service Health and Safety Advisory Committee
    - This committee is formed under Section 21 of the OHSA and comprises stakeholders from across Ontario. The committee develops the Section 21 requirements, and the Minister of Labour is responsible for reviewing and approving them.

The Review found that the Department is committed to safety, which it promotes through its dedicated occupational health and safety program.

## 5.2 Health and Safety Committee

The Department's health and safety committee (HSC) holds quarterly meetings to discuss fire-specific issues and concerns. The HSC consists of:

- the Fire Chief
- the Deputy Chief
- one district chief and two firefighters from Station 1 (Almonte)
- one district chief and two firefighters from Station 2 (Pakenham)

The HSC ensures that the Department conducts and submits the results of monthly inspections at both Station 1 and Station 2. The HSC also ensures that the Department posts information regarding health and safety on bulletin boards in the fire stations.

Despite the Department's commitment to promoting safety, the Review noted that the Department only reviews the Section 21 Guidance Notes during recruit training. The Department does not regularly review the Section 21 Guidance Notes during subsequent training sessions.

## 5.3 Personal Protective Equipment

Firefighters use many types of personal protective equipment (PPE), such as:

- bunker gear
- helmets

- firefighting boots
- gloves
- flash hoods
- self-contained breathing apparatus (SCBA)

These items are the primary equipment firefighters use to protect themselves from injury and death.

Over the last few decades, health and safety agencies have conducted studies on ways to reduce injury and death among firefighters. For example, the Workplace Safety and Insurance Board has recognized that certain cancers are directly attributable to the by-products of fires and hazardous materials. As a result of these studies, the fire service's PPE standards and legislation have evolved.

The Review found that the Department has policies and procedures in place to maintain and replace its PPE, especially at Station 1. At Station 1, the Department stores its PPE in a ventilated room that is separate from the apparatus floor. The Department also has on-site cleaning facilities to deal with contaminated PPE. However, the Review noted that the cleaning machines are installed in the PPE storage room. The Department should relocate or isolate the washing/cleaning facilities to minimize potential health and safety concerns (such as cross-contamination).

Station 2 does not have on-site cleaning facilities or an isolated PPE storage area. As a result, the Department keeps its PPE in the rescue vehicle on the apparatus floor.

### 5.4 Firefighter Wellness

In addition to promoting safe practices in the workplace, fire departments can support the health and safety of their firefighters through wellness programs. These programs can address many aspects of wellness, including cancer prevention, nutrition, physical activity, critical incident management, and post-traumatic stress disorder (PTSD).

The Review found that the Department does not have a formal policy regarding mental health and wellness. However, the Department has several programs to assist with firefighter wellness, which it offers in-house and through county-wide partners. These programs include the following:

- an employee assistance plan that provides benefits through VFIS and Homewood Clinics
- participation in the county-wide critical incident stress management program for firefighters, which facilitates peer-support
- annual reviews and training sessions on mental health and available resources
- PTSD training for all recruits during county-wide firefighter recruitment training

These programs offer good resources for the Department's staff, but there are benefits to be gained by establishing a dedicated in-house program. For instance, a formal wellness program may make a role with the Department more attractive, which can lead to increased recruitment and retention.

The Department has also made strides in promoting firefighter wellness by providing its staff with exercise equipment. This equipment allows the Department's firefighters to engage in physical activity, which supports their physical and mental health. The exercise equipment is kept at Station 1, and members of both stations can access the equipment when desired. (The Department cannot install a dedicated exercise/fitness area in Station 2 due to the numerous structural limitations of that facility.)

## 5.5 Recommendations

After assessing occupational health and safety in the Municipality, The Loomex Group developed the following recommendations:

1. The Fire Chief should consider ways to keep the PPE washing area at Station 1 separate from the PPE storage area.

2. The Fire Chief should develop a policy and process for reviewing Section 21 Guidance Notes with the Department's officers and firefighters during regular training sessions.

3. The Fire Chief should review the Department's health and wellness programs and establish a formalized health and wellness policy.

# 6.0 SWOT Analysis

## 6.1 Overview of a SWOT Analysis

A SWOT analysis is a planning method that identifies and evaluates an organization's strengths, weaknesses, opportunities, and threats. SWOT analyses provide organizations with information about internal and external factors, both helpful and harmful, that affect their ability to achieve their objectives.

## 6.2 SWOT Analysis for the Fire Master Plan

The first part of the Department's SWOT analysis involved separate engagement sessions with officers from Station 1 (Almonte) and Station 2 (Pakenham). An additional session with the firefighters from both stations followed. The Loomex Group and the Department conducted these sessions from November 22-24, 2021. In order to comply with COVID-19 restrictions, the engagement sessions adhered to attendance number protocols. Individuals who were unable to attend a session were provided with the opportunity to share their thoughts through an online survey.

During each session, The Loomex Group asked the participants nine questions to stimulate discussion about the past, present, and future of their stations and the Department. Overall, each engagement session was well attended and facilitated insightful discussions. The results of the SWOT analysis significantly informed the content of this FMP.

The results from the SWOT analysis revealed that the members of the Department are very dedicated to their organization, the community, and the fire service. The results also revealed that the Department's members share many common opinions about the Department, including:

- Officers and firefighters consider their top two contributions to the community and the Department to be:
    - their dedication as firefighters to providing emergency responses
    - their support of the community through various activities and fundraisers designed to promote civic pride in the Municipality
- Officers and firefighters agreed that the Department needs to focus on stabilizing the Fire Chief position, as the position has changed hands several times since 2018. Without this stability, Department members and the Municipality's residents must continually establish relationships with new fire chiefs, which hinders communication. The SWOT participants recommended hiring a local applicant for the role of Fire Chief. The participants agreed that such an applicant would support the community and likely serve as the Fire Chief for a long tenure. (**Note:** Since the SWOT sessions, Mike Williams, the Department's former Deputy Chief, has been appointed Fire Chief.)

- Both the dispatch and radio systems need improvements to allow for enhanced coverage and consistent standard delivery at dispatch. Such changes will help the Department improve its communications and enhance firefighter safety.
- Generally, officers and firefighters feel adequately compensated, but they made suggestions about reviewing the benefits offered by the Department. The consensus was that if the Department improves its benefits, it may help attract new recruits or better retain its current staff.
- The discussions indicated that the Department's members are satisfied with the apparatus and equipment the Department and Municipality provide.
- Officers and firefighters are concerned about the Pakenham Fire Station, noting that the station's size, functionality, and safety concerns may render the facility inadequate in the coming years. The Department's staff view Station 2 as an outdated building that does not meet the Department's needs. The SWOT participants believe the Department should review the facility to determine if it should be renovated or relocated.
- The SWOT participants think that the current NFPA standards provide excellent guidelines for the Department's training program.
- The SWOT participants expressed concern that the Department places too many demands on one position (the Deputy Chief). Doing so hampers the Deputy Chief's ability to effectively organize, plan, and deliver the Department's required training.

### 6.3 Recommendations

After assessing the SWOT analysis results, The Loomex Group developed the following recommendations:

1. The Fire Chief and the officers should review the SWOT analysis results and determine if the Department should incorporate those findings into its strategic planning.

# 7.0 Social Dynamics

## 7.1 Overview of Social Dynamics

Social dynamics is defined as “the study of group behaviour that results from individual group members’ interactions and the study of the relationship between individual interactions and group-level behaviours.”[4]

This section of the FMP uses that definition to address the topic of social dynamics within the Department.

## 7.2 Social Dynamics in the Department

When discussing changes to a fire department, people often forget to consider social dynamics during the decision-making process. If the Municipality and the Department are going to make changes, they must first understand whom those changes will affect and how the affected groups will react. Specifically, when making strategic decisions, there needs to be an understanding of local history, community culture, and municipal demographics, including the Municipality’s anticipated future growth and development. During any decision-making process, the Municipality should consider its many different community groups, as each has its own established behaviours. For the Municipality, these groups include the Department’s officers and firefighters, the steering committee, the mayor, Council, and community residents. The Municipality should also consider the social dynamics of all parties who share services with the Department.

The Department should create a transparent process that will build trust among those who will be affected by any changes. It can create such a process by establishing cooperative relationships between its firefighters and Council. There are several ways to build trust: face-to-face meetings, town hall meetings, mutual aid meetings, joint meetings within the Department, and surveys are all proven methods. Once the Department and the Municipality have established a healthy social dynamic based on trust, it will be easier for both groups to make suggestions and promote change within the Department. To create such a social dynamic, the Municipality and the Department can emulate the engagement process that the Loomex Team used while developing this FMP.

At the time of the Review, the Department’s Fire Chief position was changing. Participants in the SWOT analysis and engagement sessions were concerned about the high Fire Chief turnover rate over the past five years. These participants suggested that hiring qualified local individuals whenever possible may reduce the impact on the Department’s social dynamics in the future. (**Note:** Since the conclusion of the Review, Mike Williams, the Department’s former Deputy Chief, has been appointed Fire Chief.)

[4] Durlauf, Steven; Young, Peyton (2001). Social Dynamics.

## 7.3 Recommendations

After assessing social dynamics in the Municipality, The Loomex Group developed the following recommendations:

1. The Fire Chief should schedule regular engagement sessions with the Department's officers and firefighters to open lines of communication within the Department and allow all sections to voice suggestions.

2. The Fire Chief should use social media to promote the Department, develop brand recognition, encourage firefighter pride, and help strengthen the Department's existing community trust.

# 8.0 Fire Prevention and Public Education

## 8.1 Legislation

Public education and code enforcement are municipal responsibilities mandated under the FPPA. To comply with the FPPA, a municipality must provide specific fire prevention and protection services; it must also provide any additional services that its council deems necessary for meeting the community's needs. Due to the importance of these topics, a review of the Municipality's public education and community code enforcement programs was an essential component of this FMP.

As mentioned above, the FPPA states that municipalities must make provisions for fire protection services within their communities. According to Part II, Section 2 of the FPPA, "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."

The OFM has stipulated that this requirement also includes the following components:

- a recognized smoke/CO alarm and home evacuation program
- a public education program
- a schedule for completing fire inspections and evacuation for vulnerable occupancies
- a schedule for completing fire inspections by complaint and request
- a simplified risk assessment to determine the risks in the community and the required level of fire prevention and emergency response

In 2013, two more regulations were introduced under the FPPA regarding fire prevention activities:

- O.Reg.365/13: Mandatory Assessment of Complaints and Requests for Approval
- O.Reg.364/13: Mandatory Inspection – Fire Drill in Vulnerable Occupancy

## 8.2 Fire Prevention

PFSG 04-39-12: Fire Prevention Effectiveness Model (illustrated in Figure 3) sets recommended standards for fire prevention and public fire safety guidelines.

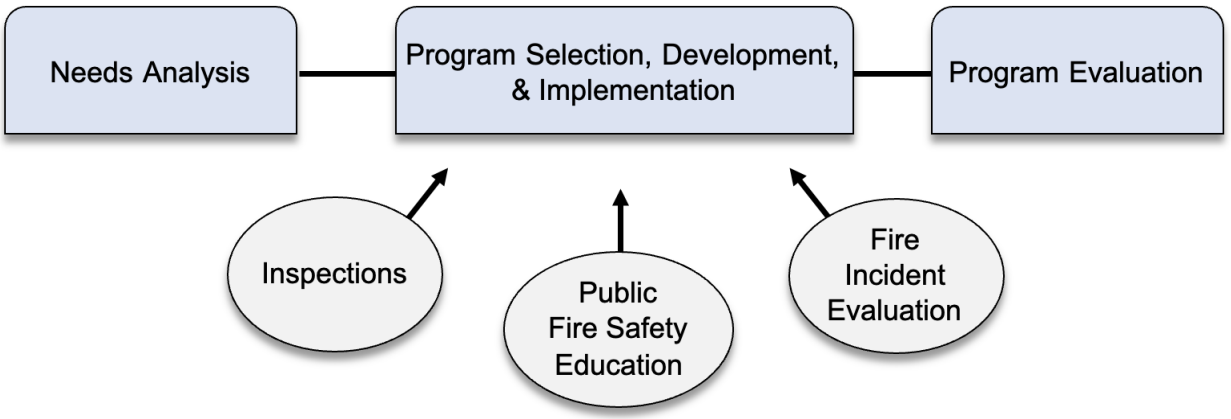


Figure 3. Fire Prevention Effectiveness Model.

PFSG 04-39-12 defines the Fire Prevention Effectiveness Model as follows:

- a planning aid that focuses on one of the eight components of the comprehensive Fire Safety Effectiveness Model
- a tool to ensure all issues are identified and addressed when considering any fire prevention programs or activities, or reviewing existing programs

### 8.3 The Three Lines of Defence

In the past, the fire service ranked the three lines of defence as follows:

1. fire suppression
2. code enforcement
3. public education

However, most progressive fire departments now recognize the importance of reversing the order of these priorities as follows:

1. public education
2. code enforcement
3. suppression

This revised focus does not mean that emergency response is no longer a critical function of the three lines of defence. Instead, the new ranking recognizes the importance of emphasizing public education and code enforcement as preventative measures before suppression becomes necessary.

Fire departments that educate the community and bring fire safety issues to the forefront are most effective at preventing fires and protecting lives and property. By providing a greater awareness of fire safety through strong public education and code enforcement programs, a fire department can significantly influence a community's well-being. As fire departments redefine their approach to the three lines of defence, they must run aggressive fire prevention programs that meet their communities' current needs as well as their projected future needs.

In most cases, structure fires occur because public education and code enforcement have failed. When the need for fire suppression arises, both community risk and the risk to the lives of responding firefighters increases exponentially. Of the three lines of defence, fire suppression also has the most significant financial impact on a municipality.

Statistics show that most fires, as well as injuries and deaths due to fires, are preventable. However, in many cases, municipalities provide enough resources for a proactive fire prevention model; some do not fund such a model at all. This lack of funding is often due to the necessity of having available funds reallocated to offset the costs involved with fighting fires or assisting the Suppression Division. While the Municipality cannot reduce its Suppression Division, it can be proactive in designing initiatives aimed at reducing the number of fires in the community. Such efforts will help to mitigate potential risks for residents, businesses, and firefighters, thereby providing cost-saving opportunities.

## 8.4 Public Education Activities

Public education activities raise a community's awareness about the importance of fire safety. Fire departments can promote these activities across various platforms, including presentations, participation at events, and public service announcements.

When fire departments participate in community events such as fairs, station tours, and fire station open houses, their members have opportunities to distribute safety information via brochures, books, and other teaching materials. Community events also offer the opportunity for firefighters to engage with the public and for the public to get an up-close look at fire apparatus and a fire station.

The Review found that the Department engages with the community through many public education activities. Although the COVID-19 pandemic reduced the number of events in which the Department could participate, the Department has maintained a strong community presence. The Department has attended local schools, organized a fire prevention booth, held station tours, hosted a Fire Prevention Week campaign, and participated in other events as requested. The Department views all public education events as opportunities to engage with the community and provide information on fire safety.

## 8.5 Smoke/Carbon Monoxide Alarm Program

Under the FPPA, municipalities must establish a formalized smoke/CO alarm program. The program must include a procedure for ensuring that residents have working alarms whenever the fire department interacts with them (such as during emergency responses), the tracking of working smoke alarms in residences, and a method for keeping statistics on the number of working and not working smoke alarms. Additionally, the program should include a schedule for proactively checking residential smoke/CO alarms. To satisfy this component of the FFPA, the Department can conduct home inspections and home fire escape reviews for community residents, including those in seasonal dwellings and trailer parks. Most municipalities adopt a smoke/CO alarm program bylaw to satisfy this FPPA requirement.

The Review found that the Department has an active smoke/CO alarm program. The Department provides updates on the program through the Municipality's website and public service announcements. Additionally, when the Department makes an emergency response, the responding Department members ensure the residence they are attending has a working alarm in the house before they leave. The responding Department members then document the replacement on the incident report for the response.

## 8.6 Inspections and Compliance

For tracking purposes, the Department's code enforcement calls and its inspections are divided into the following five categories:

- complaint
- request
- sale request
- vulnerable occupancies
- other

### Type 1: Complaint Inspections

The Department conducts a complaint inspection when it receives a complaint regarding a possible fire code violation. As per the FPPA, the Department must conduct complaint inspections. The Department must also complete follow-up actions for all complaint inspections. The most common follow-up actions are correspondence (in the form of a letter) and the addition of a note to the complaint's file.

### Types 2 & 3: Request and Sale Request Inspections

The Department usually conducts a request or sale request inspection for new occupancies, licensing, property sales, and assistance with fire code compliance.

### Type 4: Vulnerable Occupancies Inspections

The Department conducts annual vulnerable occupancy inspections as per the FPPA.

### Type 5: Other Inspections

The Department conducts inspections classified as “other” when it receives notification of concerns through means other than those listed above (such as a home inspection program, retrofit, or general inquiry). The Department may also conduct this type of inspection to inspect specific occupancies or areas of the Municipality.

Table 3 summarizes the inspections completed by the Department from 2016 to 2020 (based on information from the Municipality’s 2020 CRA).

Table 3. Reason for inspection, 2016–2020.

| Year | Complaint | Owner Request | Routine | Licensing | Totals |
|---|---|---|---|---|---|
| 2016 | 7 | 29 | 88 | 20 | 144 |
| 2017 | 8 | 40 | 126 | 17 | 191 |
| 2018 | 2 | 11 | 54 | 10 | 69 |
| 2019 | 1 | 6 | 55 | 7 | 69 |
| 2020 | 2 | 4 | 7 | 5 | 18 |

Table 4 summarizes the results of the inspections, infractions, and notices that were issued by the Department in 2019 and 2020.

**Note:** The Department did not track data related to violations prior to 2019.

Table 4. Violations noted, and notices issued, for 2019 and 2020.

| Year | Verbal | Letter | FSIR | Order | Total | Resolved |
|---|---|---|---|---|---|---|
| 2019 | 4 | 0 | 0 | 0 | 4 | 4 |
| 2020 | 0 | 1 | 0 | 5 | 0 | 0 |

## 8.7 Vulnerable Occupancies

As noted above, the FPPA requires fire departments to complete mandatory inspections and fire drills in vulnerable occupancies.

There are ten vulnerable occupancies in the Municipality. The Review found that the Department appears to be up to date on its required vulnerable occupancy inspections; the Department inspects these occupancies annually and assists them with their legislated fire drills.

Given the current structure of the Department and the changes at the Fire Chief's level, the Department requires a dedicated staff member to complete vulnerable occupancy inspections. At the time of the Review, the Department's Fire Prevention Officer was on a temporary contract slated to conclude at the end of 2022. Since then, the position has become full-time. A full-time Fire Prevention Officer will allow the Department to take a proactive rather than a reactive position, eliminating a potential gap which may have led to ongoing liability issues for the Municipality.

## 8.8 Fire Investigations

After a fire occurs, the FPPA requires a fire investigation to take place to identify the cause of the fire. If the cause of a fire is accidental, information from the inquiry reinforces the need to increase fire prevention and public education initiatives. The preliminary investigation of the cause, origin, and circumstances of a fire is the responsibility of the local fire department and is an essential component of fire protection.

In order to determine the causes of fires accurately, it is critical for fire personnel to receive advanced training in arson detection. Arson is a criminal offence and is sometimes used to cover other illegal activities or defraud insurance companies. If a fire is determined to be suspicious, the responding fire department notifies the OFM and the local police.

The FPPA states that all assistants to the Fire Marshal must notify the OFM of all incidents that meet, or that appear to meet, the following criteria:

- There is a fire or explosion that results in a fatality or a serious injury requiring a person to be admitted as an in-patient to a hospital. (**Note:** It is the responsibility

of the fire department to make every reasonable effort to confirm the status of injured persons transported to the hospital prior to the release of the fire scene.)

- There is an incident in which an explosion is the primary event.
- There is a fire or explosion involving suspected incendiary (criminal) causes. These types of fires include dumpster fires, car fires, and wildland fires. All incendiary fires and explosions must also be reported to the applicable police service. Discretion may be used when there is no impact on a building, or in circumstances where there is no apparent threat to life.
- There is a fire or explosion involving a significant loss to the community.
- There is a fire that results in an unusual fire/smoke spread.
- There is a fire or explosion that may result in widespread public concern, such as an environmental hazard.
- There is a fire or explosion in a multi-unit residential occupancy where the fire or explosion impact reaches beyond the unit of origin, or suspected OFC violations are impacting the event.
- There is a fire or explosion involving clandestine drug operations, or marijuana grow operations.

Under the FPPA, the Department, the Fire Chief, Deputy Chief, and the Fire Prevention Officer must follow all appropriate steps to determine the causes of fires. As part of this obligation, the Department, the Fire Chief, and the Fire Prevention Officer must notify and work with the OFM's investigators when required.

The Review found that the Department meets the minimum level of service under the FPPA. However, limited staff resources and other commitments impact the timeliness and effectiveness of these services.

## 8.9 Community Risk Assessment: Context

On July 1, 2019, the Province of Ontario passed a regulation that requires every municipality to complete a CRA by July 1, 2024. Every municipality must then review the CRA annually and complete a new CRA every five years. This regulation is governed under the authority of the FPPA.

Relevant extracts from this regulation are presented below.

**From Sections 1 to 4, Mandatory Use**

Every municipality, and every fire department in a territory without municipal organization, must (a) complete and review a community risk assessment as provided by this regulation; and (b) use its community risk assessment to inform decisions about the provision of fire protection services.

**From Section 2**

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

(2) A community risk assessment must include consideration of the mandatory profiles listed in Schedule 1.

(3) A community risk assessment must be in the form if any, that the Fire Marshal provides or approves.

**From Section 3**

(1) The municipality or fire department in a territory without municipal organization, must complete a community risk assessment no later than five years after the day its previous community risk assessment was completed.

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

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

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

**From Section 4**

(1) The municipality or fire department in a territory without municipal organization must complete a review of its community risk assessment no later than 12 months after,

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

b) the day its previous review was completed.

(2) The municipality or fire department in a territory without municipal organization must also review its community risk assessment whenever necessary.

(3) The municipality or fire department in a territory without municipal organization must revise its community risk assessment if it is necessary to reflect,

a) any significant changes in the mandatory profiles,

b) any other significant matters arising from the review.

(4) The municipality or fire department in a territory without municipal organization does

not have to review its community risk assessment if it expects to complete a new community risk assessment on or before the day it would complete the review.

### 8.10 Community Risk Assessment for Mississippi Mills

CRAs provide municipal councils and fire departments with the information they need to make informed decisions about fire protection services. A CRA helps identify the types of fire protection services required in a community, as well as the level of service with which those services should be delivered. The information in a CRA is based on the risks identified in a community after a comprehensive assessment of nine mandatory community profiles has been completed. Once a community's risks have been identified, they are analyzed, evaluated, and prioritized using a risk level matrix.

The Loomex Group completed a CRA for the Municipality in conjunction with the writing of this FMP. The Municipality's proactive approach to completing both documents helps ensure it is compliant with provincial regulations. Additionally, completing the CRA provided the Loomex Team with information about the community's specific risks that helped the team members develop sections of this FMP. **Error! Reference source not found.** shows the Municipality's fire and life safety risks identified by the CRA. The Loomex Group determined the risks using OFM worksheets and a risk matrix.

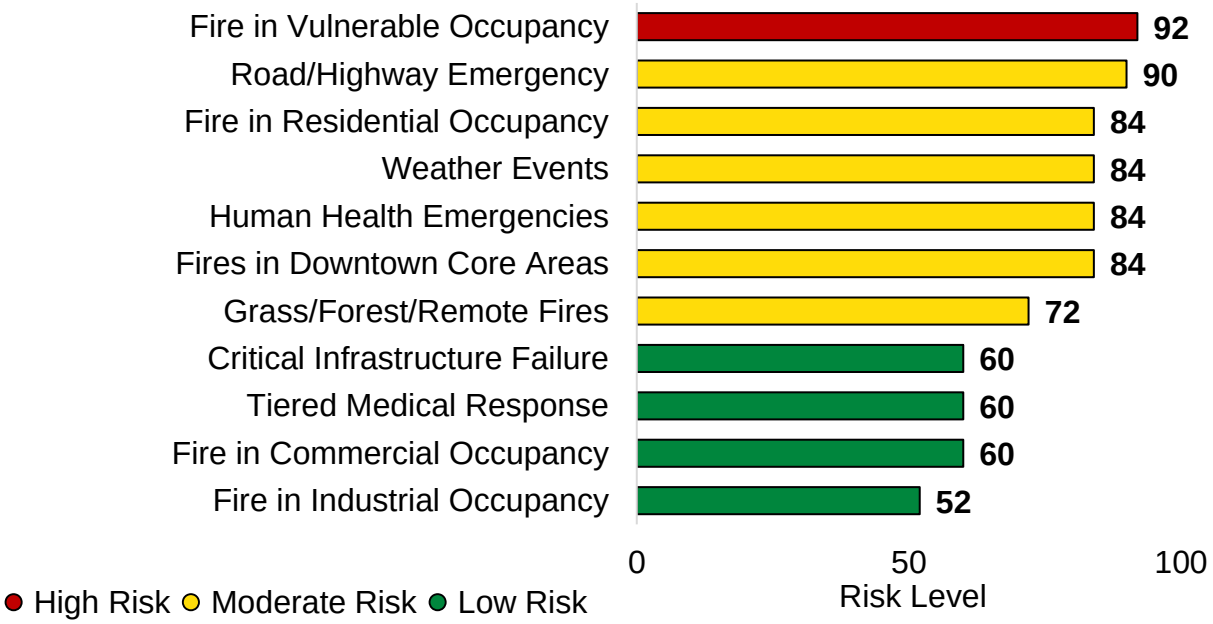


Figure 4. Life safety risks identified in the Municipality of Mississippi Mills.

The Municipality's CRA shows that the Department needs to complete the pre-planning process for the Municipality's high-risk occupancies and formalize a fire prevention policy.

## 8.11 Fire Prevention Policy

The Department must formalize a fire prevention policy and establish a program that meets the Municipality's current and expected future needs. This policy should set the parameters for how often the Department needs to complete inspections (based on occupancy type and level of risk). The fire prevention policy should also formalize the Department's public education and smoke/CO alarm programs.

The Review found that the Department is meeting the minimum level of compliance required for public education and code enforcement programs. The Department also completes inspections by request or complaint. However, limited staff resources and other commitments impact the timeliness and effectiveness of these services.

The Review also noted that the Department has completed other routine inspections, such as vulnerable occupancy inspections. That said, without a fire prevention policy, there are no guidelines for inspection standards or frequency. The Department also does not complete regular inspections at the Municipality's high-risk occupancies. If this practice continues, it puts the inhabitants of these occupancies, as well as the Department's firefighters, at risk.

As discussed above, the three lines of defence model promotes a proactive approach to community fire and life safety, prioritizing public education and code enforcement. This model is safer and more cost-effective than relying on emergency responses. Many fire departments across Ontario have set a standard for community inspections based on risk; Council can use these examples to develop/establish a similar program in the Municipality. This approach reduces the risk to the community and the Department's firefighters and, in the long term, will yield cost savings for the Municipality.

**Note:** At the time of the Review, the Department was unable to take a more proactive approach to public education and code enforcement programs. This was partly due to the lack of a full-time Fire Prevention Officer. The part-time Fire Prevention Officer was unable to keep up with the high volume of requests or complaints the Department received. Since the Review, the Department made the strategic decision to make the Fire Prevention Officer position full-time. This change will allow the Fire Prevention Officer to be more proactive and improve the Department's prevention and education programs.

## 8.12 Recommendations

After assessing fire prevention and public education in the Municipality, The Loomex Group developed the following recommendations:

1. The Fire Chief should consider hiring a new Fire Prevention Officer to ensure the Department is compliant with inspections, violations, and public education requirements. adoption

2. The Fire Chief should develop a fire prevention policy that includes a smoke/CO alarm program, a public education program, and a schedule that sets inspection frequency by occupancy type. The Fire Chief should then submit the policy to Council for consideration and.

3. The Fire Chief should develop a policy to ensure the Department completes the pre-planning process for the Municipality's high-risk occupancies.

# 9.0 Training

## 9.1 Overview of Training Legislation

It is mandatory for fire departments to complete ongoing training to ensure that their operations remain safe and effective. It is also mandatory for firefighters to complete ongoing training to maintain their skill levels.

Under the OHSA, all employers must meet the following general training requirements:

- Provide prescribed equipment, materials, and protective devices.
- Keep all equipment, materials, and protective devices in good condition.
- Carry out prescribed measures and procedures in the workplace.
- Provide information, instruction, and supervision to workers to protect their health and safety.

As per Ontario Regulation 297/13, subsections 4(1) and (2), employers must keep a record of the awareness training their employees and supervisors receive. This includes a record of any worker or supervisor who is exempt from the training.

The Province of Ontario requires fire departments to provide their employees with training on the following topics:

- Incident Management System for Emergency Management
- Accessibility for Ontarians with Disabilities Act (AODA)
- Workplace Hazardous Materials Information System (WHMIS)
- workplace harassment

Fire departments should also ensure their members receive all other required training.

Lastly, employers should protect the well-being of their employees by providing them with health and safety training. Once employees complete a training program, employers must maintain records of the completed training to verify that measures were taken to prevent hazards, accidents, discrimination, and harassment in the workplace.

## 9.2 Training Structure of the Department

The Department bases its training program on NFPA standards. All Department members complete training based on this model. New recruits also fall under the county-wide program and follow NFPA guidelines during their recruit class training period.

In recent years, the increased demands on fire departments have made it more

challenging to deliver effective training. In addition to government-mandated training, fire departments must incorporate new NFPA standards into their training programs. As such, all staff members in the Department must now work harder to ensure training compliance. The Fire Chief, Deputy Chief, and officers must deliver the Department's training programs, keep records of all completed training, and ensure the Department remains compliant with all applicable requirements. The responsibility of the firefighters is to remain compliant with the applicable standards.

For the Department to deliver effective training, monitor the progress of its members, and maintain proper documentation, the Deputy Chief and the front-line officers must work together to support the volunteer training program. By working together, the Department's leaders can guarantee the success of the training program.

## 9.3 Overview of the Department's Training Program

While it is part of the Fire Chief's role to oversee the Department's training program, that responsibility is partially shared with the one full-time Deputy Chief. The Deputy Chief must help manage the Department's training program and its fire prevention/inspection initiatives. This work is in addition to providing suppression services on weekdays. As a result, the Deputy Chief's time is split between too many duties. Because of these many duties and the frequency of daytime service calls, the Deputy Chief is unable to dedicate much time to training.

Currently, the Department drafts training schedules for six-month periods. When the schedules are complete, the district chiefs and captains review them. The district chiefs and captains are also responsible for delivering the training on the specified nights. The timelines for the scheduled training remain flexible, pending the availability of resources and instructors and any seasonal impacts.

## 9.4 Recruit Training

Under the guidance of the Fire Chief, each of the Department's fire stations manages recruitment and selects candidates. This approach allows each station to gauge interest within its community.

Fire stations advertise orientation evenings where potential new members can apply. The recruit intake process screens applicants to determine the most suitable candidates. The group which makes the final selection consists of the Fire Chief, the Deputy Chief, two district chiefs, and a representative from the Municipality's Recreation and Culture Department (when required).

Recruits complete in-house training at their respective station and a countywide training program. The Department provides the countywide program with a list of its successful applicants, and the program administrators assign these recruits to a class. This program is generally scheduled early in the year, after individual fire departments complete their intake programs.

The shared recruit program is structured to ensure that no single fire department is burdened with conducting the entire program. Several fire departments provide instructors for the program, thereby reducing costs for all fire departments involved. Without the shared program, many fire departments in Lanark County might have difficulty finding enough qualified instructors to make the required time commitment. This structure also allows the students to receive a more diversified training experience from a pool of standardized and certified instructors. Overall, the shared training model is ideal for Lanark County's fire departments. The program is an excellent example of how these departments work together and share services.

Before the training program begins, applicants are advised that it involves a five-to-six-month time commitment and that all training is off-site. Upon completing the program, recruits attain NFPA Firefighter 1 & 2 (FF 1 & 2) certification, as well as hazardous materials awareness and operations certification.

## 9.5 In-Service Training

In-service training is regular, ongoing training that firefighters complete to maintain their skills. This includes standardized, needs-based, and specialized training.

At a minimum, the Department's in-service training takes place three nights per month. The staff reviews the schedule in advance, allowing the Department's captains enough time to prepare for the training. Training may also take place on dedicated Saturdays to provide sufficient time to cover complex topics. The type of training offered may depend on seasonal conditions.

All firefighters and officers must train to current NFPA standards – specifically FF1, FF2, and hazardous materials training. Many of the Department's members are grandfathered as per the OFM standards and are viewed as having knowledge or experience equivalent to that gained in training. The Department also undertook a three-year program to achieve NFPA 1001 standards. This program required dedicated lesson plans and adherence to the NFPA's job performance reviews. Such a program places a heavy burden on in-service training from an organizational perspective.

The Deputy Chief must commit a significant amount of time to facilitating in-service training, which is an additional challenge for the Department. As noted above, the Deputy Chief is the Department's sole training officer. In addition to fulfilling the role's other responsibilities, the Deputy Chief must provide training schedules on a six-month basis and review the schedules with station captains a few weeks prior to the training. Although the Department has some content experts, it does not have dedicated training officers, para-trainers, or a training committee that can prepare and deliver its training programs.

## 9.6 Officer Development

The Department has a standard operating guideline (SOG) regarding officer

development. The SOG provides a framework for staff promotions and lists the requirements that officers must meet or exceed to achieve competent supervisor status.

The Department offers its members opportunities for advancement. Promotion to an officer position is based on merit and qualifications, and the Department's officer development SOG provides clear guidelines for hiring a district chief, captain, and lieutenant. Establishing and maintaining a quality officer development program is not an easy task. Many fire departments across Ontario face challenges stemming from the time commitment required of volunteer officers to obtain company officer certification. Still, it is essential for fire departments to address the topic of officer development, and many departments have found unique ways to develop an officer development program that ensures all officers and potential officers are qualified.

Department members can also receive the officer training needed for promotions through countywide training programs. Most members complete training in-house, as the Department is an OFM-registered regional training centre. With the closure of the OFM provincial training centre in Gravenhurst, fire departments must now rely on regional training centres or resources either within their own department or outside their districts for officer training. However, these courses still require a significant time commitment, as volunteer firefighters must spend time away from their primary jobs to attend classes for officer development.

## 9.7 Training Challenges

Most fire departments in Ontario face significant challenges regarding managing and implementing training. Given the increased impact of NFPA standards, many fire departments require assistance to meet the demands of an effective training program, including lesson plans, records management, scheduling, and training delivery. The Review found that the Department faces many of these challenges, and the Department is not currently completing all required training.

The SWOT analysis sessions also noted the following challenges:

- The Deputy Chief's role is split between training and fire prevention duties. These demands have hindered the delivery of consistent training.
- The officers have an increased number of responsibilities, as they must ensure training is adequate and that the Department's members are compliant with NFPA standards.
- Firefighters would like the Department to offer more hands-on training.
- Firefighters would like to receive better notifications about when training will occur.

Even though the Deputy Chief provides a training schedule/outline for the Department's stations, the training program depends on the availability of NFPA-certified instructors

on any given training night. The Deputy Chief is also not always available to oversee volunteer firefighters at these sessions.

Overall, the Review found that the training program is as effective as it can be under the current circumstances. However, the program is over-reliant on the Deputy Chief, creating a single point of failure within the training system. This, coupled with new, more demanding NFPA standards, has hindered the success of the Department's ongoing training. Many of these issues could be solved if the Department had a full-time training officer or training committee to support the Deputy Chief. While the Department has a SOG in place, the SOG does not address the Department's need for a training officer. This FMP recommends the Department hires a dedicated training officer to provide education, leadership, and content expertise to the organization's officers.

Additionally, the Department is not using para-trainers. Although para-trainers do not have NFPA certifications, they are qualified to facilitate training and education. The Department should develop a group of para-trainers to support its certified instructors. This group will ensure training sessions are organized and applicable to the Department. This initiative will provide greater flexibility for the Department, allowing training to occur even when certified instructors are unavailable.

Best practices have shown that many fire departments bridge gaps in training programs by establishing training committees and increasing the number of qualified training instructors at both the officer and firefighter ranks. If the Department follows suit and forms a training committee to work with the Deputy Chief and assist with the planning, development, and delivery of the training programs, the overall structure of its training program should benefit.

### 9.8 Recommendations

After assessing training in the Municipality, The Loomex Group developed the following recommendations:

1. The Fire Chief should develop a process for appointing volunteer trainers/para-trainers who can work with the Deputy Chief to deliver consistent, effective lesson planning and training.

2. The Fire Chief should form a training committee to work with the Deputy Chief and the station captains to help plan and develop the Department's training program.

3. The Fire Chief should work with the Department's mutual aid partners to establish a joint training program to ensure operational and tactical consistency.

# 10.0 Organizational Overview of the Department

## 10.1 Overview of the Department

The Department is part of the Municipality's Community Safety Division.

The Department is led by the Director of Protective Services/Fire Chief and a combination of part-time and full-time support staff. The remaining staff is composed of volunteers, who are established and approved by Council.

As per the Municipality's E&R Bylaw, the Department operates out of two stations, which are located in Almonte and Pakenham. The Department's current full-time positions are the Fire Chief, the Deputy Chief, and the administrative assistant. At the time of this FMP's development, the Department employed a part-time Fire Prevention Officer. That position was slated to conclude at the end of 2022.

## 10.2 Director of Protective Services/Fire Chief

The Fire Chief is responsible for the Department's overall management and operations. The role oversees the following initiatives:

- fire suppression
- emergency responses
- training
- fire prevention
- communications
- code enforcement
- emergency management
- public education

The Fire Chief also manages the Municipality's fire protection services and emergency management programs. This responsibility involves coordinating with other emergency service agencies and municipal departments per corporate policies and procedures, E&R Bylaws, the FPPA, and other applicable legislation. The Fire Chief also acts as the Municipality's chief bylaw enforcement officer and serves on the Mississippi Mills Police Services Board.

Overall, the Fire Chief has responsibilities for the following areas:

- administrative tasks
- bylaw services

- Council
- emergency management
- facilities
- fire code enforcement
- fire prevention
- fire suppression services
- health and safety
- mechanical
- training

### 10.3 Deputy Fire Chief

The Deputy Fire Chief has the following responsibilities:

- Act in a supervisory capacity and coordinate and manage personnel (under the direction of the Fire Chief).
- Conduct mandatory inspections of the Municipality's vulnerable occupancies and maintain the records and reporting requirements for each inspection.
- Conduct regular performance reviews.
- Coordinate the Municipality's emergency plan as per the Emergency Management and Civil Protection Act.
- Coordinate training activities, develop an annual training plan for the officers and firefighters, support the district chiefs and captains with training, and ensure the Department's training complies with current provincial and national standards.
- Ensure the Department complies with WHMIS regulations, the OHSA, and its own policies and procedures.
- Ensure the safe operations and management of on-scene emergency services.
- Conduct fire safety inspections.
- Maintain the Department's smoke/CO alarm program.
- Participate in the Lanark County Mutual Aid Association.

The Deputy Chief also relieves the Fire Chief during the latter's sick leave, time off, vacations, and other duties as required.

### 10.4 Administrative Assistant

The administrative assistant is primarily responsible for supporting the Fire Chief. This role also has the following responsibilities:

- Assist the Deputy Chief, Fire Prevention Officer, and station captains with general administrative duties.
- Complete data entry (payroll).
- Maintain the Department's records management system, including making entries for the provincial incident reporting system (required as per OFM).
- Maintain the "Who's Responding?" program, which includes the municipal fire permit system.

As part of the Municipality's emergency management program, the administrative assistant is an alternate CEMC and provides administrative support for the Municipal Emergency Management Control Group.

### 10.5 Fire Prevention Officer

At the time of the Review, the Department's Fire Prevention Officer was a temporary position slated to conclude at the end of 2022. This position was a part-time role that operated 24 hours per week. Since then, the Department has made the position a full-time permanent role.

The Review found that the Fire Prevention Officer handled their inspection, code enforcement, and investigation responsibilities in a reactive rather than a proactive manner. This setup severely limited the role's ability to address the community's needs. In the long term, the Municipality may have faced liability issues regarding compliance with the Fire Prevention Effectiveness Model.

# 11.0 Current Challenges Faced by the Department

## 11.1 Challenges Faced by the Fire Chief

A competent fire chief is the foundation on which a fire department builds an effective organization. When it has the right fire chief, a fire department is more likely to meet or exceed its legislative requirements. The right fire chief also helps ensure that their department delivers its council-approved services and proactively develops life safety programs. This makes the department more likely to meet or exceed its community's expectations.

Being a fire chief is a full-time job. This reality is especially true for fire chiefs working in smaller communities or with volunteer or part-time firefighters. Outside of their normal daily tasks, these fire chiefs often work after hours and on weekends to ensure their departments meet all responsibilities. Such a schedule places a fire chief in a position that is more operational than strategic, and it creates an unsustainable work-life balance.

One of the main challenges for fire chiefs is overseeing both legislative and personnel concerns. For example, the OFM has issued 86 PFSGs, 69 of which are the direct responsibility of a fire chief. Fire chiefs must also ensure their departments remain compliant with other legislation, such as the FPPA and the OHSA. Regardless of the size of its municipality, a fire department must adhere to all requirements of these legislative documents. Although the title "volunteer firefighter" may cause some confusion, a volunteer firefighter requires the same supervision and management as a part-time or full-time employee. Due to the complexity of the job and the need for adherence to legislation, effectively motivating and managing volunteer firefighters requires an added amount of time and a skill set that not all supervisors possess.

The Fire Chief's job description and responsibilities are outlined in the Municipality's E&R Bylaw.

# 12.0 Resource Deployment and Response Times

## 12.1 Resource Deployment

The FPPA sets out a list of requirements for providing community fire protection services. According to the FPPA, those services should reflect each community's local needs and circumstances. Fire departments and municipalities must understand those requirements when determining levels of service. The Province of Ontario, the Municipality, and the Department are all obligated to follow these requirements.

There is no scientific method that fire departments can use to determine what resources they will require for each fire situation. However, the NFPA Fire Protection Handbook and the OFM provide general guidelines about the initial critical fire ground tasks that responders must perform for structure fires at each level of risk (low, moderate, high, and maximum). Additionally, the results of studies conducted by the National Institute of Standards & Technology (NIST) support the NFPA and OFM guidelines.

When deciding on its level of service, a fire department should measure its effective response force (ERF). ERF is a metric defining the number of people and resources needed to complete identified critical tasks. For any given response, the ERF defines the resources required to prevent injuries, the loss of lives, and the growth of the emergency. The ERF also measures the initial timed response of first responders arriving at an emergency scene. After analyzing the ERF, the Department and the Municipality should use this measured response time to evaluate future response performance.

## 12.2 Determining an Effective Response Force

To make informed decisions about its response time and staffing levels, the Department must track and analyze statistics to identify its strengths and weaknesses. Once it identifies its strengths and weaknesses, the Department can recommend a standard of cover for Council's approval. The standard of cover will address the level of service the Department can provide to the community.

Before discussing the topic in more detail, it must be noted that, in recent years, the Province of Ontario has influenced how decisions are made about fire department staffing, primarily through the OHSA and the FPPA. Under the FPPA, the employer (the Municipality and Council) is responsible for protecting its employees from workplace injuries or death. Employee training and competent supervision are each part of this requirement. The Department must consider these requirements, as well as similar legislation, alongside the statistics used to determine its ERF.

### 12.3 Department Statistics

According to its statistics, the Department made the following number of responses from 2016 to 2020:

- 2016: 205 responses
- 2017: 177 responses
- 2018: 218 responses
- 2019: 141 responses
- 2020: 179 responses

Figure 5 illustrates the Department's responses by type from 2016 to 2020. The figure ranks the responses by frequency.

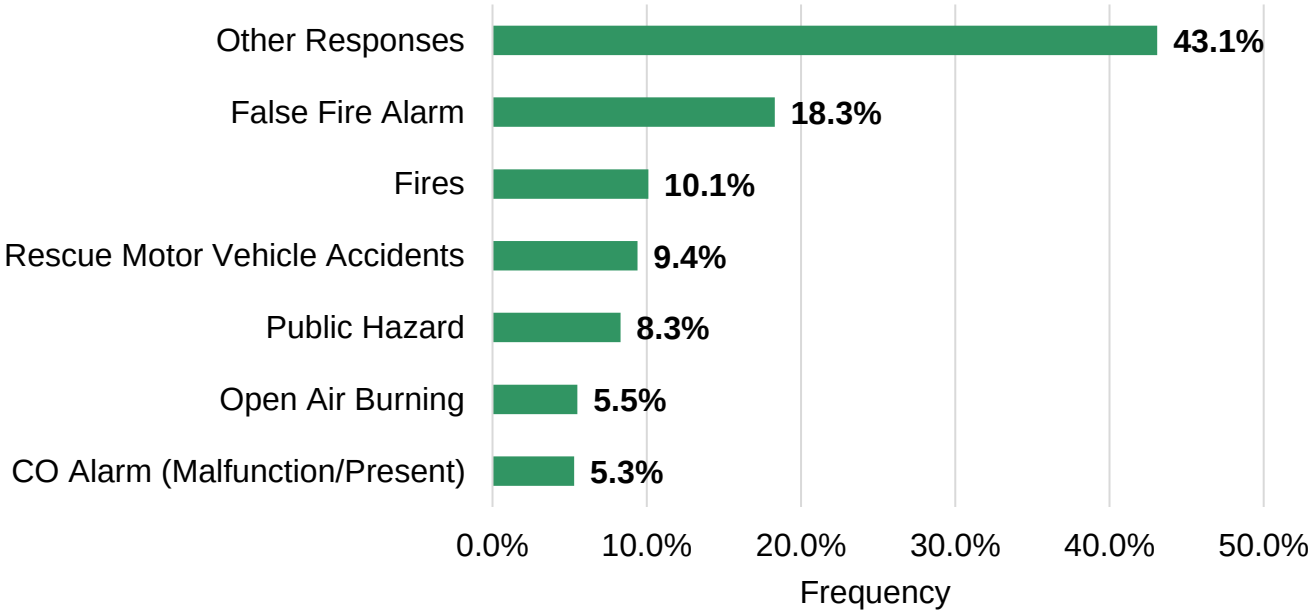


Figure 5. Department responses, 2016–2020.

**Error! Reference source not found.**Table 5 summarizes the Department's fire r esponses from 2016 to 2020.

Table 5. Types of fire responses, 2016–2020.

| Response | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Loss Fires: Structures | 6 | 2 | 6 | 4 | 8 |
| Loss Fires: Other | 0 | 0 | 5 | 0 | 0 |
| Loss Fires: Vehicles | 2 | 1 | 5 | 3 | 4 |
| No Loss Fires | 9 | 2 | 8 | 12 | 19 |
| Non-Fire Calls | 166 | 159 | 167 | 122 | 148 |

Table 6 lists the number of fires in the Municipality from 2016 to 2020 that resulted in dollar loss. Table 7 lists the yearly dollar loss for these fires.

Table 6. Fires which resulted in dollar loss, 2016–2020.

| Occupancy | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Group A | 0 | 0 | 0 | 1 | 0 |
| Group B | 0 | 0 | 0 | 0 | 0 |
| Group C | 4 | 1 | 6 | 3 | 7 |
| Groups D&E | 0 | 1 | 0 | 0 | 1 |
| Group F | 0 | 0 | 0 | 0 | 0 |
| **Total** | **4** | **2** | **6** | **4** | **8** |

Table 7. Total dollar loss, 2016–2020.

| Year | Dollar Loss |
|---|---|
| 2016 | $1,638,100 |
| 2017 | $177,000 |
| 2018 | $1,697,400 |
| 2019 | $295,901 |
| 2020 | $2,165,705 |
| **Total** | **$5,974,106** |

## 12.4 Reviewing Historical Performance

To identify its service delivery capabilities, the Department must review its historical performance, particularly the factors of distribution and concentration. The Department should also use modelling and statistical analysis to verify that it is using its resources efficiently and effectively. Before the Department can determine its service performance, it must compile and analyze historical response data from each of its stations.

## 12.5 Calculating Total Response Time

Every emergency response comprises four categorizable steps. The total amount of time it takes for an emergency services provider to respond is determined by timing these steps and adding them together. For the analysis to be accurate, the response steps must be measured consistently across all responses.

Figure 6 illustrates the four steps used to calculate total response time. Each step is defined below.

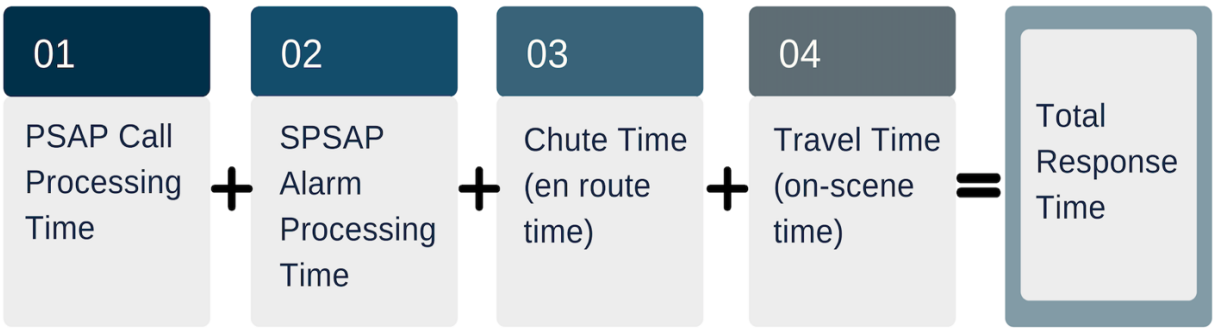


Figure 6. Components of an emergency response.

### Step 1. Public Safety Answer Point (PSAP) Call Processing Time

- The PSAP call processing time begins when the PSAP or 911 call centre receives an emergency call and transfers the call to the Department.
- This step ends when the Department's dispatch centre answers the transferred call.

### Step 2. Secondary Public Safety Answer Point (SPSAP) Alarm Processing Time

- The SPSAP alarm processing time begins when the Department's dispatch centre receives an alarm (incident beginning).
- This step ends when the communication technician/dispatcher activates the station's paging devices (dispatch time).

**Step 3. Chute Time**

- Chute time begins when the station activates its pagers, and the responding apparatus begins its response.
- This step ends when the apparatus's response is noted by or to dispatch via the Department's radio system (en route time).

**Step 4. Travel Time (First Unit)**

- Travel time begins when the responding apparatus initially acknowledges its response.
- This step ends when the responding apparatus confirms to dispatch via radio that it has arrived on-scene (on-scene time).

**Total Response Time (First Unit)**

- Total response time is the sum of time from when the PSAP or 911 centre receives a call to when the first emergency response apparatus arrives at the emergency scene.

The Department must analyze each step of its emergency responses (using the definitions above) to gauge its service delivery capabilities. By doing so, the Department can define its historical response times. Accurate and reliable data is essential for this task. The information gained from this process is what the Department will use to make strategic decisions or service alternatives, and it is imperative that the Department bases those decisions on sound evidence.

To determine a baseline measure for its incident response, the Department should use a five-year sample of its historical response data for fires with dollar loss. The Department can use that baseline to understand its current performance. Once the Department establishes a baseline, it can set a "benchmark" or "target" time for completing each step of an emergency response. Benchmarks are goals that an organization sets for itself; if the Department can achieve its benchmarks, it means that the Department is operating at its self-determined optimal service delivery capacity during an emergency response. It is crucial that the Department understands its historical performance and current service delivery capabilities.

Many agencies now accept that fire departments can measure their performance by examining how well they achieve their goals rather than by analyzing a simple average metric. For example, suppose a department can respond to an emergency with a 12-minute total response time at 90 per cent efficiency (that is, in nine out of every ten responses). If so, that department assumes that 10 per cent of its responses will not meet the 12-minute response time. Identifying issues within this 10 per cent variable may help the fire department plan and implement protection and prevention strategies.

## 12.6 Response Times and Structure Fires

The response time for all emergencies that involve a structure fire is critical. In these scenarios, the sooner the first responders arrive at the scene of the emergency, the better their chances of saving lives and limiting property damage.

A fire's growth is heat-generated and is dependent upon fuel and air supply. Once the temperature in a room ablaze reaches approximately 1,000 °F (590 °C), a flashover will occur in the entire room within six to ten minutes (or less). Since the risk for loss of life and property significantly increases following a flashover, the sooner a fire department can begin fire suppression, the greater the chance of successfully protecting people and property. The combination of appropriate response time and firefighter intervention increases the likelihood of rescue and improves fire control before a flashover can occur. The time/temperature curve chart shown in Figure 7 illustrates a fire's growth over time. The information displayed in the image reinforces how critical it is to have a prompt intervention to limit the loss of life and property.

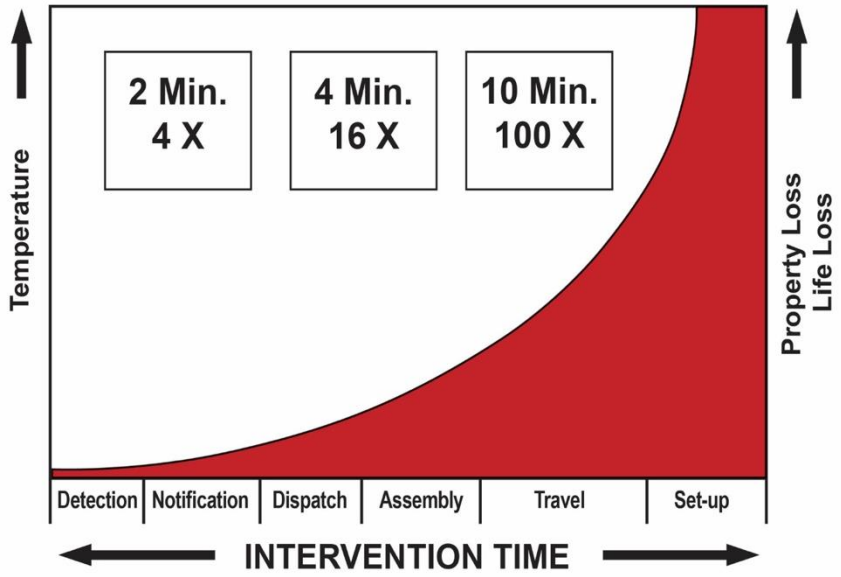


Figure 7. Growth of a fire over time.

## 12.7 Expectations, Performance Objectives, Service Levels, and Benchmarks

The public expects the Department to respond to emergencies when needed. The Department must understand the expectations of the public and Council so that it can prepare itself to meet those expectations. In all scenarios, the Department must arrive promptly and with sufficient resources to provide fire protection and suppression services. The Department must perform these operations in accordance with its established procedures and in a way that provides for the safety of the responders and the public.

By understanding these expectations and adhering to industry standards, the Department can begin setting its performance objectives and service levels. To ensure it has the information needed to set/achieve expected service levels, the Department must review its service delivery, station locations, equipment, resources, and prevention and educational strategies. The Department must also keep the community informed about the continuous advancement of its capabilities.

The Department should consider the following when setting performance objectives:

- national standards (such as NFPA 1221, 1710, and 1720, which provide guidelines for emergency response benchmarking and form the basis of many standard operating procedures)
- relevant legislation (such as the PFSG, Ontario's Section 21 Guidance Notes, and the OHSA)
- industry best practices
- the Department's current capabilities and available resources

The Department should pay particular attention to NFPA 1720. This standard is intended to provide guidance to volunteer fire services. Early drafts of the NFPA 1720 standard were met with significant opposition. Members of rural departments understood that a volunteer deployment standard with a "one-size-fits-all" approach would put them in a difficult, if not impossible, position. However, the organizations which drafted the standard understood the uniqueness of the volunteer fire service. Each volunteer fire department may differ in the services it offers and the way it deploys resources and responds to incidents. Thus, the standard was meant to provide a baseline and benchmark rather than strict guidelines.

To accurately gauge its ongoing service delivery capabilities, the Department must continually monitor and compare its performance to accepted industry standards.

### 12.8 Staffing and Response Time

Table 8 presents sample staffing and response time performance objectives. The table defines each type of demand zone by its demographics and lists the minimum number of staff needed for responses in each area, as well as the expected response time. The table also includes a metric for measuring fire department effectiveness. This metric measures how often a minimum number of staff should respond within the expected time. For example, a fire department is considered effective if it can dispatch at least 15 staff to an incident in an urban area in nine minutes 90 per cent of the time.

**Note:** The text of this table is taken directly from NFPA 1720. The NFPA uses the term Authority-Having Jurisdiction (AHJ) to refer to the body with jurisdiction over an emergency scene.

Table 8. Staffing and response time standards (NFPA 1720).

| Demand Zone[5] | Demographics | Minimum Staff to Respond[6] | Response Time[7] (minutes) | Meets Objective (%) |
|---|---|---|---|---|
| Urban area | > 1000 people/mi$^2$ (2.6 km$^2$) | 15 | 9 | 90 |
| Suburban area | 500-1000 people/mi$^2$ (2.6 km$^2$) | 10 | 10 | 80 |
| Rural area | < 500 people/mi$^2$ (2.6 km$^2$) | 6 | 14 | 80 |
| Remote area | Travel distance ≥ 8 mi (12.87 km) | 4 | Directly dependent on travel distance | 90 |
| Special risks | Determined by AHJ | Determined by AHJ based on risk | Determined by AHJ | 90 |

After establishing its performance objectives, the Department can identify the gaps preventing it from achieving the baselines and benchmarks of its desired service levels. By adopting the service level targets and objectives identified in this FMP, the Department can lessen the gap between its performance objectives and its intended baselines and benchmarks. After adopting this FMP's recommendations, the Department should use strategic planning to discover other ways to improve the effectiveness and efficiency of its operations.

### 12.9 Deployment to Risk Industry Standard (Risk Assessment)

Recently, the fire service reconsidered the way fire departments should deploy their assets. One best practice that is now widely accepted is basing deployment models on local needs and circumstances. This approach puts the risks specific to an individual community at the centre of the deployment model's considerations. Several industry-leading organizations, such as the OFM, the Metro Fire Chiefs Association, and the

[5] A jurisdiction can have more than one demand zone.
[6] Minimum staffing includes members responding from the AHJ's department and automatic aid.
[7] Response time begins upon completion of the dispatch notification and ends at the time interval shown in the table.

Commission on Fire Accreditation International, have endorsed this risk-based deployment model as the most effective way of protecting lives and property.

Another popular and accepted model for determining fire protection resources is the Effective Fireground Staffing Model (EFSM). The OFM developed the EFSM in the 1990s as part of a comprehensive fire safety model that identified seven sub-models which impact fire protection. The EFSM comprises the following components:

- public attitude
- fire prevention effectiveness
- fire risk
- detection
- intervention time
- fire ground effectiveness
- suppression capabilities

The EFSM is now widely used across Ontario and is a vital tool that helps fire departments determine an ERF.

Fire departments also use community risk assessments to determine what types and levels of fire protection services they need to provide to their communities. CRAs identify the risks that may affect residents or property within a specific community, such as exposure to natural and human-made emergencies. Identifying community risks provides information for determining effective resource allocation and service provision – the greater the risk, the greater the resources required.

### 12.10 Distribution

When measuring its distribution, a fire department must consider the following for all areas of the community:

- Where is the closest fire station?
- How long will it take for the responding unit to arrive at the scene?

Fire stations must be strategically located to ensure that a responding unit can quickly arrive at any emergency scene. A fast response ensures that firefighters can contain, minimize, and terminate incidents as soon as possible. Fire departments should also consider the distribution networks of neighbouring fire departments to determine the best locations for fire stations.

Over the years, techniques for determining efficient station locations and response times have evolved. In years past, that process involved measuring and marking

distances on a physical map. Fire departments now use mapping technology, such as ArcGIS tools and response modelling, to compare multiple data sources and plan for the best closest-station response. Many fire departments also work with the Environmental Systems Research Institute. During the mapping process, fire departments study their station response zones by analyzing road networks, speed modelling, historical data, and data provided by the GIS tool. Fire departments use these tools to determine the areas they can and cannot reach in the timelines set by their performance objectives.

Overall, GIS tools can help fire departments review their current station response areas and determine which of the following options will best meet their community's needs:

- establishing a sub-station
- relocating a station
- partnering with a neighbouring fire department

### 12.11 Critical Tasks

To effectively respond to an emergency, a fire department needs to know the number and types of resources that will be required at an emergency site. A critical tasks analysis can help fire departments understand what resources they will require at the scene of an emergency by identifying the specific critical tasks they must perform for the initial rescue and incident mitigation.

As previously stated, there is no scientific method fire departments can use to determine what resources they will require for each fire situation. Still, fire departments can use the results of several studies conducted by leading fire authorities and agencies to determine some general guidelines. To standardize their response to various incident types and ensure they dispatch a minimum ERF, most fire departments use a running assignments chart based on the information received by their communications staff. Many departments also recognize the need to transition to running assignments based on an initial ERF model. Previous studies primarily focused on when initial crews or first pumps would arrive on the scene. Critical task analyses and subsequent ERF models now match the type of risks present at the scene to the type of deployment needed to mitigate and eliminate those risks. Fire departments can then assign and carry out the fire ground critical tasks sequentially.

Depending on the station's vehicle deployment, the total number of staff on the initial call may be affected. Initial Rapid Intervention Teams, Accountability, Entry Control, and Safety functions can be managed by the ERF until the point at which the incident escalates, or is expected to escalate, beyond the ERF capabilities. At that time, the responding fire department can request further appropriate resources.

## 12.12 ERF for Structure Fires in Single-Family Dwellings

This section of the FMP gives examples of the initial critical tasks associated with providing an ERF to a fire in a single-family home, including the number of firefighters required to perform those tasks.

### Incident Commander (IC)

The IC is responsible for the safety and overall direction and management of the emergency response at the incident. This function is the responsibility of the first officer arriving at the emergency scene until that officer is relieved of command.

Due to the importance of ensuring firefighter safety, IC is addressed in section 2 of the Firefighters Guidance Notes. At the time of this FMP's development, those guidance notes include five topics: incident command, crew integrity, radio communication, incident safety officer, and the reporting of exposures.

The IC has the following duties:

- Assume, confirm, and announce command, taking an effective exterior operating position.
- Evaluate ("size-up") the situation quickly.
- Initiate, maintain, and control the communications process at the scene.
- Identify an overall strategy, develop an incident action plan, and assign personnel (in accordance with risk assessment and management principles).
- Request additional resources to match the current and predicted needs of the incident.
- Develop an effective emergency scene organization.
- Provide tactical objectives to on-scene personnel.
- Review, evaluate, and revise the incident action plan as needed.
- Provide for the continuity, transfer, and termination of command.
- Provide support for victims and the public as required.
- Provide spokesperson/communication services to the media (when appropriate).

The following six functions must be addressed as soon as possible after the initial assumption of command.

### Pump Operator

Once assembled on-scene, the pump operator for the first arriving pump company has the following duties:

- Position the pump.
- Supply the initial attack line.
- Ensure that a reliable water supply is secured.
- Supply any other hose that the Command Sector will require.
- Advise command when the additional lines are stretched and available.
- Supply a building fire protection system (when present).

### Fire Attack Sector (FAS)

The FAS is generally under the control of the first arriving company officer. This function directs companies to control and extinguish the fire. The fire attack sector may be composed of two firefighters, including the officer and a support crew member.

The FAS has the following duties:

- Perform the initial hose stretch.
- Advance the hose line into the structure, door, and flow path control.
- Perform an initial search.
- Complete rescues (if the local council has approved this service).
- Find and extinguish the fire.
- Commence salvage and overhaul operations.

### Search and Rescue

Search and rescue personnel have the following duties:

- Stretch and advance a secondary hose line.
- Provide search and rescue operations (as required).
- Conduct a primary search alongside the fire attack sector crew.
- Begin checking all void spaces above and adjacent to the fire compartment.
- Coordinate efforts with incoming firefighters.

### Support and Backup Pump Operator

Support and backup aid pump operator personnel have the following duties:

- Establish a water supply.
- Provide support for attack hose lines.
- Provide utility control.
- Assist with forcible entry.

### Ladder Crew

Ladder crew personnel for the first arriving ladder have the following duties:

- Assist with rescues by using ground ladders and other equipment (as required).
- Ventilate as per the needs of the incident, which may include tactical ventilation.
- Perform positive pressure ventilation (as required).
- Ladder the building, starting with providing a secondary means of egress for the fire attack sector.

**Note:** The ladder crew can comprise the second pump operator or additional personnel arriving on the scene in their personal vehicles.

The ladder driver-operator for the first arriving ladder has the following duties:

- Place the ladder truck in a location deemed appropriate for the situation (or as per the IC's instructions).
- Place the aerial ladder-elevating platform in operation (as required).
- Supply the ladder's pump mechanism for exposure or defensive operations (as required).
- Assist with raising ground ladders.

**Note:** The ladder driver-operator can also be the second arriving pump operator.

### Rapid Intervention Team (RIT)

The RIT has the following duties:

- Put on the appropriate equipment.
- Assemble an equipment cache.
- Assess the structure and hazards.

- Gather information from IC and Accountability.
- Prepare to advance into the structure to remove downed or trapped firefighters.

### 12.13 Additional Critical Tasks

The following additional critical tasks are required for non-hydrant areas.

**Water Supply Pump Operations**

- Locate an appropriate place for porta-tank deployment to supply water to the fire attack pumper via a high-volume supply hose.

**Water Source Pump Operations**

- Locate the closest identified water source that can supply water to refill the tankers shuttling water to the fire scene.

**Tanker Operations**

- Use the tanker's fire apparatus to provide the fire attack pumper with its initial water supply or to shuttle water from the identified water source to the fire scene.

### 12.14 Minimum Number of Firefighters Required for Critical Tasks

Table 9 lists the minimum number of firefighters needed to perform critical tasks at a fire in a single-family home (based on information from the NIST, NFPA, OFM, and best practices).

Table 9. Firefighters required for critical tasks at a single-family home fire.

| **Critical Tasks** | **# Of Firefighters Required** |
|---|---|
| Incident Commander | 1 |
| First Arriving Pump Operator | 1 |
| Fire Attack Sector | 2 |
| Search & Rescue | 2 |
| Support and Backup | 2 |
| Ground Ladder/Ventilation | 2 |
| First Arriving Ladder or Second Arriving Pump Operator | 1 |
| Rapid Intervention Team | 2 |
| **Total** | **13** |

For fires in non-hydrant areas, it is critical for the responding fire department to have enough on-scene firefighters to ensure non-hydrant areas receive adequate support and water supply. Table 10 summarizes the number of additional firefighters required to provide water supply when there is a fire in a non-hydrant area.

Table 10. Additional firefighters required to provide water in non-hydrant areas.

| Critical Tasks | # Of Firefighters Required |
|---|---|
| Water Supply | 4 |
| Water Fill | 2 |
| **Total** | **6** |

### 12.15 Critical Setup Times

In addition to critical tasks, the Department should also establish critical setup times. Critical setup times begin after the apparatus comes to a stop at the emergency site and the first officer or firefighters assume command. Based on an established standard for critical setup times, firefighters can be trained to identify and complete the necessary critical tasks within appropriate timeframes, which, combined with effective incident management, reduces the overall loss of life and property damage due to fire.

### 12.16 Automatic Aid and Mutual Aid

Both the FPPA and various municipal bylaws allow a municipality to enter into agreements to either provide or receive a service from another municipality. The PFSG outlines the requirements regarding the services transacted through these agreements.

As noted above, the Municipality participates in the Lanark County Mutual Aid Plan. The Municipality works with the County Coordinator to establish and maintain agreements to supply or receive services. Under this plan, the Department supports the Lanark Highlands and the White Lake area (through an automatic aid agreement). The Department also has a mutual aid agreement with Carleton Place and the Town of Arnprior, working with the latter on an as-required basis. The Department has also previously received support from the City of Ottawa, as stations in West Carleton (Kinburn and Fitzroy Harbour) dispatched equipment and resources.

All parties in the Lanark County Mutual Aid Plan are currently working together through the Lanark County Coordinator to establish an agreement. Under this agreement, the Lanark County departments will assist each other in the event of an emergency, providing equipment and resources as required.

### 12.17 Specialized Services

As of this FMP, the Municipality participates in the Lanark County heavy rescue

program. The Department's role is to operate Lanark County Rescue Vehicle #2, which is housed at Station 1 in Almonte. The Department acquired the vehicle in 2009 and has set 2029 as the year the vehicle will be replaced. The Department should discuss and review its continued participation in the county-wide program with the other Lanark County departments prior to 2029.

## 12.18 Recommendations

After assessing resource deployment and response times in the Municipality, The Loomex Group developed the following recommendations:

1. The Fire Chief should use the Department's historical response data to develop a baseline regarding response standards. The data should include information from the Department's low-, moderate-, and high-risk responses, as well as population density. The Department should then compare the baseline data with its effective response force model and present its findings to Council. Council should then establish an appropriate level of service for the Department.

# 13.0 Water Supply

## 13.1 Importance and Classification

Water supply is essential for effective fire suppression. Due to its importance, the FUS attributes 30 per cent of its insurance grading schedule to the topic of water supply.

When discussing fire protection, water supply is categorized as one of the following:

- municipal water supply (hydrant-protected areas)
- rural water supply (non-hydrant areas)

## 13.2 Municipal Water Supply (Hydrant-protected Areas)

In hydrant-protected areas, the municipal water supply and distribution systems provide the water supply for fire protection services. This means that municipalities are responsible for supplying water with sufficient flow to meet firefighting requirements and the local distribution system, including fire hydrants. Municipalities are also responsible for any required hydrant testing, repairs, and replacement. Hydrant-protected properties usually have lower insurance premium costs than non-hydrant properties.

## 13.3 Fire Hydrant Identification

As outlined in NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants, fire hydrants should adhere to a designated colour-coding scheme (as shown in Table 11). The colour-coding helps the responding fire crews quickly identify the amount of fire flow they can expect from any given hydrant. Knowing this information allows incident commanders, water sector officers, and pump operators to ensure that there is enough water available for the required emergency response. The colour-coding scheme also ensures that responders can make decisions about increasing the water supply by attaching it to another hydrant if needed. Figure 8 shows an example of a properly colour-coded fire hydrant.

Table 11. NFPA hydrant colour-coding scheme.

| Class | Top and Nozzle Colour | Barrel Colour | Fire Flow | Pressure |
|---|---|---|---|---|
| AA | **Light Blue** | **Chrome Yellow** | 1,500 gpm (5,680 L/min or greater) | 20 psi (140 kPa) |
| A | **Green** | **Chrome Yellow** | 1,000 to 1,499 gpm (3,785 to 5,675 L/min) | 20 psi (140 kPa) |
| B | **Orange** | **Chrome Yellow** | 500 to 999 gpm (1,900 to 3,780 L/min) | 20 psi (140 kPa) |
| C | **Red** | **Chrome Yellow** | 500 gpm (1,900 L/min or less) | 20 psi (140 kPa) |

Figure 8. Example of a properly NFPA colour-coded hydrant.

The Review noted that some of the Municipality's fire hydrants are not painted to the NFPA colour-coding scheme. However, the Municipality has implemented a program to update and colour-code all its hydrants to match the appropriate classifications and markings. In addition to this work, the Municipality should inform the Department of any changes to existing hydrant flow rates, as well as any future installations or upgrades. Doing so will ensure that the Municipality's hydrants remain compliant with the applicable legislation.

### 13.4 Private Hydrants

Private hydrants are found in municipalities at commercial and industrial sites. In most cases, private hydrants are painted red to distinguish them from municipal fire hydrants (see Figure 9). When a developer or owner has a property with a private hydrant, they must confirm hydrant installations and water flows to the satisfaction of the Chief Fire Official before they are allowed occupancy. The developers and owners must also test their hydrants yearly to ensure they are operational.

Figure 9. Example of a private hydrant.

### 13.5 Non-Hydrant Areas

Ensuring an adequate water supply for fire protection in rural areas (non-hydrant areas) presents significant challenges for fire departments. Unlike urban areas, where water supply is dependent on fire hydrants almost exclusively, non-hydrant areas require fire departments to access a water supply from alternate sources. Common ways of meeting that need include having additional fire apparatus (tankers) and having firefighters trained in tanker shuttle procedures. Two additional measures developed by the fire service to address issues of water supply in rural areas are as follows:

- The installation of non-pressurized dry hydrants: These dry hydrants are designed to allow fire apparatus to draw water from rivers, lakes, ponds, or storage tanks.
- The Superior Tanker Shuttle Accreditation Program: This program provides an improved insurance rate if the Department can maintain an adequate water supply for effective firefighting in areas up to 8 km away from a fire station for residential properties and 5 km for commercial properties. The program requires fire departments to provide a minimum water supply of 900 litres/minute (200 gallons/minute) for a two-hour duration. As a result of this program, many rural residents could see significant reductions in fire insurance premiums.

Although these two methods can help fire departments supply water to rural areas, they require additional measures to be effective. For the Municipality to maximize an available water supply system for non-hydrant areas, the Department must establish proper procedures and its firefighters must receive the necessary equipment and training.

The Review found that the Municipality has qualified for a Superior Tanker Shuttle Accreditation. With this accreditation, residents who live within 8 kilometres of one of the Department's fire stations may receive a reduction in fire insurance premiums, which can amount to savings of approximately 10 to 25 per cent. The Review also found that the Municipality has installed dry hydrants in several non-hydrant areas to ensure the Department has access to an adequate water supply. The dry hydrants are found in Appleton, Clayton, Pakenham, and Concession 7B. Additionally, the Municipality recently installed a water tower behind Station 1 to provide water supply resources.

### 13.6 Recommendations

After assessing the water supply in the Municipality, The Loomex Group developed the following recommendations:

1. The Department should continue to deliver water in non-hydrant areas as per the standards of Superior Tanker Shuttle accreditation.

2. The Fire Chief should review the NFPA's fire hydrant classifications and markings system and ensure the Municipality complies with applicable standards.

# 14.0 Fire Apparatus and Equipment

## 14.1 Apparatus and Equipment Overview

Fire apparatus (including pumpers, tankers, rescues, and aerials), often referred to as fire trucks, are used by fire departments to deliver emergency services to community residents and businesses. The purchase of fire apparatus represents a significant investment for any municipality. Likewise, maintaining and replacing apparatus to ensure a reliable and modern fleet is available requires dedicated supervision. Despite the time and monetary commitments, the fire service relies upon firefighters having a properly equipped apparatus to control and mitigate emergencies.

Fire service apparatus have evolved considerably over the years. As such, there are increasingly more demanding standards that fire departments must follow when purchasing apparatus. Councils and fire departments must adhere to the OHSA, NFPA Standard 1901: Standard for Automotive Fire Apparatus, and ULC S515-04: Automotive Fire Fighting Apparatus, to name just a few regulations. Due to the frequent changes in safety requirements, construction materials, and operating practices, older fire apparatus often lack features that current legislation now mandates. Among the most important features now required are anti-lock braking systems and roll stability control. Such features help minimize accidents by improving steering and braking control.

The FUS is another factor influencing apparatus replacements. For instance, one section in the FUS outlines the acceptable age of an apparatus for insurance grading purposes. The FUS will not recognize an apparatus that is more than 20 years old. A copy of the FUS's technical bulletin about insurance grading is included in Appendix C of this document.

Overall, these regulations emphasize the importance of planning and budgeting to replace older apparatus. Prudent planning and budgeting will help ensure that fire departments replace their apparatus as needed. These preparations will also ensure that municipalities have the necessary reserve funds to reduce the financial burden of replacements in any one year.

## 14.2 Apparatus Inspection, Testing, and Maintenance

Fire departments must ensure their fire apparatus are well maintained and can withstand high scrutiny. It is crucial that a department's apparatus can start and operate whenever an emergency occurs. Keeping a fire apparatus to such an exacting standard requires a robust system of weekly and annual inspections, tests, and maintenance. In addition to routine maintenance, such as checking and adjusting brakes and making lubrication and oil changes, the apparatus must have an annual Ministry of Transportation inspection, pump tests, and non-destructive testing on ladders. As a result of this routine upkeep, an apparatus will be out of service for several days each year for scheduled maintenance.

The standards for keeping a fire apparatus in good working order are also made more demanding and complex due to the introduction of new safety systems, pollution control, and engine and driveline systems using computer interfaces. In the past, many fire apparatus components could be repaired or maintained by mechanically skilled firefighters or at a local garage. Mechanics with specialized training who can also run computer-performed diagnostics of system faults now perform much of the maintenance work that fire apparatus require. Due to the advanced maintenance work now required, a fire apparatus may be taken out of service for extended periods for repairs.

### 14.3 Fleet Renewal and Rationalization

A fire fleet's renewal is a considerable cost for any municipality. The Fire Chief must review the FUS standards for fleet replacements and consider ways to manage the budgetary pressures incurred when it is time for replacements. (See Appendix C for a copy of the FUS – Technical Bulletin.)

Figure 10 shows the Department's ladder apparatus.

Figure 10. The Department's ladder apparatus.

To assist with budgeting needs, the Fire Chief has developed a fleet rationalization plan (see Appendix B). The rationalization plan forecasts the year and number of vehicles the Municipality must purchase to maintain an effective fleet. The plan gives Council the advantage of knowing the fleet's potential future cost so it can begin planning and building reserves to meet that cost. Although it has been carefully thought out, the fleet rationalization plan will only work if the Municipality purchases the replacement vehicles as per the specified timeline. Deferring the purchase of a large fleet can put the Municipality in a significant financial deficit because they may have to buy several vehicles over a short period.

Due to the cost of the fire apparatus, the Fire Chief must review the fleet rationalization

plan and ensure that his recommendation to Council for a replacement fleet is appropriate for the Municipality over the next 20 years. It is also essential for the Department to look at the entire fleet and assess what apparatus it does and does not need. Remember: The Department should not necessarily buy a vehicle just because one of its stations had it in the past.

### 14.4 Fire Equipment

Proper firefighting equipment is essential for the prompt and effective deployment of resources. All firefighting equipment the Department purchases must meet applicable NFPA and ULC standards. After purchasing the equipment, the Department must maintain the gear to those standards. This work involves completing annual maintenance on all equipment and keeping records of the equipment for future reference.

All firefighter PPE, including bunker gear (firefighting coats and pants), helmets, flash hoods, gloves, and boots, must also meet NFPA standards to comply with occupational health and safety regulations. Maintaining compliance is vitally important, given how frequently fire departments use each type of PPE. For example, firefighters require self-contained breathing apparatus whenever a toxic atmosphere is present or suspected, such as fires, carbon monoxide calls, and hazardous material spills.

The Review found that the Department has an established program and budget for maintaining, cleaning, and replacing its PPE to keep it compliant with applicable legislation and help protect its firefighters from the hostile work environments they encounter at fires and other emergencies.

In addition to its PPE, the Department has a large inventory of other equipment, including:

- fire hoses
- nozzles and fittings
- ladders
- generators and lighting
- ventilation fans
- portable pumps
- saws
- extrication tools (jaws of life)
- gas detectors
- thermal imaging cameras

- ice and water rescue equipment
- various types of hand tools

The Department must maintain and replace all this equipment as required. In terms of maintenance, the Municipality tests its hoses in-house and retains third-party contractors to provide annual testing for pumps and ladders. Doing so ensures that the Department remains compliant with the applicable regulations. The challenge for Council and the Department is to properly budget for replacing the Department's equipment through an approved life cycle program. Since most of the equipment used by the fire service is expensive and has a life span, the Fire Chief must budget and plan to replace the Department's equipment quickly and cost-effectively so that the replacement will not put the Department or the Municipality in a financial or operational deficit.

## 14.5 Recommendations

After assessing fire apparatus and equipment in the Municipality, The Loomex Group developed the following recommendations:

1. The Municipality should review the Fire Underwriters Survey's technical bulletin regarding the replacement of used and refurbished apparatus.

# 15.0 Dispatch and Radio Systems

## 15.1 Overview of the Current Dispatch System

The Department's current dispatch system is managed out of Smiths Falls and supports several responding communities within Lanark County. During the SWOT analysis, participants expressed concern that the system is overtaxed and not consistently meeting service demands. These concerns were also discussed during The Loomex Group's subsequent conversations with the Department's fire administration.

During the Review, the Department noted that the Lanark County fire chiefs were in the process of revising the current service agreement to address the issues with the dispatch system. At the time of this FMP's development, discussions regarding improvements to the system were ongoing. If implemented, those improvements will benefit the health and safety of all responders.

The Department also recently purchased 16 portable radios. This purchase will help improve communication between responders.

Overall, improvements to the radio and dispatch systems will help the Department enhance its communication process and better protect the safety of all responders.

# 16.0 Fire Stations

## 16.1 Overview of the Fire Stations in the Municipality of Mississippi Mills

The Department operates out of the following two fire stations:

- Station 1 (shown in Figure 12) is located at 478 Almonte St, in Almonte.
- Station 2 (shown in Figure 13) is located at 106 Jeanie St, in Pakenham.

Figure 11. Exterior of Station 1 (Almonte).

Figure 12. Exterior of Station 2 (Pakenham).

## 16.2 Fire Station Issues

The Review found that Station 2 presents several issues for the Department.

One of the main issues is the lack of space. Due to the limited size of the bay, the Department must park the fire apparatus extremely close to both the door and the wall (as shown in figures 13 and 14). This increases the potential for damage to the apparatus. The limited space also creates a severe pinch point for the Department's firefighters and staff as they maneuver around the apparatus.

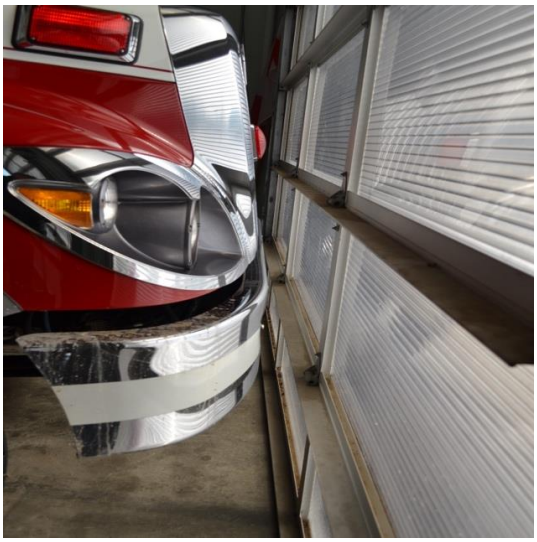

Figure 13. Proximity of the fire apparatus to the bay door.

Figure 14. Proximity of the fire apparatus to the bay wall.

This lack of space will also affect the Department when it comes time to replace the

current apparatus. Newer apparatus are much longer than those built in years past. As such, Station 2 will have insufficient space to house a new apparatus. The Department must determine the best solution to address the space constraints at Station 2.

In addition to the issues caused by its limited available space, Station 2 presents several health and safety concerns. For example, Station 2 has minimal ventilation and exhaust systems for the Department's apparatus. The Department has also renovated Station 2 several times, but the station is not currently compliant with the OBC, the OFC, Ontario Regulation 213/07, or the AODA.

### 16.3 Recommendations

After assessing the fire stations in the Municipality, The Loomex Group developed the following recommendations:

1. The Fire Chief should complete a cost analysis for Station 2. The Fire Chief should also complete a facility assessment to evaluate the station's current location and needs and verify that the facility complies with current building codes. The Fire Chief should use the results to compare options for upgrading, replacing, or relocating the station.

# 17.0 Emergency Management

## 17.1 Overview of Emergency Management Requirements

The Emergency Management and Civil Protection Act R.S.O. 1990 (EMCPA) stipulates the criteria municipalities must meet to receive their annual compliance recognition. Under the EMPCA, municipalities must complete the following:

- A municipality must have an emergency management program (EMP) and an EMP committee.
- A municipality must provide annual emergency management training to all members of its municipal control group.
- A municipality must conduct an annual exercise that uses its EMP and involves all members of its municipal control group.
- A municipality must designate a community emergency management coordinator (CEMC) and alternate CEMC.
- A municipality must review its critical infrastructure (CI) and hazard identification risk analysis (HIRA) annually. The municipality must then update its CI and HIRA as needed.

The EMCPA states that municipalities are responsible for meeting the above criteria, not fire departments.

## 17.2 Emergency Management in the Municipality of Mississippi Mills

The Review found that the Fire Chief manages the Municipality's EMP and provides the community with expert knowledge and guidance during emergency responses.

## 17.3 Recommendations

After assessing emergency management in the Municipality, The Loomex Group developed the following recommendations:

1. The Fire Chief and applicable municipal staff should review the Municipality's community emergency management coordinator (CEMC) and alternate CEMC positions. The review should verify at least one of these roles is filled by someone with an administrative background who can assist with provincial compliance documentation.

## Appendix A: Legislation, References, and Consultation List

### Legislation Affecting the Ontario Fire Service

| Legislation | Scope |
|---|---|
| Fire Protection and Prevention Act, 1997 and Ontario Fire Code | This act outlines the regulations that govern both the OFMEM and municipalities. Part IX is generally the responsibility of the Ministry of Labour, except where terms and conditions in collective agreements may adversely affect the provision of fire protection. |
| Provincial Offences Act | Under this act, assistants to the Fire Marshal are considered provincial offences officers (in regard to offences related to smoke alarms). |
| Municipal Act, 2001 | This act authorizes the passing of bylaws that are necessary for the provision of fire protection. |
| Occupational Health and Safety Act | This act outlines regulations for governing matters related to occupational health and safety. |
| Ontario Regulation 211/01 and Ontario Regulation 440/08: Propane Storage and Handling | These regulations require propane operators to obtain approval from the presiding fire department for all risk and safety management plans. The fire department must approve the sections of the plans that deal with fire safety, fire protection, and emergency preparedness. |
| Environmental Protection Act | This act requires fire department personnel to report spills to the Ministry of the Environment, Conversation, and Parks (MOECC), which was formerly referred to as the MOE. |
| Dangerous Goods Transportation Act | This act outlines the regulations that govern the transportation of dangerous goods. |
| Emergency Management and Civil Protection Act | This act requires every municipality to have an emergency management plan and a trained community emergency management coordinator to conduct training exercises for the emergency control group. |
| Building Code | This act authorizes municipalities to appoint certain fire personnel |

| Legislation | Scope |
|---|---|
| Act | as building inspectors. |
| Highway Traffic Act | This act outlines several governing regulations: how fire vehicles are to operate during emergency responses; firefighter responses on roads that have been closed by police; the use of flashing green lights on the firefighters' personal vehicles; and controlling traffic at accident scenes. |
| Forest Fire Prevention Act | This act only applies to areas it classifies as "fire regions" and outlines regulations for controlling outdoor fires in restricted fire zones. The act requires municipalities to extinguish all grass, brush, and forest fires that occur within their geographic limits. The act authorizes the applicable minister to appoint wardens and officers. |
| Ontario Regulation 207/96: Outdoor Fires | This regulation outlines governance for controlling outdoor fires that occur outside of restricted fire zones. |
| Development Charges Act | This act authorizes portions of development charges to be allocated to the fire service. |
| Coroners Act | This act outlines the regulations that govern the control of bodies. The act authorizes and regulates coroner inquests and coroner inquest recommendations. |
| Day Nurseries Act | This act defines the legislative requirements that daycare operators must have approved by the local fire chief before operating a daycare facility. |
| Employment Standards Act and Labour Relations Act | These acts outline regulations pertaining to human resources. |
| Human Rights Code | The Human Rights Code defines how boards of inquiry, complaints, discrimination, and enforcement are handled. |
| Municipal Freedom of Information and Protection of Privacy Act | This act defines how access to information held by institutions is granted and obtained. The intention of the act is to protect the privacy of individuals concerning personal information about themselves held by institutions. |

| Legislation | Scope |
|---|---|
| Pesticides Act | This act makes it mandatory to report wholesale and retail pesticide use to the fire department. |
| Workplace Safety and Insurance Act | This act requires employers to report on-the-job accidents. The act also requires employers to document employee training records and provide them upon request. |

**References**


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- Durlauf, Steven; Young, Peyton (2001). Social Dynamics. Cambridge, MA: MIT Press
- Emergency Management and Civil Protection Act RSO 1990
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- Municipality of Mississippi Mills Bylaws and Agreements
- Municipality Mississippi Mills Fire Department's Policies and Standard Operating Guidelines
- National Fire Protection Association Standards
- Occupational Health & Safety Act
- Ontario Building Code
- Ontario Fire Code
- Ontario Fire Marshal's Directives and Guidelines
- Ontario Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4
- Section 21 Committee Guidelines
- https://en.wikipedia.org/wiki/Mississippi_Mills,_Ontario

## Consultation List

The Municipality of Mississippi Mills Fire Master Plan was successful due to the support of the following:

- CAO Ken Kelly
- Director of Emergency Services/Fire Chief Mike Williams
- Deputy Chief of the Municipality of Mississippi Mills Fire Department
- Members of the Municipality of Mississippi Mills Council
- Members of the Mississippi Mills Steering Committee
- Administrative Assistant Kate Hallis
- Officers and firefighters of the Almonte and Pakenham fire stations

## Appendix B: Apparatus Summary

Table 12. Summary of the Department's apparatus

| Station | Unit | Description | Model Year | Scheduled Replacement Year | Image of Apparatus |
|---|---|---|---|---|---|
| 1 | 510 | KME Kovatch Aerial/Cat 100' 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 | 570 | Training/Fire Prevention Officer Vehicle | 2016 | 2026 |  |
| 1 | 571 | Fire Chief Vehicle | 2017 | 2027 |  |

| Station | Unit | Description | Model Year | Scheduled Replacement Year | Image of Apparatus |
|---|---|---|---|---|---|
| 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 |   |

## Appendix C: Fire Underwriters Survey – Technical Bulletin

The following Technical Bulletin from the Fire Underwriters Survey contains information on insurance grading and service tests for used and modified fire apparatus.