MUNICIPALITY OF PORT HOPE
RESOLUTION

Date: 5 July 2022

39/2022

MOVED BY: _____

SECONDED BY: _____

WHEREAS Council at their meeting held on June 21, 2022 considered Staff Report PS-05-22 regarding the Fire Master Plan;

NOW THEREFORE BE IT RESOLVED THAT Council approve the Fire Master Plan prepared by The Loomex Group, in principle attached hereto.

_____
Mayor Bob Sanderson

THE LOOMEX GROUP

Municipality of Port Hope
Fire and Emergency Services

Fire Master Plan

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Executive Summary

The Municipality of Port Hope (Municipality) contracted The Loomex Group to develop a fire master plan (FMP). The objective of the FMP was to provide the Municipality and the Municipality of Port Hope Fire and Emergency Services (Department) with information that allows them to make better-informed decisions regarding the life safety of community residents, businesses, visitors, and firefighters. To provide the Municipality with a truly comprehensive document, 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. Each municipality and fire department in the Province of Ontario is unique in its community makeup, economic conditions, population, demographics, building stock, fire service delivery, and capabilities. To produce a comprehensive fire master plan for the Municipality, The Loomex Group used a development process that reviewed all aspects of the Department. The FMP development process also considered how the Department could best align its services and available resources to meet the service demands and risks that are present in the Municipality.

There are no easy solutions that allow fire and life safety providers to significantly reduce their operating costs and still provide their communities with sufficient protection from fires and other emergencies. However, the Municipality and the Department can still explore shared services opportunities and introduce other strategies that will help improve the Department's effectiveness and yield cost efficiencies. After a comprehensive review, the FMP produced a total of 30 recommendations for the Department and the Municipality of Port Hope Council (Council) to consider. The Loomex Group based these recommendations on the results of an all-inclusive Departmental review and on analyses of other relevant factors, including current legislation, bylaws, and agreements.

The FMP makes two (2) types of recommendations: operational recommendations and policy recommendations. Operational recommendations are for the Department's Director of Fire & Emergency Services/Fire Chief (Fire Chief) and the Deputy Fire Chief to consider. Policy recommendations are for Council's consideration.

The main topics addressed in the recommendations include:

- The Department's organizational structure
- The Department's fire prevention and training programs
- The location of the Department's fire stations
- Working with the neighbouring fire department and exploring opportunities to enter into automatic aid agreements with them

- Department resources, including apparatus placement, establishing a standard of cover, and establishing an effective response force

Council should be very proud of the Department and the commendable dedication of Fire Chief Dan Smith, Deputy Chief Jeff Ogden, and the Department's officers and firefighters. The Department provides high-quality services, and its goals should be to build upon its existing strengths, improve efficiencies, and be proactive in responding to anticipated needs so that it can continue serving the community effectively; for even with the Department's current level of success, it will need to make some necessary investments and changes in the coming years in order to continue growing alongside the community. The Municipality will also have to make some investments to help the Department grow and enhance its services. Planning for these changes now will allow the Department to uphold and further cultivate its strong traditions while better positioning itself to manage the Municipality's current and future demands for fire services.

It is important to emphasize that the Municipality should consider the Department as an essential service. Due to the nature of the work, the safety of workers employed in emergency services is put at a higher risk than the safety of workers employed in other occupations. Therefore, it is vital to protect the volunteer firefighters in smaller communities by ensuring they have access to the necessary equipment to perform their jobs. Furthermore, this equipment must be kept available for service at all hours of the day, each day of the year, should its immediate use be required. It is also essential for municipalities to ensure that their volunteer firefighters are respected, reasonably compensated, and provided with appropriate benefits for their service. Council should continue to see volunteer firefighters as an investment in the future of the Municipality's safety, viewing their services as cost-effective and cost-avoidance securities.

The development of the FMP was successful due to the support of:

- Chief Administrative Officer David Smith
- Director of Fire & Emergency Services/Fire Chief Dan Smith
- Deputy Chief Jeff Ogden
- District Chiefs Glenn Case, Shawn Coull, and Brad Goodwin
- The Department's officers and firefighters
- Asset Manager & GIS Coordinator Amy Gilmer

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 (5) years. The Loomex Group has made every effort to ensure that the information provided herein is accurate and comprehensive.

Summary of Recommendations

Legend for Recommendation Headings	
Mandatory	Is the recommendation mandatory for legislative compliance?
Term	When should the recommendation be addressed? IM (Immediate Term, 0-1yr.) ST (Short Term, 1-4 yrs.) LT (Long Term, 5-10 yrs.) OG (Ongoing)
Council Approval	Does the recommendation require Council approval to be implemented?
Budget Impact	Will the recommendation have to be included in the Department's budget through the regular budgeting process?

Legislation, Bylaws, and Agreements Recommendations: Section 6.6	Mandatory	Term	Council Approval	Budget Impact
1. The Fire Chief should review Bylaw No. 53/2007 and provide Council with recommendations about sections of the bylaw that should be amended based on the results of this FMP or as otherwise required.	✓	IM	✓	✓
2. The Fire Chief should seek to formalize any verbal "handshake" agreements that the Department currently has in place with neighbouring fire departments by presenting them to Council for consideration and approval.	✓	ST	✓	✓
3. The Fire Chief should develop a schedule for regularly reviewing all Department bylaws and agreements to ensure they are current with the		ST	✓	

services being provided by the Department.				
Occupational Health & Safety Recommendations: Section 7.4	**Mandatory**	**Term**	**Council Approval**	**Budget Impact**
1. The Fire Chief should explore the possibility of either getting the Department's members included in the Municipality's wellness program or creating a wellness committee within the Department that consists of representatives from all Department levels.		ST		
2. The Fire Chief should explore the possibility of creating a fitness facility at one of the Department's fire stations.		ST	✓	✓
SWOT Analysis Recommendations: Section 8.1	**Mandatory**	**Term**	**Council Approval**	**Budget Impact**
1. The Department's Fire Chief, Deputy Chief, and officers should review the SWOT analysis results, consider all comments and suggestions the analysis generated, and determine how and if they should implement any of the recommendations from the analysis into the Department's operations.		IM		
Social Dynamics Recommendations: Section 9.1	**Mandatory**	**Term**	**Council Approval**	**Budget Impact**
1. The Fire Chief should continue fostering firefighter engagement by enhancing the Department's available programs to include monthly officers' meetings, face-to-face meetings, surveys, and firefighter engagement sessions on a routine basis. Engagement sessions like these serve as forums that allow various Department		ST		

stakeholders to voice their suggestions and concerns.				
2. The Fire Chief should develop a standard operating guideline that establishes a process for reviewing the different social dynamics that may affect stakeholders when important decisions that will affect the Municipality or the Department must be made. The standard operating guideline should include a process for ensuring that the Department's communication processes are inclusive of its members' different generations/age demographics.		ST		
Fire Prevention & Public Education Recommendations: Section 10.12	**Mandatory**	**Term**	**Council Approval**	**Budget Impact**
1. After the Fire Prevention Officer's current contract with the Department concludes, the position should be made into a permanent full-time position.		IM	✓	✓
2. The Fire Chief should develop a fire prevention and public education policy that specifies how frequently inspections should occur, sets the parameters of the Department's public education programs, and includes a smoke/CO policy. Once the fire prevention and public education policy is drafted, the Fire Chief should present it to Council for consideration and adoption.		IM	✓	
3. The Fire Chief should work with the Fire Prevention Officer to conduct annual inspections at the Municipality's high-risk occupancies in order to gain information that the		ST		

Department can use to create pre-plans for its fire suppression crews.				
4. The Fire Chief should develop a policy/procedure that explains the respective roles of the Department and the Municipality's building services regarding building permits, planning application approvals, building inspections, and commissioning life safety systems in buildings.		ST		
5. The Fire Chief should prepare a report for Council's consideration and approval that presents evidence supporting the need to hire an additional Fire Inspector. The report should emphasize that requirements to inspect high-risk occupancies, as identified in the Municipality's community risk assessment, are proactive steps that ensure the safety of the community's residents, workers, and firefighters.		IM	✓	
Training Recommendations: Section 11.6	**Mandatory**	**Term**	**Council Approval**	**Budget Impact**
1. The Fire Chief should prepare a report for Council's consideration and approval that presents evidence supporting the need to hire a full-time Training Officer. The report should emphasize that having a full-time Training Officer would allow the Department to focus more time on training initiatives and enable the Deputy Chief to have more time to work on other programs and manage the Department's training program.		IM	✓	✓

2. The Chief Training Officer should hold quarterly meetings with the training committee to monitor and ensure the consistency and effectiveness of the Department's training programs.		IM		
3. The Deputy Chief should review the Department's current delivery of special operations, including hazardous materials responses and high-angle rescue responses.		IM		
Resource Deployment & Response Times Recommendations: Section 12.20	**Mandatory**	**Term**	**Council Approval**	**Budget Impact**
1. The Fire Chief should use the Department's historical response data to develop a baseline for determining the Department's response standards. The baseline data should include information from the Department's low-, moderate-, and high-risk responses. Once collected, the Department should combine the baseline data with its effective response force model so Council can establish an approved level of service for the Department.		ST	✓	✓
2. The Fire Chief should relocate one tanker from Fire Station 2 to Fire Station 1 to allow the Department to provide a better level of service for the community and a better level of safety for the firefighters.		IM		
3. The Fire Chief should prepare a report regarding hazard materials incidents for Council's consideration and adoption that recommends the Department perform hazardous	✓	ST	✓	✓

material responses at the operational level.				
4. The Fire Chief should prepare a report regarding water/ice rescues for Council's consideration and adoption that recommends the Department only perform surface water rescues (excluding using a marine vessel) and ice rescues.	✓	ST	✓	✓
5. The Fire Chief should review the number of calls the Department receives for medical responses to see if there is a possibility of reducing the number of medical calls where firefighter response has no impact on patient care. If applicable, the Department should then update its tiered response agreement accordingly.		ST	✓	
6. The Fire Chief should prepare a report for Council's consideration and adoption that recommends replacing the current Fire Station 2 with a new fire station to service the Welcome area.		ST	✓	✓
7. The Fire Chief should look for property in the vicinity of Northumberland County Roads 2 and 10 on which a new fire station can be built.		ST	✓	✓
8. When it hires a new Fire Prevention Officer, Training Officer, and Fire Inspector, the Department should ensure the incoming staff are qualified to respond to emergency responses during daytime hours.		IM		
9. The Fire Chief should prepare a report for Council's consideration and adoption that recommends hiring full-time daytime firefighters in		LT	✓	✓

the Department. The report should emphasize that the choice to hire full-time daytime firefighters will provide a better level of service to the community and a better level of safety for the Department's firefighters.				
Water Supply Recommendations: Section 13.4	**Mandatory**	**Term**	**Council Approval**	**Budget Impact**
1. The Fire Chief should develop and formalize a dry hydrant testing program.		IM		
2. Council should support the purchasing of new tanker trucks that have features such as a water capacity of no less than 2,500 gallons and onboard pumping capabilities.		OG	✓	✓
Emergency Management Recommendations: Section 14.3	**Mandatory**	**Term**	**Council Approval**	**Budget Impact**
1. The CEMC should update the Municipality's emergency response plan to align with the Province of Ontario's Incident Management System model. Once updated, the CEMC should present the emergency response plan to Council for consideration and approval.		ST	✓	
2. The CEMC should review the current membership of the Municipality's Emergency Management Program Committee and then create a revised membership roster that is streamlined and more in keeping with current best practices. Once created, the CEMC should present the revised membership roster to		ST	✓	

Council for consideration and approval.				
3. The Municipality should consider building a new municipal facility that is large enough to accommodate a Joint Operations Centre.		ST	✓	✓

1.0 Introduction

The FMP provides a framework for Council and the Department's Fire Chief and administrative staff to work from when making policy, organizational, capital, and operational decisions that will affect the Department in the immediate term (0-1 year), short term (1-4 years), and long term (5-10 years).

The FMP reflects the requirements of:

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

1.1 Definition of Fire Protection Services, Fire Chief, and Council

Three (3) key roles/concepts are essential to a fire master plan's development: fire chief, town council, and what is meant by the term "fire protection services."

Section 2 of the FPPA provides definitions for two of those three roles/concepts: a municipality's role in establishing fire protection services and the responsibilities of a fire chief. Regarding fire protection services, the FPPA states that "Every municipality shall (a) establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and (b) provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances." The role of a fire chief is defined in part in Section 2.6.3 of the FPPA 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." Additionally, fire chiefs are responsible for providing their town/municipal council with recommendations about which services must be in place for the local fire department to be in compliance with governing legislation. Fire chiefs are also responsible for providing their town/municipal council with recommendations about which services are required for meeting the community's needs.

The third definition to note is that of Council. In short, Council is the governing body that determines the type of fire protection services that the Department must deliver to the Municipality. Council also determines the level of service that the Municipality expects the Department to provide.

1.2 Role of The Loomex Group for the FMP

The Loomex Group's role for the FMP was to provide the Department and Council with recommendations about ways in which the issues that are currently impacting the Department – and the potential future issues that will impact the Department or Municipality – can be managed/mitigated.

The Municipality's Council, residents, businesses, and visitors expect the Department to run effectively and efficiently; these groups also need to know the Department's capabilities and limitations, given the resources provided to the Department. Therefore, the FMP considers the current and future resources that the Department will need in order to provide Council-approved fire protection services to the community. Additionally, the FMP identifies benchmarks to measure service efficiencies in the Department.

As a third-party consultant, The Loomex Group reviewed all aspects of the Department and has made recommendations in the FMP about ways the Department can improve its operations. Overall, The Loomex Group identified that the Department could primarily improve its operations by incorporating efficiencies and best practices. The FMP also examines the core functions of the Fire Service and specific fire department operations, including changes that have taken place, and provides recommendations pertaining to these areas, where applicable.

The Loomex Group based the recommendations in this FMP on two (2) primary sources:

- A series of consultations that included the Municipality's Chief Administrative Officer and the Department's Fire Chief, Deputy Fire Chief, District Chiefs, and officers and firefighters
- Thorough reviews of applicable legislation, standards, best practices, and Ontario Fire Marshal's Public Safety Guidelines that The Loomex Group conducted during the FMP's development

The recommendations presented in this FMP may or may not be supported by the Department, and some of them may require additional study or consideration.

2.0 Approach and Methodology

The Loomex Group brought together a project team (Loomex Team) expressly suited to complete the FMP for the Department. The Loomex Team included experts with direct experience managing emergency and fire services departments, conducting organizational reviews, and developing strategic plans. The Loomex Team's expertise, knowledge, dedication, and commitment to advancing community life safety are evident throughout this document.

The Loomex Group believes that document review and stakeholder engagement are each necessary components of the FMP process. To complete the Municipality's FMP, The Loomex Group used an approach and methodology that included:

- A background review of documents and maps
- Direct observation of the environment
- Engagement sessions with staff from the Department and the Municipality
- A review of the Department's organizational structure
- An analysis of the community's current needs and risks
- An assessment to determine if the Department can continue providing an appropriate level of service to the community in the future (based on anticipated trends)
- A review of the locations and the functionality of the Department's fire stations
- A review of potential opportunities for shared services
- A review to verify that the Municipality and the Department are meeting applicable legislative requirements

The steps of the FMP development process were as follows:

1. Establish terms of reference
2. Stakeholder engagement
3. Strengths, weaknesses, opportunities, and threats (SWOT) analysis
4. Data collection, review, and analysis
5. Completion of community risk assessment
6. Draft fire master plan
7. Final fire master plan

A detailed description of the procedures involved during each of the preceding steps is given below.

Step 1: Establish Terms of Reference

The Loomex Group met with the Fire Chief and the Deputy Fire Chief to review the scope of work needed to develop the FMP. The Loomex Group and the Municipality established the project's terms of reference during this meeting.

During this step of the development process, the Loomex Team created a framework to meet the FMP's requirements. The framework was subsequently reviewed and approved by the Fire Chief.

Step 2: Stakeholder Engagement

The Loomex Team held an initial engagement session with the Municipality's Council and CAO and the Department's Fire Chief, Deputy Chief, District Chiefs, officers, and firefighters.

The goals of the engagement session were:

1. Introduce the members of the Loomex Team
2. Present the project's framework
3. Outline the role of each member of the Loomex Team and identify what each team member will contribute to the FMP

After this initial meeting, the Loomex Team conducted additional stakeholder engagement sessions with the Department's Fire Chief, Deputy Chief, District Chiefs, Fire Prevention Officer, Training Officer, officers, and firefighters.

Step 3: Strengths, Weaknesses, Opportunities, and Threat Analysis

The Loomex Team organized a SWOT analysis session and met with the Department's District Chiefs, officers, and firefighters. During this session, the Loomex Team asked a series of 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 helped inform 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 Department's senior staff to review and analyze numerous documents containing both current and relevant historical information about the Department. In order for The Loomex Group to provide the Department with informed recommendations in the FMP, 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 Team 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
- Community risk assessment

As they reviewed the above-noted documents, the members of the Loomex Team maintained an open-minded approach regarding how the Department conducts business. During the document review, the Loomex Team sought to identify collaborative opportunities and determine ways for the Department to incorporate shared services and cost-savings or cost-avoidance strategies.

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 profile
- Community growth
- Fire protection agreements
- Best practices as per NFPA 1710 & 1720 and the Ontario Fire Marshal's Public Fire Service Guidelines
- Administration
- Human resources, job descriptions, and succession plans
- Recruitment, retention, and compensation
- The Department's firefighter training program and its education program
- Fire stations, apparatus, and equipment
- Fleet and equipment maintenance
- Fire prevention programs (related to public education and code enforcement)
- Fire suppression
- Technology and future needs

In addition to data collection and stakeholder engagement, the Loomex Team spent time in the community observing and reviewing all areas and aspects of the Municipality from a first-hand perspective.

Step 5: Community Risk Assessment (CRA)

The Loomex Group completed a CRA for the Municipality as part of the FMP's development process.

While developing the CRA, the Loomex Team reviewed the following profiles to identify the risks that are present in the Municipality:

1. Geographic
2. Building stock
3. Critical infrastructure
4. Demographic
5. Hazard profile
6. Public safety response entities
7. Community services
8. Economic
9. Past events and loss history

Steps 6 & 7: Draft and Final Fire Master Plan

The Loomex Team held regular meetings with the Fire Chief and the Deputy Chief to ensure the FMP benefited from continual reviews. After completing the draft version of the FMP, the Loomex Team provided the document to the Fire Chief and Deputy Fire Chief. The Fire Chief and Deputy Fire Chief reviewed the draft, made comments, and returned the document to the Loomex Team. The Loomex Team reviewed all comments from the Fire Chief and Deputy Fire Chief and updated the FMP accordingly. After the revisions were made the CAO was briefed on the high-level elements of the plan. 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 Port Hope

The Municipality of Port Hope is located in southern Ontario, situated in Northumberland County, and has a land area of 278.87 km^2. One of the most notable features of the Municipality is the Ganaraska River that runs through the area (shown in Figure 1).

The Municipality's website describes Port Hope as:

> [A] remarkably picturesque community located on the shore of Lake Ontario and the Northumberland Hills. With a population of approximately 16,500 and thriving business and tourism sectors, our inspiring culture provides our residents and visitors with a diverse range of activities and associations to suit every interest. Our urban/rural heritage figures prominently in our dedication to preserving our past and embracing our future. We have attracted widespread recognition for our historical architecture, including being named "best-preserved Main Street in Ontario," and we feature over 270 designated heritage buildings, the highest number per capita in Canada. Port Hope's vibrant urban core is surrounded by spectacular rambling rural countryside with farmland, rural hamlets and the beautiful Ganaraska Forest […] Residents enjoy numerous opportunities to suit every lifestyle, with a wide variety of employment opportunities, leisure, and education pursuits, all complemented by an exceptional quality of life.

Figure 1: Ganaraska River at Port Hope (photo source: Wikipedia).

4.0 History of the Port Hope Fire & Emergency Services

For The Loomex Group to develop a vision for where the Department should go in the future, it was essential for the Loomex Team to have a solid understanding of how the Department arrived at where it is today. To this end, the Loomex Team reviewed the history of the Department, noting the significant developments and changes that helped shape its present structure.

The Loomex Group reviewed the Department's history with District Chief Glenn Case and Chief Training Officer (CTO) Bob Cranley. During discussions, the pride that the District Chief and the CTO have in the history of the Department was quite evident. All too often, the hard work of previous Councils, fire chiefs, and firefighters goes unnoticed; yet without their contributions, the Department would not be where it is today.

Town of Port Hope

The Town of Port Hope's first organized fire department started in 1834. For this fire department, the Town of Port Hope incorporated a "Board of Police" and appointed four area fire wardens. Throughout the late 1800s, the town experienced several mill fires, and the town hall and downtown core were destroyed by fire twice. Because of their need for fire protection, the town quickly saw many changes to its fire services, including the formation of a "Hook and Ladder Company" in 1842 and a Rescue Company in 1850. By 1860, fire protection was being provided to the town by three fire departments: the Victoria Fire Company, the Extinguisher Hose Company, and the Hook and Ladder Company. Figure 2 shows an exterior shot of the Central Fire Station that was erected on Walton Street in 1871. By 1875, the Victory Fire Company had disbanded, and the Hook and Ladder Company amalgamated with the Extinguisher Hose Company to provide contract fire protection services to the town.

The Extinguisher Hose Company remained in place until 1990, at which time the Town of Port Hope assumed the fire department and formed the Port Hope Fire Department. The current Station 1 Firefighters Association retained the Extinguisher Hose Company, and the name remains in place today.

Figure 2: Exterior of the Central Fire Station.

In 1873, the town recognized the need to provide a water source for fighting fires, a realization that led to the town establishing its first fire hydrant system. The town's sewers and water committee selected the engineer Keifer to build a rotary pump system that would supply water to 14 fire hydrants in the town's downtown core. The town chose John Helm Esq. to operate the rotary system from his mill on the Ganaraska River (located near the present footbridge). Figure 3 depicts an image of a fire hydrant in the town's downtown area.

Figure 3: Fire hydrant in the downtown area.

In 1900, the town hired Mr. John Tozer as a driver and fireman. Mr. Tozer had to follow a strict set of employment rules:

1. He must be near the fire hall at all times.
2. He must be available with his team of horses to bring the hose and other firefighting equipment.
3. He must work an average of 10 hours a day during working days, including providing street watering and drawing gravel when not attending fires.
4. He must sleep at the Central Fire Hall in a bedroom and keep a good team of horses at his expense, less the cost of food.

Figure 4 shows an image of John Tozer aboard his water wagon.

Figure 4: Mr. John Tozer on his water wagon.

Over the years, the town's need to have someone who could drive the horse and water wagon – and in later years, the motorized fire apparatus – to the scene of a fire grew to where both the Central Fire Station and the current fire station housed two apartments in which duty drivers could live. The drivers occupied these apartments during the hours of 7:00 p.m. to 7:00 a.m., Mondays to Saturdays, and during the daytime on Sundays. This practice remained in place until the mid-2000s.

The Central Fire Station remained in place until 1970, when the town decided to build a new fire station on Ontario Street. One of the main factors that influenced the town's decision to move the fire station was that, over the years, the Ganaraska River flooded many parts of the downtown area on an occasional basis, including the downtown fire station. Figure 5 depicts a scene of flooding that occurred in downtown Port Hope.

Figure 5: Flooding in downtown Port Hope.

Towards the end of the 1920s, the Department began transitioning from horse-drawn fire apparatus to motorized apparatus. For a time, the Department used both types of apparatus to fight fires. Figure 6 shows a circa-1930s image of the Department's horse-drawn apparatus beside its motorized apparatus.

Figure 6: Motorized fire apparatus beside a horse-drawn apparatus, circa 1930s.

Township of Hope

Prior to 1962, the Township of Hope's fire protection was provided by the Town of Port Hope and the Bewdley Fire Station. Some residents were concerned about this setup and about how long it took fire trucks to arrive from Port Hope when an emergency occurred. To allay those concerns, in 1962, a handful of residents from the Township of Hope formed the Col AG Giles Fire Company. Over the next several years, this newly formed department worked to obtain a fire truck, and, in 1965, it had 17 members and built its fire station on the Sylvan Glen property of Col. Giles. The township's residents were provided with fire protection services from the Col AG Giles Fire Company at the cost of $5.00 per house and $10.00 per farm. The department's total budget at that time was $1,004.00.

In time, the Township of Hope would come to build two new fire stations. The first new station was built in Welcome (in 1978), and the second station was built in Garden Hill (in 1983). By the time the second of those stations had been constructed, the department had 30 firefighters, seven fire vehicles, and an annual budget of $20,000.

While it was still a relatively young department, the volunteer firefighters took enormous pride in the equipment and stations available to them, and they provided an exceptional level of service to the township's residents.

Municipality of Port Hope

In 2000, the Town of Port Hope and the Township of Port Hope amalgamated into the Municipality of Port Hope; however, both fire departments continued to act independently until 2004.

In 2004, the Municipality of Port Hope made the decision to amalgamate its two fire departments, hiring Fire Chief Frank Haylow as the Municipality's full-time fire chief. Fire Chief Boughen and Fire Chief Wheeler remained in place for the next year to assist with the transition. In 2005, Fire Chief Boughen retired, and Fire Chief Wheeler became the full-time Deputy Fire Chief.

Figure 7 shows the Port Hope Fire & Emergency Services at a fire scene.

Figure 7: Port Hope Fire & Emergency Services at a fire scene.

Today, the Port Hope Fire & Emergency Services is a professional and progressive fire service provider. The Department provides many services to the community, including public education, fire inspections, fire suppression, medical responses, ice and water rescue responses, and other emergency response services. The Department's history shows that it is an organization that has been very active in supporting its community and its firefighters, possessing an ability to adapt to changes that are often not in its control. This ability to adapt will serve the Department well in the future as the Municipality continues to grow.

The dedication of Fire Chief Dan Smith, Deputy Chief Jeff Ogden, the District Chiefs, and the Department's officers and firefighters is reflected in the quality of the Department's operations.

Credit must also be given to the Department's previous fire chiefs, in recognition of their vision and dedication that helped guide the Department from its inception:

Port Hope: Past Fire Chiefs

Fire Chief Mission
Fire Chief Dunn
Fire Chief Ware
Fire Chief Little
Fire Chief Record
Fire Chief Dayman
Fire Chief Boughen

Township of Hope: Past Fire Chiefs

Chief Stapleton

Chief Kellogg
Chief Coull
Chief Wheeler

Municipality of Port Hope

Chief Boughen
Chief Haylow
Chief Collins
Acting Chief Mann
Chief Wheeler
Chief Edgar

5.0 Overview of the Department

The Department is a composite fire department that provides fire and life safety services to the Municipality. The Department operates out of three (3) fire stations and has 15 pieces of fire apparatus.

The Department is governed by Council, and its operating and capital budgets are primarily funded by the Municipality's tax base.

5.1 Department Staffing and Organizational Structure

The Department is staffed by:

- One (1) full-time Fire Chief
- One (1) full-time Deputy Chief
- One (1) Contracted Fire Prevention Officers
- Three (3) volunteer District Chiefs
- Three (3) Station Captains
- Ten (10) Captains
- Three (3) Lieutenants
- One (1) volunteer Chief Training Officer
- Sixty-three (63) volunteer firefighters
- One (1) full-time administrative assistant
- One (1) customer service assistant

During the FMP's development, the Loomex Team identified that the Department is linked with the Municipality's building and bylaw services (through the Fire Chief's position). As part of this connection, the Fire Chief is responsible for managing the Municipality's building and bylaw services, which has a staff of:

- One (1) Chief Building Inspector
- Two (2) inspectors
- Two (2) bylaw-enforcement officers
- One (1) customer service assistant

Figure 8 illustrates the Department's organizational structure, with the Municipality's building and bylaw services included.

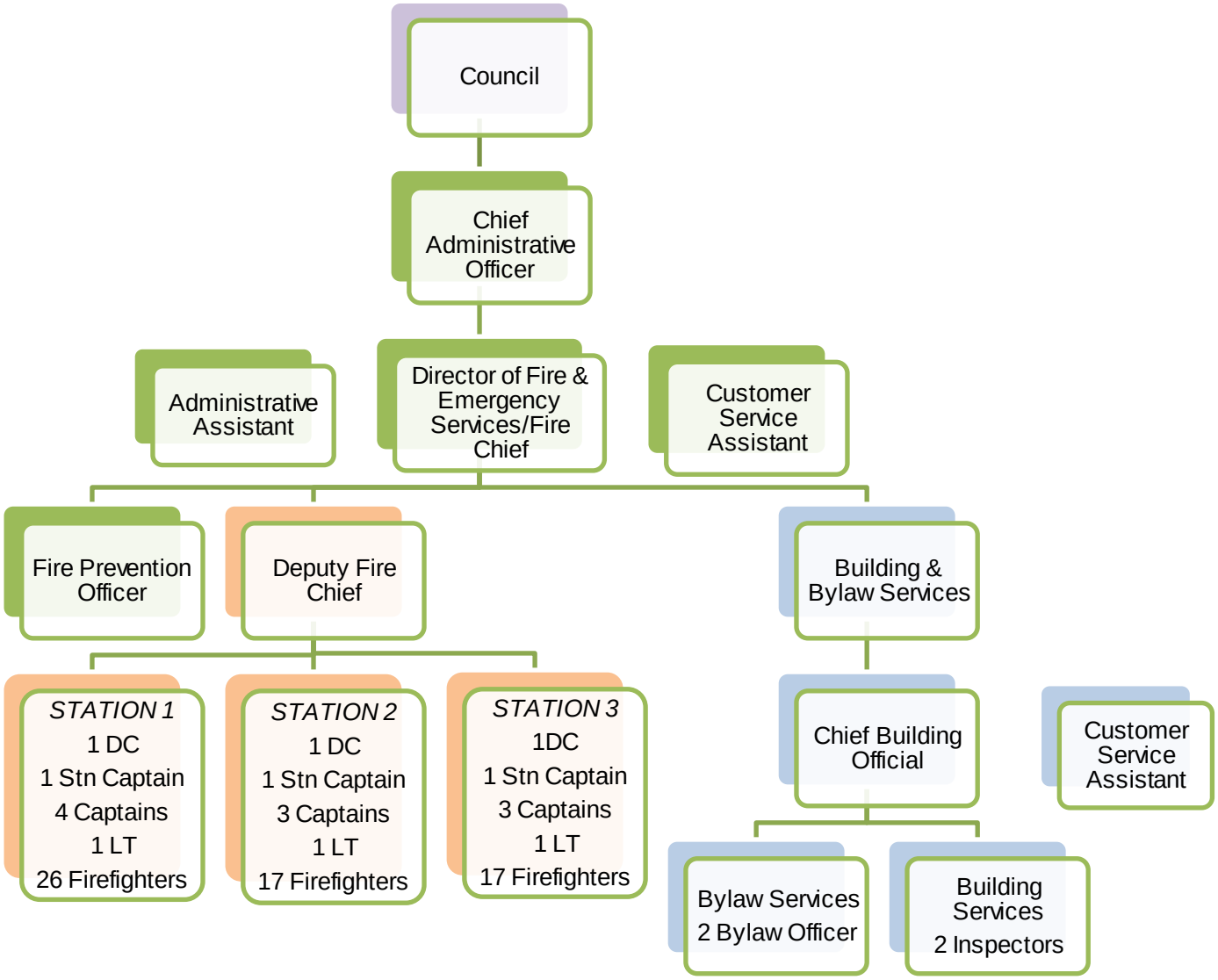

Figure 8: The Department's organizational structure.

5.2 Overview of the Director of Fire & Emergency Services/Fire Chief's Position

A competent fire chief is the foundation on which a fire department builds an effective organization. Having the right fire chief can significantly help a fire department operate in a way that will meet or exceed its compliance obligations with current legislation. Having the right fire chief also means that a fire department can meet or exceed the expectations of its community's council and residents, accomplishing this through the delivery of its council-approved services and the proactive development of life safety programs.

There are currently 86 Ontario Fire Marshal's Public Fire Service Guidelines, 69 of which are the direct responsibility of a fire chief. In addition to the pressure of maintaining compliance with these guidelines, fire chiefs must also work hard to ensure their departments maintain compliance with other legislation. Regardless of the size of its municipality, a fire department must adhere to all requirements of the Fire Protection and Prevention Act and the Ontario Health and Safety Act.

Often, fire chiefs who work in smaller communities or with volunteer or part-time firefighters must work after hours and on weekends to meet all their individual responsibilities and the responsibilities of their fire departments. To alleviate some of their supervisory pressures, fire chiefs in composite fire departments may share their duties with a deputy fire chief or with district chiefs. Additionally, the title “volunteer firefighter” may cause a misconception, suggesting that a volunteer firefighter receives different supervision or management than a part-time or full-time employee. Due to the complexity of their 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.

For the Department, the Fire Chief is responsible for overseeing all Departmental operations and serving as a member of the Department’s senior management team.

From a Departmental perspective, the Fire Chief’s role includes supervising:

- Fire prevention programs
- Fire code enforcement
- Training
- Fire suppression activities
- Facilities
- Administration

From a municipal perspective, the Fire Chief manages the Municipality’s building and bylaw services. While there are many collaborative benefits gained from having the Fire Chief manage these services along with the Department, the Municipality and the Department need to ensure the Fire Chief has enough support to fulfill his legislative requirements.

The Fire Chief’s other municipal duties include:

- Serving as the primary contact for community-Department interaction
- Serving as a member of the senior management team
- Serving as the management representative for the Department’s Joint Health & Safety Committee
- Managing the municipal fleet

- Assuming the corporate duties that are necessary for overseeing the Municipality's emergency management program

5.3 Overview of the Deputy Fire Chief's Position

The Deputy Fire Chief is responsible for managing the Department's Operations Division and performing emergency responses (as required). This position also assumes the role of Incident Commander (when required) and ensures that firefighters are operating safely and effectively during emergency responses. The Deputy Fire Chief is responsible for supervising the fire ground by acting as a competent supervisor under the OHSA.

The Deputy Fire Chief is also responsible for the management, delivery, and supervision of all Departmental training. Duties of this responsibility include ensuring that the training is compliant with current provincial and national standards, providing support to the Training Officer, and ensuring that the Department's firefighters are operating safely and effectively during training sessions.

The Deputy Chief is also the Municipality's alternate Community Emergency Management Coordinator and sits as a management representative on the Joint Health & Safety Committee.

5.4 Overview of the Administrative Assistant's Position

The Department's administrative assistant is responsible for supporting the Fire Chief with administrative duties such as data entry (payroll), making entries for items related to the Office of the Fire Marshal and Emergency Management (OFMEM), and working with a records management system. This position also supports the EMP, the Deputy Fire Chief, the Fire Prevention Officer, and the CTO with general administrative duties.

5.5 Customer Service Assistant's Position

The Department's customer service assistant's primary responsibility is to provide service to the Municipality's residents. This position also handles the Department's reception duties, including managing walk-ins, processing requests for burn permits, and receiving payments. The customer service assistant also handles the Department's quality assurance upkeeping for the Provincial Standard Incident Reporting System (through the records management system) and deals with requests from insurance companies.

5.6 Overview of the Fire Prevention Officer's Position

Working under the direction of the Fire Chief, the Fire Prevention Officer is responsible for managing the Department's public education programs, conducting fire and building

inspections to enforce the Ontario Fire Code and the Ontario Building Code, and investigating fires.

5.7 Overview of the Chief Training Officer's Position

Working under the direction of the Deputy Fire Chief, the Chief Training Officer is responsible for the Department's training program. The CTO is responsible for overseeing the records management related to the Department's training program, scheduling training, and delivering Department training at all levels, including recruit training, in-service training, and officer development.

The Department's CTO also assists with emergency responses in the capacity of a Suppression Captain.

5.8 Overview of the Suppression Division

The Department's Suppression Division is the responsibility of the Deputy Fire Chief. The Suppression Division comprises three District Chiefs, captains, lieutenants, and 64 volunteer officers and firefighters. A non-exhaustive list of the community services provided by the Suppression Division includes:

- Public education
- Public service calls
- Firefighting services
- Medical responses
- Attending motor vehicle accidents
- Performing auto extrications and water/ice rescues
- Responding to alarm activations

6.0 Legislation, Bylaws, and Agreements

6.1 Municipal Liability Policy vs. Operational Decisions for Fire Protection

Over the years, many municipalities across Canada have been challenged in the courts about Council decisions and the operational policies that fire departments have in place regarding how services are provided and how operations at a fire scene are carried out. One such challenge in the Province of Quebec resulted in a precedent-setting decision by the Supreme Court of Canada.

In the 1989 case of Laurentide Motel Ltd. v. Beauport, the Supreme Court of Canada (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." The SCC's 1989 decision cost the city of Beauport over $500 thousand, 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.[1]

This FMP includes a summary of the above case as an object lesson for Council to consider when making fire protection services decisions: 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 of Beauport's failure to maintain and operate effective fire protection services (in this case, water supply and firefighting) resulted in the city being partially responsible, and therefore liable, for most of the ensuing costs.

In the ruling, the SCC determined that a policy decision made by a town council would be mostly free from liability. The SCC made that decision because a town council is an elected body and would have communicated its decision in a form that would be familiar

[1] 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

and accessible to its community's citizens (such as in the form of bylaws, council minutes, or news reports). If community citizens were unhappy with the town council's decisions, they had the opportunity to 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 these decisions. As a result, the public may have limited opportunities or no opportunities to question or change decisions that could adversely affect them.

Following this SCC ruling, many municipalities have revised and updated their fire protection-related bylaws to ensure services and policies are made as a town council's decision rather than as decisions made exclusively by a fire department. Among these fire protection-related bylaws is the establishing and regulating bylaw (E&R bylaw). An E&R bylaw specifies which services the local fire department is to provide and the level of service the community expects of the fire department. E&R bylaws also outline various other fire prevention bylaws, including open burning bylaws, false alarms bylaws, fireworks bylaws, fire routes bylaws, and service agreements (such as mutual aid and automatic aid agreements).

6.2 Legislation

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 that guide the Department in its operations are:

- Fire Prevention and Protection Act, 1997
- Ontario Fire Marshal's Public Safety Guidelines
- Emergency Management and Civil Protection Act (R.S.O. 1990)
- Ontario Building & Fire Codes
- National Fire Protection Association Standards
- Occupational Health & Safety Act and Section 21 Committee Guidelines
- Municipal bylaws
- Corporate policies and guidelines
- Department policies and standard operating guidelines
- Highway Traffic Act
- Municipal Act
- Municipal Freedom of Information and Protection of Privacy Act (MFIPPA)

Of the examples given above, the FPPA is particularly important. The FPPA outlines the minimum standards that must be adhered to for providing life safety systems in a municipality. As per the FPPA, a municipality must have the following documents and practices in place:

- Simplified risk assessment

- Smoke alarm program
- Vulnerable occupancy program
- Distribution of fire safety education materials
- Completing inspections upon complaint or when requested to assist with fire code compliance

Table 1 summarizes the above FPPA requirements and indicates if the Municipality complies with them.

Table 1: FPPA requirements and the Municipality's compliance standing.

Requirement	Compliant?	Comments
Simplified Risk Assessment (SRA)	Yes	Rather than update its SRA, the Municipality has completed a community risk assessment.
Smoke/CO Alarm Program	Yes	The Department has a smoke/CO alarm program which consists of providing alarms and interacting with residents during a response. During an inspection, the responding Department member checks that the resident's alarms to verify they are operable.
Distribution of Fire Safety Education Material	Yes	The Department distributes fire safety material at each of the community events it attends.
Complete Inspections by Complaint or Request	Yes	The Department's Fire Prevention Officer completes inspections based on complaints and requests.
Vulnerable Occupancies	Yes	The Municipality has nine (9) vulnerable occupancies. All occupancies are compliant with the required drills, and inspections are being completed at these locations annually.

6.3 Bylaws

To meet the requirements of the FPPA and other legislation, Council must approve the level of service that the Department is to provide to the Municipality's residents, businesses, and visitors. Council makes its decision through an E&R bylaw, the content of which is based on recommendations from the Fire Chief.

The E&R Bylaw for the Municipality is Bylaw No. 53/2007. This bylaw forms the Department's foundation and structure, how it operates, and which services it offers.

As per Bylaw No. 53/2007, Council is responsible for approving the following core services that the Department provides:

- Fire suppression services for all buildings, structures, vehicles, and any other thing or item for which the Department has been authorized
- Motor vehicle extrication and rescue on all roads
- Emergency medical services to assist the County's ambulance services
- Hazardous materials response, with Department members trained at the National Fire Protection Association 472 Awareness Level
- A higher level of fire suppression services to be provided to Cameco Corporation
- Shore-based ice and water rescue services

Further policies that Council sets and approves through Bylaw No. 53/2007 are:

- Mission and municipal policies regarding service levels
- Personnel
- Administration
- Discipline of personnel
- Additional powers
- Enforcement
- Calls outside the Municipality of Port Hope
- Organizational structure

After reviewing Bylaw No. 53/2007, the Loomex Team found that it appears to be very comprehensive but should be revised. Two sections of the bylaw that Council should update are the section of the bylaw that outlines the Department's core services and the section that outlines the Department's organizational chart. Updating these sections of the bylaw will help ensure they are current with today's Fire Service and reflect any legislation/liability changes that may have occurred.

Other bylaws that affect the Department are as follows:

- Bylaw 66/2001: Being a Bylaw to Regulate Outdoor Solid Fuel Combustion Appliances
- Bylaw 14/2012: Being a Bylaw to amend Bylaw 15/2006 being a Bylaw to adopt a schedule of Administration Polices for the Municipality of Port Hope Fire & Emergency Services and to adopt a Controlled Burn Permit Form
- Bylaw 102/2008: Being a Bylaw to Provide for the Sale of Fireworks and the Setting off Fireworks and Pyrotechnics within the Municipality of Port Hope
- Bylaw 32/2005: Being a Bylaw to Authorize Participation in the County of Northumberland Mutual Aid Plan and Program
- Bylaw 54/2012: Being a Bylaw to Authorize Execution of an Emergency Medical Tiered Response Agreement between the County of Northumberland and the Corporation of the Municipality of Port Hope

- Bylaw 56/2017: Being a Bylaw to enter into an Automatic Aid Response Agreement between the Municipality of Clarington and the Corporation of the Municipality of Port Hope
- Bylaw 64/2017: Being a Bylaw to Authorize Execution of an Agreement with Cameco Corporation and the Corporation of the Municipality of Port Hope regarding Emergency Response and Training Assistance at the Port Hope conversion Facility

The review conducted by the Loomex Team during the FMP's development found that these additional bylaws are current and reflect the community's needs; however, they should be reviewed, updated, and presented to Council for consideration and adoption on a regular basis.

6.4 Agreements

Under the authority of the FPPA and municipal bylaws, a municipality is permitted to enter into an agreement to either provide or receive a service from another municipality. There are several differences in the requirements for such agreements, as detailed in the Ontario Fire Marshal's Public Fire Safety Guidelines (PFSG). An overview of these differences is given below.

Mutual Aid Plan

Ontario Fire Marshal Guideline 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.

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

1. Activate mutual aid during a major emergency where the home fire department is committed and/or the situation cannot be contained or controlled with available resources.
2. Activate the provincial Chemical, Biological, Radiological, Nuclear (CBRN) or Heavy Urban Search and Rescue (HUSAR) response system.
3. Activate a county, district, or region automatic aid program (optional).
4. Activate a county, district, or region hazardous materials support response (optional).
5. Activate a county, district, or region extrication support response (optional).
6. Activate a county, district, or region specialized rescue support response (optional).

Fire coordinators establish and maintain mutual aid plans under the stipulations of the FPPA and the direction of the Fire Marshal.

The details of a mutual aid plan specify that municipalities that provide service to the area(s) designated in the mutual aid plan 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 for such areas as designated in the appointment.

Section 2 of the FPPA outlines the duties of individuals who have a role in providing fire protection services. In this section of the FPPA, it is outlined that, subject to the instructions of the Fire Marshal, a fire coordinator shall:

(a) 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; and

(b) perform such other duties as may be assigned by the Fire Marshal.

Mutual aid is not immediately available for areas that receive fire protection under an agreement. The municipality purchasing fire protection is responsible for arranging an acceptable response for 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.

Automatic Aid

Ontario Fire Marshal Guideline PSFG 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 the closest available assistance is dispatched to an incident so that residents receive the quickest response to their needs. Automatic aid agreements reduce the amount of time between a fire's commencement and an extinguishing agent's application to the fire. Time is a critical element when responding to an incident and reducing the amount of time it takes for responders to arrive at an incident may help minimize property loss and maximize the protection of residents.

Fire Protection Agreements

Ontario Fire Marshal Guideline PSFG 04-09-12: Fire Protection Agreements states that fire protection agreements are contracts – approved by town/municipal councils – 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 to gain access/support to various services, specialized equipment, staffing, public education, and code enforcement (without needing to establish an existing fire department). A municipality may also enter into a fire protection agreement to have multiple departments operating and managing a fire department jointly.

6.5 Agreements Currently in Place with the Department

The Department has many agreements in place that make provisions for providing or receiving services such as dispatch, medical response, and fire protection. The Department also participates in the Northumberland County Mutual Aid Agreement, which allows the Department to either receive or supply services in the event a municipality's resources have reached their capacity during the response to an emergency incident and further resources/services are required.

Overall, the Department's current agreements are applicable for the services the Municipality requires. However, during the FMP's development, the Loomex Team found that some of the Department's agreements are only "handshake" agreements. The Fire Chief should work to formalize those "handshake" agreements and present them to Council for its consideration and official adoption. Table 2 summarizes the agreements that the Department currently has in place.

Table 2: Agreements the Department currently has in place.

Type of Agreement	Participating Partner(s)	Description of Agreement
Mutual Aid	Northumberland County Departments	A reciprocal agreement to provide or receive services with other fire departments in Northumberland County.
Automatic Aid	Municipality of Clarington	A reciprocal agreement that provides for fire protection for motor vehicle accidents and extrication services on Highway 401.
Fire Protection Services	Cameco	An agreement to provide emergency response and training assistance to the Port Hope Conversion Facility.
Tiered Medical Response	Northumberland County	An agreement that allows the Department to respond to high-priority medical calls and motor vehicle accidents on a tiered basis to support the paramedic services.
Dispatch Agreement	City of Peterborough	A joint agreement with seven municipalities and the Northumberland County to have

Type of Agreement	Participating Partner(s)	Description of Agreement
		the City of Peterborough provide dispatch services.

6.6 Recommendations

After a review and assessment of Legislation, Bylaws, and Agreements, it is recommended that:

1. The Fire Chief should review Bylaw No. 53/2007 and provide Council with recommendations about sections of the bylaw that should be amended based on the results of this FMP or as otherwise required.

2. The Fire Chief should seek to formalize any verbal "handshake" agreements that the Department currently has in place with neighbouring fire departments by presenting them to Council for consideration and approval.

3. The Fire Chief should develop a schedule for regularly reviewing all Department bylaws and agreements to ensure they are current with the services being provided by the Department.

7.0 Occupational Health and Safety

The Department must comply with several health and safety governance models, including the Ontario Occupational Health and Safety Act (known as the Green Book) and the Ministry of Labour's Ontario Fire Service Health and Safety Advisory Committee (formed under Section 21 of the OHSA). Section 21 of the OHSA outlines specific requirements that the Department must follow. A committee of stakeholders from across Ontario develops the Section 21 requirements, and the Minister of Labour reviews and approves them.

The Loomex Team reviewed the Department's occupational health and safety practices during the FMP's development. The results of the review found that the Department is committed to safety at all levels of its organization. The Department begins introducing new members to its proactive approach to safety during the Firefighter Recruitment Program. New Department members are also provided with health and safety training and MOL Section 21 Guidance Notes training during the recruitment program.

7.1 Health & Safety Committee

The Department has an established Joint Health & Safety Committee (JHSC) that meets on a quarterly basis. The JHSC comprises the Fire Chief, the Deputy Chief, two (2) District Chiefs, and two (2) members from each of the Department's three fire stations. The Department is meeting its legislative requirements in regard to the JHSC by having the appropriate number of members on the committee who have the necessary job-specific Level 2 certifications.

As part of its health and safety program, the Department has health and safety information boards posted at each of its stations. Worker representatives from the stations manage the information boards. Worker representatives from the Department also conduct monthly health and safety inspections of the Department's facilities. The information gathered from these inspections is forwarded to the Department's Fire Chief and District Chiefs. The Fire Chief and the District Chiefs then review the data and put measures in place to correct any issues that the inspections identified. The review conducted during the FMP's development found that the Department solves most issues at the station level.

For any injury or near-miss that occurs, the Department requires an accident form to be completed and forwarded to the Fire Chief. After receiving an accident form, the Fire Chief must either follow up or fill out the necessary Workplace Safety Insurance Board (WSIB) forms.

7.2 Personal Protective Equipment (PPE)

The PPE used by firefighters includes bunker gear, helmets, firefighting boots, gloves, flash hoods, and 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 in which injury and death among firefighters can be reduced. As a result of these studies, the Fire Service has seen its standards and legislation relating to PPE evolve. Similar to these results, over the last 20 years, the Workplace Safety and Insurance Board has recognized that certain cancers are directly attributable to the by-products of fires and hazardous materials.

The review conducted during the FMP's development found that the Department has a proactive approach to following and meeting the standards and legislative requirements pertaining to PPE. These requirements include ensuring that all PPE undergoes annual in-house cleaning and receives testing by an independent third party. The Department is also ensuring that it adheres to the ten-year shelf-life provision for bunker gear. Additionally, the Department has a comprehensive standard operating guideline (SOG) in place for managing contaminated PPE at the scene of an emergency. The SOG outlines the procedures that the Department must follow after an emergency event has occurred. One of the most important procedures outlined in the SOG is ensuring that contaminated PPE is placed in an appropriate receptacle at the scene before it is brought back to the station for either in-house or third-party cleaning. It is vital for fire departments to properly contain contaminated PPE and send it for cleaning – this is to avoid firefighters and fire vehicles becoming contaminated while returning to the station. There are also legislative requirements about maintaining the PPE/gear firefighters use when their primary PPE/gear has been contaminated or is being cleaned or tested.

The Department's three fire stations each have specialized washing machines, called extractors, that the firefighters can use to clean their PPE in between the PPE's annual cleaning.

7.3 Firefighter Wellness

A firefighter wellness program is another way for fire departments to support their firefighters' health and safety. These programs are designed to address many aspects of wellness, including cancer prevention, nutrition, physical activity, critical incident management, and post-traumatic stress disorder (PTSD).

Although the Department does not have a formalized firefighter wellness program in place, it has taken many steps to promote firefighter wellness. Examples of these steps are:

- An employee assistance program

- A PTSD policy that includes third-party post-incident debriefings
- Offering Volunteer Firemen's Insurance Services
- Offering an "After the Call Program" for providing training on good mental health

While the Department is moving in the right direction for supporting firefighter wellness, this FMP recommends that the Department establish a formalized wellness program and committee. Both the committee and the program's content should include representation from all levels of the Department; the program could also possibly be included in the Municipality's wellness program. Among the topics that the formalized wellness program should cover are healthy eating habits, physical fitness, and mental wellness. The Department should also consider installing a fitness facility at one of its fire stations or providing its firefighters with access to a third-party gym/fitness facility within the Municipality.

Having staff members who are both physically and mentally healthy enough to manage the stressful role of being a firefighter is vital for the Department. A physically and mentally healthy Department staff can also reduce the cost to the Municipality, most prominently when it comes to WSIB claims and firefighter absence due to sickness.

7.4 Recommendations

After a review and assessment of Occupational Health and Safety, it is recommended that:

1. The Fire Chief should explore the possibility of either getting the Department's members included in the Municipality's wellness program or creating a wellness committee within the Department that consists of representatives from all Department levels.
2. The Fire Chief should explore the possibility of creating a fitness facility at one of the Department's fire stations.

8.0 Strengths, Weakness, Opportunity, and Threats 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 the internal and external factors (both the helpful and the harmful) that are influencing their ability to achieve their objectives.

The Department's SWOT analysis included engagement sessions with the Department's District Chiefs, officers, and firefighters; a session specifically for the District Chiefs at each station was completed individually. In order to comply with COVID-19 restrictions, these sessions were held at the Department's fire stations and had a restricted attendance. Individuals who were unable to attend a session were provided with the opportunity to share their thoughts through an online survey.

A total of four (4) separate engagement sessions were held. During each engagement session, the Loomex Team asked the participants a series of nine (9) questions to stimulate discussion about the past, present, and future of their stations and the Department.

To gear the SWOT analysis to a Department perspective, the Loomex Team instructed the Department's officers and firefighters to consider the components of the analysis as follows:

- Strengths: Characteristics of the Department that allow the organization to provide service to the community
- Weaknesses: Characteristics of the Department that place the organization at a disadvantage for providing a service to the community
- Opportunities: Elements that the Department can take advantage of to provide a better level of service to the community
- Threats: Elements in the environment that can cause issues for the Department as it tries to provide service to the community

Overall, there was a good response for each engagement session. The results of the sessions revealed that all of the Department's District Chiefs, officers, and firefighters are very dedicated to providing a high-quality level of service to their community in all aspects of their roles, including responding to emergencies, providing public education programs, and attending and supporting community events.

The SWOT analysis also revealed other common themes that are shared among the members of the Department, including:

- Overall, the District Chiefs, officers, and firefighters recognize the importance of providing public education programs, including the Alarm for Life Program, but believe that if these programs were better organized, the Department could provide an even better level of service in this area

- Overall, the members of the Department are extremely satisfied with the apparatus and equipment provided to them; they would like to see this commitment to providing quality gear continue; they would also like to see improved gear/equipment standardization across the Department
- Generally, the District Chiefs, officers, and firefighters feel that they are adequately compensated for their roles
- Overall, discussions indicated that Department staff think that internal communications within the Department have been improving – and they recognize that COVID-19 has presented many challenges in this area – but they believe that the Department could further improve its internal communications by being more versatile and inclusive to the various needs of the different generations within the Department
- The District Chiefs and officers would like to see the return of the monthly officers' meetings in order to facilitate two-way communications with the Department's administrative staff and enhance the Department's internal communications process

At the end of each engagement session, the Loomex Team asked the participants what top-five items they would like to see Council or the Fire Chief do for the Department or the community's residents. Asking a question like this often yields a long list of differing responses, but this was not the case with the Department's members. The Department's members provided well-considered answers based on a desire to provide an improved level of service to their community, protect their fellow firefighters, and ensure they have the necessary equipment and tools to do their jobs. There was a remarkable consistency in the responses given by the Department's members, with four consistent responses:

1. The Department should increase the rate at which it is standardizing the equipment across its three stations.
2. The Department should better organize the firefighters' training program and provide more support to its delivery.
3. The Department should review its response areas and ensure that the closest station response is always dispatched, including having a fire department from outside the Municipality respond if it is the closest station.
4. The Municipality should replace Station 2.

8.1 Recommendations

After a review and assessment of the SWOT Analysis, it is recommended that:

1. The Department's Fire Chief, Deputy Chief, and officers should review the SWOT analysis results, consider all comments and suggestions the analysis generated, and determine how and if they should implement any of the recommendations from the analysis into the Department's operations.

9.0 Social Dynamics

One definition of social dynamics (or sociodynamics) is "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."[2] Using that definition, this section of the FMP addresses the topic of social dynamics within the Department.

Social dynamics is one component of the decision-making process that is frequently overlooked when changes to a fire department are discussed. For the Municipality or the Department to make changes, they must first understand who will be affected and how the individual or groups will react and interact with those changes. Specifically, when making strategic decisions, there needs to be an awareness and understanding of local history, community culture, and municipal demographics (including the Municipality's anticipated future growth and development). Figure 9 illustrates the general groups that may be affected by any changes to the Department's structure or operations.

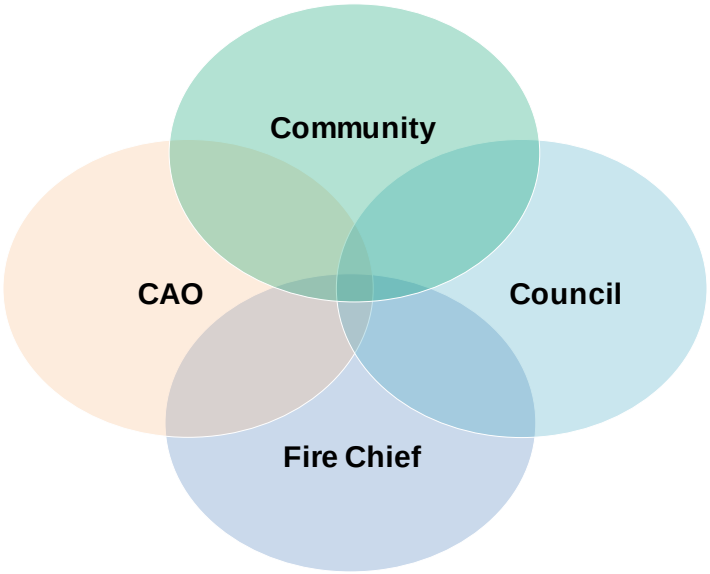

Figure 9: Overlap of the groups that must be considered as part of social dynamics.

Many groups within a community, each with established behaviours, need to be considered in the decision-making process. For the Municipality, these groups include Council, the CAO, the Fire Chief, the Deputy Chief, and the overall community residents. For the Department, these groups include each of its fire stations, its District

[2] Durlauf, Steven; Young, Peyton (2001). Social Dynamics. Cambridge, MA: MIT Press. ISBN 0-262-04186-3.

Chiefs, its officers and firefighters, and other neighbouring departments. It is essential for the Fire Chief to recognize the importance of social dynamics within the Department as well as the Municipality. After considering all components of these social dynamics, the Fire Chief can build strategies for ensuring that any changes made to the Department will be embraced.

Creating a transparent process that will foster trust among those who will be affected by any changes made by the Department begins by establishing cooperative relationships between Council and the Department's firefighters. There are several ways to build trust: scheduling regular engagement sessions through surveys, face-to-face meetings, town hall meetings, mutual aid meetings, and joint meetings within the Department are all proven methods.

The purpose of engagement sessions is to create a healthy social dynamic across the Department. Once a healthy social dynamic is in place, it becomes easier to obtain suggestions and promote change within the Department. The Department's current Fire Chief has implemented several engagement processes that are excellent examples of a healthy social dynamic environment, including holding an annual general meeting and communicating regular information by email.

Even with its current engagement processes in place, the results from the SWOT analysis indicated that the Department can still improve its internal communications. Some possible initiatives to improve the communications within the Department include holding monthly officers' meetings and fostering a communication process that is more inclusive of the different generations/age demographics within the Department.

9.1 Recommendations

After a review and assessment of Social Dynamics, it is recommended that:

1. The Fire Chief should continue fostering firefighter engagement by enhancing the Department's available programs to include monthly officers' meetings, face-to-face meetings, surveys, and firefighter engagement sessions on a routine basis. Engagement sessions like these serve as forums that allow various Department stakeholders to voice their suggestions and concerns.
2. The Fire Chief should develop a standard operating guideline that establishes a process for reviewing the different social dynamics that may affect stakeholders when important decisions that will affect the Municipality or the Department must be made. The standard operating guideline should include a process for ensuring that the Department's communication processes are inclusive of its members' different generations/age demographics.

10.0 Fire Prevention and Public Education

10.1 Legislation

Public education and code enforcement are municipal responsibilities that are mandated under the FPPA. In order for a municipality to comply with the FPPA, it must provide specific fire prevention and protection services; a municipality must also provide all additional services that its council has determined are necessary for meeting the community's needs and circumstances. Reviewing the Municipality's public education and community code enforcement was an essential component of this FMP.

As mentioned in Section 1 of this FMP, the FPPA states that it is mandatory for municipalities to make provisions for fire protection services within their communities:

"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 Office of the Fire Marshal has stipulated that this requirement also includes the following components:

- Recognized smoke/CO alarm and home evacuation program
- Public education program
- Fire inspections and evacuation for vulnerable occupancies
- Fire inspections on complaint or request
- The completion and maintenance of a simplified risk assessment to determine the risks in the community and the required level of fire prevention and emergency response that is needed

In 2013, two (2) new regulations were introduced under the FPPA about specific fire prevention activities that must be performed:

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

10.2 Fire Prevention

Ontario Fire Marshal Public Fire Service Guideline PFSC 04-09-12: Fire Prevention Effectiveness Model (FPEM), illustrated in Figure 10, sets recommended standards for fire prevention and public fire safety guidelines.

Guideline PFSC 04-09-12 defines the FPEM as:

- A planning aid that focuses on one (1) of the eight (8) components of the comprehensive Fire Safety Effectiveness Model (FSEM)
- A tool to ensure all issues are identified and addressed when considering any fire prevention programs or activities, or reviewing existing programs

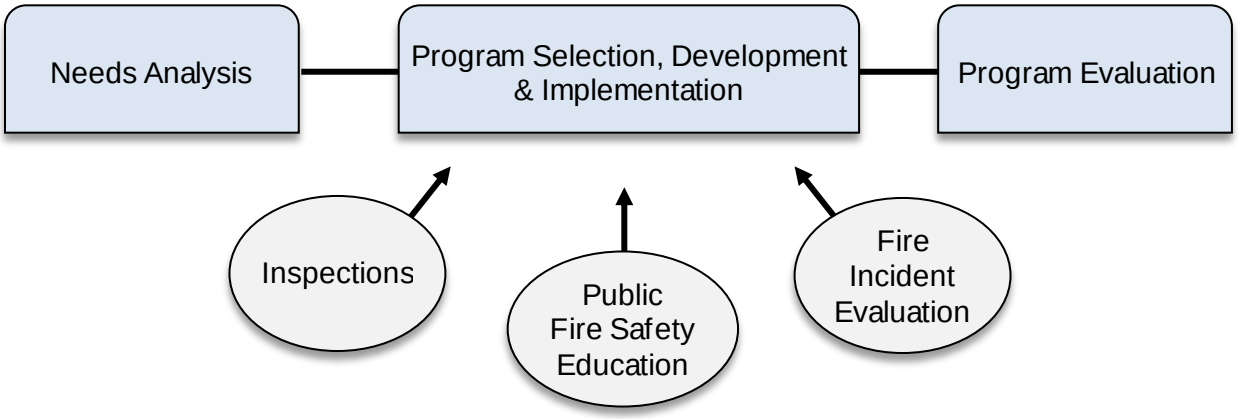

Figure 10: Fire Prevention Effectiveness Model.

10.3 The Three Lines of Defence

Traditionally, the Fire Service considered the order of the three lines of defence to be fire suppression, code enforcement, and public education. However, the current trend is to reverse the order of these priorities and rank them as public education, code enforcement, and then suppression. This revised focus from traditional priorities does not mean that emergency response is no longer a critical function of the three lines of defence; it does mean that public education and code enforcement are now more greatly emphasized than before.

Educating the community and bringing fire safety issues to the forefront is one of the most effective ways of 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. Shifting the three lines of defence to a more proactive approach that addresses fire and life safety in a community makes it more critical than ever to run an aggressive fire prevention program that will meet the Municipality's current needs as well as its projected future needs.

In most cases, the need for a suppression staff to attend a structure fire is due to the failure of components one and two in the revised three lines of defence model. The need to resort to responding fire crews should be the last line of defence, for when this need arises, both community risk and the risk to the lives of responding firefighters

increases exponentially. Of the three lines of defence, this third component also has the most significant financial impact on a municipality.

Statistics show that most fires, injuries, and deaths due to fires are preventable; however, in many cases, municipalities do not fund or provide enough resources for a proactive FPEM. This lack is often due to the necessity of having any available funds reallocated to offset the costs involved with fighting a fire 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, helping to mitigate potential risks for residents, businesses, and firefighters, and thereby providing cost-saving opportunities.

10.4 Public Education Activities

Public education activities raise a community's awareness about the importance of fire safety. Fire departments can promote these activities across a variety of 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 conducted during the FMP's development found that the Department is very proactive regarding public education activities, and it continually seeks new opportunities for promoting fire prevention in the community. Although the COVID-19 pandemic has prevented station visits and community functions from taking place, the Department attended many events and engaged with seniors' groups, schools, service clubs, and other public events to promote fire and life safety prior to the pandemic. These events provided the Department with many opportunities to engage with the public and educate them about fire and life safety.

10.5 Smoke/Carbon Monoxide (CO) 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 component 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 choose to adopt a smoke/CO alarm program bylaw for their residents to satisfy this FPPA requirement.

The Department has a very aggressive and proactive smoke/CO alarm program. Each year, the Department selects a section of the Municipality to visit and then conducts home inspections to check for working alarms and provide public education messaging in that selected area. The process involves teams of firefighters visiting homes and completing a home safety inspection checklist. During an inspection, if the Department discovers that the dwelling has an inoperable alarm, the Department members will install either a new battery or alarm in the home before leaving. Similarly, if the Department is responding to an emergency call in a home and discovers an inoperable alarm, the responding Department members will ensure there is an operating alarm in the home before leaving. The Department documents these actions on the incident report that is completed for the call.

The Department also communicates public education messaging via local radio as another component of its smoke/CO alarm program. The Department broadcasts this messaging on a regular basis.

10.6 Inspections and Compliance

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

1. Every building for which a fire safety complaint is received; and
2. Every building for which a request for assistance to comply with the Fire Code is received and the involvement of the Chief Fire Official is required.

Other regulations that govern the type and frequency of building inspections are:

- Ontario Regulation 364/13, Mandatory Inspections – Fire Drill in Vulnerable Occupancy: requires that fire safety assessments, inspections and fire drills be conducted on an annual basis
- Ontario Fire Code Section 2.8.2 – Occupancies that require a Fire Safety Plan: requires the applicable occupancies to have a fire safety plan prepared, approved, and implemented in buildings and premises
- Ontario Fire Code Section 2.13 – installations of smoke alarms, and Section 2.16 – installations for carbon monoxide alarms: requires that a smoke/CO program (which includes inspections and enforcement) shall be in place

While building owners must comply with the Ontario Building Code (OBC), there is nothing to trigger compliance inspections unless building permits are required or issued. From a regulatory perspective, the Municipality's Building & Bylaw Services is currently maintaining compliance with the OBC.

For tracking purposes, the Department's code enforcement calls and its inspections are divided into five (5) categories: complaint, request, sale request, vulnerable occupancies, and others.

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 a note being added 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 vulnerable occupancy inspections annually as per the FPPA.

Type 5: Other Inspections

The Department conducts inspections classified as "other" when concerns are brought to the Department's attention through other means (such as a home inspection program, retrofit, or general inquiry). The Department may also conduct this type of inspection in order to inspect specific occupancies or areas of the Municipality.

Table 3 summarizes the types of inspections the Department completed during the years 2016-2020, and Table 4 summarizes the reasons for each inspection.

Table 3: Inspections completed during 2016-2020 by occupancy type.

Year	Commercial	Multi-Residence	Mixed-Use	Vulnerable Occupancies	Other	Totals
2016	0	0	0	1	0	1
2017	0	5	0	5	1	11
2018	0	9	0	26	23	63
2019	24	25	4	14	41	108

Year	Commercial	Multi-Residence	Mixed-Use	Vulnerable Occupancies	Other	Totals
2020	23	10	0	14	21	68
Total	**52**	**49**	**4**	**60**	**86**	**251**

Table 4: Reason for inspections during the years 2016-2020.

Year	Complaint	Owner Request	Sale Request	Vulnerable Occupancies	Other	Totals
2016	0	0	0	1	0	1
2017	3	2	0	1	5	11
2018	11	19	4	14	14	62
2019	17	37	4	11	28	97
2020	11	17	4	3	22	57

The Municipality's community risk assessment identified that the Fire Chief and the Fire Prevention Officer have been working to obtain information on inspections that the Department completed before 2016. The Department must record this information because completed inspections with no documented follow-up actions, as well as outstanding violations, leave the Municipality with a degree of liability risk.

Table 5 summarizes the results of the inspections, infractions, and notices that the Department issued during the years 2016-2020. Due to time restrictions impacting the Fire Prevention Officer, as well as other issues, 36 violations are still outstanding, which could create a liability issue for the Municipality.

Table 5: Number of violations noted and notices issued during the years 2016-2020.

Year	Verbal	Letter	FSIR	Order	Total	Resolved
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	12	10	16	3	41	32
2019	6	30	13	28	50	36
2020	0	34	12	4	50	36

Completing inspections based on complaints or requests puts the Department in compliance with the FPPA, but not resolving the inspections leaves the Department open to questions about its level of compliance. As a result of a new direction by Council, more time dedicated to code enforcement must be given to the Department so it can work on resolving all currently outstanding violations.

10.7 Vulnerable Occupancies

The Municipality has nine (9) vulnerable occupancies. The review conducted during the FMP's development found that all vulnerable occupancies in the Municipality meet the requirements under O.Reg.365/13: Mandatory Assessment of Complaints and Requests for Approval and O.Reg.364/13: Mandatory Inspection – Witnessed Fire Drill in Vulnerable Occupancy. The Department is ensuring these occupancies remain compliant with this legislation by annually inspecting the occupancies, monitoring their mandatory drills, and reviewing their fire and life safety plans.

10.8 Fire Investigations

After a fire occurs, the FPPA requires a fire investigation to take place in order 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 local fire services and is an essential component of fire protection.

To adequately determine the origins and causes of fires, it is critical for fire personnel to receive advanced training in arson detection. If a fire is determined to be suspicious, the Office of the Fire Marshal and the local police are both notified. Arson is a criminal offence and is sometimes used to cover other illegal activities or defraud insurance companies.

The FPPA states that all assistants to the Fire Marshal shall notify forthwith the Office of the Fire Marshal and Emergency Management of all incidents that meet, or that appear to meet, the following criteria:

- Fires or explosions resulting in either a fatality or serious injury requiring person(s) to be admitted as in-patient(s) to a hospital (it is the responsibility of the fire department to make every reasonable effort to confirm the status of injured persons transported to hospital prior to the release of the fire scene)
- Explosions (where the explosion is the primary event)
- Fires or explosions suspected of being incendiary (criminal). Discretion may be used when there is no impact on a building(s) or in circumstances where there is no apparent threat to life. These types of fires include dumpster fires, car fires, and wildland fires. All incendiary fires and explosions must also be reported to the police authority having jurisdiction
- Fires or explosions where the loss is significant to the community
- Fires resulting in unusual fire/smoke spread
- Fires or explosions involving circumstances that may result in widespread public concern (e.g., environmental hazard)

- Fires or explosions in multi-unit residential occupancies where fire spread or explosion impact is beyond unit of origin, or where suspected Fire Code violations have impacted on the circumstances of the event
- Fire or explosions involving clandestine drug operations or marijuana grow operations

Under the FFPA, the Department's Fire Chief, Deputy Chief, and Fire Prevention Officer must follow all steps that pertain to determining the causes of fires. As part of this obligation, the Fire Chief, Deputy Chief, and Fire Prevention Officer must notify and work with the Ontario Fire Marshal's investigators, when required.

10.9 Community Risk Assessment: Context

On July 1, 2019, the Province of Ontario passed a regulation that requires every municipality to complete a community risk assessment no later than July 1, 2024. This regulation is governed under the authority of the FPPA.

Relevant extracts from this regulation are presented below.

From Sections 1 – 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 (stipulating that a CRA must be completed at least every five years):

(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 (stipulating that a CRA must reviewed annually):

(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.

10.10 Community Risk Assessment for the Municipality of Port Hope

CRAs provide town 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 the community's fire department must deliver those services. The information contained in a CRA is based on the risks that are identified in a community after a comprehensive assessment of nine (9) mandatory community profiles has been completed. Once a community's risks have been identified, they are analyzed, evaluated, and prioritized by 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.

Figure 11 depicts the Municipality's life safety risks related to the Department. The risks were determined by using the Ontario Fire Marshal & Emergency Management worksheets and risk matrix.

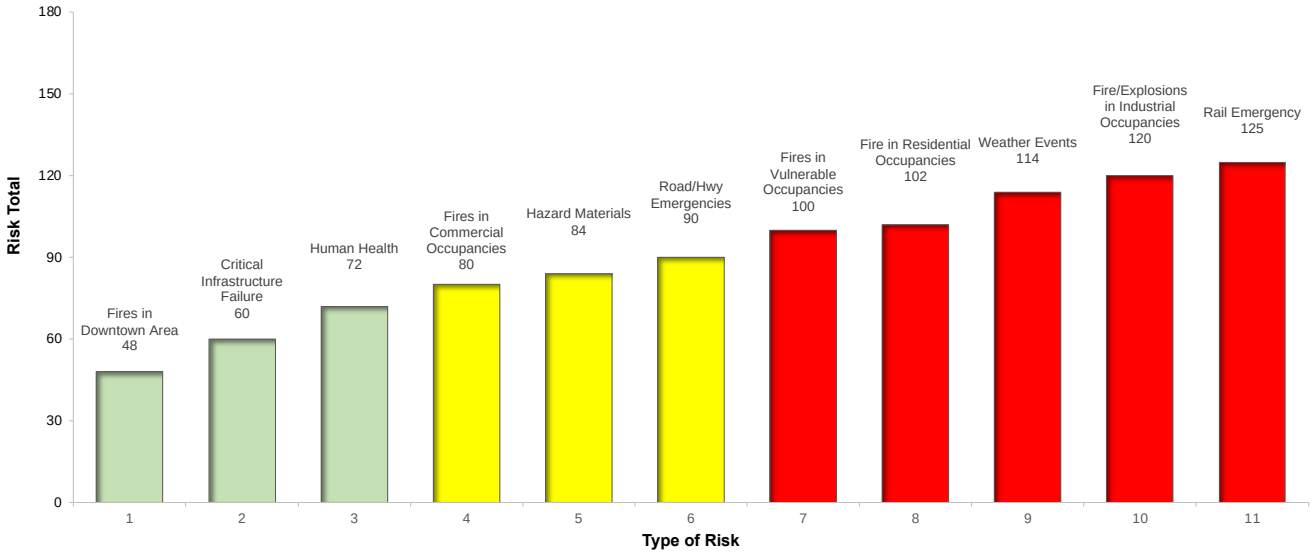

Figure 11: Life safety risks present in Port Hope.

Among the information identified in the CRA is the Department's need to create a fire prevention policy and complete pre-planning for the Municipality's high-risk occupancies.

The fire prevention policy/bylaw should set the parameters for how often the Department needs to complete inspections (based on occupancy type and level of risk). The policy/bylaw should also formalize the Department's public education program and its smoke/CO alarm program.

By conducting pre-planning, the Department would be able to familiarize itself with the Municipality's different high-risk occupancies, thereby gaining information that may be useful in the event an incident occurs in those structures. The Department should conduct pre-planning for all of the Municipality's high-risk occupancies (i.e., the vulnerable and industrial occupancies) and the downtown core area.

Regarding public education and code enforcement, the Department is meeting the minimum level of compliance mandated for those types of programs. The Department cannot currently be more proactive in its approach to public education and code enforcement programs because it receives a high volume of requests or complaints and only has one (1) contract Fire Prevention Officer. Furthermore, the Department's current

approach to public education and code enforcement programs does not allow inspections to be scheduled regularly at the Municipality's high-risk occupancies (as identified in the Municipality's community risk assessment). If this practice continues, it puts the inhabitants of these occupancies, as well as the Department's firefighters, at risk if an emergency happens. As was discussed previously, taking a proactive approach to conducting inspections and promoting public education is safer and more cost-effective than needing firefighters to respond to emergency incidents.

10.11 Fire Prevention and Investigation Challenges

The Loomex Team's review found that the Department is attempting to be proactive with its fire inspection programs, but the limited amount of time available to the current Fire Prevention Officer is hampering its efforts. On average, the Fire Prevention Officer spends 70 per cent of his available time on inspections for complaint requests, owner requests, sale of property requests, and vulnerable occupancies, which leaves only 30 per cent of available time open for proactive inspections. The goal of the Municipality and the Department should be to reverse the percentages. Ideally, the majority of the Department's inspections should be proactive – this will better ensure the safety of the Municipality's residents, workers, and firefighters.

The risks identified in the Municipality's CRA showed that three of the top five in the community are fire in industrial occupancies, fire in residential occupancies, and fire in vulnerable occupancies. Except for vulnerable occupancies and single-family homes, the Department is not regularly inspecting the majority of these high-risk occupancies (based on records of the current number of inspections the Department is completing). Since the risks posed by industrial occupancies, multi-residential units, and commercial occupancies represent some of the biggest risks to the community, the Department must make a concerted effort to inspect these occupancies more frequently. Inspecting these high-risk occupancies more frequently will help the Department better reduce the risks those occupancies pose and better protect the safety of its firefighters.

As a way to increase the frequency of the Department's inspections, Council should adopt a fire prevention policy that sets expectations for how often the Department should proactively inspect all occupancies in the community. The proposed fire prevention policy should also support increasing the size of the Department's fire prevention staff to better meet the Municipality's needs (based on the Municipality's identified risks). Although adding more fire prevention staff is a cost to the Municipality, the three lines of defence model views proactive fire prevention initiatives such as this as the most cost-effective strategy for delivering fire and life safety in a community – for when the Department must respond to a fire, it means one or more components of the Municipality's use of the three lines of defence has failed. Overall, emergency responses pose the greatest risk to the safety of the Department's firefighters; they can also lead to the greatest financial impacts on the Municipality in terms of loss.

In addition to the gap in the number of inspections it's completing, the Department struggles to provide the appropriate level of service for fire investigations. As stated in Section 10.8, the FPPA requires the Department to investigate all fires that occur in the Municipality, but the Department currently lacks the available resources and expertise to satisfy that requirement. At present, the Fire Chief, Deputy Chief, and Fire Prevention Officer are completing fire investigations for the Department, but there is no formalized schedule that makes clear who is responsible for being available to complete the investigations. Another issue is that completing fire investigations is very time-consuming due to the complexity of the investigation process. This issue results in the Department's senior management not being able to work on their regular duties.

Despite the challenges it has with completing fire prevention initiatives and fire investigations, the Department can begin taking steps to dramatically reduce those issues by adopting a comprehensive fire prevention policy and adding additional staff to complete fire inspections. These two steps are the most cost-effective ways of improving life safety for the community and the Department's firefighters.

10.12 Recommendations

After a review and assessment of Fire Prevention and Public Education, it is recommended that:

1. After the Fire Prevention Officer's current contract with the Department concludes, the position should be made into a permanent full-time position.

2. The Fire Chief should develop a fire prevention and public education policy that specifies how frequently inspections should occur, sets the parameters of the Department's public education programs, and includes a smoke/CO policy. Once the fire prevention and public education policy is drafted, the Fire Chief should present it to Council for consideration and adoption.

3. The Fire Chief should work with the Fire Prevention Officer to conduct annual inspections at the Municipality's high-risk occupancies in order to gain information that the Department can use to create pre-plans for its fire suppression crews.

4. The Fire Chief should develop a policy/procedure that explains the respective roles of the Department and the Municipality's building services regarding building permits, planning application approvals, building inspections, and commissioning life safety systems in buildings.

5. The Fire Chief should prepare a report for Council's consideration and approval that presents evidence supporting the need to hire an additional Fire Inspector. The report should emphasize that requirements to inspect high-risk occupancies, as identified in the Municipality's community risk assessment, are proactive steps that ensure the safety of the community's residents, workers, and firefighters.

11.0 Training

Training is mandatory for ensuring that a fire department's operations remain safe and effective; it is also an ongoing requirement for firefighters to maintain their skill levels. Under the Occupational Health and Safety Act, employers must provide training to their employees.

The OHSA states that it is the duty of the employer to ensure that:

- Prescribed equipment, materials, and protective devices are provided
- Equipment, materials, and protective devices provided by the employer are maintained and kept in good condition
- Prescribed measures and procedures are carried out in the workplace
- Information, instruction, and supervision are provided to workers to protect the workers' health and safety (without limiting the strict duty imposed in the above bullets)

In addition to the OHSA, the Province of Ontario requires fire departments to provide their employees with the following training:

- Incident Management System for Emergency Management
- Accessibility for Ontarians with Disabilities Act (AODA)
- Workplace harassment
- Workplace Hazardous Materials Information System (WHIMIS)
- Other training mandated by the Province of Ontario, as required

The Department must provide its members with all necessary health and safety training – such training is where ensuring the well-being of workers is protected begins. In order for there to be evidence that an employer is administering all necessary training to its employees, it must maintain training records. These training records will clarify what measures an employer took to prevent hazards, accidents, discrimination, and harassment in the workplace.

The review conducted during the FMP's development found that the Department bases the training program for all its members on the standards of the NFPA. The Department bases specialty or advanced training on other standards, such as NFPA 472: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents. The review also found that the Department and its staff have completed some, but not all, government-mandated training.

11.1 Training and Education

In the world of emergency services, the importance of providing adequate training to emergency responders cannot be overstated. Likewise, it is vitally important that emergency responders complete all training that is crucial to their roles.

Where life safety is at risk, it is of paramount concern that emergency responders are competent in their roles – when the citizens in a community call for help, they expect and deserve the very best from their fire and emergency service providers. No matter what area of fire and emergency services they are assigned to – from fire prevention and public education to fire suppression – fire crews must have the necessary confidence and skills to provide services to their community.

The Department's training committee comprises a part-time CTO and several trainer facilitators culled from each of the Department's fire stations. This committee meets to develop the Department's training schedule annually, forwarding the training schedules to the Department's senior officers for review once they are completed. When developing the training schedule, the training committee is flexible regarding timelines about when the training programs will be delivered; the committee gives particular consideration to the availability of resources and instructors and the potential of any seasonal impacts. The training committee is also responsible for delivering the approved training programs on designated training nights. Overall, the training committee is expected to strategically plan the Department's training program with the District Chiefs and develop/deliver the program, which are daunting tasks, given that they are performed on a volunteer basis.

The Loomex Team's review found that the members of the training committee are very dedicated to their roles and are doing the best they can with the knowledge and time available to them.

11.2 Recruit Training

The Department's current recruit program is conducted as a two-part system.

First, prospective members apply to the Department and are selected through an intake process that allows the Department to screen and select potential candidates. Applicants who successfully pass the Department's screening process must then attend the countywide Shared Recruit Program. The number of participants selected for the Shared Recruit Program is usually between 10-15 individuals, depending on the needs of an individual fire department. The Shared Recruit Program is ordinarily scheduled early in the year or in the fall.

The Shared Recruit Program is designed in a way that helps ensure no single fire department is burdened with conducting the entire program. As such, the program's team of instructors is culled from several different fire departments. Structuring the recruit program in this way reduces costs for all fire departments involved and allows the students diversity in their training, from a pool of standardized and shared certified instructors. Furthermore, many departments may have difficulty ensuring a bank of qualified instructors and the required time commitments, leaving this a viable option for the other departments in Northumberland County. The structure of the recruit program

is an excellent example of the departments in Northumberland County working together and sharing services.

Before beginning the Shared Recruit Program, applicants are advised that it involves a five-to-six-month time commitment and that all training is off-site. Upon completing the Shared Recruit Program, an individual attains NFPA Firefighter 1 & 2 (FF I & II) certification and Hazardous Materials Awareness and Operations certification.

After completing the Shared Recruit Program, recruits return to their respective fire departments and begin in-service training. Recruits are placed on a one-year probationary period during their in-service training. Once their one-year anniversary date arrives, recruits will be permitted to respond to emergency calls (a decision also based on the discretion of their fire department).

11.3 In-Service Training

Regularly scheduled Department training, known as in-service training, reflects standardized, needs-based, and specialized training. At a minimum, the Department's in-service training takes place two (2) nights per month (on the first and second Tuesdays). The last Tuesday of the month is an equipment familiarization and maintenance night. A predetermined schedule is generally reviewed with staff in advance to allow the officers to prepare for in-service training. Depending on seasonal conditions, training may also take place on dedicated Saturdays to provide sufficient time to complete more complex training such as water rescue.

All firefighters and officers are expected to train to current NFPA standards – specifically FF1, FF2, and hazardous materials training. While it has many members grandfathered under the OFMEM standards, the Department undertook a three-year program to achieve NFPA 1001 standards, which required dedicated lesson plans and adherence to the NFPA's Job Performance Reviews. Such an upgrade places a heavy burden on in-service training from an organizational perspective.

During the SWOT analysis, it was identified that officers have an increased role and responsibility to ensure adequate training and compliance with NFPA standards. Also noted was the requirement to ensure that the instructors meet the required level of expertise for both theory and practical training.

During the SWOT analysis, the Department's firefighters also identified that they would like to see more practical training. The key to good training is determining the right mix of practical and theory-based components, and the Department is making strides to comply with this request. Some of the Department's recently purchased technology, such as the Fire Learning Management System (FLMS), will aid the management of training programs, specifically in terms of lesson plans, records management, and online tutorials. The Department's commitment to continuous improvement to address

training shortfalls will provide benefits for all its fire staff, as it is evident that without a dedicated individual to oversee the training program and help to coordinate, lead instructors, and ensure proper lesson plans for necessary training, compliance is not sustainable.

11.4 Volunteer Officer Development

A good officer development program dutifully addresses the requirements of the OHSA, especially those that pertain to ensuring a fire department's officers meet the definition of a "competent supervisor" (which reduces the liability on a fire department's municipality). However, 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 that such a program places on their 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.

The Department has developed a volunteer officer development promotional program based on merit and qualifications. The Department's program also requires all potential candidates to have attained certain requirements based on NFPA standards. Table 6 summarizes the qualifications each officer position in the Department needs in order for a member of the Department to apply for a promotion.

Table 6: Qualifications for promotions in the Department.

Promotion	Qualifications
Firefighter to Lieutenant	• NFPA 1041: Standard for Fire Service Instructor 1 (or be able to obtain this qualification within one [1] year of promotion)
Lieutenant to Captain	• NFPA 1041: Standard for Fire Service Instructor 1 • NFPA 1021: Fire Officer 1
Captain to District Chief	• NFPA 1041: Standard for Fire Service Instructor 1 • NFPA 1021: Fire Officer 1 • NFPA 1021: Fire Officer 2

The opportunities for Department members to receive the officer training needed to attain the qualifications required for promotions exist with support through countywide training programs. Additionally, there are officer courses in locations like the Quinte West Training Centre. However, it is important to note that these courses require a significant time commitment, which is the root cause of several issues for potential

candidates. The major issues for volunteers are attending off-site courses for officer development and the time commitment involved away from their primary jobs.

11.5 Certification

During the development of this FMP, the Province of Ontario passed Ontario Regulation 343/22: Firefighter Certification. This regulation is under the authority of the FPPA and establishes the mandatory minimum certification standards for specific fire protection services. Some of the highlights of the regulation are:

- The firefighter certification regulation was filed on April 14, 2022, and will come into effect on July 1, 2022
- The regulation introduces mandatory minimum certification standards for firefighters that align with fire protection services being performed. This stipulation will help ensure that firefighters receive consistent training according to the level of service set by their municipal council; support for firefighter and public safety is also provided for
- Municipalities will be required to meet the certification standard that aligns with the level of fire protection services their fire departments are providing
- Municipalities will set the types of service and the levels of service that their fire departments are to provide and then provide the fire departments and their staff members with the appropriate level of training (based on the NFPA standards)
- Fire department staff will be required to meet the NFPA standards and be able to provide services associated with their roles. For example, a fire prevention officer will need to be certified to the level of inspections being provided, and captains will be required to be certified to the level of supervision they will be conducting

Because the Department has been using the NFPA standards and certifications as a basis for its training programs, it should be able to have a smooth transition to the additional certifications that will be required in the future.

11.6 Recommendations

After a review and assessment of Training, it is recommended that:

1. The Fire Chief should prepare a report for Council's consideration and approval that presents evidence supporting the need to hire a full-time Training Officer. The report should emphasize that having a full-time Training Officer would allow the Department to focus more time on training initiatives and enable the Deputy Chief to have more time to work on other programs and manage the Department's training program.

2. The Chief Training Officer should hold quarterly meetings with the training committee to monitor and ensure the consistency and effectiveness of the Department's training programs.

3. The Deputy Chief should review the Department's current delivery of special operations, including hazardous materials responses and high-angle rescue responses.

12.0 Resource Deployment and Response Times

12.1 Resource Deployment

When determining the appropriate level of service a fire department should provide to its community, both fire departments and municipalities must understand that the FPPA sets out a list of requirements for providing fire protection. The FPPA bases those requirements on local needs and circumstances. 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 OFMEM provide general guidelines about the initial critical fire ground tasks that are required for structure fires at each level of risk (low, moderate, high, and maximum). The results of additional studies conducted by the National Institute of Standards & Technology (NIST) support the NFPA and OFMEM guidelines.

The number of persons and resources needed to complete the identified critical tasks is known as the effective response force (ERF). An ERF defines the resources that are required for any given response to help prevent an emergency from intensifying and injuries/loss of life from increasing. An ERF refers to the initial timed response of first responders arriving at an emergency scene. The time identified in the ERF should be seen as a performance measure that can be used by the Municipality and the Department. Upon confirmation of the severity of an incident, the Department can dispatch additional resources to the emergency scene. Dispatching the additional resources from the station(s) that are closest to the incident will improve ERF response times, but it is up to a municipality to determine the parameters and details of its ERF. The timed response identified in the ERF can directly affect considerations such as station location, staffing, apparatus deployment, and development standards.

12.2 Determining an Effective Response Force

To make informed decisions about its response times 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 must provide to the community.

Before discussing the topic in more detail, it must be noted that, in recent years, the Government of Ontario has influenced how decisions are made about fire department staffing. The influence is primarily felt 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. Such requirements, as well as similar

legislation, must be considered alongside the Department statistics that are used to determine the Department's ERF.

12.3 Department Statistics

During the FMP's development, the Loomex Team identified that Council needs to formally set the level of service that the Department is to provide to the community. But before Council can set the Department's level of service, the Department must first provide Council with recommendations about its service delivery capabilities. In order for the Department to make an informed recommendation to Council about establishing an ERF baseline for responses to low-, moderate- and high-risk emergencies, the Department must review its historical data so that the recommendations it makes about establishing those baselines are founded on concrete examples from its response history. Doing so will allow Council to make a well-considered decision about setting a level of service that is based on the Department's actual response capabilities.

Collecting historical data about the Department begins with compiling a list of the number of responses the Department has made over the past five (5) years. The Department's records management system and the standard incident reports from the Office of the Fire Marshal pertaining to the Department can identify the number of responses made by the Department in recent years. After reviewing those sources, the Loomex Team found that the total number of responses made by the Department for the years 2017-2021 is as follows:

- 2017: 579 responses
- 2018: 630 responses
- 2019: 604 responses
- 2020: 593 responses
- 2021: 586 responses

On average, the Department responds to 599 calls per year. In total, the Department responded to 2,992 calls during the years 2017-2021.

After calculating its total number of responses from the past five years, the Department can examine the specific types of response calls it made during that time. Figure 12 illustrates the types of service calls made by the Department during the years 2017-2021 and the frequency of each type of response (shown as a percentage). This information reveals that, at 23 per cent, the most frequent response call made by the Department was medical calls to support the Northumberland Paramedic Services (as per the Department's tiered response agreement). Less frequent, at 12 per cent, were responses to property fires. The Department's least frequent type of response during 2017-2021 was public hazard response, at 4 per cent.

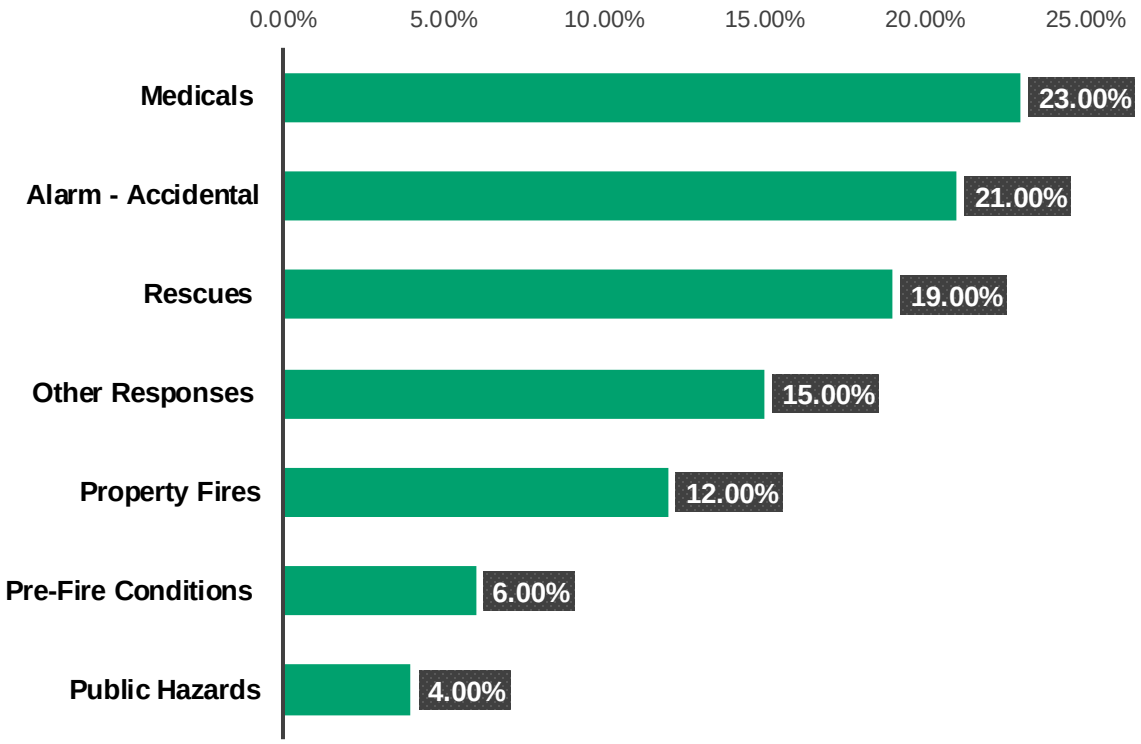

Figure 12: Types and frequency of Department responses for the years 2017-2021.

Table 7 summarizes the types and numbers of property fires the Department responded to during the years 2016-2021.

Table 7: Types and numbers of fire responses for the years 2017-2021.

Year	Loss Fires: Structures	Loss Fires: Other	Loss Fires: Vehicles	No Loss Fires	No Loss Fires: Excluded	Non-Fire Calls
2017	22	1	4	9	17	526
2018	14	1	3	7	18	587
2019	17	0	13	7	8	559
2020	14	1	6	2	10	566
2021	32	1	15	15	25	498

Table 8 summarizes the Municipality's dollar loss due to fire for the years 2017-2021, with the information presented by property class. On average, the Municipality suffered a dollar loss of $1,923,900 per year.

Table 8: Dollar loss due to fire, shown by property class, for the years 2017-2021.

Year	Group A	Group B	Group C	Groups D & E	Group F	Other	Total Loss Yearly
2017	$0	$0	$1,141,200	$0	$29,000	$555,000	$1,725,200
2018	$250,000	$0	$241,050	$0	$0	$210,000	$701,500
2019	$0	$0	$588,100	$602,000	$0	$687,000	$1,877,100
2020	$40,500	$0	$672,500	$0	$55,000	$102,500	$870,500
2021	$430,000	$0	$1,995,000	$136,000	$1,100,000	$784,200	$4,445,200
Total Dollar Loss							$9,619,500

12.4 Reviewing Historical Performance

It is essential for the Department to review its historical performance in order to identify its service delivery capabilities.

When the Department is reviewing its historical performance, it must give particular attention to distribution and concentration. Distribution and concentration are key factors that inform a fire department's decision as it seeks to determine the most efficient manner of providing an emergency response. The Department should also use modelling and statistical analysis to verify that it is using its resources efficiently and effectively. In order for the Department to accurately determine its service performance, historical response data from each station it operates needs to be compiled and analyzed.

12.5 Calculating Total Response Time

Every emergency response comprises categorizable steps. When they are timed and added together, those steps represent the total amount of time it takes for a fire or other emergency services provider to respond to the scene of an emergency. For an analysis of historical responses to be accurate, the way in which those steps are reviewed must be consistent from response to response. Figure 13 illustrates the steps involved with an emergency response. A definition for each of those steps follows.

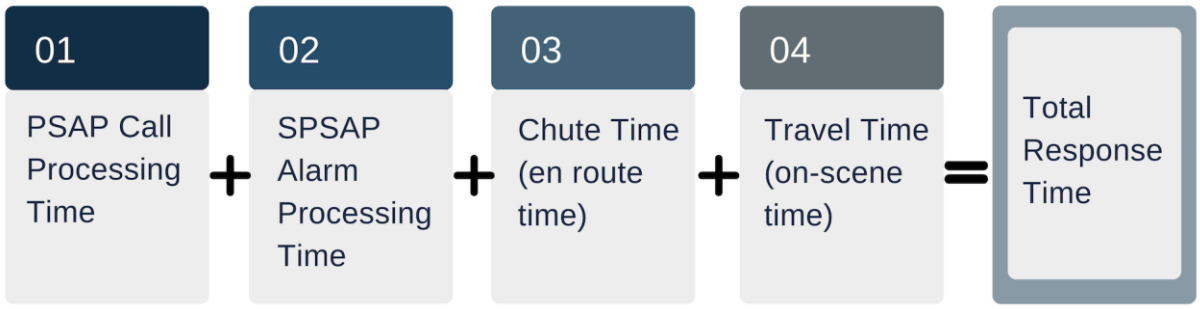

Figure 13: Components of total response time.

Public Safety Answer Point (PSAP) Call Processing Time: The time interval during which the PSAP/911 call centre receives an alarm (via phone call), the PSAP transfers the call to the Department, and the Department's dispatch center answers the transferred call.

Secondary Public Safety Answer Point (SPSAP) Alarm Processing Time: The time interval during which the Department's dispatch centre receives an alarm (incident's beginning) and the communication technician/dispatcher activates the station's paging devices (dispatch time).

Chute Time: The time interval during which the station activates its pagers and the responding apparatus begins its response; the apparatus's response will be noted by – or noted to – dispatch by voice communication via the Department's radio system (en route time).

Travel Time (1st Unit): The time interval during which the responding apparatus gives an initial acknowledgement that they are responding to the emergency and the responding apparatus confirms to dispatch via radio that it has arrived on-scene (on-scene time).

Total Response Time (1st Unit): The total time from the dispatch centre's receipt of the alarm (incident's beginning) to the first emergency response apparatus's arrival at the emergency scene.

Effective Response Force Time: The total amount of time from the dispatch centre's receipt of the alarm (incident's beginning) to the on-scene arrival of the unit which constitutes the ERF.

In order to gauge its service delivery capabilities, the Department must analyze each stage of its emergency response, separating those stages into the steps defined above. The Department must ensure that the data it uses to define its historical performance is accurate and reliable – this is data that the Department will use when making strategic decisions or service alterations, and it is imperative that those decisions are based on sound evidence.

The Department should use a five-year sample of its historical response data of fires with dollar loss to determine a baseline measure for its incident response. That baseline will be the source from which the Department can gain an understanding of 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-identified 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 widely accept that fire department performance is better measured in terms of how a department can achieve its goals instead of being based solely on a simple average metric. For example, if a fire department states that it can respond to an emergency with a 12-minute total response time at 90 per cent efficiency (i.e., in nine out of every ten responses), it assumes that 10 per cent of the incidents it responds to will not meet the 12-minute response time. It is the identification of issues within this 10 per cent variable that may help the fire department plan and implement protection and prevention strategies.

12.6 Response Times to Structure Fires

The response time for all emergencies that involve structure fire is critical. In these scenarios, the sooner the first responders arrive at the scene of an emergency incident, 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 1000^{o} F (590^{o} C), a flashover will occur in the entire room within 6-10 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 14 illustrates a fire's growth over time, reinforcing how critical it is to have a prompt intervention to limit the loss of life and property.

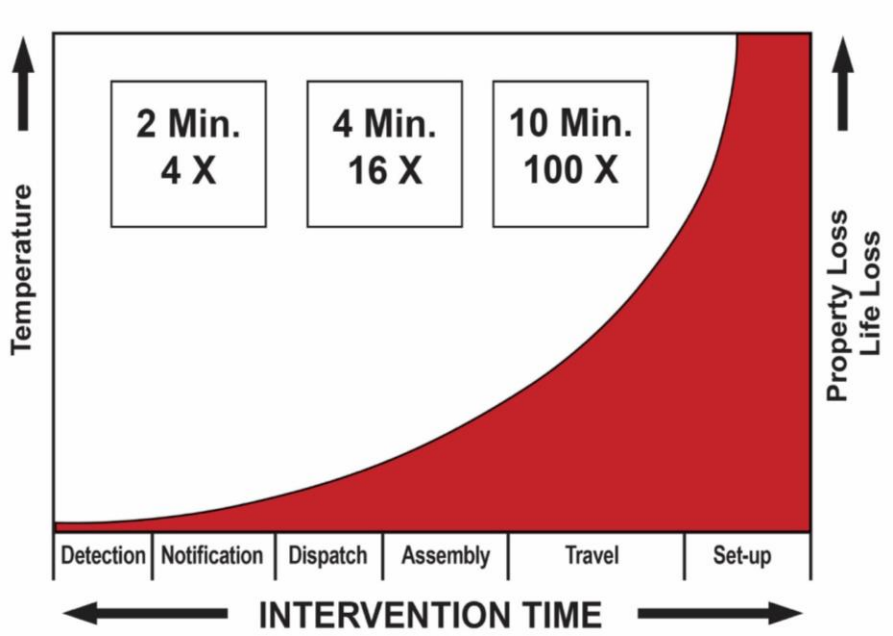

Figure 14: Time/temperature relationship of a fire's growth over time.

12.7 Expectations, Performance Objectives, Service Levels, and Benchmarks

The public expects that the Department will be available to respond to emergencies when needed. In order to be prepared for when it is needed, the Department must know what is expected of it by the public and by Council so that it can ready itself to meet those expectations.

Understanding the expectations of area residents and policymakers and incorporating those expectations with recommended industry standards is vitally important – this combination is how the Department can begin setting performance objectives and service levels for itself. To make sure it has the information it needs to set/achieve the service levels expected of it by the Municipality, 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.

There are many other sources that the Department draw from when trying to establish performance objectives, including national standards, industry best practices, current capabilities, and available resources. Industry-recognized standards like the NFPA 1221, 1710, and 1720 provide excellent guidelines for fire services emergency response benchmarking. The NFPA standards also form the basis of many standard operating procedures. Additionally, other legislation – such as the OFMEM Public Fire Safety Guidelines, Ontario's Section 21 Guidance Notes, and the OHSA – are inherently incorporated into operational and training programs.

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

After setting its performance objectives, a fire department can identify the gaps in its capability that may be preventing it from achieving the baselines and benchmarks that are necessary for reaching its desired service levels. The gap between setting a performance object and achieving the baseline/benchmark is what departmental strategies and action plans aim to improve.

Adopting the service level targets/objectives this FMP identifies is one way the Department can lessen the gap between its performance objectives and its intended baselines/benchmarks. After adopting the recommendations from this FMP, the Department can use strategic planning to find ways to improve the effectiveness and efficiency of its operations.

Overall, the Department must arrive promptly and with sufficient resources to provide fire protection and suppression services for all fire incidents. 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.

12.8 Deployment to Risk Industry Standard (Community Risk Assessment)

There has been an evolution in the Fire Service industry regarding how fire services providers should deploy their assets. One new best practice that is widely accepted is for fire services providers to base their deployment models on local needs and circumstances; such models would therefore consider the risks that are specific to individual communities. Several industry-leading organizations, such as OFMEM, the Metro Fire Chiefs Association, and the Commission on Fire Accreditation International (CFAI), have endorsed this risk-based deployment model as the most effective way of protecting lives and property.

One of the most popular and accepted models for determining fire protection resources is the Effective Fireground Staffing Model (EFSM). The Office of the Fire Marshal developed the EFSM in the 1990s as part of a comprehensive fire safety model that identified seven (7) sub-models which impact fire protection (Figure 15). The EFSM is now widely used across Ontario and is a vital component used by fire departments to determine ERFs.

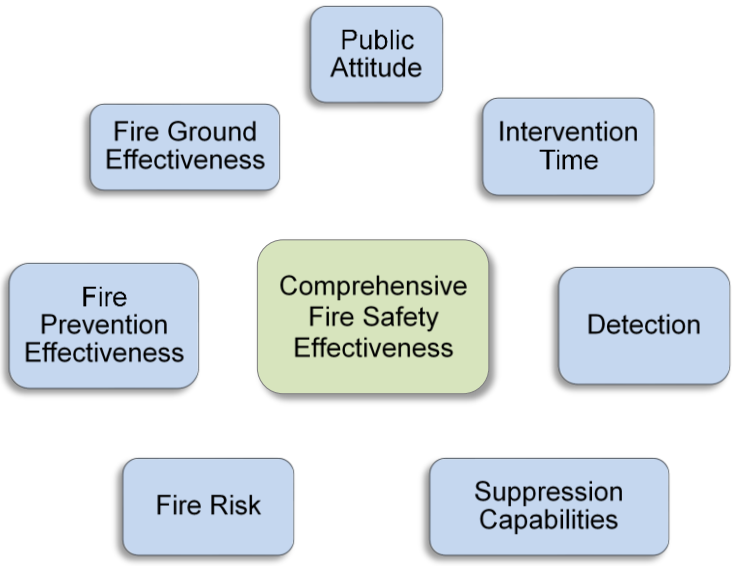

Figure 15: Comprehensive fire safety effectiveness model.

A CRA is another invaluable tool that fire departments can use to help determine what types/levels of fire protection services they need to provide to their communities. A CRA provides an assessment of the risks that may affect persons or property within a specific community, including exposure to natural and human-made emergency events. Identifying community risk provides information for determining effective resource allocation and service provision – the greater the risk, the greater the resources required. As was discussed in Section 10, an analysis of community risk must be undertaken to assess a community's risk level so that appropriate and effective initial responses to emergency incidents can be determined.

12.9 Distribution

Distribution is one of the many topics addressed in a standard of cover. A standard of cover defines distribution as the geographic location of the first due Fire Service resources that are available to provide the initial all-risk response to an emergency. Distribution measures the first due unit's on-scene arrival at an emergency within the response area of the designated apparatus. As a measure of time, distribution is the travel time between the fire station and a responder's on-scene arrival at the emergency.

Fire stations must be strategically located to ensure an initial rapid deployment is made to an emergency and that consequences can be minimized and terminated. As part of its determination of effective distribution, the Department should look at neighbouring fire departments to determine the best location(s) for the first due unit.

Techniques for determining the most efficient station response have progressed from estimating the closest station by using circles on a map to using a sophisticated process

that compares multiple data sources with the latest mapping technologies. Many fire services now work with the Environmental Systems Research Institute (ESRI), ArcGIS solutions/tools, and response modelling to plan for the best closest-station response. Fire departments should analyze their station response zones by using road network/speed modelling, historical data, and the GIS tool to identify travel response capabilities. Fire departments should also use these tools to determine the areas they can and cannot reach in their identified baseline and benchmark timelines.

Based on the information that it can gather using these modern mapping methods, the Department should be able to determine whether it can provide an ERF within its baseline and benchmark times. Furthermore, the implementation of GIS tools will assist the Department in reviewing its current station response areas and making decisions about whether establishing a sub-station, relocating a station, or using a neighbouring fire department is the most viable option for providing the Municipality with a closest or best station response.

12.10 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 stated in Section 12.1, there is not currently any 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/agencies to determine some general guidelines.

To standardize their response to various incident types and ensure they dispatch a minimum ERF, most fire services providers use a running assignments chart based on the information received by communications staff. Many fire services providers now recognize the need to transition to running assignments based on an initial ERF model. Whereas previous studies primarily focused on when initial crews or first pumps would arrive on the scene within the accepted timeframe, critical tasks and subsequent ERFs now match the type of risks that are present at the scene to the type of deployment that is needed to mitigate and eliminate those risks. Fire ground critical tasks can be assigned or carried out sequentially.

The total number of staff on the initial call may be affected depending on the station's vehicle deployment. Initial Rapid Intervention Teams, Accountably, 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.

12.11 ERF to Single-Family Dwelling Structure Fires

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)

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. The IC performs 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 (IAP), and assign personnel as required (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 for the support of victims and the public, as required
- Provide spokesperson/communication services to the media, when appropriate

The following six (6) 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 performs 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
- When the additional lines have been stretched, advise command that they are available for use
- Supply a building fire protection system when present

Fire Attack Sector

The Fire Attack Sector is generally under the control of the first arriving company officer and directs companies to control and extinguish the fire. The Fire Attack Sector may be composed of two (2) firefighters, including the officer and a support crew member. This crew is responsible for the initial hose stretch and advancing the hose line into the structure, door, and flow path control. This crew is also responsible for performing an initial search, completing rescues (as required), finding and extinguishing the fire, and commencing salvage and overhaul operations.

Search & Rescue

Search & Rescue personnel perform 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 an overhaul of all void spaces above and adjacent to the fire compartment
- Coordinate efforts with incoming firefighters

Support & Backup Aid Pump Operator

Support & Backup Aid Pump Operator personnel perform the following duties:

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

Ladder Crew

Ladder Crew personnel for the first arriving ladder perform the following duties:

- Assist with rescue by using ground ladders and other equipment, as required
- Ventilate accordingly with the needs of the incident, which may include tactical ventilation, horizontal ventilation, or vertical ventilation
- Perform positive pressure ventilation, as required
- Ladder the building, starting with providing a secondary means of egress for the Fire Attack Sector
- Ventilate the roof (as required)

Note: The Ladder Crew can also be composed of the second Pump Operator or additional personnel arriving on the scene in their personal vehicles.

Ladder Driver-Operator

The Ladder Driver-Operator for the first arriving ladder performs the following duties:

- Place the ladder truck in a location deemed most appropriate to 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 Rapid Intervention Team:

- Puts on equipment
- Assembles an equipment cache
- Assesses the structure and hazards
- Gathers information from IC and Accountability
- Prepares to advance into the structure to aid in the removal of downed or trapped firefighters

12.12 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 that are shuttling water to the fire scene
- **Tanker Operations**: A tanker's fire apparatus is used to provide the fire attack pumper with its initial water supply or to shuttle water from the identified water source to the fire scene

12.13 Minimum Number of Firefighters Required for Critical Tasks

Table 9 summarizes the minimum number of firefighters required to perform the critical tasks at a fire in a single-family home. The numbers in this table are based on information from the NIST, NFPA, OFMEM and best practices.

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

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

Fire departments must perform several additional critical tasks for fires in industrial, commercial, and low/high occupancies. These further critical tasks require additional fire apparatus, equipment, and firefighters to mitigate these types of fires.

For fires in non-hydrant areas, it is critical for the responding fire department(s) to have an adequate number of firefighters on-scene in order to ensure those 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 for fires in non-hydrant areas.

Critical Task	# Of Firefighters Required
Water Supply	4
Water Fill	2
Total	**6**

12.14 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.

12.15 Fire Apparatus and Equipment

Fire apparatus (including pumpers, tankers, rescues, aerials et al.), 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. Additionally, maintaining and replacing apparatus to ensure a reliable and modern fleet is available is an integral part of managing and planning fire services delivery. The Fire Service relies upon firefighters having a properly equipped apparatus to control or mitigate an emergency.

Fire Service apparatus have evolved considerably over the years, and there are increasingly more demanding standards that fire departments must follow when purchasing apparatus. When purchasing fire apparatus, councils and fire departments must adhere to the OHSA, National Fire Protection Association 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 do not have many of the features that current legislation now mandates. Among the most important features now required are anti-lock braking systems (ABS) and roll stability control (RSC), as these features help minimize accidents by improving steering and braking control.

The Fire Underwriters Survey is another factor that determines when a fire department should replace its apparatus. Of particular importance is the section of the FUS that outlines the acceptable age of an apparatus for insurance grading purposes. In smaller communities, the FUS will not recognize an apparatus that is more than 20 years old.

12.15.1 Apparatus Inspection, Testing and Maintenance

A fire department must make sure its fire apparatus is maintained and can withstand a high level of scrutiny, ensuring the apparatus can start and operate any time an emergency occurs. Maintaining 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 (MTO) inspection, pump tests, and non-destructive testing on ladders. As a result of this routine maintenance, an apparatus will be out of service for several days each year while its scheduled work is being completed.

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. As a result of this advanced maintenance work, a fire apparatus may be taken out of service for extended periods while repairs are being completed.

The Loomex Team's review of the Department's fire fleet found that the fleet is modern and well maintained. The Department's firefighters regularly check the apparatus as part of the Department's routine vehicle maintenance program. The Department completes safeties on the apparatus, including pump testing, annually (as per legislation); the Department also tests the ladders on its apparatus.

12.15.2 Fleet Renewal and Rationalization

A fleet's renewal is a considerable cost for any municipality. The challenge for the current Council (and future Councils) is to meet the FUS standards for the fleet and manage the financial/budgetary pressures that are incurred when it is time for replacements.

To help forecast the pressures on budgets, the Fire Chief is developing a fleet strategy plan for the Municipality. That plan will provide Council with the current and future needs of not only the fire fleet, but also all fire departments within the Municipality. That plan will also give Council the advantage of knowing the fleet's potential future cost so it can begin developing strategic plans and building reserves to meet that cost.

During the FMP's development, the Loomex Team only examined the Department's fire fleet. Table 11 outlines the Department's vehicle replacement schedule.

Table 11: Vehicle replacement schedule.

Unit #	Type	Year	Life Expectancy	Replacement Year
815	Rescue – GMC Top Kick CC70C Van	1996	20 Years	2016
816	Rescue – Ford Van F550/V8	2000	20 Years	2020
888	Grand Caravan SE	2013	7 Years	2020
817	Pumper/Tanker – Freightliner FL80	2002	20 Years	2022
905	Dodge Journey	2016	7 Years	2023
818	Chevrolet Kodiak C5500	2005	20 Years	2025

Unit #	Type	Year	Life Expectancy	Replacement Year
	CAFF Pumper			
819	Chevrolet Kodiak C5500 CAFF Pumper	2005	20 Years	2025
17518	Chevrolet Silverado WT 2500	2019	7 Years	2025
29190	GMC Sierra	2021	7 Years	2028
867	Dependable/Crimson Aerial Platform	2008	20 Years	2029
871	International Tanker	2010	20 Years	2030
880	Pumper Truck – International	2011	20 Years	2031
883	Pumper Truck – International	2012	20 Years	2032
906	Dependable Spartan Rescue Pumper	2016	20 Years	2036
31450	Heavy Duty Freightliner Fire Tanker	2020	20 Years	2040

12.15.3 Fire Equipment

The Department has a large inventory of other fire equipment, including self-contained breathing apparatus (SCBA), fire hoses, nozzles and fittings, ladders, generators and lighting, ventilation fans, portable pumps, saws, gas detectors, thermal imaging cameras, ice and water rescue equipment, and many types of hand tools. All this equipment must be maintained and replaced as required.

The challenge for Council and the Department is to properly budget for replacing this equipment within an approved life cycle program. As most of the equipment used by the Fire Service is expensive and has a life span, the Fire Chief must carefully plan and budget to ensure that the Department replaces its equipment quickly and cost-effectively.

The Loomex Team's review of the Department's fire equipment found that the Department has made great strides to ensure that the equipment used at all its stations is standardized and interchangeable. Even though the program is costly and requires several years to finish, it is essential that the Department completes this endeavour. Support for this program must come from two main sources. Firstly, Council must support the program by providing the necessary funding for equipment to ensure the

Department can provide a seamless service to the community. Secondly, the Fire Chief must continue to prioritize the equipment requirements so that the Department's available funds are spent on the appropriate equipment.

12.16 Fire Stations

The Department operates out of three (3) fire stations:

- Fire Station 1 (Port Hope) Station is located at 245 Ontario Street
- Fire Station 2 (Welcome) is located at 1366 Northumberland, Road 2
- Fire Station 3 (Garden Hill) is located at 3588 Ganaraska Road

During the FMP's development, the Loomex Team reviewed the Department's fire stations from both a location perspective (in regard to deployment capabilities) and a functionality perspective (in regard to the stations' capabilities to meet both the current and anticipated future needs of the Department).

Before discussing the Department's fire stations, it is important to note that most of the fire stations built in the 1970s and 1980s were built to accommodate the fire departments of the time. And while those fire stations also tried to include designs and features that would accommodate the stations' future needs, no one at that time could accurately predict the changes the Fire Service would undergo in the following decades. Additionally, fire departments could not have foreseen the level of community growth or the expectations placed on the firefighters by the year 2022. Therefore, while many fire stations still have the functionality to provide services to their communities, in many instances, changes to the stations must be made to accommodate the current and future needs of the Fire Service.

There are also a couple of general considerations regarding the Accessibility for Ontario with Disabilities Act (AODA) pertaining to all three of the Department's stations. These considerations primarily concern the Department's staff, the public, and ensuring that each station has ample storage space.

Firstly, the AODA regards fire stations as public facilities. As such, fire stations must offer everyone equal access to their facilities. Many fire departments have challenged the intention of the AODA by stating that a fire station is not a public building, but that is a naive approach to circumvent the AODA. Fire stations are publicly funded and should be all-inclusive facilities in the Municipality. Fire departments operate in compliance with multiple acts and codes, and while it is costly to upgrade to AODA standards, it is the right and ethical thing to do.

Secondly, the Department faces storage space issues at both Fire Station 1 and Fire Station 2. Both stations have limited overall storage space due to several factors:

- Fire Station 1 has limited space because it is a shared workspace that accommodates both fire suppression and administrative operations
- Fire Station 2 has limited space due to the footprint of the facility

Each fire services provider needs storage space/extra rooms to keep equipment such as fire hoses, SCBA tanks, and workbenches for fixing small equipment. Locker space is also required, so firefighters have room to store personal items such as a change of clothes and hygiene items.

Despite the Department having limited storage space at its fire stations, and while two of its three fire stations show areas where improvements to the facilities can be made, the Department takes pride in ensuring it keeps the resources and facilities provided to it in top working order – no matter the age or functionality of the building. During its review of the Department's fire stations, the Loomex Team found that each station and apparatus was clean and ready for its next emergency response.

12.16.1 Fire Station 1 (Port Hope)

Fire Station 1, shown in Figure 16, was built in 1970 after the Department outgrew its previous fire station. The Department also built this new station due to the history of the Municipality's downtown area flooding and the threat posed by future flooding.

Figure 16: Fire Station 1.

Fire Station 1 serves a dual purpose: This station houses suppression crews as well as the Department's administrative, training, and fire prevention divisions. The Department's Director of Emergency Services/Fire Chief, Deputy Chief, Fire Prevention Officer, customer service assistant, and administrative assistant all operate out of this station. The volunteer staff at Fire Station 1 includes the District Chief, the Training Officer, a Station Captain, a Lieutenant, and 26 firefighters. At the time this station was

built, the Department only provided service to the Town of Port Hope (and had a smaller administrative staff).

The apparatus floor area at Fire Station 1 appears to be sufficient for the number of apparatus currently used by the Department. The station also has a dedicated bunker gear room that firefighters can access from the outside to ensure quick access to their bunker gear, allowing them to get dressed for a response in a timely manner. The biggest challenge for this station appears to be adequately accommodating both the administrative staff and the suppression firefighters that respond from the station.

Over time, as the Department grew, and particularly after the amalgamation in the early 2000s, more functional pressure has been placed on Fire Station 1. The Department has completed numerous renovations at this station in an effort to upgrade the facility and allow its staff to respond to emergencies with the level of service expected by the community. As a result of these renovations, many areas of Fire Station 1 now serve multiple functions.

Figure 17 depicts one of the dual-function areas of Fire Station 1. This area was originally designed to be a kitchen, and it now also functions as a boardroom/meeting space. The resulting combined space is not only small in nature, but also lacks any privacy for meetings.

Figure 17: Kitchen/boardroom at Fire Station 1.

Figure 18 shows the Department's administrative/reception area. This area serves as the Department's administrative workspace as well as the place where members of the public can come to make inquiries or meet with a staff member from the Department. Like the kitchen/boardroom area, the administrative/reception area is small and lacks the space needed by the customer service assistant to store Department information.

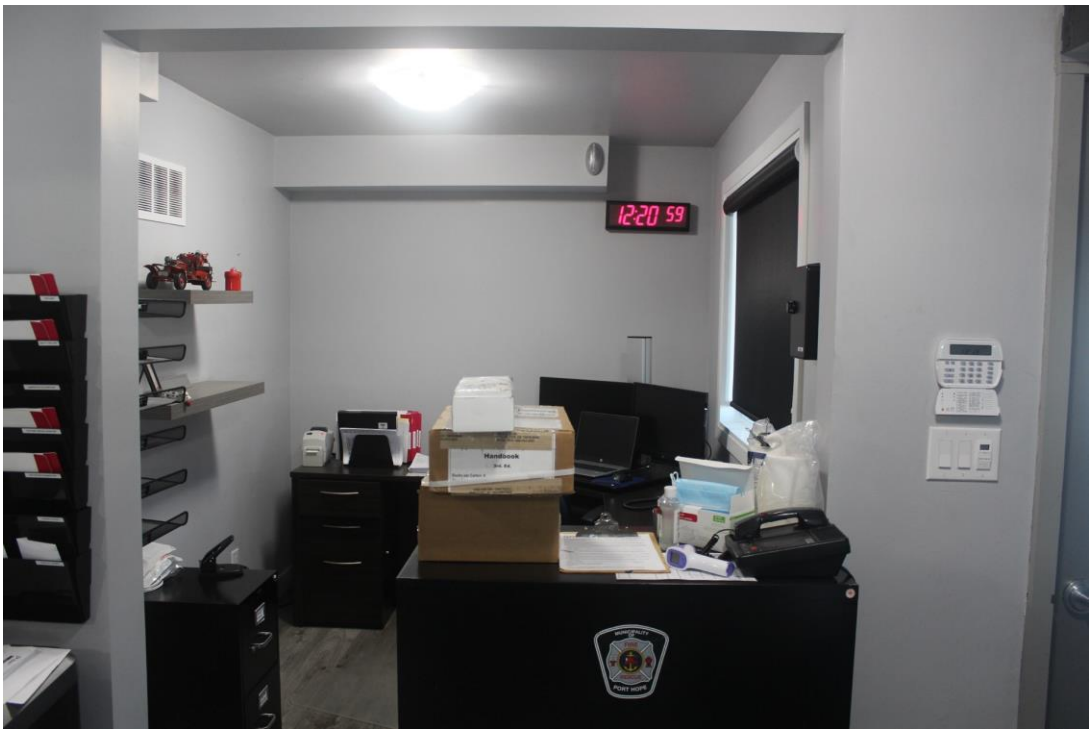

Figure 18: Administrative/reception area at Fire Station 1.

The second floor of Fire Station 1 was initially designed to be an apartment for on-duty crews but now serves as the location for the Fire Prevention Officer. The second floor of Fire Station 1 is only accessible by stairs and therefore does not meet accessibility standards of the AODA; it also isolates the Fire Prevention Officer from the rest of the staff. Figure 19 shows the stairs that ascend to the second floor of Fire Station 1.

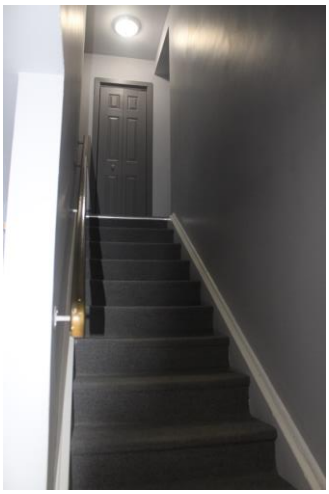

Figure 19: Stairway leading to the second floor of Fire Station 1.

One of the most significant limitations of Fire Station 1 is the training room. Fire Station 1 houses the Department's largest complement of firefighters but has one of the

smallest training rooms. The small size of the training room at Fire Station 1, shown in Figure 20, precludes the Department from enhancing/providing its current training as well as expanding the training at this station in the future.

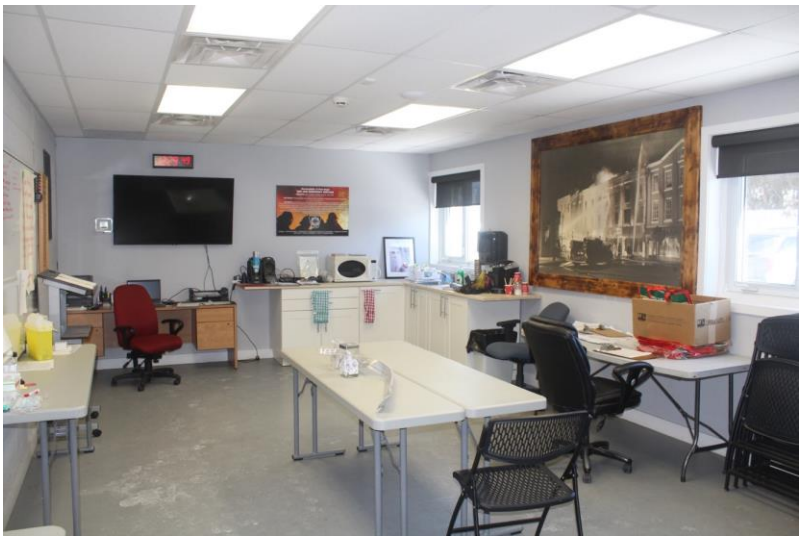

Figure 20: Training room at Fire Station 1.

Fire Station 1 also lacks adequate parking space (as shown in Figure 21). As stated above, this station is a combined-use facility that houses both the Department's administrative staff and its largest number of volunteer firefighters, but neither group currently has sufficient parking space.

Figure 21: Rear parking area at Fire Station 1.

12.16.2 Fire Station 2 (Welcome)

Fire Station 2, which provided service to the Welcome area prior to the amalgamation of the Department in the early 2000s, is located at 1366 Northumberland Road 2. Fire

Station 2 was built in 1978 and has served the community for over 44 years, but it is currently at the end of its life cycle, and Council needs to prioritize the replacement of the facility. Figure 22 depicts an exterior shot of Fire Station 2.

Figure 22: Fire Station 2 (Welcome)

As discussed previously, the Fire Service has undergone many changes over the last 30-40 years, and some of those changes have resulted in significant alterations to the functionality demanded of fire stations. Many times, fire chiefs find they are working with a facility that was never designed to accommodate all the changes that have taken place in the Fire Service, and this is the case with Fire Station 2.

One of the main challenges presented by an older fire station is a lack of space. For the Department, a lack of space is acutely seen in Fire Station 2's current administrative area. This area, depicted in Figure 23, is currently serving as a training area, kitchen facility, and cleaning area for contaminated bunker gear. Having the same room serve as both a kitchen and a training area puts pressure on the use of the space in and of itself, but having that area also contain contaminated PPE presents serious health and safety concerns. The preferred configuration for a fire station is to have a dedicated clean area (to be used for tasks such as administrative functions) and a dedicated working area, such as the apparatus floor. Both areas should be kept separate so that cross-contamination does not occur.

Figure 23: Administrative area at Fire Station 2.

Another issue presented by Fire Station 2 is the lack of separate washroom and shower facilities for the male and female firefighters (as well as the public). Figure 24 shows the Fire Station 2's only washroom, which is located in the administrative area.

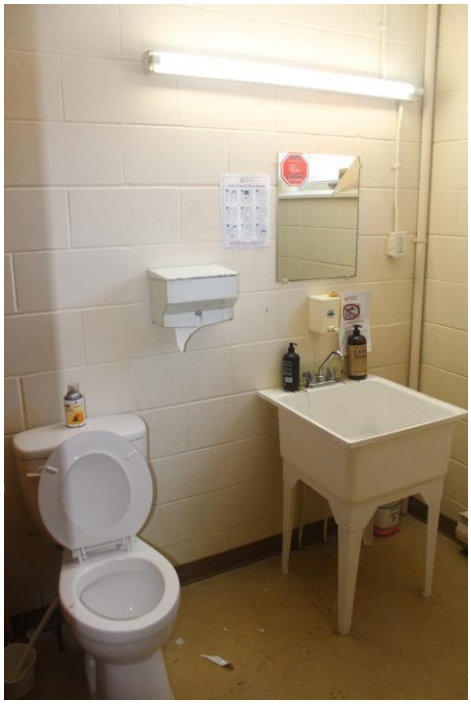

Figure 24: Picture of washroom at Fire Station 2.

In 1978, when Fire Station 2 was built, the apparatus floor area would have been considered large and spacious. It allowed firefighters to move safely around the vehicle

and offered ample storage room and enough space to work and clean the apparatus. As its size increased, more space is now required to house the Department's fire apparatus, which takes away from floor space that was previously available for firefighters to work safely on their equipment and vehicles. The lack of space at Fire Station 2 also prevents the Department from acquiring any further vehicles that might be required. Figure 25 and Figure 26 show the amount of space available at the front and back of the apparatus floor when vehicles are parked.

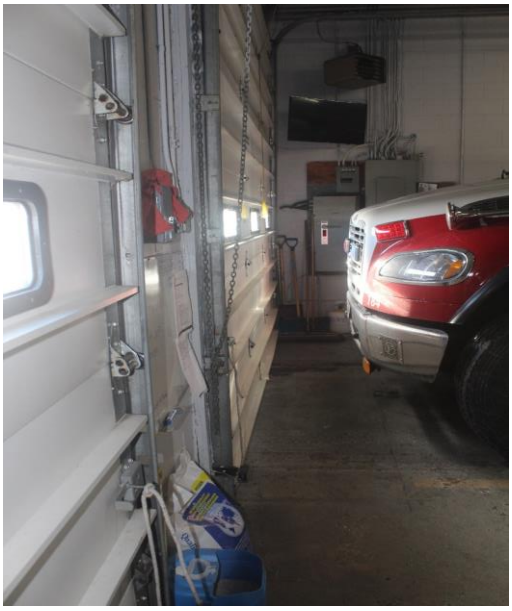

Figure 25: Front view of apparatus placement at Fire Station 2.

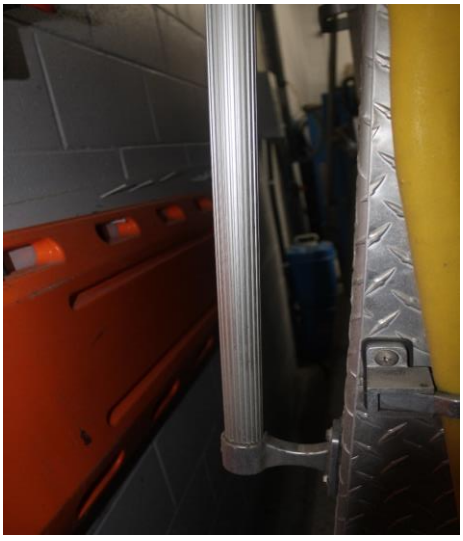

Figure 26: Back view of apparatus placement at Fire Station 2.

The Department also uses the apparatus floor area to store its bunker gear, keeping it stored along a wall. Up until the last ten (10) years or so, this was an acceptable

practice; due to the introduction of larger response apparatus, however, the amount of space between the bunker gear and the vehicles has diminished, and this creates safety concerns for firefighters getting dressed for a call and for trucks leaving the station. Figure 27 shows the proximity of the bunker gear to the fire apparatus.

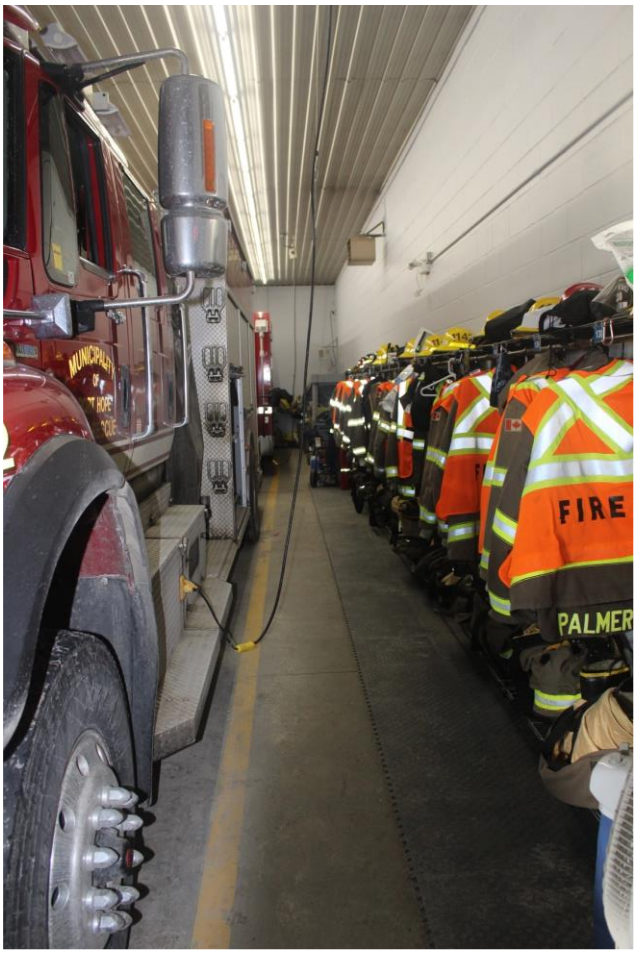

Figure 27: Bunker gear's proximity to the responding apparatus.

For safety reasons, it is normal practice for upgraded fire stations to either build add-ons to accommodate bunker gear rooms or separate the dressing area from the responding apparatus section. In either case, bunker gear needs to be stored in an area with proper ventilation. Studies have shown that off-gases that emanate from bunker gear after a fire call can contaminate the bunker gear's storage area if the storage area does not have proper ventilation. While the Department uses new procedures for cleaning bunker gear to reduce the risks posed to its firefighters, the challenge for many departments – and this station in particular – is having enough space to isolate and ventilate the bunker gear properly (or create a bunker gear room). The Department must prioritize finding a solution to this issue in order to protect the health and safety of its firefighters, as well as visitors to the fire station, from illness and firefighter cancers.

Another issue posed by Fire Station 2 is accessibility. When Fire Station 2 was built, facilities did not have to meet AODA requirements. With the AODA's introduction in 2005, public facilities became required to be accessible to everyone. As stated earlier in this section of the FMP, many fire departments have challenged the intention of the AODA by stating that a fire station is not a public building, but that is a naive approach to circumvent the AODA. Because fire stations are publicly funded facilities, they should conform to the AODA and be inclusive to all community members. As such, the Department should look to update Fire Station 2, so it conforms with the AODA.

Finally, Fire Station 2 has a considerable lack of storage space. As stated at the beginning of this section, fire departments need storage space/extra rooms to keep equipment such as fire hoses, SCBA tanks, and workbenches for fixing small equipment. Fire stations also need to have sufficient locker space, so firefighters have room to store personal items such as a change of clothes and hygiene items.

12.16.3 Fire Station 3 (Garden Hill)

Fire Station 3 was built in the village of Garden Hill, at 3588 Ganaraska Road, in 1983. This station primarily provides service to the northern part of the Municipality and supports both Fire Station 1 and Fire Station 2 during high-risk responses. Prior to the Department's amalgamation, Fire Station 3 served as part of the Township of Hope. Figure 28 shows an exterior shot of Fire Station 3.

Figure 28: Fire Station 3 (Garden Hill).

The review conducted by the Loomex Team during the FMP's development found that Fire Station 3 is well able to support the safety requirements needed for responding to emergency calls, and it is suitable for managing the day-to-day requirements of a

volunteer station. Like Fire Station 1, this station has a separate bunker gear room that provides access directly from the parking area. Figure 29 depicts the bunker gear room at Fire Station 3, showing where the Department's members can access the room from the parking area.

Figure 29: Bunker gear room at Fire Station 3.

The training room at Fire Station 3 is the right size for the number of volunteers at the station; it is also well set up for conducting training. Figure 30 shows a view of the training room at Fire Station 3.

Figure 30: Training room at Fire Station 3.

Similar to the training room, Fire Station 3's apparatus floor area is also the correct size for the types of vehicles that respond from the station. The Department's firefighters can

safely move around the vehicles both when they are stationary and when they are responding to an emergency call. Figure 31 shows the apparatus floor area.

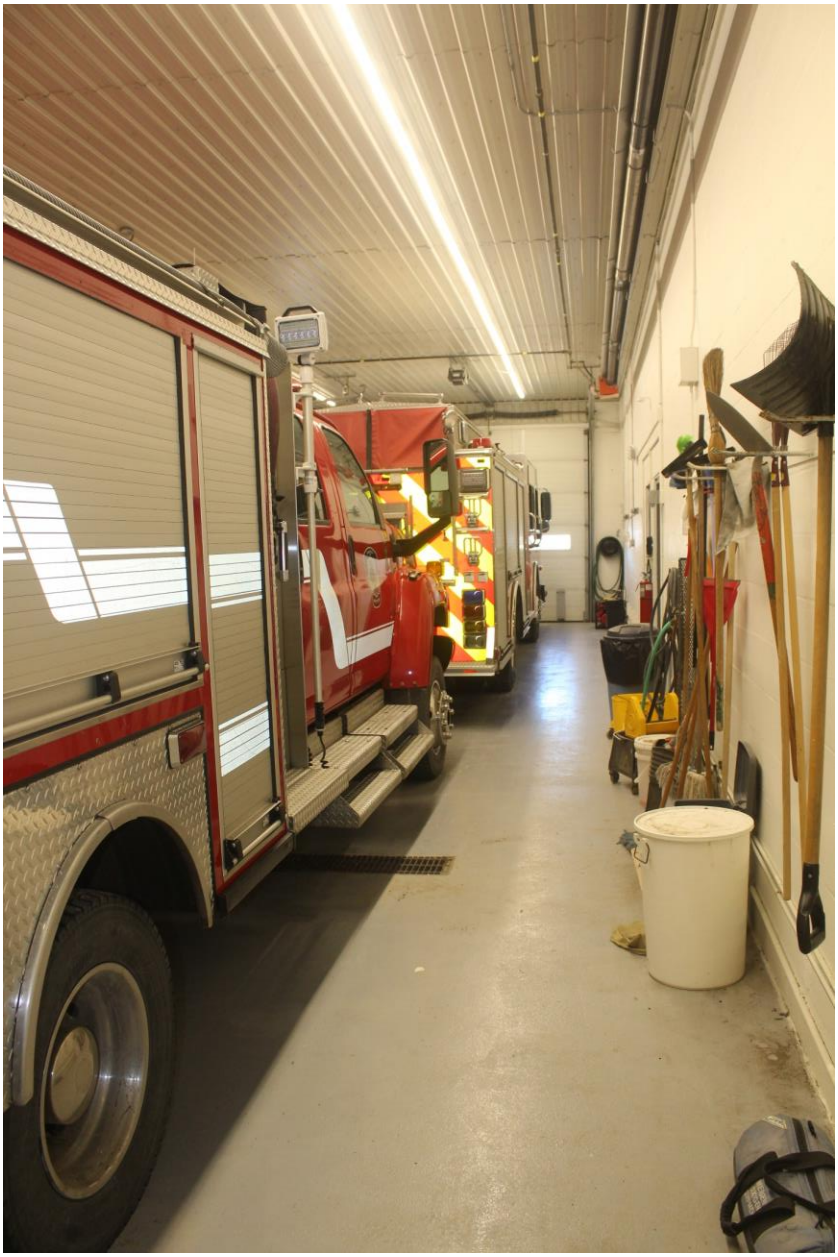

Figure 31: Apparatus floor area at Fire Station 3.

Other functional areas at Fire Station 3 include a maintenance room, kitchen area, locker room, and a separate bunker gear cleaning/drying area. These rooms are of the proper size and configuration for this station. Figure 32 shows Fire Station 3's separate bunker gear cleaning area.

Figure 32: Bunker gear cleaning area at Fire Station 3.

The Loomex Team's review of Fire Station 3 concluded that there are currently no areas of the station that require significant changes or renovations. When the Department considers making changes to Fire Station 1 and Fire Station 2, it should look at Fire Station 3 and use its configuration/functionality as a model for the other two fire stations. At the time of the review, the main concern with Fire Station 3 is the issue of providing water to the station during the winter months.

12.16.4 Fire Station Considerations

Sections 12.16.1 – 12.16.3 of this FMP looked at all three of the Department's fire stations, focusing on the topics of functionality, health and safety, and the stations' capacity to allow the Department to provide service to the community in the future. After considering each station from an overall Department perspective, the Loomex Team has made the following conclusions:

1. Fire Station 1 does not have enough space to house the Department's fire administration, fire prevention activities, training activities, and fire suppression firefighters in this one station. This station also lacks storage space.

2. Fire Station 2 does not have enough space to function as a fire suppression station. There are health and safety issues with having contaminated bunker gear cleaned in the kitchen and training area, and the bunker gear on the apparatus floor is too near the responding apparatus. There is also not enough space on the apparatus floor for parking the fire apparatus due to the current size of the vehicles.

3. Fire Station 3 is a very functional station and does not require any work to be completed at this time other than solving the issue with the station's water system that is most problematic during the winter months.

Considerations for Improvement

Going forward, the Fire Chief should make use of the following improvement plan, submitting it to Council so it can be officially adopted and established:

1. Replace Fire Station 2 with a new fire station that would include all the required functionality for providing fire suppression out of the station and include an administrative area. The add-on of the administrative area would allow the new station to accommodate moving the Department's fire administration, fire prevention, training, and storage to the station. This new station would then become the Department's headquarters, providing a better location for all residents in the Municipality due to the station's more central location. Another reason for replacing Fire Station 2 is that the Department cannot expand the current station because it is in a flood plain, as illustrated in Figure 33 and confirmed by correspondence from the Ganaraska Conservation Authority on March 16, 2022.

2. Renovate Fire Station 1, as required, and use this station as a fire suppression station only.

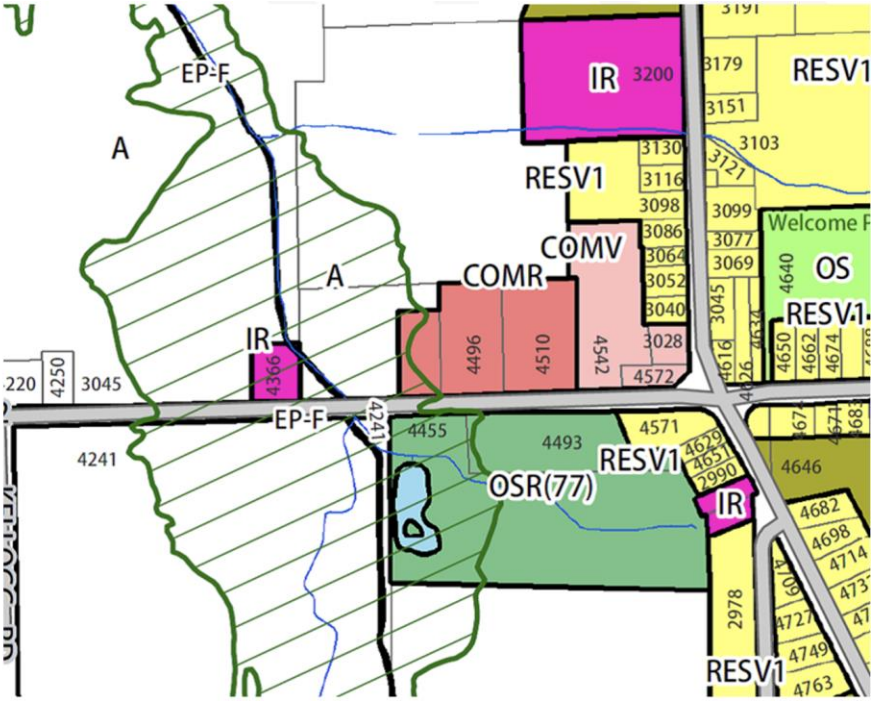

Figure 33: Fire Station 2's location (4366) in a flood plain.

12.17 Specialized Services

In addition to responding to the calls known as the "core services," fire departments are often called to an emergency scene to deliver specialized services. Specialized services are responses that usually pertain to:

- Hazardous materials (HazMat)
- High/low angle rescue
- Collapse rescue
- Trench rescue
- Confined space rescue
- Water/ice rescue

Although infrequent, these types of calls often place firefighter safety at a higher risk than the core services. Additionally, most specialized services are costly to deliver, and most require fire department staff to receive additional training and certifications.

For most specialized services, there are three levels of service that can be provided: awareness, operational, and technician. A fire department can base the level of service it should provide for specialized services on the number of calls it receives for a specific type of service, the risk and impact the threat poses to the community, affordability, and its council's approval.

12.18 Current Deployment

The Loomex Team's review of the Department's response history revealed that there is currently no Council-approved service level in place. The first step towards rectifying this issue is creating a standard of cover. A standard of cover is defined as a fire department's established distribution and concentration of fixed and mobile resources. When a fire department is looking to set a standard of cover, it is important to ensure that the standard of cover provides for sufficient resources to be assembled on an emergency scene so that the fire department can complete the critical tasks required to mitigate the incident. To establish a level of service, the Department must work together with Council to review the hazards and risks that are present in the Municipality. The Department must also work closely with other fire departments through mutual aid agreements, automatic aid agreements, and, in some areas, the concept of closest station response.

The tables that summarize the Department's statistics in Section 12.3 confirm there is a definite need for the Department to provide the Municipality with suppression services. There is also a definite need for the Department to work with Council to set a clearly established level of service and ERF.

The Department is a "composite" service, meaning that it employs both career management and part-time firefighters to meet its required resource deployment needs. The use of volunteer, part-time, and on-call firefighters is a common method of providing fire services for a municipality.

As discussed earlier in this FMP, the Department currently operates out of three (3) fire stations. The Loomex Team's review examined how the Department conducts different types of emergency responses from its stations. The review assessed both individual station responses and responses made by the Department as a whole.

Through the Loomex Team's review of the number of firefighters the Department dispatches on an emergency call, as well as engagement sessions with the Fire Chief, Deputy Fire Chief, District Chiefs, and firefighters, concern was raised about the Department's ability to respond to emergency calls other than property fires during daytime hours, Monday to Friday. This concern stems from both the types of calls and the number of calls the Department receives during those hours. The concern is not unique to the Department. It is often a challenge for volunteer firefighters to respond to multiple emergency calls during the same day. And while this is not a unique problem for just the Department, it is a problem that the Department cannot ignore – the Department must ensure it can provide the appropriate level of service to the community at all times while also protecting the safety of its firefighters.

Medical calls and accidental alarms are two of the most frequent types of calls to which the Department responds. These calls accounted for over 45 per cent of the Department's responses between 2017 and 2021, with the total number of calls being 1,770. There are a couple of strategies the Department can use to try and reduce the number of responses it makes to these types of calls:

1. For accidental alarms, it is recommended that the Department conduct a detailed analysis to review the type of accidental alarm calls it receives and then evaluate the results to see if there is the potential for these call types to be reduced through a more enhanced fire prevention program.

2. For medical responses, the Department should begin to track whether or not it has patient contact prior to the paramedic service. If not, there is the possibility that the Department does not need to respond to certain types of medical calls when the paramedic service will arrive first and will not require the Department's service. Table 12 summarizes the average number of firefighters the Department dispatches from Fire Station 1 to respond to medical calls.

If the Department can reduce one or both types of these responses, it may help reduce the pressures on the volunteer firefighters.

Table 12: Average number of firefighters sent to medical responses (2017-2021).

Time of Day	Number of Firefighters Responding
6 a.m. to 12 p.m.	7
12 p.m. to 6 p.m.	9
6 p.m. to 12 a.m.	9
12 a.m. to 6 a.m.	6

12.18.1 Specialized Services Provided by the Department

The Department currently provides an operational level of HazMat services and has an agreement in place with a local industrial employer (Cameco) to provide these services to the community if required to do so. Cameco also provides the necessary resources and training for the Municipality to ensure there are continuity and effective pre-planning strategies for both the Department and Cameco. The Municipality's current Establishing and Regulating Bylaw, set out by Council, only speaks to a minimum service identified as an "Awareness Level," but the Department is functioning at the "Operational Level." As such, this FMP recommends that the Department updates the E&R Bylaw and ensures it has the additional training needed to provide HazMat responses at an operational or technical level. The results of the Municipality's CRA also support having the Department provide a higher level of HazMat response due to the risks present in the community.

Although the Municipality has no record of any industrial incidents occurring in recent years, there have been previous hazardous incidents in its transportation sector (along the rails and the Highway 401 corridor). Even though no industrial accidents have occurred in the Municipality in recent years, the reality is that if an incident involving these specialized services did happen in the Municipality, the Department would be called, and the expectation is that they would manage the incident safely and effectively.

Regarding structural collapse responses, the Loomex Team's review found that the Department is providing this type of specialized service at the awareness level, which is the appropriate level of service required for the Municipality. For additional support for this type of incident, the Fire Chief would call the Fire Coordinator to activate one of the Provincial Urban Search & Rescue response teams to assist the Department with managing the incident.

The Loomex Team's discussions with the Department's senior officers also revealed that the Department is providing high-angle rope rescue response services. A further review of the Department's records found that there has only been one incident in the last five (5) years where the high-angle rope rescue service was required. Although a

local employer has supplied the Department with the equipment needed for high-angle rope rescue services, the maintenance of this equipment and the associated training for the service are both very costly to the Municipality. Due to the limited number of calls for high-angle rope rescue responses, combined with the cost involved with providing that service, the Municipality should reassess the situation to determine if it is a service that the Municipality wishes to continue providing to the community.

The Loomex Team's review also examined the Department's water and ice rescue program. Currently, the Department provides surface water and ice rescue services. Similar to its high-angle rope rescue response services, the equipment needed for the Department's ice and water rescue services is costly, and the training for these services is time-consuming. The Department's data showed that, since 2016, the Department has received four (4) calls for water rescues and one (1) call for ice rescue. After reviewing these responses with the Department's senior officers, the Loomex Team confirmed that all the water rescue calls did not require the Department's boat – which leads to another important consideration.

Figure 34 shows the type of boat the Department operates for water rescues in and outside the harbour of Lake Ontario. The size and power of the boat make it neither adequate nor safe for large bodies of water like Lake Ontario, and the Department's use of this boat puts its firefighters at risk. The use of the boat also creates a potential liability issue for the Municipality. Since acquiring its Zodiac boat, the Department has received limited calls that have required offshore rescue services. Such a small frequency of calls can make it difficult to justify the time and money that has been invested in this service. Moreover, the Loomex Team's review also identified that the Canadian Coast Guard Auxiliary operates out of a neighbouring municipality and can provide rescue services if required.

Figure 34: The Department's water rescue boat.

As previously stated, providing specialized services can be overwhelming for the Department. Specialized services require considerable financing as well as time

constraints on firefighters, who require training to achieve mandatory certification for specialized services. For the Department to determine what specialized services it should provide to the community, it must base its decision on the community's risks, needs, and historical data. The Fire Chief can make recommendations to Council regarding what services the Department should provide, but it is Council's responsibility to set the level of service the Department should provide through the Establishing and Regulating Bylaw. To do so, Council must review and revise the Municipality's Establishing and Regulating Bylaw to identify not only which services the Department should provide, but also which services the Department does not need to provide.

12.19 Future Deployment Strategy

It is essential for the Department to maintain its current ERF capabilities. The Department should also aim to enhance its ERF for fires in single-family homes and its ERF for medium- and high-risk occupancies (such as multi-unit dwellings, industrial occupancies, and the downtown core). To achieve these goals, the Department can address specific objectives in both short- and long-term timeframes. The Department's considerations must also look at the risks that are present in the community, as determined by the Municipality's CRA, in order to ensure the community is the safest environment possible for the public and the Department's firefighters.

Fire Apparatus

Aside from not having a tanker truck at Fire Station 1, and a few vehicles being over the accepted life expectancy to be recognized as a first response apparatus, the Loomex Team's review found that the Department's fire apparatus is appropriate for all three of the Department's fire stations.

The Department currently has three (3) 2,500-gallon tankers in its fleet: one is at Fire Station 3, and the remaining two are at Station 2. The most cost-effective solution to the issue of not having a tanker at Fire Station 1, which would not reduce the level of service to the Municipality, would be for the Department to move one tanker from Fire Station 2 to Fire Station 1. Although available space at Fire Station 1 is at a premium, the Department could create space for the 2,500-gallon tanker by relocating the small pumper at Fire Station 1 to Fire Station 2. The advantage of this move is twofold. First, the move would provide Fire Station 1 with a tanker that the Department can use when responding to calls along Highway 401, as well as when Fire Stations 2 and 3 require backup. Second, having a smaller pumper at Fire Station 2 would help the Department respond to calls in the Municipality's rural area, as well as when Fire Station 3 requires backup for calls involving the Ganaraska Forest.

Fire Stations

As discussed in Section 11.15.4, the Department can consider several options for enhancing its fire station facilities. Of those considerations, the most significant is the replacing Fire Station 2 with a new facility that would serve as the location for:

- Suppression operations
- Administration
- Fire prevention
- Training offices
- Department storage space
- A large training room

The Municipality could also consider relocating its Joint Operations Centre to the new fire station.

If the Municipality decides to build a new fire station to replace Fire Station 2, the next question it must answer is where that facility should be located. The Loomex Team looked at four (4) possible locations for the new fire station. When evaluating the possible locations, the Loomex Team considered different scenarios and how they would impact the Municipality (based on the risks identified in the Municipality's CRA).

The four different location considerations are:

1. Figure 35 illustrates locating the new fire station in the area of its current location (Figure 35).
2. Figure 36 illustrates locating the new fire station in the area of County Road 2 and County Road 65 (Figure 36).
3. Figure 37 illustrates locating the new fire station in the area of County Road 2 and Morris Church Rd (Figure 37).
4. Figure 38 illustrates location the new fire station in the area of County Rd 2 and County Road 10 (Figure 38).

The Loomex Team also looked at how coverage in the Municipality would be impacted (based on the risks identified in the Municipality's CRA) if the Department were to operate as a two-station model, with Fire Station 2 removed but not replaced (Figure 38).

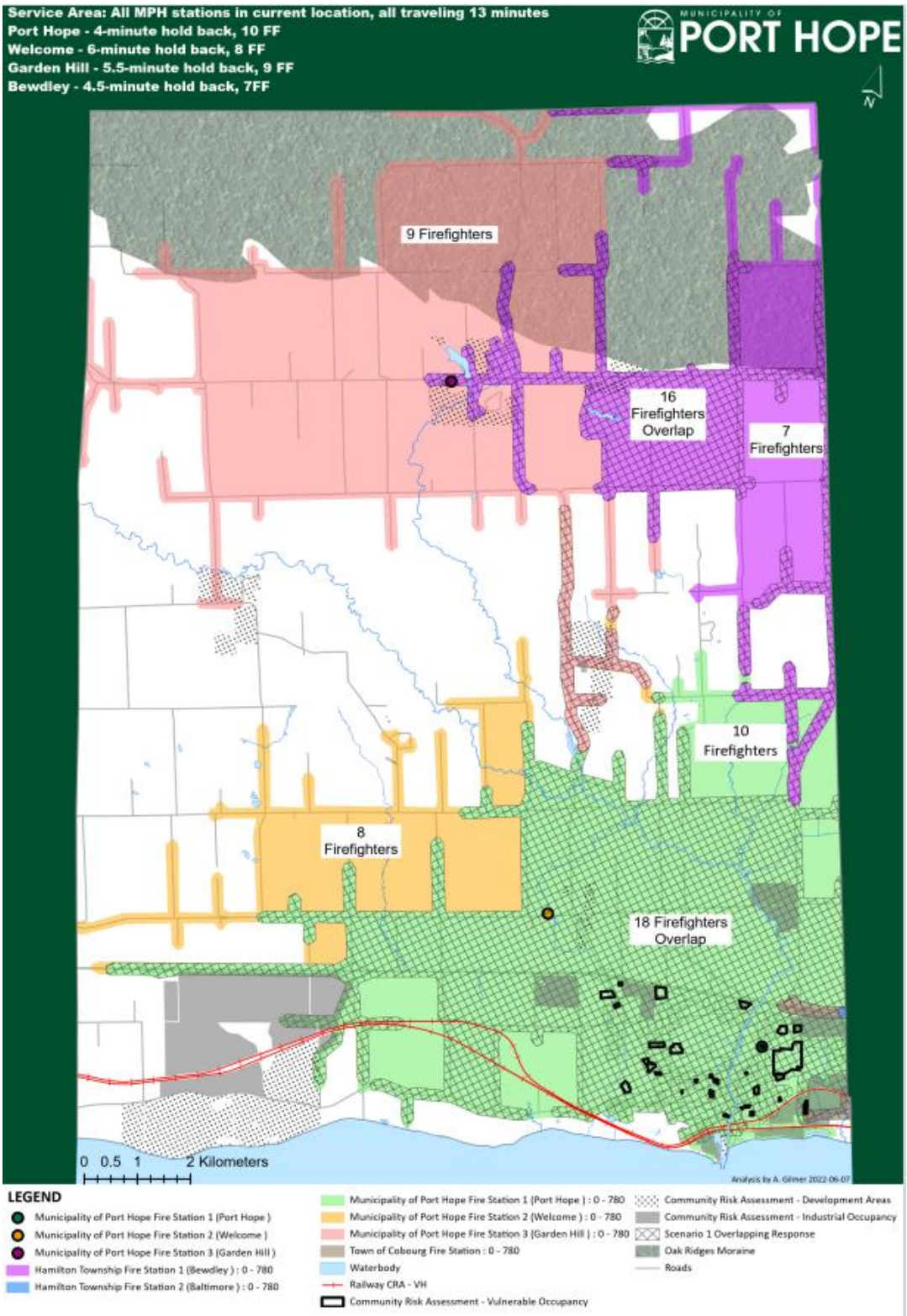

Figure 35: All fire stations in their current locations.

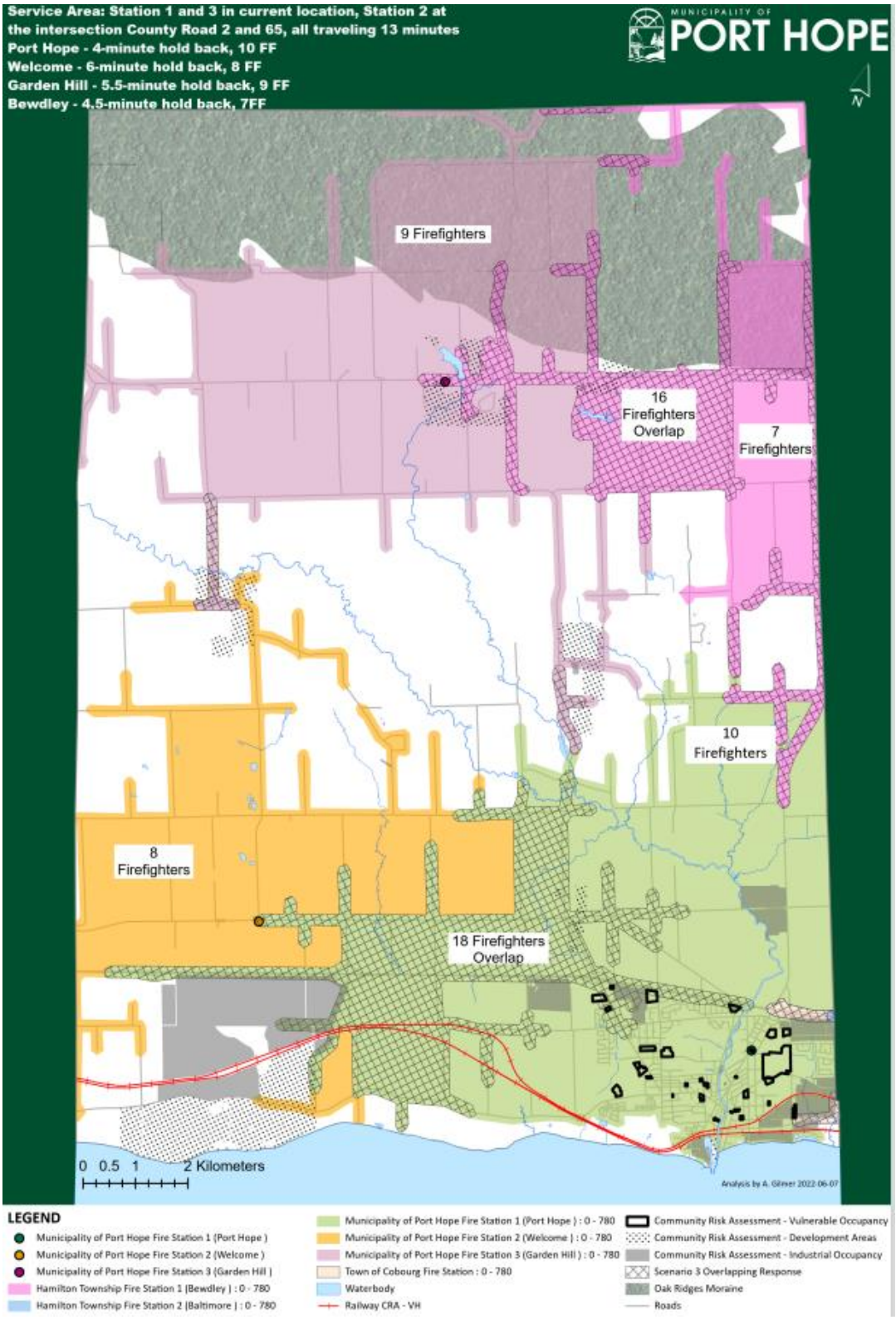

Figure 36: Fire Station 2 located in the area of County Roads 2 and 65.

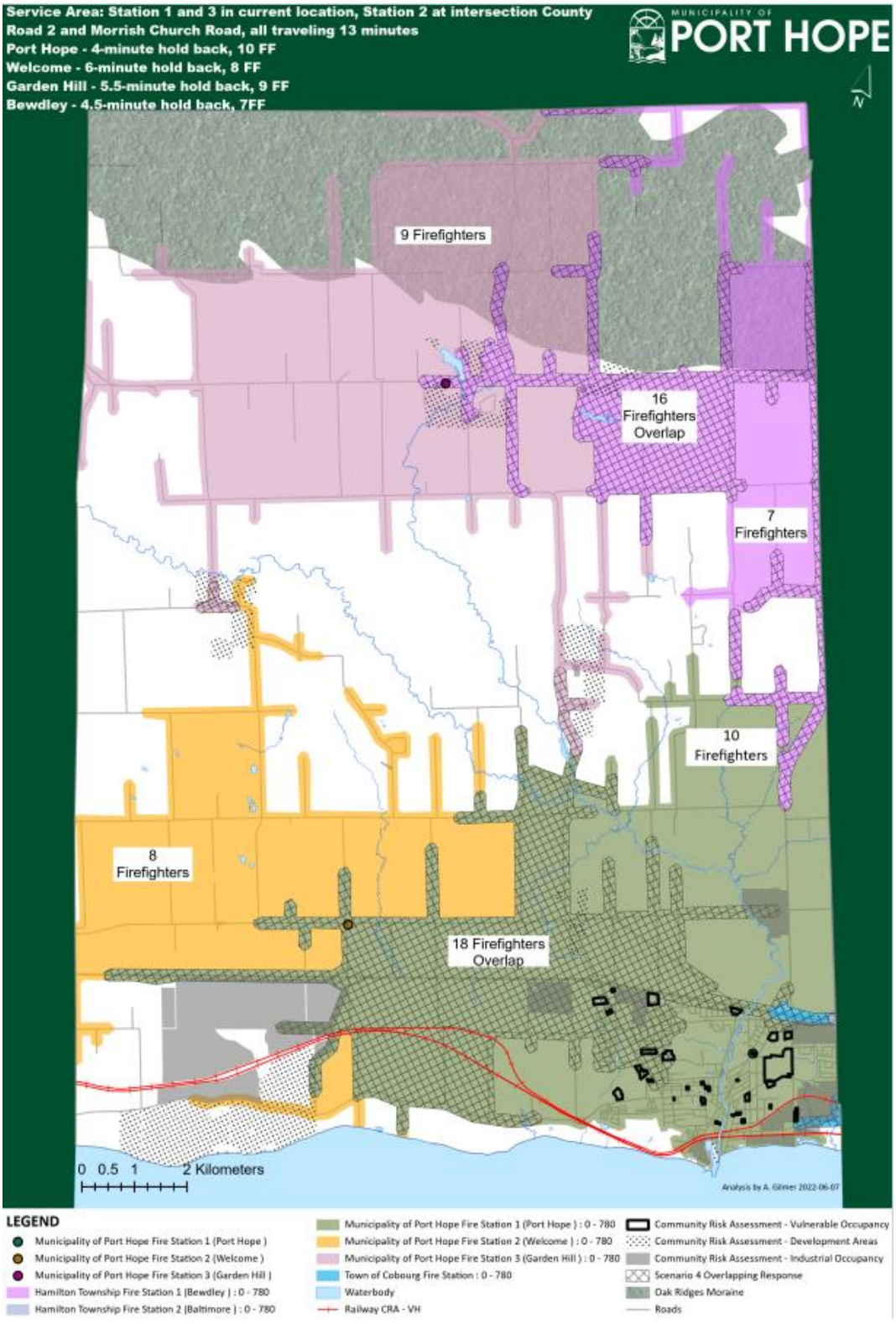

Figure 37: Fire Station 2 located in the area of County Rd. 2 and Morris Church Rd.

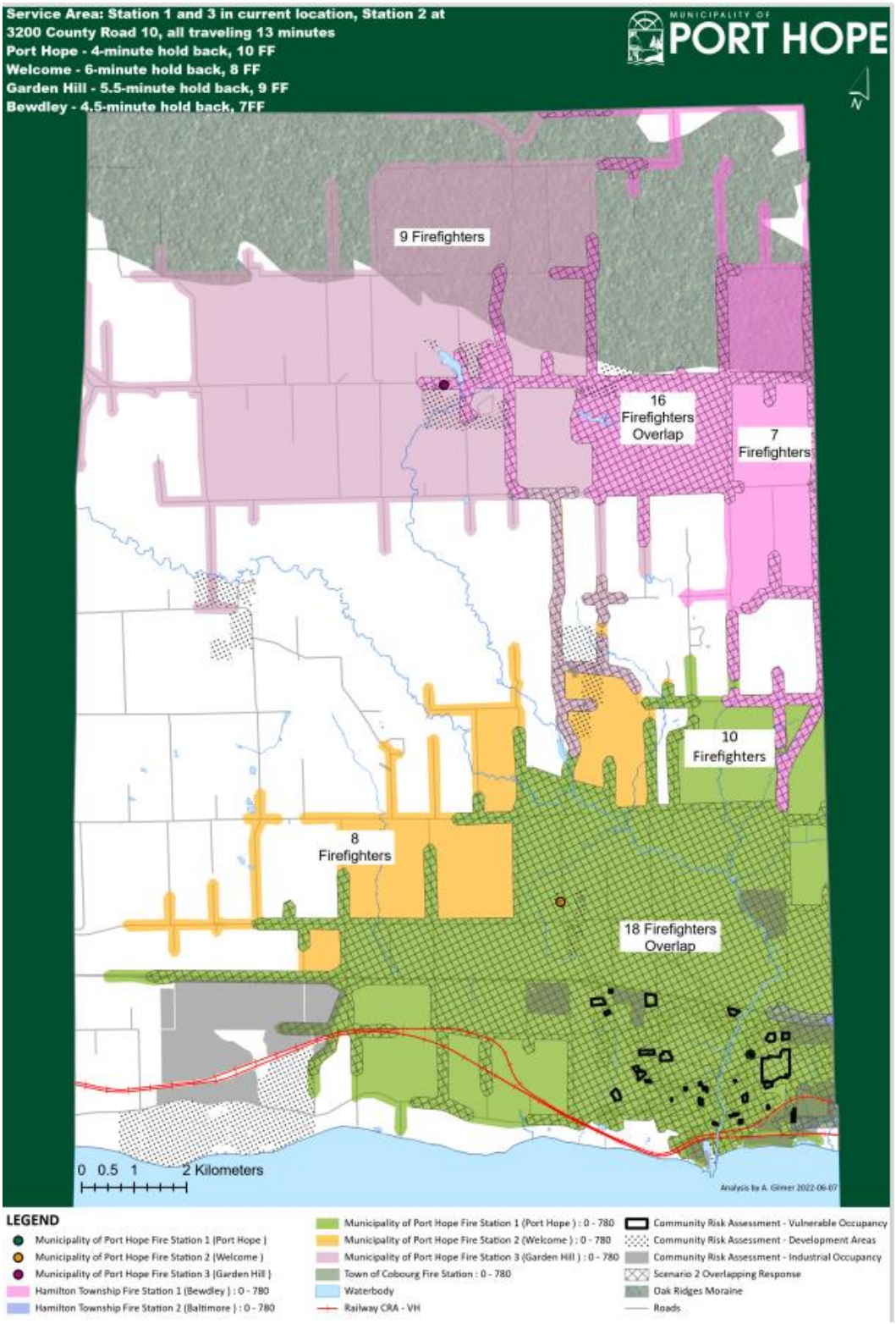

Figure 38: Fire Station 2 located in the area of County Roads 2 and 10.

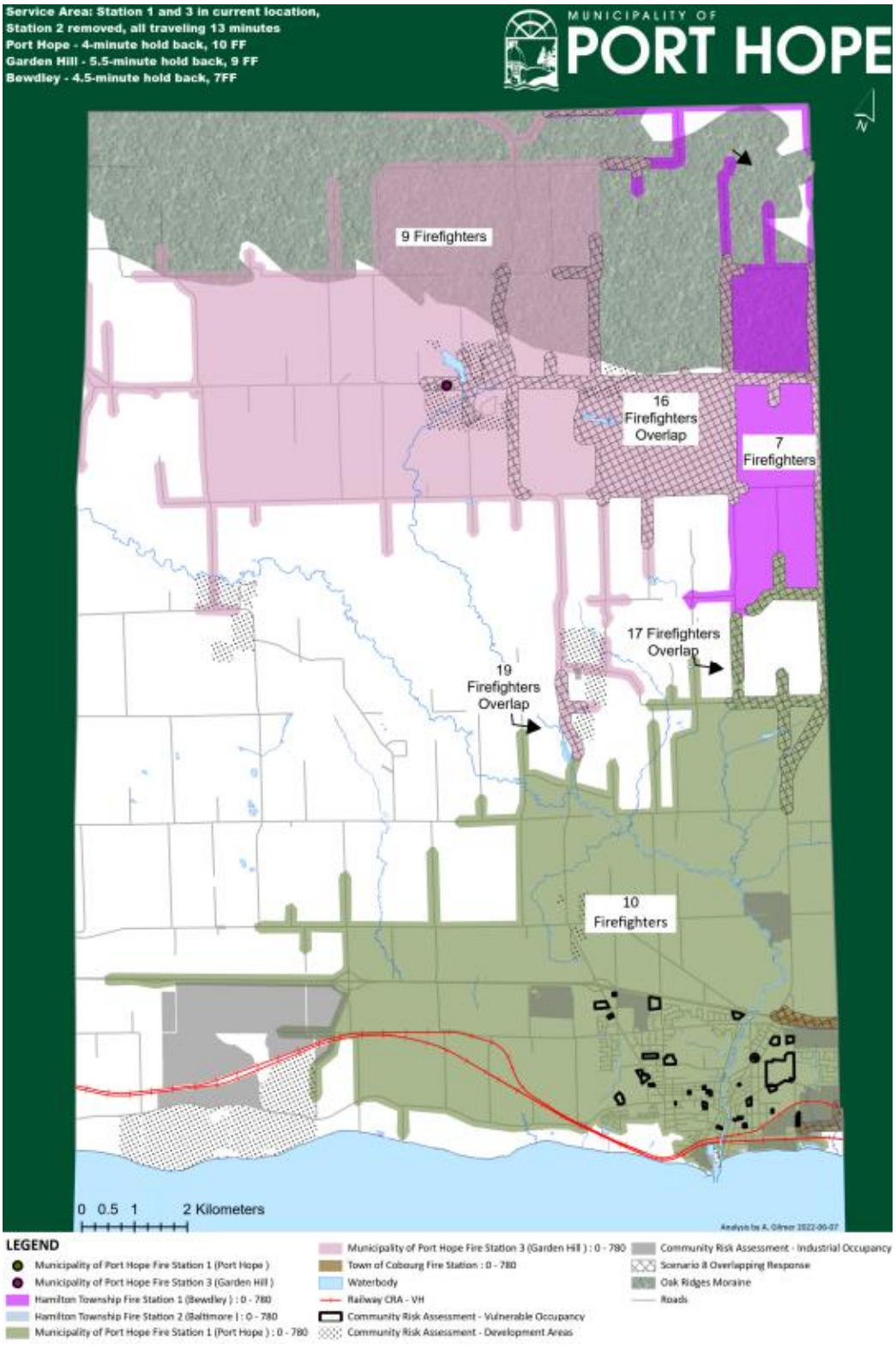

Figure 39: Fire Stations 1 & 3 in their current locations, with Fire Station 2 removed.

By using ESRI, ArcGIS solutions/tools, and response modelling that took into consideration road network and speed and historical data on response times and assembly times, the Loomex Team's review concluded that the Municipality should not go to a two-station model. Rather, the Municipality should consider the area closest to Northumberland County Roads 2 and 10 as the best possible location for a new fire station. This location would provide the appropriate level of safety for the Department's firefighters as well as address the level of service that is required for the risks present in the community. Locating the new fire station close to Northumberland Roads 2 and 10 would also allow the Department to respond to the entire Municipality in a timely manner because of the available road network.

Another factor influencing the location of a potential new fire station is the list of top-five risks present to the Municipality. The Municipality's CRA determined that the top-five risks in the community are rail emergencies, fires in industrial occupancies, weather events, fires in residential occupancies, and fires in vulnerable occupancies. A review of those risks shows that most are within the built-up area of the Municipality. Data collected about the Department suggests that the Department can place 18 firefighters on location in the built-up area of the Municipality within 13 minutes. This statistic shows that the Department can meet the critical tasks needed to address a fire in a single-family dwelling. (However, it is important to note that the Department will have to dispatch more firefighters for a fire in an industrial occupancy, commercial occupancy, or multi-unit occupancy).

Staffing

Regarding staffing, there are several actions the Department can take to better its current effectiveness and efficiency. Over the next five (5) years, the Department can try to improve its response times and ERF performance by adopting service level objectives, revising its current service delivery model, and enhancing its use of technology. For example, the Department can implement a continuous quality improvement process by adopting internal baselines from its collected response data and then attempt to make a 5 per cent improvement of that baseline data over the next five-year period, or shorter, to establish local performance benchmarks (also called Department goals). The Department can also review the incident response times for structure fires (with dollar loss) for the years 2017-2022 to determine its baselines and provide a foundation from which it can make future decisions about its service delivery models.

One significant staffing issue the Department has recently been experiencing is a sharp decline in the number of volunteer firefighters being recruited/hired. Greater demands for time commitments from the volunteer firefighters, as well as enhanced NFPA certification standards, changes to the nature of the emergency services and public expectations, and a failure to manage or take the lead in a changing environment, have all contributed to the significant decline of volunteer firefighter recruit hiring in the

Department. In addition, over the past two (2) years, the impact of the COVID-19 pandemic has contributed to recruitment and retention problems.

The Department's shortage of staff has also resulted in other issues. Managing the Municipality's risks, recruiting volunteer firefighters, making medical response calls, and maintaining daytime staffing numbers have all been identified as factors that are impacting the Department's ability to provide the correct number of firefighters at an emergency scene, especially during the daytime hours of Mondays to Fridays. Unfortunately, there are no easy or low-cost solutions to this issue. Therefore, it is imperative for Council and the Department to develop plans and put funding in place to introduce gradual changes to the Department that will correct the issues caused by the current staffing situation. If plans and funding are not put in place now, the time will come when a large investment becomes required.

There are several staffing changes that the Department can make over time to correct its staffing issues and ensure its response capabilities match and address the community's risks. These changes begin with the Department meeting its ERF model and Council introducing an approved standard that sets the Department's expected level of service.

Additional staffing considerations are as follows:

1. When the Department replaces its current Fire Prevention Officer, it should ensure that the new hire is both a Fire Prevention Officer and suppression firefighter.
2. As recommended in Section 11, the Department should hire a Training Officer who can manage the Department's training needs and also serve as a suppression firefighter.
3. As recommended in Section 10, the Department should hire a Fire Inspector (in the future), and that new hire should be able to serve as both a fire inspector and a suppression firefighter.

If implemented, the three considerations listed above would help mitigate the Department's staffing for a short-term period. To address these issues in the long term, the Department and Council both need to plan and budget for the hiring of full-time daytime firefighters. An organizational chart for the Department's future recommended structure is presented in Figure 40.

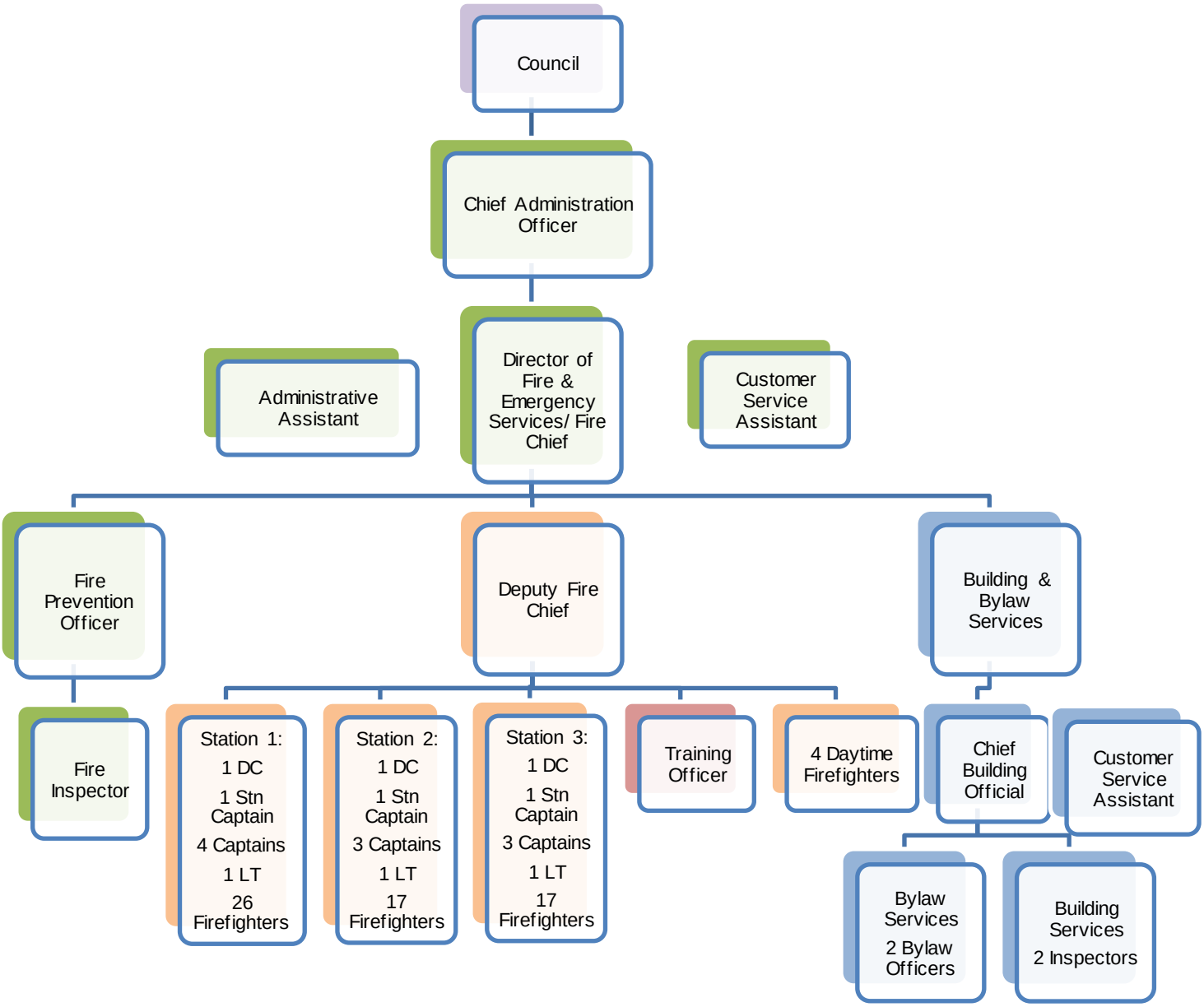

Figure 40: Recommended future organizational structure.

Shared Services

The Department is part of the Northumberland County Mutual Aid System. This affiliation allows the Department to call for additional firefighters and equipment if additional resources are required; this mutual aid system is not activated until the Department makes the request.

In 2021 a review was conducted to review the services provided by the seven departments in the Northumberland County Fire Service. That 2021 review discussed the feasibility of the seven fire departments entering into automatic aid agreements in areas where a neighbouring department could provide a faster response to areas within the Municipality. Further results from that study found that both the Town of Cobourg Fire Department and the Hamilton Township Fire Department can assist the Department through automatic aid agreements, helping to provide a better ERF to some of the Municipality's higher-risk areas.

By using the ESRI, ArcGIS solutions/tools, and response modelling, the Department can now provide accurate response zones that include its neighbouring departments.

Specialized Services

The Department's future resource deployment for specialized services should be as follows:

- Hazardous Materials: Operational Level
- Surface Water/Ice Rescue: Operational Level (excluding using a marine vessel)
- Confined Space: Awareness Level
- Trench Rescue: Awareness Level
- High/Low Angle Rescue: Awareness Level

The preceding resource deployment model is based on the risks present in the community and the level of additional training and time commitment that the Department's volunteer firefighters must devote to attain certification for specialized services.

Roadmap for Success

In this FMP, Sections 9, 10, and 11 discuss the OFMEM's three lines of defence and how important they are to fire protection services in the Municipality. Building on what this FMP has already discussed regarding the three lines of defence, Table 13 provides Council and the Fire Chief with a roadmap that outlines ways the Department can continue and enhance the level of service it provides for the Municipality. The table also includes strategies for ensuring the safety of the Department's firefighters is protected. If Council follows this strategic plan, it should be able to begin introducing plans and budgets that will help the Department remain a cost-effective service.

Table 13: Strategic plan for providing the Department's level of service.

Time Frame	Strategy
Immediate	• Move one tanker from Fire Station 2 to Fire Station 1 • Move the CAFF pumper from Fire Station 1 to Fire Station 2

Time Frame	Strategy
Immediate	• Restrict the water/ice rescue program to surface water rescues (excluding those using a marine vessel) and ice rescues only
Immediate	• Review the tiered response agreement to ensure that the Department is providing the appropriate level of service for the Municipality
Immediate	• When replacing the Fire Prevention Officer, ensure the position is reclassified as Fire Prevention Officer/suppression firefighter
Immediate	• Enter into automatic aid agreements with Hamilton Township and the Town of Cobourg (where applicable)
Immediate	• When hiring a Training Officer, ensure the position is classified as a Training Officer/suppression firefighter
Short-Term	• Build a new headquarters station to replace Fire Station 2, locating the new facility close to the Northumberland County Roads 2 and 10
Immediate	• When hiring an additional fire inspector, ensure the position is classified as fire inspector/suppression firefighter
Long-Term	• Hirer full-time daytime firefighters

12.20 Recommendations

After a review and assessment of Resource Deployment and Response Times, it is recommended that:

1. The Fire Chief should use the Department's historical response data to develop a baseline for determining the Department's response standards. The baseline data should include information from the Department's low-, moderate-, and high-risk responses. Once collected, the Department should combine the baseline data with its effective response force model so Council can establish an approved level of service for the Department.

2. The Fire Chief should relocate one tanker from Fire Station 2 to Fire Station 1 to allow the Department to provide a better level of service for the community and a better level of safety for the firefighters.

3. The Fire Chief should prepare a report regarding hazard materials incidents for Council's consideration and adoption that recommends the Department perform hazardous material responses at the operational level.

4. The Fire Chief should prepare a report regarding water/ice rescues for Council's consideration and adoption that recommends the Department only perform surface water rescues (excluding using a marine vessel) and ice rescues.

5. The Fire Chief should review the number of calls the Department receives for medical responses to see if there is a possibility of reducing the number of medical calls where firefighter response has no impact on patient care. If applicable, the Department should then update its tiered response agreement accordingly.

6. The Fire Chief should prepare a report for Council's consideration and adoption that recommends replacing the current Fire Station 2 with a new fire station to service the Welcome area.

7. The Fire Chief should look for property in the vicinity of Northumberland County Roads 2 and 10 on which a new fire station can be built.

8. When it hires a new Fire Prevention Officer, Training Officer, and Fire Inspector, the Department should ensure the incoming staff are qualified to respond to emergency responses during daytime hours.

9. The Fire Chief should prepare a report for Council's consideration and adoption that recommends hiring full-time daytime firefighters in the Department. The report should emphasize that the choice to hire full-time daytime firefighters will provide a better level of service to the community and a better level of safety for the Department's firefighters.

13.0 Water Supply

Water supply is essential for effective fire suppression. Due to its importance, the Fire Underwriters Survey attributes 30 per cent of its insurance grading schedule to water supply. There are two (2) water supply categories that are used when discussing fire protection:

1. Municipal water supply: hydrant-protected areas
2. Rural water supply: non-hydrant protected areas

13.1 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. The Municipality is responsible for supplying potable water with sufficient flow to meet firefighting requirements and the local distribution system, including fire hydrants. Hydrant-protected properties usually have lower insurance premium costs than non-hydrant properties.

As outlined in the NFPA codes and standards book, NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants, fire hydrants should be marked as per a designated colour-coding scheme so that responding crews can quickly identify the amount of fire flow that can be expected from any given hydrant. Knowing this information allows an Incident Commander, Water Sector Officer, and Pump Operator to ensure they have enough water supply when responding to an emergency; the colour-coding scheme also ensures they will be able to make decisions about increasing water supply by attaching it to another hydrant if needed. Figure **41** depicts an example of a properly colour-coded fire hydrant. Additional information about the NFPA classifications and markings of municipal fire hydrants is presented in Table 14.

Figure 41: Properly colour-coded hydrant.

Table 14: NFPA municipal fire hydrant classifications and markings.

Class	Top and Nozzle Colour Code	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		1,000 – 1,499 gpm (3,785 – 5,675 L/min)	20 psi (140 kPa)
B	Orange		500 – 999 gpm (1,900 – 3,780 L/min)	20 psi (140 kPa)
C	Red		500 gpm (1,900 L/min or less)	20 psi (140 kPa)

The Loomex Team's review found that the Municipality is following the NFPA fire hydrant classification system.

The Loomex Team's review also found that the Municipality's Environmental Services manages the operation of the Municipality's water system. The Municipality's Environmental Services is responsible for ensuring that municipal residents have safe domestic water and that any required hydrant testing, repairs, and replacements are completed. Hydrants are flushed twice a year and are winterized before the winter season.

13.2 Private Hydrants

Private hydrants are found throughout the Municipality at commercial and industrial sites. The developers and owners of properties with private hydrants must provide certification of 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 the hydrants at their sites each year to ensure they are still operational. Figure **42** shows an example of a private hydrant; note that private hydrants are usually painted red so they can be differentiated from municipal fire hydrants.

Due to time restraints and workload, the Department does not currently have a program to ensure that the owners of properties with private hydrants meet their obligation under the Ontario Fire Code.

Figure 42: Picture of private hydrant.

13.3 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, the Department must have additional fire apparatus (tankers) and firefighters that are trained on tanker shuttle procedures in order to ensure there is a water supply for non-hydrant areas. Two measures developed by the Fire Service to address issues of water supply in rural areas are as follows:

1. The first measure is the Superior Tanker Shuttle Accreditation program. The program provides an improved capacity to maintain adequate water supply for effective firefighting in areas up to 8 km away from a fire station. The program accomplishes this result through a minimum of 900 litres/minute (200 gallons/minute) water supply that lasts for a two-hour duration. As a result of this program, many rural residents could see significant reductions in fire insurance premiums.
2. The second measure is the installation of non-pressurized dry hydrants in several locations. These dry hydrants are designed to allow fire apparatus to draw water from rivers, lakes, ponds, or storage tanks.

Even though the above methods can assist fire departments will supplying water to rural areas, they require additional measures to be effective. For the Municipality to best maximize an available water supply system for non-hydrant areas, equipment must be purchased, procedures must be established, and training must be provided to the Department's firefighters.

The Loomex Team's review of the Municipality's water supply for non-hydrant areas found that the Department has tanker shuttle accreditation and has developed a program for its rural water supply program that will see eight (8) new dry hydrants installed by 2023.

In addition to its current approach to water supply in non-hydrant areas, the Department can also develop and formalize a dry hydrant testing program Furthermore, Council can support the purchase of new tankers that have features such as a water capacity of no less than 2,500 gallons and onboard pumping capabilities.

13.4 Recommendations

After a review and assessment of Water Supply, it is recommended that:

1. The Fire Chief should develop and formalize a dry hydrant testing program.
2. Council should support the purchasing of new tanker trucks that have features such as a water capacity of no less than 2,500 gallons and onboard pumping capabilities.

14.0 Emergency Management

The Emergency Management and Civil Protection Act R.S.O. 1990 (EMCPA) stipulates that a municipality must meet certain criteria in order to receive its annual compliance recognition. Highlights from the EMCPA include the provisions that:

- A municipality must have an emergency management program (EMP) and an EMP Committee
- Annual emergency management training must be provided to all members of the Municipal Control Group
- An annual exercise that uses the EMP and involves all members of the Municipal Control Group must be conducted
- A municipality must designate a community emergency management coordinator (CEMC) and alternate CEMC
- A municipality's critical infrastructure (CI) and hazard identification risk analysis (HIRA) must be reviewed annually and updated, as required

The EMCPA specifies that the responsibility for meeting the above criteria rests solely with the Municipality and not with the Department.

The Fire Chief is the Municipality's CEMC, and the Deputy Fire Chief and the Clerk hold the role of alternate CEMC. Compliance is managed by an administrative assistant. The Municipality was compliant with the EMCPA in both 2020 and 2021.

14.1 Emergency Response Plan

A high-level look at the specifics of the Municipality's ERP shows that, in many ways, it is very thorough and up to date. However, one issue with the ERP is that it is modelled after older plans that were people-based rather than function-based. The challenge with a people-based plan is that the positions are filled by staff within the organization (based on the qualifications of the organization's available staff), but staff are often only assigned to an area because of numbers (not what they can bring to the emergency).

In place of a people-based plan, the Province of Ontario recognizes an incident management system (IMS) that is function-based. A function-based IMS is a method that staffs positions based on qualifications. A function-based IMS plan can also operate at reduced numbers, as a municipality can assign many functions to a limited staff (based on the scope of the emergency). One benefit of a function-based IMS is that many external stakeholders in a community can fit seamlessly into the plan; another benefit is that a function can be filled from another municipality that is trained and using the IMS.

14.2 Joint Operations Centre

The Municipality's current primary Joint Operations Centre (JOC) is at The Hub at the Canton Facility (5325 County Road 10). The alternate JOC is at the Port Hope Police Station (55 Fox Road). A review of the current primary JOC concluded that the facility is small for the functions of a JOC, especially if the emergency event increases to the point where it requires multiple people from different groups to be located in the same room. Additionally, there is a lack of space for conducting management meetings that are separate from the main control group. The Municipality should consider constructing a new municipal facility that includes a space allocated for a JOC.

Emergency Management Program Committee

The EMCPA states that every municipality must have an EMP committee. For the Municipality, By-law No. 07/2018 Emergency Management Program Committee identifies the membership of the EMP committee.

The Municipality's current EMP committee is as follows:

1. CEMC
2. Alternate CEMC
3. Police Chief (Urban)
4. Police Chief (Rural)
5. Director of Works & Engineering Services
6. Director of Corporate Services/Clerk
7. Director of Finance
8. Committee of the Whole Chair of Police and Fire Services
9. Chief of Paramedics Services
10. Communications
11. Northumberland County
12. Health Unit

The membership of the Municipality's current EMP committee is in keeping with the configuration of its past EMP committees. Today, best practices advocate having smaller committees composed of the key stakeholders that have a direct impact/influence on the content and direction of the Municipality's EMP. A streamlined committee, plan, and program allows EMP committees to be more productive. The new configuration also helps reduce the workloads of municipal managers, who often have very busy schedules. Additionally, external stakeholders would not be required in the Municipality's EMP committee.

A new EMP committee for the Municipality could be structured as follows:

1. CEMC
2. Alternate CEMC(s)

3. Head of Council
4. CAO
5. Police Chief (Urban)
6. Department Administrative Assistant

Overall, the Municipality is meeting the minimum compliance required by the EMCPA; however, the Municipality's EMP, ERP, HIRA, CI, and the JOC must all be updated as time permits. The updates are required for the Municipality to ensure its EMP program remains current and applicable to meet the community's needs in the event of an emergency that requires the JOC or MECG to be activated.

14.3 Recommendation

After a review and assessment of Emergency Management, it is recommended that:

1. The CEMC should update the Municipality's emergency response plan to align with the Province of Ontario's Incident Management System model. Once updated, the CEMC should present the emergency response plan to Council for consideration and approval.
2. The CEMC should review the current membership of the Municipality's Emergency Management Program Committee and then create a revised membership roster that is streamlined and more in keeping with current best practices. Once created, the CEMC should present the revised membership roster to Council for consideration and approval.
3. The Municipality should consider building a new municipal facility that is large enough to accommodate a Joint Operations Centre.

Appendix A: Legislation and Reference Documents

Legislation Affecting the Ontario Fire Service

Legislation	Scope
Fire Protection and Prevention Act, 1997 and Ontario Fire Code	Outlines 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 smoke alarm related offences.
Municipal Act, 2001	Authorizes the passing of bylaws that are necessary for the provision of fire protection.
Occupational Health and Safety Act	Outlines regulations for governing human resources and occupational health & safety related matters.
Ontario Regulation 211/01 and Ontario Regulation 440/08: Propane Storage and Handling	Requires propane operators to obtain fire department approval for all risk and safety management plans (RSMPs). The fire department must approve the sections of the RSMPs that deal with the subjects of fire safety, fire protection, and emergency preparedness.
Environmental Protection Act	Requires fire department personnel to report spills to the Ministry of the Environment, Conversation and Parks (MOECC), formerly referred to as the MOE.
Dangerous Goods Transportation Act	Outlines the regulations that govern the transportation of dangerous goods.
Emergency Management and Civil Protection Act	Requires every municipality to have an emergency management plan and a trained community emergency management coordinator to conduct training exercises for the municipality's emergency control group.
Building Code Act	Provides municipalities with the authority to appoint certain fire personnel as building inspectors.

Legislation	Scope
Highway Traffic Act	Outlines regulations that govern how fire vehicles are to operate during an emergency response. Also outlines regulations that govern firefighter response on roads that have been closed by police, the use of flashing green lights on firefighters' personal vehicles and controlling traffic at accident scenes. Requires that the hours of service during which commercial motor vehicles are operated must be logged.
Forest Fire Prevention Act and Ontario Regulation 207/96 Outdoor Fires	The Forest Fire Prevention Act applies only to areas that are classified as "fire regions" (as defined in the act) and outlines regulations for the control of outdoor fires in restricted fire zones. It requires municipalities to extinguish all grass, brush and/or forest fires that occur within their geographic limits. It provides the Minister with the authority to appoint wardens and officers. O. Reg. 207/96 outlines regulations for the control of outdoor fires that occur outside of restricted fire zones.
Development Charges Act	Authorizes portions of development charges to be allocated to the fire services.
Coroners Act	Outlines the regulations that govern the control of bodies. Authorizes/regulates coroner inquests and coroner inquest recommendations.
Day Nurseries Act	Defines the legislative requirements that a daycare operator must have approved by the local fire chief before the former is permitted to operate a daycare facility.
Employment Standards Act and Labour Relations Act	Outlines regulations pertaining to human resources.

Legislation	Scope
Human Rights Code	Defines how boards of inquiry, complaints, discrimination, and enforcement are to be handled.
Municipal Freedom of Information and Protection of Privacy Act	Defines how access to information held by institutions is to be granted/obtained. Intended to protect the privacy of individuals concerning personal information about themselves held by institutions.
Pesticides Act	Makes mandatory the reporting of wholesale and retail pesticides to the fire department.
Workplace Safety and Insurance Act	The legislated requirement to report accidents as well as document training records and be able to provide them upon request.

References

- Emergency Management and Civil Protection Act (R.S.O. 1990)
- Municipality of Port Hope: Bylaws and Agreements
- Municipality of Port Hope Community Risk Assessment
- Municipality of Port Hope Fire & Emergency Services: Policies and Standard Operating Guidelines
- National Fire Protection Association Standards
- Occupational Health & Safety Act and Section 21 Committee Guidelines
- Ontario Building & Fire Codes
- Ontario Fire Marshal's Directives and Guidelines
- Ontario Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4

Consultation List

The following people were consulted throughout the FMP development process. Each person provided invaluable information that helped shape the final FMP document.

- Chief Administrative Officer David Smith
- Director of Fire & Emergency Services Dan Smith
- Deputy Chief Jeff Ogden
- District Chiefs Glenn Case, Shawn Coull, and Brad Goodwin
- Fire Prevention Officer Jacquie Hill-Bower
- Chief Training Officer Bob Cranley
- Officers and Firefighters
- Amy Gilmer, Asset Manager & GIS Coordinator