AGENDA ITEM REPORT

Meeting:	Regular Meeting of Council, Operations and Planning - 19 Jul 2023
To:	Members of Council
From:	Bryce Robinson, Fire Chief
Department:	Fire
Subject:	Public Fire Protection Analysis/Fire Service Review/Fire Master Plan

Recommendation:

That Council accept this report "Public Fire Protection Analysis/Fire Service Review/Fire Master Plan" as submitted by the Fire Chief and Deputy Fire Chief as information; and

Option 1:
In consultation with the Fire Service Review Report, That Council direct staff to provide recommendations to Council on future fire station structure which includes but is not limited to, operating and capital implications.

OR

Option 2:
That Council direct staff to hire a third-party professional consultant to conduct a review of the existing fire station structures in consultation with the Fire Service Review report that includes recommendation(s) for Council to consider including but not limited to, operating and capital implications.

Origin:

At the May 4, 2022 Regular Meeting of Council, Council resolved the following:

(164-2022)
That Council accept this report "Fire Master Plan & Community Risk Assessment Sole Source Procurement" as submitted by the Fire Chief; and
That Council approve proceeding with sole source procurement from the proposal submitted by Emergency Management Group (EMG) at at a cost of $64,059+HST; and
Furthermore That Council approve a transfer of up to $15,187 from the Reserve for Working Capital: Modernization Funding to cover unbudgeted expenses.

Background information:

On February 15, 2022 the Municipality issued a Public Fire Protection Analysis (PFPA) Request for Proposal (RFP).

On May 4, 2022 Council approved proceeding with an independent fire master plan and community risk assessment from the proposal submitted by Emergency Management Group (EMG).

A fire service review is a process of identifying a fire department's present status, and developing a strategy for future goals and needs, along with assisting the department in making decisions in relation to more efficiently allocating its resources.

The fire service review created for the Hastings Highlands Fire Service consists of a review of:

Section 1: Community and Fire Department Overview
Section 2: Risk Assessment
Section 3: Fire Department Divisions
Section 4: Facilities, Vehicles, Equipment and Water Supply
Section 5: Emergency Management
Section 6: Mutual Aid, Automatic Aid and Fire Service Agreements
Section 7: Finance, Budgeting, Fees and Cost Recovery Mechanisms
Section 8: Stakeholder Surveys and Review of Previous Fire Master Plan
Section 9: Recommendations, Timelines and Associated Costs

The benefits of conducting a fire service review are many, but the key advantages are:

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

The recommendations contained within this fire service review document have been submitted to provide a set of strategies and goals for implementation that are aimed at assisting the Council and Fire Chief in making strategic decisions relating to the efficient allocation of Hastings Highlands Fire Department resources and staffing.

Under the *Fire Protection and Prevention Act, 1997* (FPPA Part II, Section 2(1)):
Every municipality shall,

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

<u>Next Steps if Option 1 is Approved</u>
Should Council direct staff to move forward with Option 1 of the recommendation, then a 'Fire Service Review - Community Engagement Strategy' would be included as part of the report detailing how and when the public can submit their comments to Council on the fire station structure review and where they can find more information on the proposed recommendations. Staff will ensure proper circulation of this information by posting it in print, on our website and social media.

Next Steps if Option 2 is Approved
Should Council move forward with Option 2 then staff would follow the directions of the Municipality's Procurement Policy (Bylaw 2016-024).

Lyle Quan, consultant for Emergency Management Group will be attending the meeting to present the report, provide a short presentation and answer any questions Council may have.

Financial impact:

Fire Master Plan: $47,075+HST
Community Risk Assessment: $16,984+HST
TOTAL: $64,059+HST

Breakdown: $64,059 + $8,327.67 (HST) = $72,386.67
Total expense to be borne by Hastings Highlands including all applicable taxes and rebates: approximately $65,187.

Link to strategic plan:

Strategic Priority #2 Rationalize Infrastructure
Goal: Fire Services Plan
Action: Complete a review of fire services.
Action: Develop a viability plan.

References:

Emergency Management Group

Attachments:

HHFD Master Plan Council Presentation
Hastings Highlands Fire Service Review

Prepared By:

Bryce Robinson, Fire Chief

Reviewed By: Municipal Clerk July 13, 2023

Hastings Highlands Fire Department Master Plan

Emergency Management Group

July 19, 2023

Process

Along with assistance and input from staff, we have been able to complete a full review of the department and the services offered through the following steps

Fire Protection Model

Key focus of this Master Plan revolves around the three Lines of Defence for Public Safety

1. Public Fire Safety Education
2. Code Enforcement Through Inspections
3. Emergency Response Capabilities

At EMG we also consider the following as a key partner to the above three lines:

4. Emergency Management

Recommendations Based On

- Governance
- **Fire Prevention**
- **Fire Station**
- **Aerial need**
- Staff
- **Training**
- Emergency Operations
- Communications/Dispatching
- Budget and Finance

35 Recommendations that are either operationally or strategic in their focus:

- Operational recommendations can be addressed mostly by staff
- **Strategic** recommendations require large financial investment and possible Council approval, and these are the key to this presentation.

Recommendations Overview

Fire Prevention & Public Education

- To be more proactive, there is a need for a part-time or even full-time fire prevention officer to enhance inspections programs, and levels of frequency of inspections
  - Have a greater ability to promote public fire safety education
  - Presently, it is the fire chief that does all fire prevention work; even utilizing the VFFs in this type of capacity will help to address the need for more fire prevention.
  - Overall, there needs to be more emphasis on Fire and Life Safety Education.

Recommendations Overview

Training And Administration

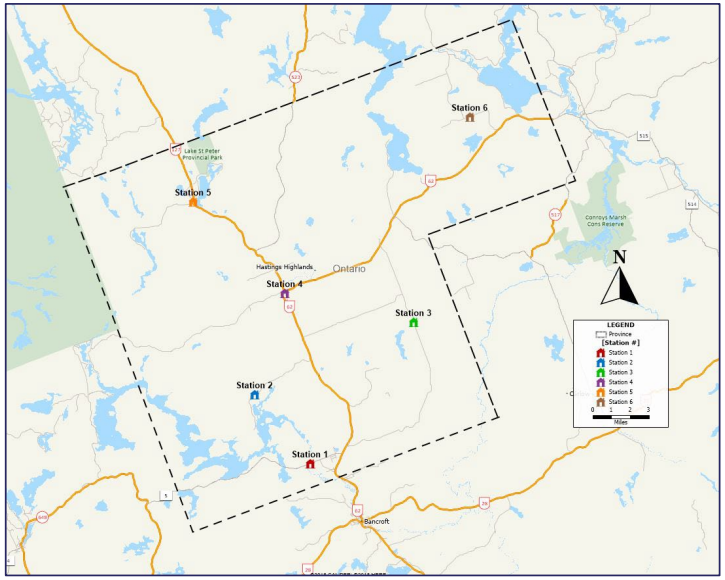
- With the new OFM Training and Certification Regulation, there will be an increased need for training and records management.
  - Presently the Fire Chief is the key lead on this program with the assistance of the station officers
  - But there is a lack of consistency and this will need to be addressed
  - There will also be an increase in records management and development of formal training programs, which will require a greater investment by the Township
    - For a Training Officer – part-time to start
    - Administrative assistance for the records management.

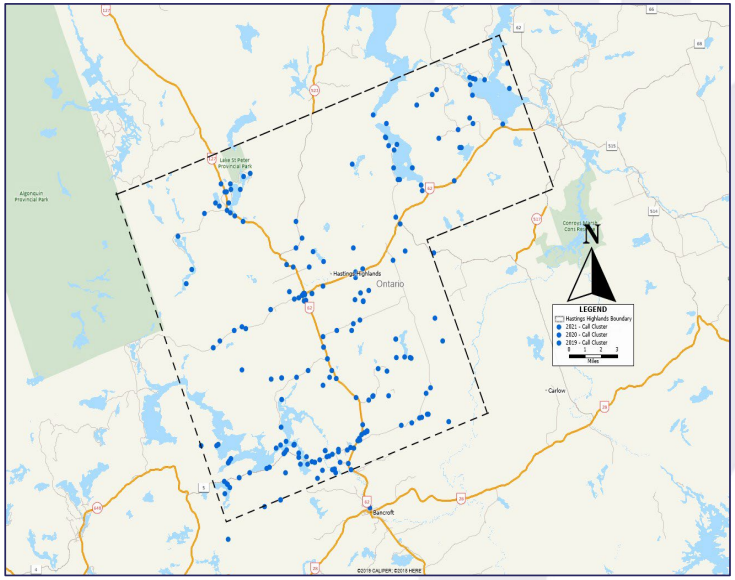
Fire Stations

Fire Stations Concerns

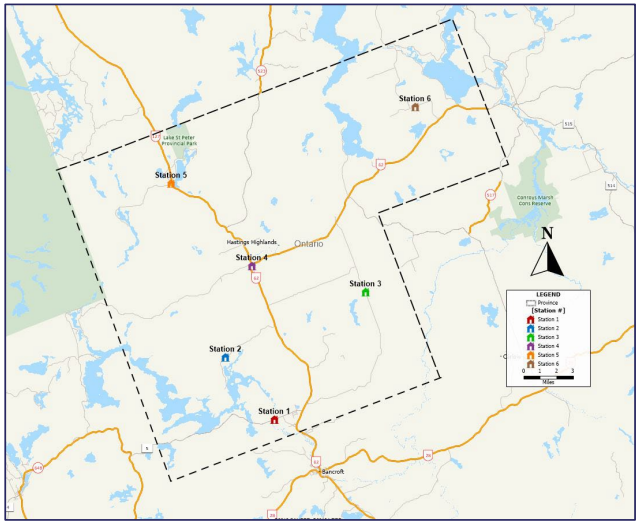
- Proximity of the firefighter's gear in relation to the vehicle exhaust.
- No diesel exhaust catchment system at any of the fire stations.
- All the stations appear to be at maximum capacity for vehicles and equipment storage.
- There was a notable lack of proper storage areas/facilities for the equipment. This creates a tripping/safety hazard to the staff.
- No emergency backup power at any of the fire stations.
- Washroom facilities for both male and female firefighters were also an issue at the stations and should be addressed. This can also be accomplished by making the washrooms gender-neutral.
- Lack of shower/wash-up areas that need to be made available at all the stations.

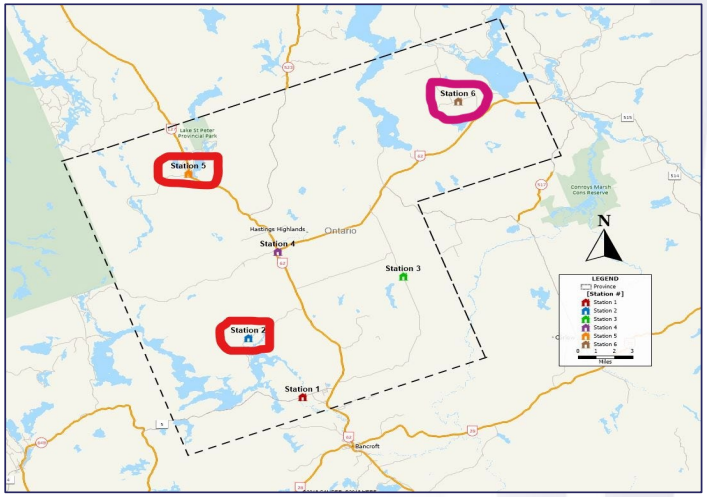
Fire Station Location and Call Cluster





Fire Stations Status

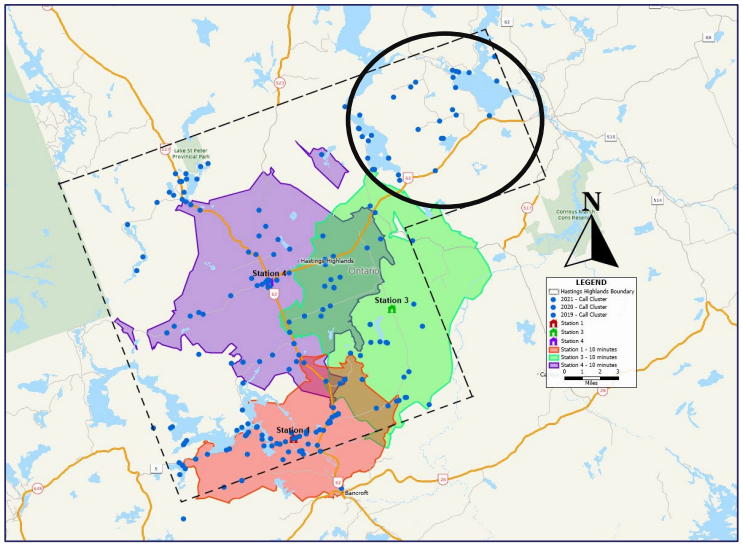


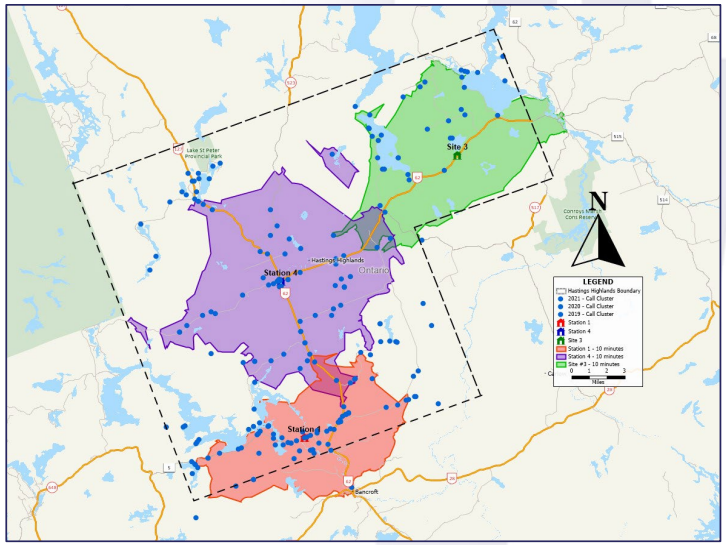


- Fire stations were originally set up to respond to the specific community they served
- The stations are now arranged on a six-response zone setup
- However, **three of these stations are not active due to issues with the facility or lack of VFFs**

Fire Station Option #1 – Move Stn #3

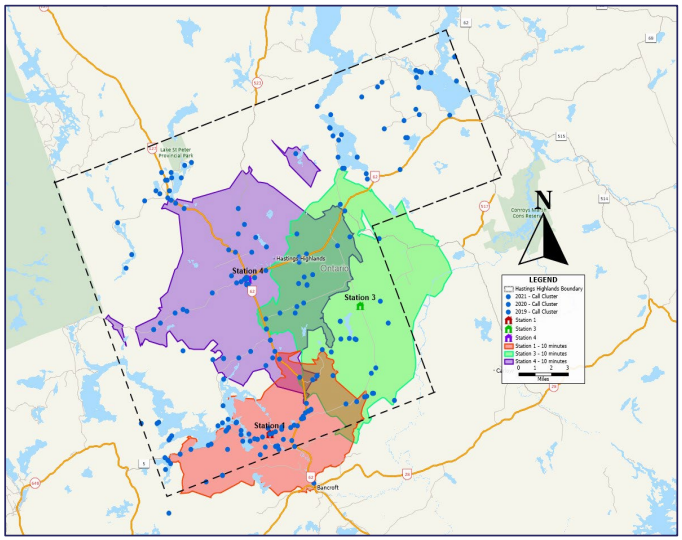
Moving of one fire station

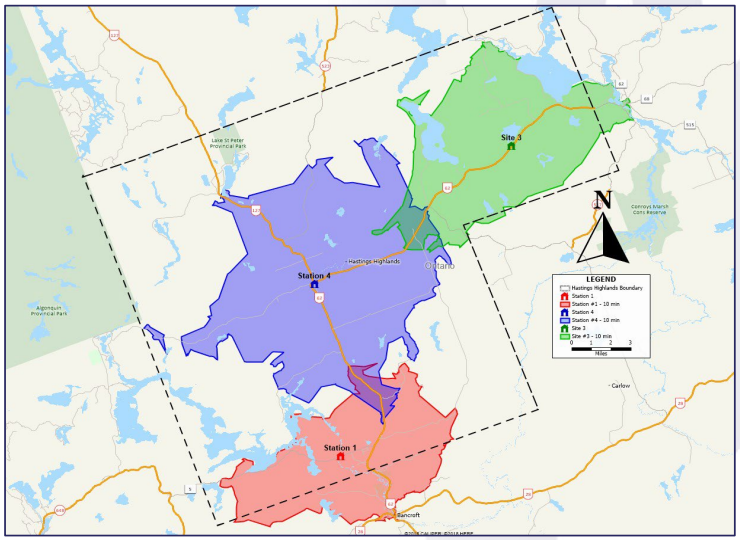




Fire Station Option #2 – Station Relocations

Relocation of 3 fire stations along the main highway corridor





Fleet – Aerial Device Consideration

Even though some of the fleet vehicles are aging and in need of replacement, consideration should be given to replacing one of the present fire trucks with an aerial – new or used.

This would allow fire department access to buildings that are more than two stories.

Live Fire Training Recommendation

Training Program

- HHFD to define training goals and expectations based on the services offered and develop an annual training program.
- HHFFD conducts a needs assessment to identify what additional training props are required to ensure the firefighters meet training requirements.

If HHFD is unable to utilize other local facilities, consideration must be given to the purchase of a mobile or fixed type live fire training prop.

Next Steps

- Review the recommendations and create a plan for moving forward
- Feasibility study to be conducted relating to the fire station recommendations
- Document the implementation and completion of the recommendations
- Track level of improvement based on:
  - Response times, whether stations are closed or relocated
  - Staff training and retention
  - Improvements in the fire prevention and public education programs

Conclusion

It must be noted that during our assessment, it was quite evident that:

- The Hastings Highlands Fire Department is made up of a group of dedicated, professional personnel who are committed to improving their level of service provision to meet the needs of the community.
- We would like to thank everyone who assisted in the development of this master plan and the community risk assessment.

Final Note:

- ***This presentation has only been a high-level overview of the Strategic items, that would require Council approval. There were also many operational recommendations.***
  - ***But the operational recommendations can be addressed by the Fire Chief and Volunteers, with little to no cost.***

Thank You – Questions?

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Municipality of

HASTINGS HIGHLANDS

Fire Service Review

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Emergency Management Group

EXECUTIVE SUMMARY

This Fire Service Review (FSR) encompasses a comprehensive review of the Hastings Highlands Fire Department's (HHFD) strengths, weaknesses, opportunities, and challenges. This FSR also consists of a review of the community (through the development of a separate Community Risk Assessment report), along with identifying present and future population statistics and anticipated growth of the community. By conducting these reviews, the Emergency Management Group (EMG) was able to develop this 10-year forecast of recommendations for the HHFD.

Benefits of an Organizational Review:

The benefits of conducting a service review are many, but the key advantages are:

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

The recommendations contained within this FSR document have been submitted to provide a set of strategies and goals for implementation that are aimed at assisting the Council in making decisions relating to the efficient allocation of HHFD resources and staffing. The recommendations provided by EMG have been broken down into the following timelines:

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

Ultimately, the implementation of the recommendations will depend on the direction Municipality Council provides, as well as the allocation of associated resources and the ability to move forward with the associated recommendations contained within the document.

Project Scope

As noted in the original Request for Proposal (RFP), the following describes the responsibilities of the Consultant in developing the FSR for the Municipality.

Scope of Work

Municipal Hazards

- Detail information and relevant data outlining the Municipality's greatest concerns with regards to a Hazard Identification Risk Assessment (HIRA).
- Development of a Comprehensive Community Risk Assessment as the basis for determining the appropriate level of emergency response deployment to meet the Municipality's legislative responsibilities.

Staffing and Professional Qualifications

- Existing staffing levels (full-time, part-time and paid-on-call), completed with recommended compensation rate, and mandatory/recommended professional qualifications for all ranks.
- Personnel training standards, relevant credentials, and ongoing/future training/certification requirements for each rank.
- Retention and recruitment of firefighters, including specific requirements with regards to testing and background checks during recruitment drives.

Apparatus, Fire Stations, and Equipment

- A detailed GIS/risk-based analysis of service coverage and can provide recommendations with respect to ideal fire station locations, diversity, age of equipment, and staffing levels.
- Inventory and maintenance best practices, annual testing of equipment, the life span of equipment, replacement criteria, and supplies.

Legislative Mandate and Contractual Agreements

- Contractual and recommended future agreements between the Municipality and external agencies: mutual aid/automatic aid agreements, Ministry of Natural Resources (MNR) mitigation and response, CBRNE/Hazmat, auto extrication, rescue services, water/ice water rescue.
- Legislated mandates and service level requirements.
- Dispatch services and contractual agreements.

Administration

- Staffing, records management, software, and technology.
- Communication systems and equipment.
- Response activation processes, including methodology for calls for service and staffing levels.
- Identification of potential gaps and possible duplication of service.
- The past five years of response times, type, service provided, and service activity in relation to geography, topography, population, and population seasonal fluctuation. Consider the growth in population and development over the next 20 years and the potential impact to service delivery, and operations of the Fire Department.
- Provide detailed Geographic Information System (GIS), risk-based analysis of services coverage and provide a unique optimization calculation of an affordable, sustainable service model.
- Potential for cost savings and shared resources.
- Department operational guidelines and policies.
- Identify non-growth-related needs of the Fire Department.
- A review of changes being considered with respect to fire protection service areas. These studies are extremely useful in assisting local stakeholders with making informed choices and knowing the impacts that major changes will have on fire protection and associated fire insurance grades.
- Review of the existing service levels and compared to similar communities (ex. economies, populations, developments, etc.) with similar fire insurance grades.
- By-law: establishing and regulating, cost recovery, etc.

Water Supply (Dry Hydrant)

- Municipal/private water supply, access, and year-round availability.
- Agreement opportunities to access private year-round water sources.
- Superior Tanker Shuttle Service (STSS) accreditation and potential benefits.
- Provides all necessary information to develop STSS utilizing formalized alternative water supplies in rural areas to obtain accreditation. Current water supply capabilities.

Summary Overview of Recommendations

Below, is a summary of the recommendations within each of the key categories. Greater detail surrounding each recommendation can be found within the section from which it is derived.

Public Fire Safety Education

- Assessment by HHFD to set realistic fire prevention and public education goals based on available resources.
- Conduct a demands analysis of the fire prevention initiatives with the development of an annual fire prevention program and report on completion
- Consider greater utilization of volunteer firefighters for public education efforts
- Partnerships within the community to ensure fire safety education is relevant and delivered based on identified community needs (i.e., school fire safety education, seniors, new Canadians fire safety education).

Emergency Response

- Review of response data and areas for improvement
- Dispatching services review
- Vehicle life cycles and reserve apparatus

Department Facilities (fire stations)

- Fire stations general assessment and needs
- Station locations and suggestions and reallocation of resources

Staff/Personnel Development

- Increase in Fire Prevention staffing
- Programming to support health and wellness
- Knowledge and skills maintenance enhancement

Strategic Priorities

- By-law updates
- Development and utilization of training opportunities

***Note**: A quick reference recommendations chart entailing all the recommendations can be found in Section 9. This chart has also included brief rationale comments to assist the reader with justification for each recommendation.*

TABLE OF CONTENTS

ACRONYMS

AED	Automatic External Defibrillator
AHJ	Authority Having Jurisdiction
ASHER	Active Shooter/Hostile Event Response [Program]
AVL	Automatic Vehicle Locators
BLS	Basic Life Support
CAD	Computer Aided Dispatch
CAFC	Canadian Association of Fire Chiefs
CEMC	Community Emergency Management Coordinator
CRA	Community Risk Assessment
CRTC	Canadian Radio-television and Telecommunications Commission
DPG	Dwelling Protection Grade
E&R	Establishing & Regulating By-law
EAP	Employee Assistance Program
EMC	Emergency Management Coordinator
EMG	Emergency Management Group
EMP	Emergency Management Plan

EOC	Emergency Operation Centre
ERP	Emergency Response Plan
EVT	Emergency Vehicle Technician
FESO	Fire and Emergency Services Organization
FI	Fire Inspector
FPO	Fire Prevention Officer
FPPA	Fire Protection & Prevention Act
FSR	Fire Service Review
FUS	Fire Underwriters Survey
GIS	Geographic Information System
HFSC	Home Fire Sprinkler Coalition
HHFD	Hastings Highlands Fire Department
IMS	Incident Management System
IP	Internet Protocol
KPI	Key Performance Indicator(s)
MLFTU	Multi-Live Fire Training Unit
NIOSH	National Institute for Occupational Safety & Health

NIST	National Institute of Standards and Technology
NFPA	National Fire Protection Association
OAFC	Ontario Association of Fire Chiefs
OFM	Office of the Fire Marshal (Ontario)
OHSA	Occupational Health and Safety Act
PPE	Personal Protective Equipment
PFPC	Public Fire Protection Classification
PSAP	Public Safety Answering Point
PTSD	Post-Traumatic Stress Disorder
RFP	Request for Proposal
RTT	Real Time Texting
SCBA	Self-Contained Breathing Apparatus
SOG	Standard Operating Guideline
SOP	Standard Operating Policy
SRA	Simplified Risk Assessment
STA	Short-term Accommodations
SWOT	Strength, Weakness, Opportunity, Threats

TIC	Thermal Imaging Camera
WSIB	Workplace Safety & Insurance Board

INTRODUCTION

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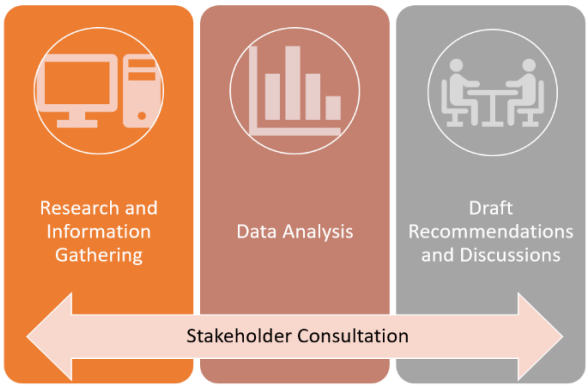
Project Methodology

The Emergency Management Group (EMG) has based its review process on the Municipality of Hasting Highlands' initial Request for Proposal (RFP) and the response document submitted by EMG. The specific scope of work noted, in the RFP, was reviewed and included into each section of this document. The FSR was completed by utilizing best practices, current industry standards, and applicable legislation as the foundation for all work undertaken.



EMG also utilized quantitative and qualitative research methodologies to develop a strong understanding of current and future needs and circumstances of the community.

Overall, the methodology involves a considerable amount of research, documentation review, data analysis, along with stakeholder consultation. Next comes the submission of draft reports, and related recommendations. The final product is a living document that provides a high-level strategic direction for Municipality Council and the Hastings Highlands Fire Department.

To accomplish the scope of requirements, EMG has:

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

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

Based on the previously noted criteria, through meetings with members of Council, the Municipality 's Senior leadership Team, firefighters, and community stakeholders, the consulting team was able to complete a thorough review of elements that are working well and areas requiring improvement within the HHFD. Data provided by HHFD was reviewed in relation to all the previously noted items contained in the Hastings Highlands RFP. This review culminated in a total of 35 recommendations.

Performance Measures and Standards

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

- The Fire Protection and Prevention Act
- The Office of the Fire Marshal and Emergency Management (OFM) Communiques
- The Ontario Occupational Health and Safety Act (OHSA), with reference to the National Institute for Occupational Safety and Health (NIOSH)

- The Ontario Fire Service, Section 21, Advisory Committee Guidance Notes
- The National Fire Protection Association (NFPA) standards, and
- The Fire Underwriters Survey technical documents.

Project Consultants

Although several staff at EMG were involved in the collaboration and completion of this FSR, the overall review was conducted by (in order of involvement):

- Lyle Quan, Fire Service Consultant/ VP of Operations - Project Lead
- Guy Degagne, Fire Service Consultant
- Rick Monkman, Fire Service Consultant
- Darryl Culley, President

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

SECTION 1

Community & Fire Department Overview

SECTION 1: COMMUNITY & FIRE DEPARTMENT OVERVIEW

1.1 Community Overview

The Municipality of Hastings Highlands is located within the eastern region of Ontario. The township is part of the Ontario Highlands region and offers a broad range of extraordinary winter and summer activities. The Municipality 's administrative and commercial centre is the community of Maynooth, located at the junction of Highway 62 and Highway 127 north of Bancroft.

The Municipality includes the communities of Baptiste, Bell Rapids, Birds Creek, Centreview, Graphite, Greenview, Hickey Settlement, Hughes, Hybla, Lake St. Peter, Maple Leaf, Maynooth Station, McAlpine Corners, McGarry Flats, Monteagle Valley, Musclow, Purdy, Scotch Bush, Scott Settlement and York River.

TABLE #1: Hastings Highlands Permanent Population by Year

2011	2016	2021
4,168	4,078	4,385
Population Increase/Decrease since 2011	-2.2%	+7.5%

***Note:** Retrieved from Stats Canada website, June 7, 2022*[1]

[1] Census Profile (statcan.gc.ca), Accessed June 7, 2022, https://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3512076&Geo2=PR&Code2=01&Data=Count&SearchText=hastings%20highlands&SearchType=Begins&SearchPR=35&B1=All&Custom=&TABID=1

FIGURE #1 - BOUNDARIES OF THE MUNICIPALITY OF HASTINGS HIGHLANDS

***Note**: Retrieved from MapQuest, June 20, 2022*

1.2 Fire Service Overview

The Hastings Highlands Fire Department (HHFD) consists of six fire stations staffed by Volunteer Firefighters (VFF) under the direction of a full-time Fire Chief. The HHFD responds to approximately 100 to 150 calls for service per year. These calls range from medical assistance to fire-related incidents, and motor vehicle collisions.

The Fire Chief is presently responsible for Fire Prevention, Training and Administration. Although the Municipality has approved the hiring of a Deputy Fire Chief, the Fire Chief has been unsuccessful in filling this position.

The current fire stations are in Birds Creek, Herschel North, Monteagle, Maynooth, Lake St. Peter and Bangor. However, it should be noted that presently the fire station in Lake St. Peters was closed and

both the Herschel North station and the Bangor Fire Station are currently not active due to the lack of VFFs available in the area.

The organizational chart noted in Figure #2 reflects the general reporting structure within the HHFD and that of the Fire Chief to the CAO and Municipality Council.

FIGURE #2 - EMERGENCY SERVICES ORGANIZATIONAL CHART

1.3 Assessment of Current Fire Services By-Laws and Agreements

Establishing & Regulating By-Law

HHFD is established through by-laws from the Municipality. The authority to enact the Fire Department comes through the *Municipal Act, 2001, S.O. 2001, c.25* and the *Fire Protection and Prevention Act, 1997, S. O.1996, c.4*. The Municipality of Hastings Highlands (MHH) The Establishing & Regulating By-Laws (E&R) was last updated in 2020 under By-Law 2020-012 which aligns with the expectations of the *FPPA*.

The E&R By-Laws are Council's direction to the HHFD and prescribe what services to provide. It is the municipal council's responsibility to set the level of service within a municipality.

It is recommended that these by-laws be reviewed annually, or as significant changes occur to the Municipality, to ensure that the noted service levels, service expectations, and authority of the Fire Chief are properly aligned with the needs of the community.

As part of any by-law update process, the draft should be vetted through the Municipality's Solicitor prior to going to council. It is further suggested that consideration be given to bring the E&R by-law forward to newly sitting councils every four years. This will allow new councillors to understand the level of service provided to the community and council's responsibility to adequately fund this set level of service.

Currently there is not a definitive response time expectation/criterion noted in the E&R By-law. The NFPA recommends that some type of assessment be completed to evaluate a baseline for a department's response time goal. This review will offer an understanding of how the Department has been performing, along with identifying areas for possible improvement in relation to station location and vehicle and staffing distribution. The E&R By-laws should reflect new legislation, changes in the types and level of response, fire prevention, public education, and training expectations.

By incorporating these guidelines and standards, the HHFD will be ensuring that staffing, training programs, fire prevention and public education initiatives, as well as response to the community adhere to industry best practices.

To assist the Fire Chief in meeting the needs and expectations of Council, the E&R By-law notes that the Fire Department shall respond to a variety of incidents designed to protect the lives and property of the inhabitants within Hastings Highlands. The following list of core services has been extracted from the 2020 E&R By-law.

APPENDIX "B" TO BY-LAW 2020-012

CORE SERVICES PROVIDED

1. Emergency Response

a. *Structural firefighting including limited internal rescue & fire attack in accordance with the Fire Departments level of training, operational guidelines, Ministry of Labour Occupational Health & Safety Guidance Notes and the number and types of personnel and equipment available to the department on each specific emergency response;*

b. *Emergency responses to water access properties including islands are not provided by HHFD;*

c. *Those properties accessed via private roads, private lanes, or private driveways subject to the following limitations:*

i. *The ability of such road, lane, or driveway to support and accommodate Fire Department equipment, vehicles, and apparatus; and*

ii. *The failure of the owner of the lands upon which the road, lane or driveway is located or the user of such road, land, or driveway to maintain such road, lane or driveway in a condition that is passable by Fire Department equipment, vehicles, and apparatus.*

Core services provided by the Fire Department shall be identified under seven main categories including:

a. *Vehicle firefighting*

b. *Grass, brush, and wildland fire fighting*

c. *Marine firefighting - defensive only- shore based*

d. *Standard First-Aid/CPR with AED*

e. *Hazardous materials - Awareness Level Only*

f. *Vehicle accidents*

g. *Traffic Control*

h. *Transportation incidents involving vehicles, aircraft and watercraft, ATV, & snowmobile*

i. *Water rescue - shore based*

j. *Public assistance*

k. *Other agencies assistance*

l. *High angle rescue - awareness only*

m. *Confined space rescue - awareness only*

n. *Trench rescue - awareness only*

o. *Mutual aid*

p. *Automatic aid*

q. *Participation in community emergency plan*

r. *Fire protection agreements*

s. *Joint service agreements*

t. *Ice rescue - awareness only*

2. Fire Prevention and Public Education

Fire prevention and public education activities shall be provided in accordance with the approved fire prevention policies.

Article 3 should be expanded to outline smoke and CO alarm programs along with the Public Education initiatives and the audiences they will be focussed towards. It should also identify which inspection frequency will be adopted, be it either FUS or NFPA 1730, which are very similar.

During the review process the revisions, should reflect such things as new legislation, changes to service provision, and training expectations. Consideration should also be given to including reference to such guidelines and standards as:

- Section 21 Guidelines for the Fire Services
- OFM Guidelines in relation to staffing and response recommendations, and
- Related NFPA standards that deal with:
    - Technical Rescue and HAZMAT response levels
    - Training
    - Fire prevention and public safety programs
    - Fire department response goals and objectives
    - Communications and vehicle dispatching

By incorporating these noted guidelines and standards, The Hastings Highlands Fire Department will be adhering to industry best practices, which in turn ensures that staffing, training programs, fire prevention initiatives and response to the community are meeting these guidelines and standards.

Second Suites By-Law

Second suites were permitted under the Province of Ontario's Housing Supply Action Plan which was developed to relieve some of the affordable housing shortages. Second suites are an important part of Ontario's rental housing landscape. They offer affordable housing solutions throughout the province. Second Suites are self-contained residential units which are generally allowed in single detached, semi-detached and row houses. They are also allowed in ancillary structures (i.e., garage, laneway house or garden suite).

Changes were made to the Planning Act in 2011[2] when the Government of Ontario passed new legislation (Strong Communities through Affordable Housing Act, 2011[3]). This legislation was made to promote the creation of second suites province wide. These changes, however, do not automatically legalize existing second suites nor allow new second suite constructs without a building permit. All secondary units that are built in Ontario must also meet the health, safety, housing, and maintenance standards. These standards include but are not limited to the Ontario Building Code, the Fire Code, and municipal property standards bylaws.

This by-law should be brought about so the Municipality will have the ability to inspect renovations or new constructions that encompasses a second suite. The regulation of fire safety, regarding second suites, was the result of tenants who were residing within basement units who were not able to escape when a fire arose inside which resulted in their death. The Municipality should also review opportunities to implement a means of reporting unregistered or illegally built second suites, such as an anonymous tip line.

A few points to be considered about second suites:

- Property owners may not understand their responsibilities regarding fire safety and fire code.
- HHFD should review its fire prevention and enforcement resources regarding adequate staffing to inspect all the second suite units in the Municipality.
- HHFD should establish and advertise a reporting method to identify possible illegal locations.
- Inground related dwellings (basements) which must meet Ontario Building Code and Ontario Fire Code standards, under the *Strong Communities through Affordable Housing Act*, 2011.
- Municipality should develop a stand-alone by-law that addresses second units.
- Most fires occur in residential units.

With these points in mind, the HHFD should work collaboratively with the Building Department and bring forth a by-law regulating second suites that includes the need for them to be licensed.

2 Planning Act, R.S.O. 1990, c. P.13 (ontario.ca), Accessed January 7, 2022,

3 Bill 140, Strong Communities through Affordable Housing Act, 2011 - Legislative Assembly of Ontario (ola.org), Accessed January 7, 2022

A Registry and Licensing By-Law of Short-Term Accommodations (STA)

The Municipality has seen an increase in its residential building stock that may be used as short-term accommodations. This generally indicates a large group of people have stayed in a residence that has been changed into a short-term accommodation. Some of these may have had interior renovations that do not meet the Ontario Fire Code (OFC) and may possibly be a fire risk.

With the Municipality of Hastings Highlands being a tourist area, these types of accommodations could be seen more commonly as business ventures. The owner/operators may not be aware of or compliant with the OFC requirements. Like any residential occupancy, working smoke and CO alarms are a must, and could be disabled by the clients.

The HHFD should work collaboratively with the Building Department to develop a by-law that addresses these STA's to examine the issues of second suites.

1.4 Fire Services Policies, Directives, & Standard Operating Guidelines (SOGs)

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

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

The Hastings Highlands Fire Department's SOGs are numerous, and to the credit of the Department staff, all were updated in 2021. The review of SOGs can be a very involved process and the Fire Chief should not take on this task independently. The establishment of an SOG Committee to assist with this endeavour would be a great asset to the Department in many ways.

- The SOGs would be updated and current on a regular basis,
- Staff are more involved in the Department's operations; and
- Provides a safer environment for members of the Department by ensuring that all members are made aware of the operating guidelines and related expectations.

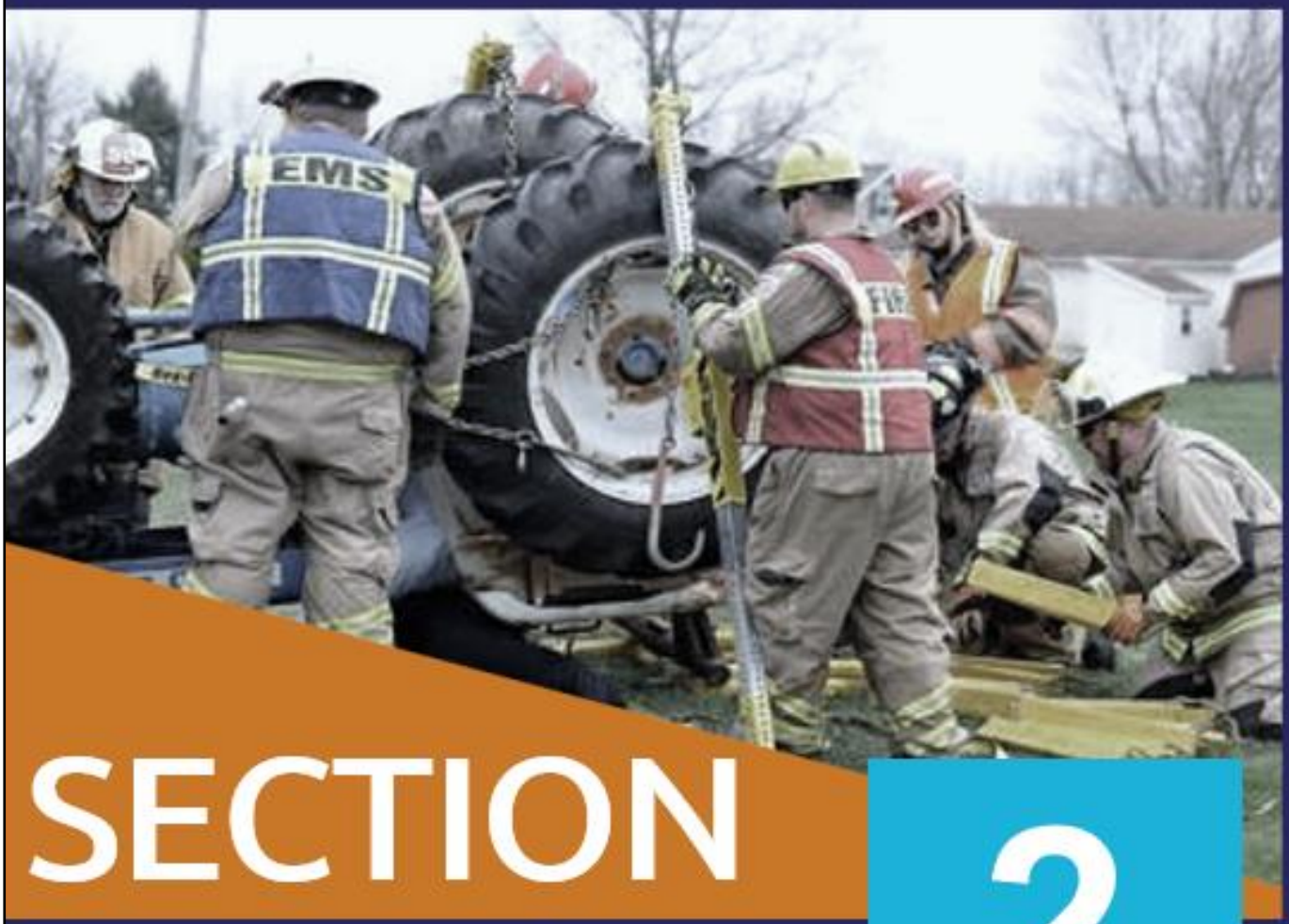
It is also suggested that the HHFD make their SOGs available on-line through a fire department portal, which would ensure that the staff have appropriate access to review them at their convenience. During its review, EMG found there are several SOGs in place that are not relevant to the operations of the HHFD and should be removed.

A good source of information in the development of department SOGs is the Section 21 Guidance Notes, that are kept current by a provincial team of fire service personnel. The Section 21 Committee is part of the *Ontario Health and Safety Act (OHSA)* initiative for firefighter safety. The NFPA Standards are also an excellent source of information. Any documents that are referenced in the development of an SOG should be identified within that document as having been referenced.

For a fire department to operate in a safe and efficient manner it is imperative that all members adhere to all policies, SOGs, and SOPs and those that fail to do so be held accountable.

Section 1: Recommendations

Rec #	Recommendations	Estimated Cost	Suggested Timeline
1	That the Fire Chief bring forth a revised version of the Establishing & Regulating By-Law for Council's approval and going forward the Fire Chief annually review and update, the By-Law as necessary. • And that all other by-laws noted in this document be reviewed and updated as required. All by-laws should be reviewed annually to ensure the currency of the documents.	Staff Time	Short-term (1-3 years)
2	That a Department SOG Committee be established. It is further recommended that the department's SOGs be reviewed and regularly updated.	Staff Time	Short-term (1-3 years)



SECTION 2

Risk Assessment Profile

SECTION 2: RISK ASSESSMENT

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

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

2.1.1 Strengths

- Hastings Highlands benefits from having six fire stations that are arranged into six response zones. This has worked well for the Fire Department in relation to responding to calls for service within the community.
- The HHFD has strong relationships with its partner emergency services (police and EMS), along with automatic aid agreements in place with other fire services to assist with general response needs.

2.1.2 Weaknesses

- The HHFD, as well as other volunteer fire services, depends on its team of dedicated volunteer firefighters for response to calls. This can be a challenge when it comes to having sufficient volunteer firefighters for responses.
- Due to other commitments, such as full-time jobs and family obligations, there is no guarantee the volunteer firefighters will be available or accessible to respond as required, which in turn can potentially result in low staffing levels on-scene.
- Many of the fire stations need upgrades to ensure they continue to meet the requirements in relation to equipment storage, shower facilities, and removal of firefighters' gear from diesel exhaust contamination.
    - Of the six fire stations, three are facing operational challenges.
- Currently, the Fire Chief is responsible for Administration, Training and Fire Prevention. There are VFFs who assist in ensuring training topics are being delivered at their respective fire stations. However, it is a struggle to ensure that training needs and expectations, outlined in such documents as the NFPA and the *Occupational Health and Safety Act,* are being presented and documented on a consistent basis.

- More training will be required, by all fire departments in Ontario, with the OFM implementation of the training standards and certification requirements for all positions, within the fire service.

2.1.3 Opportunities

- HHFD should continue engaging in partnerships with bordering departments for such things as joint training, cross border responses, mutual aid and fire service agreements that benefit both communities.
- Continuing to build on these partnerships will improve available options in relation to meeting future training and certifications requirements.
- Recommendations are being made in this report to consider the consolidation of fire stations to reduce costs, while continuing to provide a good level of service to the community.
- If a warranted recommendation is made to close a fire station, the recommendation needs to be considered and implemented regardless of reluctancy.

2.1.4 Threats/Challenges

- As the community's population continues to grow and age any major emergencies stressing the availability and the dependency on volunteer suppression staffing resources, as well as equipment, must be considered.
- A key challenge for the Department is the age of the fleet. Some of the vehicles have exceeded the industry standards suggested life cycles.
- The threat of climate change and impact on weather patterns is increasing challenge for communities to handle inclement weather incidents, such as freezing rain/ice storms. With inclement weather becoming more common, they need to be part of the emergency response program for each community.
- These changes in climate conditions, along with subsequent frequency and severity, has established the need for a larger response component to these emergencies.

All the noted weaknesses and challenges will be addressed in this document (within the related section).

2.2 Community Risk Assessment

The most effective ways to reduce injuries, death, and property damage due to fire is through public education, inspections, and enforcement. A proactive fire prevention program coupled with a current community risk assessment (CRA) will be able to identify and address these key components of community fire safety.

2.2.1 Community Risk Assessment Profile

The Province of Ontario Regulation 378/18 Community Risk Assessment (CRA) states, "a community risk assessment is a process of identifying, analyzing, evaluating and prioritizing risk to public safety to inform decisions about the provision of fire protection." Effective July 1st, 2019, the regulation states that every municipality shall complete a CRA by 2024 with renewal to occur every five years, thereafter. The municipality is required to review the document annually.

There are two fundamental risk categories associated with the fire service – operational risk and organizational risk. Operational risk is the responsibility of the Hastings Highlands Fire Department to determine the risks within its community and plan strategic, tactical, and task orientated plans to mitigate incidents. Organizational risk is a function and responsibility of Council to determine the disciplines, level of service, staffing, stations, and approval of the department business plan based on the overall risk assessment of the municipality.

It is the accumulation and analysis of the following factors that will assist in identifying and addressing potential risk scenarios that may be encountered:

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

Once these questions are answered, they will establish the basis for formulating and prioritizing risk management decisions to reduce the likelihood of these incidents from occurring and to mitigate the impact.

A CRA was completed as part of this FSR project. In developing the CRA there were several steps followed, in order of priority they include:

1. Identify Risks in the community considering the nine profiles.
2. Prioritize Risks based on probability and consequence levels.
3. Assign Risk Levels for each identified risk level.
4. Determine Risk Treatment Options for each identified risk.
5. Determine Fire Protection Services to be provided based on how risks will be treated.
6. Review the CRA annually and complete a new risk assessment every five years to ensure it accurately reflects risk in the community.

2.2.2 Municipality Community Risk Statistics

Even though a full CRA was part of this FSR development, it is beneficial to review the following information that was obtained from the OFM and the HHFD. The data offers an overview of the areas of concern within the Municipality of Hastings Highlands. For ease of review, the data has been listed from the highest to lowest level of concern. This information will assist the Fire Chief and staff with fire prevention and public safety awareness initiatives.

Fire Loss by Occupancy Classification

The analysis indicates that between 2015 to 2021 on average approximately 74% of the fires reporting a loss occurred in Group C - residential occupancies.

Municipality of Hastings Highlands, Fire Loss by Property Classification

Based on the information received, the following building classifications for property loss are listed in order of occurrence type:

- Group C – Residential occupancies
- Structures/Properties not classified by the Ontario Building Code
- Classified under the National Farm Building Code
- Group F – Industrial occupancies

Municipality of Hastings Highlands, Reported Structure Fire Cause

Assessing the possible cause of the fires reported is an important factor in identifying any potential trends or areas that may be considered for introducing additional public education or fire prevention initiatives as part of the community fire protection plan. The leading causes of structure fires were:

- Design/Construction/Maintenance Deficiency
- Undetermined
- Misuse of ignition source/material first ignited
- Mechanical/Electrical Failure
- Other unintentional
- Other

Municipality of Hastings Highlands, Ignition Source Class

The leading causes for ignition sources were:

- Undetermined
- Heating equipment, chimney, etc.
- Miscellaneous
- Electrical distribution equipment
- Other Electrical / Mechanical
- Cooking equipment
- Appliances
- Open flame tools, smoker's articles

After evaluating and reviewing the data there is a significant number of undetermined fires occurring in Hastings Highlands and the Fire Chief, as the Fire Prevention Officer, should monitor this situation. In the event additional resources are required in determining causes and ignition sources, such as supplemental training and the use of outside resources the Fire Chief would then be informed. These resources include the OFM, OPP, Electrical Safety Authority (ESA), and third-party investigators in conjunction with insurance companies.

To assist the Fire Department in its fire safety goals, it is recommended that the Fire Department staff meet with relevant local community groups to form a partnership for organizing fire safety and public

education events. These events can then be tailored to the unique needs and challenges within the community and can be based on the previous fire source information supplied. An example of a community group would be a local group that wishes to promote fire safety in the community or any local Lions Clubs (or other clubs) that want to support fire safety initiatives.

Within NFPA 1730, it breaks down how a fire service should evaluate and categorize the level of risk for each occupancy. By using this as a reference in assigning risk, it will aid the Department in what occupancies they need to focus their resources on fire inspections and enforcement as well as public education opportunities. These risk categories are:

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

Conducting a review of every building within Hastings Highlands may not be practical. Utilizing NFPA 1730 definitions of risk categories may guide council in deciding the focus and service level within the community. Council should determine, with input from the Fire Chief, an acceptable level of risk to manage within the community based on its needs and balanced with the circumstances to deliver the services.

2.3 Community Risk Overview

The following is an overview of the top risks identified by EMG that are facing Hastings Highlands. More detailed information can be found in the Community Risk Assessment document.

***Note:** *The following risks are not identified in the order of importance.*

Bodies of water – There are several lakes found in the Municipality. There is always the risk of incidents involving marine vessels, such as collisions, taking on water, and catching fire. SOGs will need to be brought in line with industry standards/regulations/legislation when responding to ice/water emergencies.

The HHFD has the ability to mitigate an ice/water rescue, to the shore-based level only. HHFD should review advantages of acquiring either an inflatable raft, or an airboat or hovercraft for the mitigation of ice rescues that are a distance offshore or in remote areas. If topography is flat the hovercraft might also be used on-land for the removal of parties from remote inland areas. A response agreement with a neighbouring fire department that does ice/water rescues to the operations level, should be implemented in the interim.

Radio System – A fully functional and reliable radio system is a requirement in today's fire service. Failing this may put the lives of the public and firefighters in peril. The HHFD's radio system has not been updated for many years and should be addressed as soon as possible. Many areas of Hastings Highlands have poor or no radio coverage, even though the system uses repeaters. A comprehensive radio audit needs to be completed that not only looks at coverage but the entire infrastructure. The current system works on the analogue platform whereby fire departments are moving to digital where ethe signals are mush stronger and reach a further distance.

The Hastings Highlands Fire Department currently receives its dispatching services from the Belleville Fire Department (BFD). There is the need to review the current level of service provided by the BFD when dispatching the HHFD to incidents.

Fire Stations – There are six fire stations of which three are not active due to either the lack of Firefighters, or the presence of black mold and structural issues. Electrical Safety Authority and Ministry of Labour orders have been issued to the Municipality over the condition/operations of the structures. An evaluation of each station is addressed in this Fire Service Review document.

Fire Department Fleet – A review of the Fire Department's fleet is also a concern when the age of the vehicles exceeds industry recommended standards.

Municipality of Hastings Highlands - New residential occupancies will bring an increase in populous both permanent and seasonal. With an increase in population there will potentially be an increased demand on fire inspections and public education events. The HHFD should review time spent and demands placed on fire prevention needs, which may require additional resources to meet the demand and industry standards.

Technical Rescues – Trench/ Confined Space/ High & Low Angle/ Ice Water. No formal agreement is in place with other fire services to mitigate some technical rescues. The MHH should enter into a response agreement with another fire department or third party for the mitigation of trench, low angle, and confined space rescues. At the very least, all Firefighters should be trained to awareness level for all technical rescues, and wherever possible to the operations level. The operations level provides the Firefighters greater ability to mitigate or stabilize the situation until more advanced technical rescue expertise can arrive on scene.

Weather Events – The Municipality and surrounding areas have experienced, a number, of severe storms and tornadoes over the past decade. Communities in the Province are now installing storm sirens such as seen in the United States. The District of Muskoka and the Muskoka Emergency Response Committee has launched the "#AlertMuskoka" app to notify residents of pending emergencies. The County of Hastings in cooperation with its municipalities should conduct a needs analysis if such an app would be advantageous.

Domestic Terrorism – Can occur in any community and include an active shooter, or even sabotage of municipal infrastructure such as water treatment plants and cyber attacks. Use *NFPA 3000, Standard for an Active Shooter/ Hostile Event Response (ASHER) Program,* as reference in conducting any public education on the subject. The Municipality in cooperation with the local OPP detachment may want to provide training any relevant training.

There are recreation-based resorts and camps in the MHH. These include camps that are faith based. There is always a risk of an attack on any one of them. The MHH should work with each camp in developing, implementing, and practicing an emergency plan in the event of an attack, based on NFPA 3000.

Industries – The forestry/logging industry could be of risk to the community. With a high fire load present, in the event of a fire occurring, may create a conflagration that becomes a wildland urban-interface fire requiring several outside resources to combat.

Road access to logging operations may be limited and fire apparatus which will create a delay in getting resources to the location of the incident.

Demographics – The Municipality has an increasing senior demographic that may eventually reside in a senior's residence. Currently, there is a lack of seniors' buildings within the community, however, with the senior population increasing the need for senior housing will also. These occupancies require annual inspections and fire drills. To properly complete a fire drill there needs to be a witness of the drill posted at each exit.

Building Stock - With existing and new residents living in the Municipality, there could be illegal second units and apartments. The MHH updated the current Zoning By-Law (2022) to allow additional dwelling units in detached dwellings and authorizes additional dwelling units in an accessory building to a detached dwelling. Second suites are expected to be built meeting the OBC and OFC requirements. The MHH should require each one be registered with the Municipality and inspected by HHFD fire prevention personnel.

There is also an unknown number of short-term accommodations in the Municipality. Currently, there is no by-law that regulates these accommodations and there are not any proposals set forth. The

owners of these establishments are advised that they must fall in line with municipal by-laws such as Property Standards and Open-Air Burning. A by-law should be considered to regulate this industry that also calls for the registration and fire inspections of these locations.

Building Stock/Light Weight Construction – The OFM has identified the risks associated with occupancies in which light weight construction (LWC) practices have been used. Municipalities are to inventory all building stock that includes the use of LWC practices. The HHFD and the Building Department should work in collaboration to developing an ongoing list of all building stock, based on the OBC Occupancy Classifications.

***Note:** Collecting this data is a mandatory requirement from the province, and failure to research and document the required information could result in the Municipality of Hastings Highlands facing significant fines. Once the building stock totals, including the sum of LWC, are gathered, the Municipality must insert the data into their CRA.*

2.4 Community Risk Reduction Plan

Once a CRA is completed and all risks have been identified the process of developing a Community Risk Reduction Plan (CRRP) begins. The recommendations noted in this FSR in combination with the recommendations noted in the CRA form the basis of a CRRP.

When properly applied, the CRRP coordinates emergency operations with prevention and mitigation efforts throughout the community and at the fire station level. Involvement of fire station personnel is critical for both gathering local risk data and performing activities necessary to implement the CRRP.

Aside from the main benefits to the community, the CRRP action plan can contribute positive impacts on the fire department. A CRRP improves firefighter and emergency responder safety and occupational health, along with reducing line-of-duty deaths. This is due in part to the enhancements in the number of fire inspections and public education events completed, enforcement of the OFC, and the reduction in the number of fires, resulting from these measures.

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

- The presence of new and emerging hazards, that are identified, and the risks managed, which makes the community safer.
- Declining budgets among fire departments and local governments, thereby better resource allocation.

- Rapidly changing community demographics.
- Community engagement.
- May avoid potential ramifications of hazards that were ignored or not fully addressed.
- Better defines the fire department's purpose and value within the community, beyond just fighting fires.

With the completion of the Community Risk Assessment and this Fire Service Review document. The Fire Chief now has the components needed for the Risk Reduction Plan.

There are several steps in the development of a CRRP:

Identification and Prioritization – Upon the completion of the CRA in which the various community risks were identified and the priorities determined, the results should be documented for use in the remaining planning process. The document does not need to be complex or complicated, but in a clear and concise format that enables the reader to understand the risks and those that should have the highest priority.

During this process consider the following:

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

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

During the development of the organizational review, there are five elements that should be included:

- *Education:* Determining the appropriate type and mix of educational messaging necessary to inform the public and effect behavioural change. More encompassing education through different mediums of social media.
- *Enforcement:* Identifying whether stronger enforcement is necessary or if newer codes and standards need adoption. Notification of the public on successful convictions through the justice system.

- *Engineering:* Determine whether there are engineering or technological solutions to address the identified risk(s).
- *Emergency Response:* Changes to the emergency response protocols, SOGs, SOPs, and policies to better meet a specific risk or need. This may require additional resources such as stations, apparatus, equipment, staffing, and/or enhanced levels of training.
- *Economic Incentive:* Identifying whether financial incentives will improve compliance or help increase awareness of community needs.

Prepare the CRRP – Once the risks are identified and prioritized and strategies and tactics determined for prevention and mitigation, it will be necessary to develop a written plan.

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

Monitor the Progress, Evaluate Your Findings & Modify the CRRP – The final step involves monitoring and evaluating the effectiveness of the plan and adjusting, as necessary. This will enable the organization to determine if they are achieving their desired goals and/or if the plan is or is not having an impact. Ongoing monitoring allows for plan modifications in a timely manner.

Having a successful CRRP will bring additional resources to the effort through partnerships within the fire department as well as the community it serves. The community-based approach increases public safety because of the collective work within the community to understand, assess, and provide inclusive solutions to community safety issues.

Section 2: Recommendations

Rec #	Recommendations	Estimated Cost	Suggested Timeline
3	That Hastings Highlands develops a comprehensive Community Risk Reduction Plan that falls in line with the Community Risk Assessment and the Fire Service Review recommendations.	Staff Time	Short-term (1-3 years) ongoing

SECTION 3

Fire Department Divisions

SECTION 3: FIRE DEPARTMENT DIVISIONS

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

3.1 Community Safety – Four Lines of Defence

Even though the Office of the Fire Marshal (OFM) community safety model revolves around three specific lines of defence - Public Education, Safety Standard and Enforcement, and Emergency Response. EMG views Emergency Management as the fourth, inclusive line of defence, and have added this into the overall concept of community safety.

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

4. Emergency Management – a municipality is legislated to have an emergency preparedness program to ensure the safety of the residents of the community by having a training, education, response, and mitigation plan in place for any possible emergency the community may encounter. More information on this topic can be found in Section 5.

Along with these four lines of defence, the following industry best practices help to inform a fire department of industry expectations. Neither the NFPA and/or the FUS are legislated

requirements, and do not have to be followed, but utilizing them to improve a community's fire service is encouraged by EMG.

3.2 National Fire Protection Association (NFPA) 1201

The National Fire Protection Association Standard 1201 – *Standard for Providing Fire and Emergency Services to the Public* makes note of the services that should be offered and how they are to be delivered based on the composition of an emergency service.

Section 4.3.5 notes:

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

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

To accomplish this, an FESO must ensure open and timely communications with the CAO and Governing Body (Council), create a service review for the organization. The FESO must also ensure there are mutual aid and automatic aid programs in place, along with an asset control system and maintenance program.

To provide an emergency service with a clearer focus on what the ultimate goals for emergency response criteria are, the NFPA suggests that response times should be used as a primary performance measure in emergency services. NFPA 1720 refers to goals and expectations for volunteer emergency services which have been incorporated into the evaluation of the emergency services' response and staffing needs. More discussion in relation to the NFPA1720 standard will be presented in Section 5.

3.3 Administration Division

A fire chief's role, in a large or small fire department, requires regular interaction of council, and senior corporate management. Responsibility for Fire Protection Services found in Part 2,

section 2, paragraph 6 (3), of the *Fire Protection and Prevention Act, 1997, S.O. 1997*, states that "A Fire Chief is the person who is ultimately responsible to the council of a municipality that appointed him or her for the delivery of fire protection services". It is based on this provincial legislation that the Fire Chief needs to communicate directly and regularly with the council of a municipality to satisfy the requirements of the role.

The Administration Division in the HHFD includes the Fire Chief, and a Deputy Fire Chief (which is currently unfilled, at time of this report). Although the Fire Chief is doing an admirable job at managing the day-to-day operations of the Department there is no doubt that more resources are required.

With the upcoming OFM training and certification requirements, to meet NFPA standards for all positions within the Department (being implemented in 2022), the training demands on all positions within the HHFD will increase based on the services the Department will be supplying. The additional training requirements and subsequent workload will very likely require a review of the position responsibilities and identify the following:

- The future need for a part-time Training Officer position to handle the new legislated training requirements, or at the very least ensuring that the new Deputy Chief has the resources and time to implement the required training, and
- There will be a need for administrative support or the investment and implementation of a more efficient records management system (to replace the present paper-based system) that all staff can utilize to input their training.

Currently EMG is not recommending more full-time staff, it is recommended that with the impending training and certification legislation, the Fire Chief will need to thoroughly monitor the present personnel's (whether full-time or volunteer) ability to manage the demands and increase in administrative record keeping.

3.4 Fire Prevention and Public Education

In relation to the 'Three Lines of Defence' presented by the OFM, public education is the first line of defence. The more resources assigned to this endeavour, the more proactive a community and fire department are, regarding fire safety. Fire prevention and public education are the foundation to creating a safe community and this should be the initial focus of a fire service, to create an effective, manageable education and awareness program.

Safety Standards and Enforcement is the second line of defence within the 'Three Lines of Defence', which involves preventing fires before they begin. A combination of public education

with safety standards and enforcement, are the most effective methods of reducing injuries and death associated with fires and associated emergencies.

NFPA 1035 Standard on Fire and Life Safety Educator, Public Information Officer, Youth Fire Setter Intervention Specialist and Youth Fire Setter Program Manager Professional Qualifications (section 3.3.11) identifies fire and life safety education as a "comprehensive community fire and injury prevention program designed to eliminate or mitigate situations that endangers lives, health, property, or the environment."

EMG has reviewed the data and daily operations in relation to prevention and public education. It was confirmed that the Fire Chief oversees all components of the program and is attempting to ensure that the basic OFM requirements of "request and complaint" inspections are addressed as time allows. However, there needs to be larger emphasis placed on the first two lines of defence within the community, which will then allow a better understanding of the value of fire prevention and home safety. Therefore, a plan should be developed to identify what other inspections can be reasonably accomplished by the Fire Chief, and what options are needed to address the other fire prevention-related concerns.

3.4.1 Investigations

The Ontario fire service is mandated to determine the origin and cause of fires. The results of these investigations assist in identifying trends which are used in the development of building and fire codes, public education, and fire prevention initiatives. Typically fire investigations are a part of the FPO's role. However, without a FPO on staff, this responsibility falls to the Fire Chief.

It is important to note that the current E&R By-Law (ref: 2020-012) does not identify the expectations of a fire investigation. As previously indicated, the precise prediction of workload and volume of structure fires, that require an investigation, is challenging. However, it can be stated that as a community grows it is reasonable to expect that incidents of fires will also increase based on individual causes.

3.5 Prevention and Public Education Related Opportunities

After conducting a review of the fire prevention programs, along with comparing recommended industry best practices (such as the NPFA and Fire Underwriters Survey (FUS)) and related legislation (Fire Protection and Prevention Act (FPPA)), EMG has determined that there are opportunities specific to fire prevention and public education that can be implemented. These implementations will ensure HHFD matches community current needs, while planning for future growth.

3.5.1 Prevention Opportunities

The workload relating to fire prevention is consistently increasing as HHFD attempts to address the matters of required inspections/enforcement, incident investigations, ad hoc special projects, and public education programming. Given the FSR and assessment process, there is a need for the Fire Chief to place greater emphasis on inspections, enforcement, and reviews.

Through the utilization of the FUS Inspection Frequency Chart (Table #2), the Fire Chief can measure requirements to meet inspection benchmarks, developing a plan with what can be accomplished with its present staffing complement, along with presenting options for increasing inspection frequencies.

TABLE #2: FUS Suggested Inspection Frequency Chart

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

It is acknowledged that the FUS suggested frequency chart can be difficult to address, therefore priority should be focused on the vulnerable occupancies (e.g., nursing homes, retirement homes, group homes, etc.), institutional buildings, assemblies, multi-residential, and industrial buildings. The fire prevention division has made significant efforts to address most of these occupancies.

By continuing to identify the time spent on each project and collating this into approximate baseline times, as this report has attempted to illustrate, the Fire Chief can then use the hours spent as a model figure in applying future initiatives.

The Fire Chief is encouraged to review the number of inspections and associated orders/fines issued on the concept of recidivism; that by which businesses are requiring more inspections, more follow-up, and therefore more time of the Fire Chief, versus those which require minimal assistance or interaction.

Consideration should be given to joining with a neighbouring municipality in sharing a Fire Prevention Officer to ease the workload on the Fire Chief.

3.5.2 Public Education Opportunities

The Fire Chief, with the assistance of the Volunteer Firefighters, is also the Public Educator and is responsible for running education activities and creating and/or delivering education programs. HHFD is committed to delivering a full array of fire prevention services and public education programs with available resources. To accomplish this, some fire departments have trained suppression staff to conduct inspections or assist in public education. This not only brings more resources to the table but also enhances the level of fire safety awareness by those trained staff.

The utilization of existing resources is a cost-effective option for the promotion of fire prevention and public education programs. It also helps to create a more engaged team, by making them more a part of the community fire safety initiatives. Not all volunteer firefighters need to be trained to conduct inspections and/or public education. This can be offered to the members as a voluntary (but paid) option. Alternatively, a part-time position could be considered for the development and execution of public education programming. Utilizing a fully trained and certified staff in this regard would address the importance of proactive education in developing community fire and life safety behaviours.

Utilising partnerships with local businesses, media outlets, and other municipal entities such as the library can aid in the delivery of this public education programming. It is advisable that increased efforts to leverage social media platforms and the development of partnerships with

internal and external stakeholders would support advancement of public safety messaging campaigns.

3.6 Residential Fire Sprinklers and Monitored Fire Alarm Systems

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

The NFPA, along with the Ontario Association of Fire Chiefs, are strong supporters of residential sprinkler systems to reduce the risk to life and property from fire. In a recent NFPA on-line article, it was noted that because fire sprinklers react so quickly, they can dramatically reduce the heat, flames, and smoke produced in a fire. Properly installed and maintained fire sprinklers help save lives, reduce damage, and make it safer for firefighters.

Facts About Home Fire Sprinklers

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

Automatic sprinklers are highly effective and reliable elements of total system designs for fire protection in buildings. According to an American Housing Survey, 10% of occupied homes (including multi-unit) had sprinklers in 2010-2014, up from 4.6% in 2009.

Source: U.S. Experience with Sprinklers[4]

- 85% of all U.S. fire deaths occur in the home.
- The civilian death rate of 1.4 per 1,000 reported fires was 81% lower in homes with sprinklers.
- The civilian injury rate of 25 per 1,000 reported fires was 31% lower in homes with sprinklers. Many of the injuries occurred in fires that were too small to activate the sprinkler or in the first moments of a fire before the sprinkler operated.

4 NFPA report - U.S. Experience with Sprinklers, Accessed April 15, 2022, https://www.nfpa.org/News-and-Research/Data-research-and-tools/Suppression/US-Experience-with-Sprinklerss

- The average firefighter injury rate of 13 per 1,000 reported home fires was 79% lower where sprinklers were present.
- Where sprinklers were present, flame damage was confined to the room of origin in 97% of the fires compared to 74% of fires without sprinklers.
- In 2021 some fire safety statistics[5] were released which includes:
- Fire sprinklers reduce the risk of death in a home fire by 80%.
- The risk of property loss is reduced by 70% in homes with sprinklers.
- A sprinkler installation typically costs 1-2% of a home's total construction cost. In Canada it has been found that due to the high costs of building materials due to the pandemic and pushback from some trades, the estimated costs vary from $5 to $10 / sq. ft.
- Fire sprinklers activate on an individual basis.
- Fire sprinklers release less water than fire hoses.

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

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

Presenting a demonstration at community events would assist in educating the public on the benefits of having sprinklers in the home. A practical demonstration will provide a very graphic visual image of their effectiveness.

Another key component to saving lives and property is early fire detection and monitoring. If the residents are not at home when a fire occurs, it may be some time before it is noticed and reported to the fire department. By that time, there could be significant fire involvement resulting in high property loss. The continuous monitoring of a fire alarm system by a third party

5 The Latest Fire Safety Statistics - Stay Safe in 2021 (safeatlast.co), Accessed April 15, 2022, https://safeatlast.co/blog/fire-safety/

will ensure constant surveillance of alarm systems and the prompt notification of an alarm to the fire department.

3.7 Training and Development

A fire department can only provide effective community safety through the delivery of service levels if firefighters are properly trained and equipped to deliver those services. As a fire department grows with the expanding and/or changing needs of the community, the delivery of necessary services also expands.

The industry standards and legislations are intended to establish standards of performance concerning fire protection services and to improve the health and safety of firefighters. It is important to note that volunteer firefighters (paid-on-call) must be provided with the same minimum training competencies and equipment as any full-time firefighters.

The Fire Protection and Prevention Act, 1997 (FPPA) identifies the responsibilities of a municipality regarding fire protection services:

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

To that end, Ontario municipalities adopt an Establishing and Regulating Fire Department By-Law (E&R By-Law) identifying the level of services to be provided based on needs and circumstances. The E&R By-Law informs the fire department about the type and level of training required. In the summer of 2022, Ontario Regulation 343/22 Firefighter Certification under the FPPA came into force, identifying that any firefighter performing a fire protection service is certified, at a minimum, to the corresponding certification standard set out in the regulation:

- 2 (1) Every municipality, and every fire department in a territory without municipal organization, must ensure that its firefighters perform a fire protection service set out in Column 1 of Table 1 only if, on or after the corresponding day specified in Column 3 of that Table,
    - (a) the firefighter performing the fire protection service is certified, at a minimum, to the corresponding certification standard set out in Column 2 of that Table.

In addition, Part III of the Occupational Health and Safety Act identifies the duties of employers stating that:

- 25 (2) Without limiting the strict duty imposed by subsection (1), an employer shall,
  - (a) provide information, instruction and supervision to a worker to protect the health or safety of the worker;
  - (c) when appointing a supervisor, appoint a competent person;
  - (h) take every precaution reasonable in the circumstances for the protection of a worker

Complementing the Occupational Health and Safety Act are the Section 21 Firefighter Guidance Notes that provide best practices for protecting the health and safety of fire service workers in Ontario. Of particular importance to training is Part 7 of the Guidance Notes which focuses on training.

Furthermore, NFPA 1201, Standard for Providing Fire and Emergency Services to the Public identifies that:

- 4.11.1 The Fire and Emergency Services Organization (FESO) shall have training and education programs and policies to ensure that personnel are trained, and competency is maintained to effectively, efficiently, and safely execute all responsibilities.

Finally, training services should familiarize themselves with the NFPA 1401 *Recommended Practices for Fire Service Training Reports and Records*. NFPA 1401 identifies the elements of training documents; the types of training documents required; the evaluation of training record systems; and the legal aspect of record keeping. With the introduction of O.Reg. 343/22 Firefighter Certification in Ontario,

NFPA 1401 identifies that – 4.1.3 Compliance with mandated training requirements should be documented.

The responsibility for fire department training and development typically falls under the scope of the Chief of Training/Training Officer. Hastings Highlands BYLAW 2020-012: *Establishing and Regulating a Fire Department* (BYLAW 2020-012) provides an organization chart that includes a Training Division with a Training Captain and 5 training officers (one for each of the five stations identified).

However, a review of training services revealed that the Department does not currently have a Training Division or a Training Captain. The Training Division activities/duties are performed by

the Fire Chief. Training programs are then passed on to officers at each station for the delivery of training. A training matrix was developed by the Fire Chief for specific modules to be taught on a weekly basis during training hours.

The matrix is comprised of external training and internal training curricula. Furthermore, the matrix divides training in four categories, including IFSTA Chapters; Hastings Highlands Specific Training; Additional Training Topics; and New Employee Additional Courses. Training is suppression orientated apart from the New Employee Additional Courses section, which covers topics such as policies and operational guidelines.

The matrix does not address training needs specific to professional development of Prevention, Fire Investigation, Public Education, or Fire Officer functions or positions. Furthermore, the current training matrix does not address competency training for all levels of services identified in By-Law 2020-012, such as technical rescue, fire prevention, and public and life safety education. For instance, it does not appear that HHFD is ensuring that the minimum levels of technical training are being met. There are no training curricula, and the annual training matrix does not currently have slotted times to provide basic training at the awareness level for technical rescue and other levels of service prescribed in the HHFD Establishing and Regulating by-law.

The current training matrix is an excellent initiative developed by the Fire Chief as a starting point to address training inadequacies. However, more needs to be done to either ensure that training to all noted levels of service identified in the E&R By-law are addressed, or that the E&R by-law be updated to reduce the levels of services being provided by the Department.

EMG also recommends consideration be given to hiring a dedicated Training Officer position (whether on part-time or stipend remuneration system) to assist with development of curricula, the delivery of training, development and implementation of a Learning Management System, and training records management. The current FirePro software has the capability to be an efficient and effective training record management tool. Therefore, no other software is required at this time.

However, with the elimination of the administrative assistant position, records management has been substantially limited and needs to be addressed. The addition of a dedicated training officer would considerably improve the current training records management functions.

Finally, with respect to record management practices, EMG would recommend a review of current HHFD training related Standard Operating Guidelines (SOGs), which do not align with the current structure of the fire department or its current practices.

As previously identified, the Office of the Fire Marshal (OFM) has moved towards mandatory NFPA-based training and certification for all firefighters in the province. Adoption of the NFPA Pro-Quals will strengthen and support the HHFD training program as well as ensure that HHFD complies with OFM mandates. According to BYLAW 202-012, NFPA Pro-Quals believed to be aligned with the mandatory training and certification are as follows:

- *NFPA 1072* Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications.
- NFPA 1001 Standard for Fire Fighter Professional Standard Qualifications.
- NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications.
- NFPA 1006 Standard for Technical Rescue Personnel Professional Qualifications.
- NFPA 1021 Standard for Fire officer Professional Qualifications
- NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner.
- NFPA 1033 Standard for Professional Qualifications for Fire Investigator.
- NFPA 1035 Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist and Youth Firesetter Program Manager Professional Qualifications.
- NFPA 1041 Standard for Fire and Emergency Services Instructor Professional Qualifications.

Factors to Consider in the Delivery of Training

There are three over-arching factors when delivering training to firefighters:

1. Initial training: The training required to meet the competencies identified by the AHJ.
2. Refresher (maintenance) training: Training that is ongoing and keeps firefighters current with their skills. This ongoing training is provided to firefighters and officers to ensure that previously acquired competencies are not lost or diminished with lack of use.
3. Advanced training: The training used to develop firefighters for the promotional process and succession planning. Courses and training are offered as part of their developmental process to prepare them and typically requires more time and effort on behalf of the firefighter. This training generally includes formal fire officer, fire prevention, fire investigation and fire education programs.

To verify, in a formal manner, that the delivery of training is meeting the related NFPA Pro-Quals training competency mandated through O.Reg. 343/22 Firefighter Certification, the delivery of training must identify the following:

- What training programs are required in relation to the services that the fire department is providing.
- The number of hours that are required to meet each of the required competencies identified in the regulation.
- Resources required to accomplish this training not limited to adequate curricula and qualified training instructor(s).
- Joint partnerships with bordering fire departments and private organizations that can be entered into to achieve the training requirements identified.
- An annual program outline, at the start of each year, to be presented to the Fire Chief, with noted goals and expectations, which are based on current and identified future needs of the fire department, measured and reported-on regarding completion success rate at the end of each year.
- Robust and accessible training records.

With an increase in training requirements, as well as with consideration to future community growth, foreseen increase in call volumes, and implementation of a robust training records management system, restructuring HHFD training program to include a Training Officer position would ensure that HHFD will be able to meet the current and future training demands. For the present time the responsibility for overseeing training could also be assigned to the new full-time Deputy Fire Chief position. This will help the department in meeting the new provincial regulation pertaining to training and certification requirements. Eventually this Training Officer position could become a part-time (15-20 hours per week) to a full-time position, if required.

Consideration (for a full-time dedicated training officer position) would have to be given not only to the general hours of work, but also in relation to such things as:

- If expected to respond to calls outside of scheduled hours of work
- Evening training programs and practical evaluations
- Attendance at outside courses

3.8 Training Facilities

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

While HHFD does not have a training centre within its municipal boundaries, EMG noted that sharing of resources and partnering in training with surrounding fire departments is not a common practice. The opportunity to share training costs and resources, not to mention the opportunity to standardize training and equipment through the local mutual association is an unfortunate loss. The option to share training costs and resources would ensure that HHFD continues to be successful at ensuring NFPA-based training and certification is met.

As an alternative to the cost of designing, developing, and maintaining a training centre, which can be cost prohibitive for a community like the Municipality of Hastings Highlands. EMG suggests that HHFD take the opportunity provided by the OFM in booking their free service of the provincial Multi-Live Fire Training Unit (MLFTU); a mobile training unit that has multi-training capabilities (as noted in the following figure). The advantage of having access to such a unit is that it can be parked at a fire station and does not require a full site-specific yard/compound to use. Another advantage of such a unit is that it can be moved between fire stations. There are minimal operating costs associated with the use of the provincial MLFTU.

As an alternative, HHFD may consider purchasing such a training unit. The cost of these units can range greatly based on if it is purchased through a vendor or is an in-house design. The advantages of purchasing from a vendor is that all structural and engineering approvals have been addressed. The unit noted in the following photo is approximately $500,000.

The range of building such a unit can range from approximately $100,000 to $500,000. Brant County Fire Department recently purchased a used unit for less than $100,000 and may be a good source for the HHFD Fire Chief to contact. Whether it is a used, rented or wholly purchased unit, the overall goal is to ensure that the firefighters are provided with live fire training on an annual basis.

FIGURE #3 - OFM MULTI-LIVE FIRE TRAINING UNIT

3.8.1 Small-Scale Training Facility

There is also the possibility of a "public-private" partnership that may be possible where funding is secured between the Municipality and third-party agencies that have a vested interested in fire suppression training.

A growing trend for training facilities is the use of shipping containers (also called sea-cans) due to the ease and flexibility of modifying the shipping container to design a facility that meets the NPFA 1402 Standard on Facilities for Fire Training and Associated Props**.** The use of shipping containers allows a fire department to custom design a facility that specifically meets their needs and allows expansion at a low cost in the future (Figure #4).

A two or three-storey structure for ladder training and firefighter emergency exiting such as bail out procedures from a second storey window can easily be accommodated with a shipping container training structure. A propane fed system can provide environmentally friendly fires for suppression and advanced training in fire behaviour. The designs are limitless in terms of what a department wants to incorporate into the facility and an analysis of what the fire department requires must occur to ensure that taxpayers' dollars are spent in the most efficient and cost-effective manner. EMG noted that the Municipality of Hastings Highlands owns land in the town of Maynooth that could accommodate such training facility. While considering the

possibility of new fire station locations, it may be cost-effective to build a small-scale training facility at the same time while ensuring the necessary space is considered for this new facility.

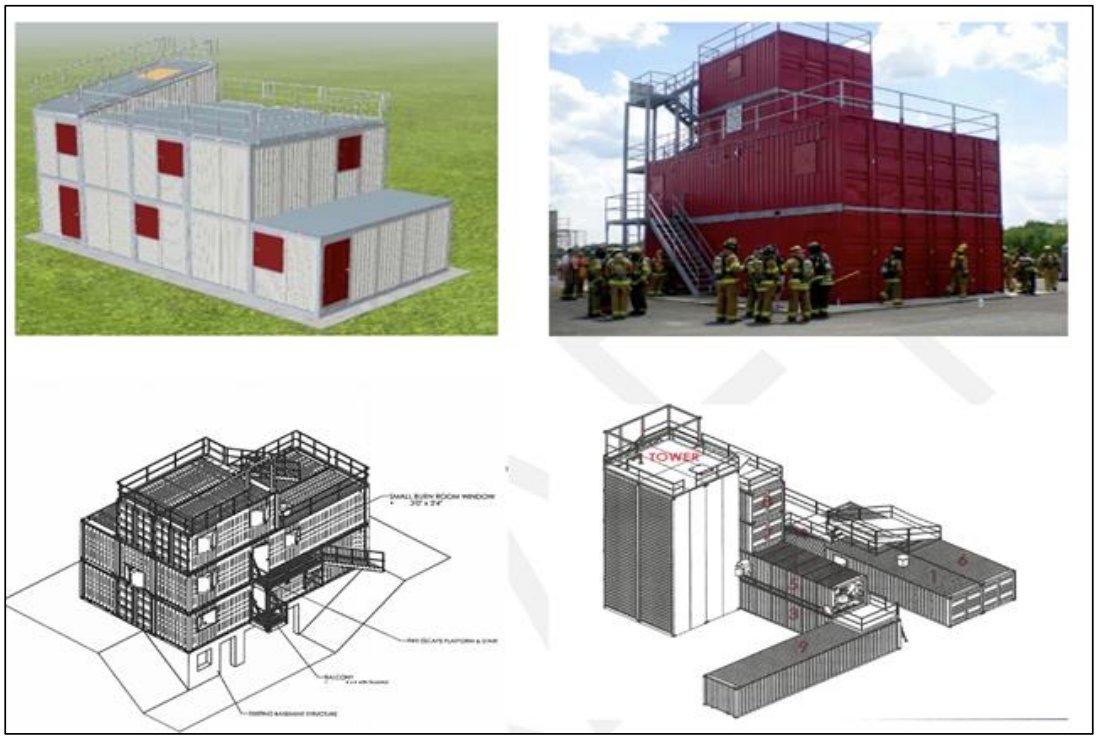
***Note:** Prior to the building of such a facility, the Fire Chief would need to ensure that all environmental requirements are met by the contract. This could include the installation of proper run-off, catchment systems for contaminated water, and a properly engineered foundation for the facility.*

The benefits of the hands-on practical component of a small-scale training facility are numerous as firefighters can develop new skills, maintain existing skill sets and gain confidence in equipment and tactical strategies. The practical training improves firefighter safety and reduces work related injuries. Live fire training is an invaluable training tool to improve a firefighter's skills and confidence. This is especially valuable for smaller fire departments with limited number of structure fires to maintain their skills to ensure adequate responses to reduce or eliminate loss of life and property damage.

An often-overlooked aspect of a training facility is building situational awareness in fire officers. The fire officer is responsible to minimize the loss of life and property and to ensure that firefighters on scene are safe. A fire officer must conduct a rapid assessment of the situation during times of stress and while countless bits of information are bombarding the officer. The ability to make good decisions is based upon Recognition Primed Decision Making (RPDM) process. As indicated above, these factors are of key importance for the fire department as the number of structure fires is low volume and regular exposure to live fire training ensures that firefighters and officers can maintain their skills.

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

FIGURE #4 - TRAINING FACILITY EXAMPLES



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

- A satellite centre that can offer certified NFPA 1001 firefighter related training, as well as all other mandated training under O.Reg. 343/22 as per HHFD levels of service prescribed in By-law 2020-012.
- A significant cost savings for the FD as they can provide improved training for all volunteer firefighters without them having to travel.

Such a facility could also be rented out to other fire departments, which could create a revenue investment for the Municipality.

3.9 Staff Development

For staff to obtain the necessary knowledge, skills, and experience it is recommended that a clear understanding of how the progression through the ranks should occur. It is the sole responsibility of

council as the authority having jurisdiction (AHJ) to determine the level of training, qualification and or certification of its firefighters and officers at each of those positions. These decisions would be based on information provided by the Fire Chief.

With the passing of Ontario Regulation 343/22 made under the Fire Protection and Prevention Act, 1997, sub-section 2 (1) states:

> "*Every municipality, and every fire department in a territory without municipal organization, must ensure that its firefighters perform a fire protection service set out in Column 1 of Table 1 only if, on or after the corresponding day specified in Column 3 of that Table*".

According to By-law 2020-012 prescribed levels of service, Figure #5 sets out the mandatory fire protection services that applies to HHFD under the regulation. A review of HHFD staff training and development and how it meets the requirements as noted in Figure #5 should be conducted by the Fire Chief.

FIGURE #5 - MANDATORY CERTIFICATION FOR FIRE PROTECTION SERVICES

Item	Fire Protection Service	Minimum Certification Standard	Compliance Deadline
1.	**Firefighter Exterior Attack:** Fire suppression operations from the exterior of the building only.	The following job performance requirements of NFPA 1001, "Standard for Fire Fighter Professional Qualifications", 2019 Edition, Chapter 4 (Firefighter I) and Chapter 5 (Firefighter II): 4.1, 4.2, 4.3.1, 4.3.2,4.3.3, 4.3.6, 4.3.7, 4.3.8, 4.3.10 (A1-A9, B1-B3, B4 (exterior stairway), B5-B10), 4.3.15, 4.3.16, 4.3.17, 4.3.18, 4.3.19, 4.3.20, 4.3.21, 4.5 5.1, 5.2, 5.3.1, 5.3.2 (A1-A4), 5.3.3, 5.3.4, 5.4.2, 5.5.3, 5.5.4, 5.5.5	July 1, 2026
5.	**Firefighter Interior Attack:** Fire suppression operations that enter the interior of the building and can perform rescue.	All job performance requirements in item 1 and the following job performance requirements of NFPA 1001, "Standard for Fire Fighter Professional Qualifications", 2019 Edition, Chapter 4 (Firefighter I) and Chapter 5 (Firefighter II): 4.3.4, 4.3.9, 4.3.10 (A10-A11, B4 (interior stairway), B11), 4.3.11, 4.3.12, 4.3.13, 4.3.14 5.3.2 (A5-A9, B1-B6)	July 1, 2026

Item	Fire Protection Service	Minimum Certification Standard	Compliance Deadline
9.	Team Lead Exterior Attack: Supervision of firefighters that provide fire suppression operations from the exterior of the building only.	All job performance requirements in item 1 and the following job performance requirements of NFPA 1021, "Standard for Fire Officer Professional Qualifications", 2020 edition, Chapter 4 (Fire Officer I): 4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3	July 1, 2026
13.	Team Lead Interior Attack: Supervision of firefighters that provide fire suppression operations from the interior of the building and can perform rescue.	All job performance requirements in item 5 and the following job performance requirements of NFPA 1021, "Standard for Fire Officer Professional Qualifications", 2020 edition, Chapter 4 (Fire Officer I): 4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3	July 1, 2026
18.	Pump Operations Driver: Driving and operating a pumper apparatus that requires a class D licence.	All job performance requirements in NFPA 1002 "Standard for Fire Apparatus Driver/Operator Professional Qualifications", 2017 Edition, Chapter 5 (Apparatus Equipped with Fire Pump).	July 1, 2026

Item	Fire Protection Service	Minimum Certification Standard	Compliance Deadline
19.	**Fire Prevention/Inspection Level I:** Conducting fire and life safety inspections.	All job performance requirements of NFPA 1031, "Standard for Professional Qualifications for Fire Inspector and Plan Examiner", 2014 Edition, Chapter 4 (Fire Inspector I).	July 1, 2026
20.	**Fire Prevention/Inspection Level II:** Conducting fire and life safety inspections including in facilities that store, handle, or use flammable/combustible liquids.	All job performance requirements in item 19 and NFPA 1031, "Standard for Professional Qualifications for Fire Inspector and Plan Examiner", 2014 Edition, Chapter 5 (Fire Inspector II).	July 1, 2026
21.	**Fire Investigator:** Conducting fire cause and origin investigations.	All job performance requirements of NFPA 1033, "Professional Qualifications for Fire Investigator", 2014 Edition, Chapter 4 (Fire Investigator).	July 1, 2026
22.	**Fire and Life Safety Educator:** Providing fire and life safety education.	All job performance requirements of NFPA 1035, "Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist, and Youth Firesetter Program Manager Professional Qualifications", 2015 Edition, Chapter 4 (Fire and Life Safety Educator I).	July 1, 2026

Item	Fire Protection Service	Minimum Certification Standard	Compliance Deadline
23.	Training Officer Level I: Providing training and education to other fire personnel.	All job performance requirements of NFPA 1041, "Standard for Fire and Emergency Services Instructor Professional Qualifications", 2019 Edition, Chapter 4 (Fire and Emergency Services Instructor I).	July 1, 2026
24.	Training Officer Level II: Providing training and education to other fire personnel including lead instructor roles at live fire and above or below grade technical rescue practical training.	All job performance requirements in item 23 and NFPA 1041, "Standard for Fire and Emergency Services Instructor Professional Qualifications", 2019 Edition, Chapter 5 (Fire and Emergency Services Instructor II).	July 1, 2026
27.	Incident Safety Officers: Undertaking the primary role of incident safety officer at emergency calls.	All job performance requirements of NFPA 1521, "Standard for Fire Department Safety Officer Professional Qualifications", 2020 Edition, Chapter 5 (Incident Safety Officer).	July 1, 2026

In addition to the mandatory certification for fire protection services prescribed in Ontario Regulation 343/22, EMG recommends that the following suggested level of training be implemented by HHFD to ensure that fire protection services positions not identified in the regulations receive relevant quality training.

District Chief

The position of District Chief for HHFD is one that represents the third level as a supervisory position within the organization. With this position comes the greatest responsibility at the district chief level. Working with the Fire Chief and/or the Deputy Chief with strategic leadership in mind he/she provides oversight, status updates, repair needs and recommendations to improve operations, training, apparatus and equipment and station needs.

EMG believes that there is great opportunity with the establishment of a Fire Leadership Team, comprising of Fire Chief, Deputy Chief, and District Chiefs. With operational leadership in mind, EMG recommends that HHFD consider certifying their District Chiefs to NFPA 1021 Fire Officer Professional Qualifications - Level 2 (Fire Officer II). Fire Officer II provides excellent competence-based training with knowledge and skills requisites for officers to perform their duties effectively and efficiently at the supervisory/ managerial level within their fire department.

EMG suggests that the Incident Safety Officer mandatory certification identified in Figure #5 should apply to the District Chief positions within HHFD.

Deputy Chief

The position of Deputy Chief is one that would represent the second highest rank within HHFD. In the absence of the Fire Chief, the Deputy Chief plans, organizes and directs departmental operations with respect to equipment, apparatus, and personnel[6]. Having oversight of two divisions and representation on the fire leadership team. NFPA 1021 Fire Officer Professional Qualifications - Level 3 (Fire Officer III) focuses on Human Resources Management, Community and Government Relations, Administration, Inspection and Investigation, Emergency Services Delivery, Health and Safety and Emergency Management.

EMG believes this level of education is a perfect fit for this level within the organization. As a pre-requisite for certification to Fire Officer III, the candidate is requiring successful completion and certification to Fire Officer II, Fire Instructor I and Firefighter II.

[6] HHFD Deputy Chief Job Description dated 2018-11-13

Fire Chief

Currently general job responsibilities for the Fire are available in the Establishing & Regulating By-law 2020-012, including sections 6, and 9 through 18. Detailed descriptions of roles and expected performance measures need not be identified within the By-law so they can be updated by the Fire Chief and Human Resources as needed without having to bring the by-law back to Council for approval.

Professional development plan for the fire chief position should encompass, prevention training to at least fire inspector level 1 aligning with NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner, Fire instructor level 1 aligning with NFPA 1041 Standard for Fire and Emergency Services Instructor Professional Qualifications, Incident Safety officer from NFPA 1521 Standard for Fire Department Safety Officer Professional Qualifications, and Fire Officer 4 aligning with NFPA 1021 Standard for Fire Officer Professional Qualifications.

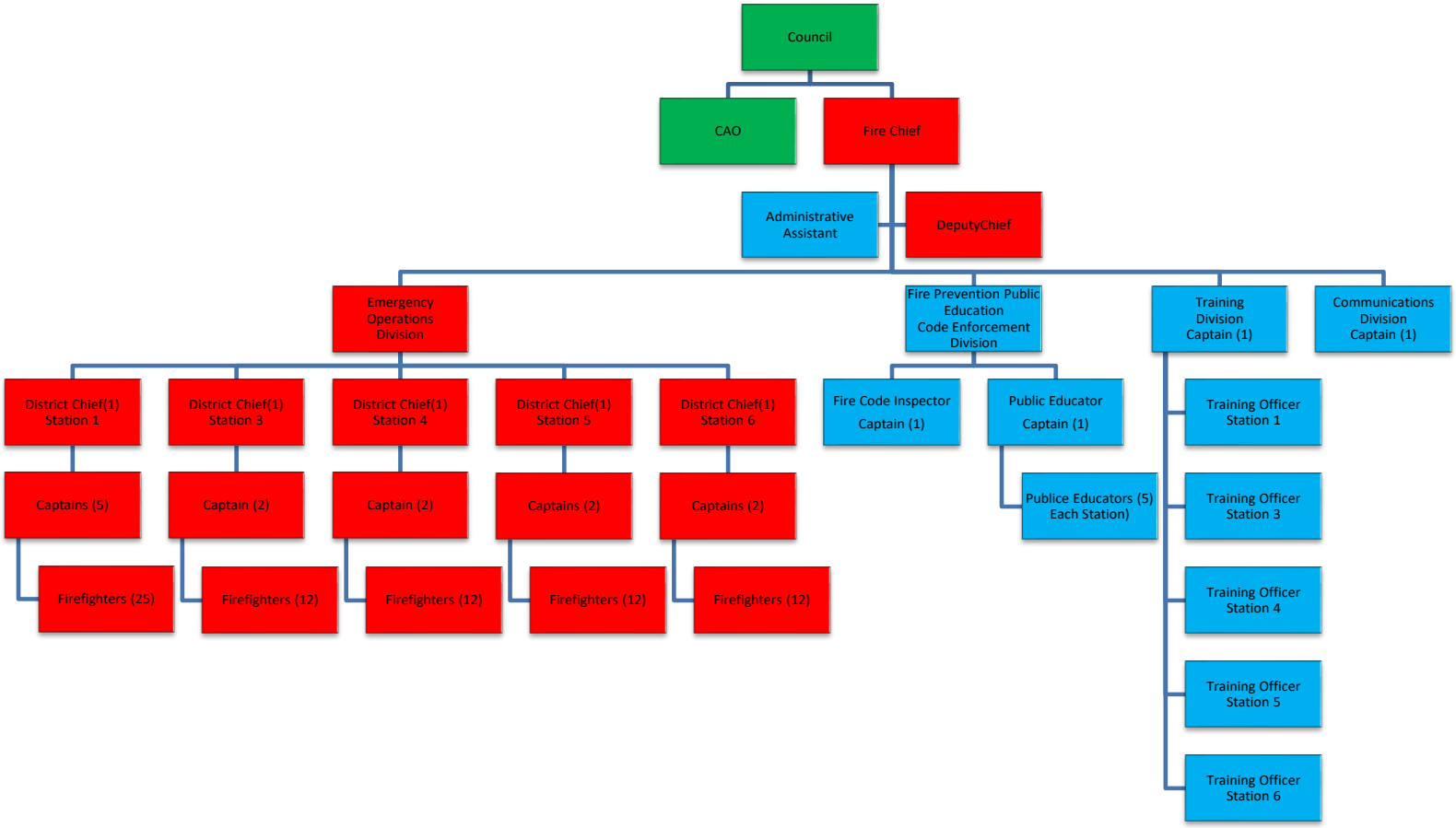
Developing job descriptions with a list of the expected minimum technical job competencies and responsibilities, as well as the core corporate competencies and responsibilities, along with continuous professional learning for each of those positions is an essential step towards succession planning. The NFPA Professional Qualifications Standards listed above are recommended by the OFM and meet the competencies prescribed in HHFD job description documents for all current positions.

The dynamics of today's fire service require a high level of education and experience to meet the demands placed upon the position. You cannot implement a career development program without considering education and experience as both go hand in hand.

Appendix "A" to By-law 2020-012 identifies the organizational chart for the Hastings Highlands Fire Department. The organizational chart indicates that HHFD has a Fire Prevention Public Education Code Enforcement Division, a Training Division, and a Communication Division in addition to its suppression (Emergency Operations Division). The chart identifies a prevention position, a public educator position, several training officers' positions, and a communication position. There are no job descriptions for these positions, as well as no hiring criteria or promotional criteria. Further, By-law 2020-012 identifies the duty of a fire investigator, for which no job description exists.

This organizational chart should either be updated to reflect the actual structure that the Department is operating under, or plans need to be in place to ensure that the noted position are filled, and job descriptions are included.

FIGURE #6 - HHFD ORGANIZATIONAL CHART FROM BY-LAW 2020-012



EMG noted that currently there is no established succession planning/promotional process in place for a firefighter to advance to captain or district chief, as well as management positions within the department. EMG recommends that in the long-term, the creation of such a promotional process. This can be based on the OFM Training and Certification process and internal job descriptions.

3.10 Fire Suppression/Emergency Response

The HHFD is a composite fire department in that it has both career and volunteer firefighters. The career contingent consists of the Fire Chief and Deputy Fire Chief with the fire suppression division comprising of volunteer firefighters dispersed amongst the six fire stations. For the HHFD, the NFPA standard that relates to the emergency response of the Department is 1720 - *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments.* This NFPA standard notes the following operational goals:

- Staffing and Deployment
    - 4.3.1 The fire department shall identify minimum staffing requirements to ensure that the number of members that are available to operate are able to meet the needs of the department.
    - 4.3.2* Table 4.3.2 (noted here on page 76) shall be used by the AHJ to determine staffing and response time objectives for structural firefighting, based on a low-hazard occupancy such as a 2000 ft2 (186 m2), two-story, single-family home without basement and exposures and the percentage accomplishment of those objectives for reporting purposes as required in 4.4.2.
- 4.6 Initial Firefighting Operations
    - 4.6.1 Initial firefighting operations shall be organized to ensure that at least four members are assembled before interior fire suppression operations are initiated in a hazardous area.
    - 4.6.2 In the hazardous area, a minimum of two members shall work as a team.
    - 4.6.3* Outside the hazardous area, a minimum of two members shall be present for assistance or rescue of the team operating in the hazardous area.

NFPA 1720 section 4.10.3 identifies other types of companies that are utilizing specialized equipment and apparatus, to assist as per the fire departments SOGs. “Special operations shall be organized to ensure that the fire department's special operations capability includes the personnel, equipment, and resources to deploy the initial arriving company and additional alarm assignments providing such services.”

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

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

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

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

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

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

The study found that four-person crews were able to complete 22 essential firefighting and rescue tasks in a typical residential structure fire 30% faster than a two-person crew and 25% faster than a three-person crew.[7] Having crews of four firefighters lessens the risk of injury as more personnel are available to complete assignments.

3.10.1 National Fire Protection Association (1720)

Chapter 4 of the NFPA 1720 (2020) Standard identifies the number of response personnel for the deployment of volunteer firefighters:

- Section 4.3.1: "the Fire Department shall identify minimum staffing requirements to ensure that the number of members that area available to operate are able to meet the needs of the department.
    - In Urban areas with a population greater than 1,000 per square mile or 2.6 km^2, there should be a minimum response of **15 staff within 9 minutes**, 90 percent of the time.
    - In Suburban areas with a population of 500 – 1,000 per square mile or 2.6 km^2, there should be a minimum response of **10 staff within 10 minutes,** 80 percent of the time.
    - In Rural areas with a population of less than 500 per square mile or 2.6 km^2, there should be a minimum response of 6 staff within 14 minutes, 80 percent of the time.
    - In Remote areas with a travel distance of greater than or equal to 8 miles or 12.87 km, there should be a minimum response of **4 staff directly dependent on travel distance,** 90 percent of the time."

With a current permanent population of approximately 4,400 within approximately 972 square kilometres, HHFD's communities fall into the rural standard with approximately 10 residents per square kilometer. Even with taking into consideration the approximate 27,000 to 30,000 seasonal residents, this would only bring the population density up to 45 residents per square kilometre. This would require six firefighters on scene within 14 minutes 80% of the time.

***Note**: To accomplish the National Fire Protection Association Standard, a fire department should endeavour to meet the stated minimum response standards based on responding to a 2,000-sq. ft. single family dwelling. The dwelling (noted in the Standard) does not have a basement or other exposures (buildings close enough to each other to create a greater possibility for fire spread). Most homes have basements, however, and these homes are often built close enough to each other to*

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

create that "exposure" for potential fire spread, which must be considered by the fire department in its response efforts.

Fire Response Curve:

When considering the response times and needs of a community, the fire response curve (Figure #7) presents the reader with a general understanding of how fire can grow within a furnished residential structure over a short period of time. Depending on many factors, the rate of growth can be affected in several different ways, which can increase or suppress the burn rate through fire control measures within the structure. As an example, some older legacy homes, fire spread, and flashover may progress slower than newer homes due to the type of construction and contents. Some older homes may not witness flashover for up to 25 minutes. Whereas newer homes could incur flashover in as little as four minutes within the room or origin.

***Note:** Flashover is a situation in which the entire contents of a room ignite due to the extreme high heat conditions. This situation is not survivable by unprotected occupants that may be caught in this type of situation. Even firefighters are at great risk of severe injury and/or death due to the extreme fire and heat conditions within the area of the flashover.*

The response time of a fire department is a function of various factors including, but not limited to:

- The distance between the fire stations and response location
- The layout of the community
- Impediments such as weather, construction, traffic jams, lack of direct routes (rural roads)
- Notification time
- Assembly time of the firefighters, both at the fire station and at the scene of the incident.

***Note:** Assembly time includes dispatch time, turnout time to the fire station and response to the scene. It should be noted that assembly time can vary greatly due to weather and road conditions along with the time of day.*

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

FIGURE #7 - FIRE RESPONSE/PROPAGATION CURVE

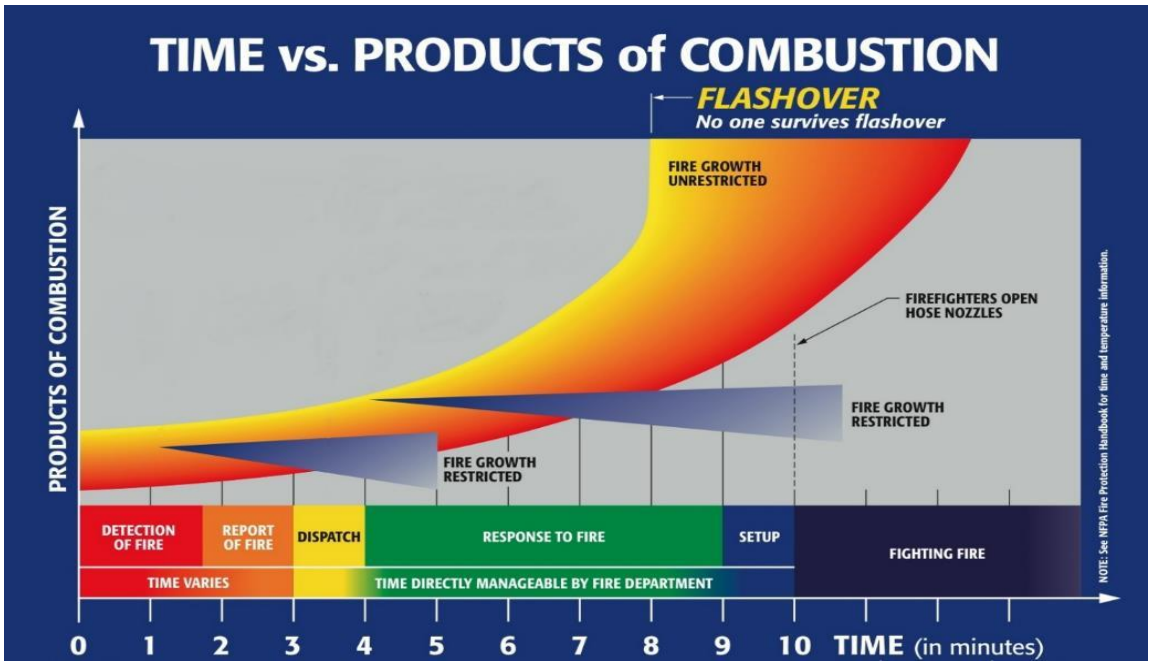


FIGURE #7 notes the following time variables:

- Detection of fire – this is when the occupant discovers that there is a fire. For the purposes of this chart, detection time is noted as being within one to one and half minutes – this could in fact be shorter or longer. The fire may be in a very early stage or could have been burning for quite some time before being detected.
- Report of fire – this is when someone has identified the fire and is calling HHFD for help.
- Dispatch – the time it takes the dispatcher to receive the information and dispatch the appropriate resources.
- Response to the fire – response time is a combination of the following:
    - Turnout time – how long it takes the career firefighters to get to the fire truck and respond or how long it takes the volunteer firefighters to get to the fire station to respond on the fire truck.
    - Drive time – the time from when the crew advises dispatch that they are responding until the time that they report on scene.
- Setup time – the time it takes for the fire crews to get ready to fight the fire.

- Fighting the fire – actual time it takes to extinguish the fire on scene.

The overall goal of any fire department is to arrive at the scene of the incident as quickly and as effectively as possible. If a fire truck arrives on scene in ten minutes or less, there is increased opportunity to contain the fire by reducing further spread to the rest of the structure.

In relation to on scene staffing, based on studies and evaluations conducted by the National Institute of Standards and Technology (NIST) and the NFPA, no interior attack is to be made by the firefighters until sufficient personnel arrive on scene. The expectation is that a minimum of three firefighters and one officer arrive on scene to make up the initial fire suppression team. This team of four can effectively do an assessment of the scene, secure a water source (e.g., fire hydrant), ensure the fire truck is ready to receive the water and get the fire pump in gear, as well as unload and advance the fire hose in preparation for entry into the structure. A team of four also allows for adherence to the recommended "two-in, two-out" rule, referring to the presence of two firefighters inside the structure with two outside ready to go in as back-up.

The Fire Chief does ensure that each station has a complement that allows for an initial full crew response to incidents. To accomplish this, a response protocol is in effect that ensures whenever a station and its firefighters are dispatched to any type of call where back-up may be required, another station is automatically dispatched to the same incident.

3.10.2 Response Data

Based on a review of the response data supplied, along with discussions with the Fire Chief, HHFD is achieving a varying level of success in meeting the NFPA response criteria. By utilizing this information in conjunction with the supplied response maps created by EMG, we can see the effect of road networks on response times by emergency responders.

HHFD response times should be monitored based on the NFPA 1720 standards which is from "dispatch time to time of arrival at the incident", from the time the call is received, to when the fire station tones activate, to when the firefighters get on the fire trucks and arrive at the emergency scene location.

***Note:** In monitoring time measurements, the 80th percentile criterion is the recommended practice that is endorsed by the NFPA. This data is more accurate since it is evaluating the times based on 80% of the calls as opposed to averaging the times at the 50th percentile. For example:*

- 8 out of 10 times the fire department arrives on scene in 10 minutes or less, which means that only 10% of the time they are above that 10-minute mark,

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

The travel time grids highlighted in Figure #8(a) and (b) are calculated using the GIS software Caliper Maptitude, which uses the road network with the posted speed limits, factoring in direction of travel, traffic lights and stop lights. While the posted speed limit is used, it is understood that at times fire apparatus responding to calls may exceed the speed limit if it is safe to do so, thus reducing the response time. Correspondingly, there will be times due to weather conditions, construction, and traffic congestion that the fire apparatus will be travelling at speeds lower than the posted speed limit (even using emergency lights and sirens). Therefore, using the posted limit is a reasonable calculation in determining travel distance.

FIGURE #8(a) - LOCATION OF THE CURRENT FIRE STATIONS – OUTLINING 10 MINUTE DRIVE TIME GRIDS

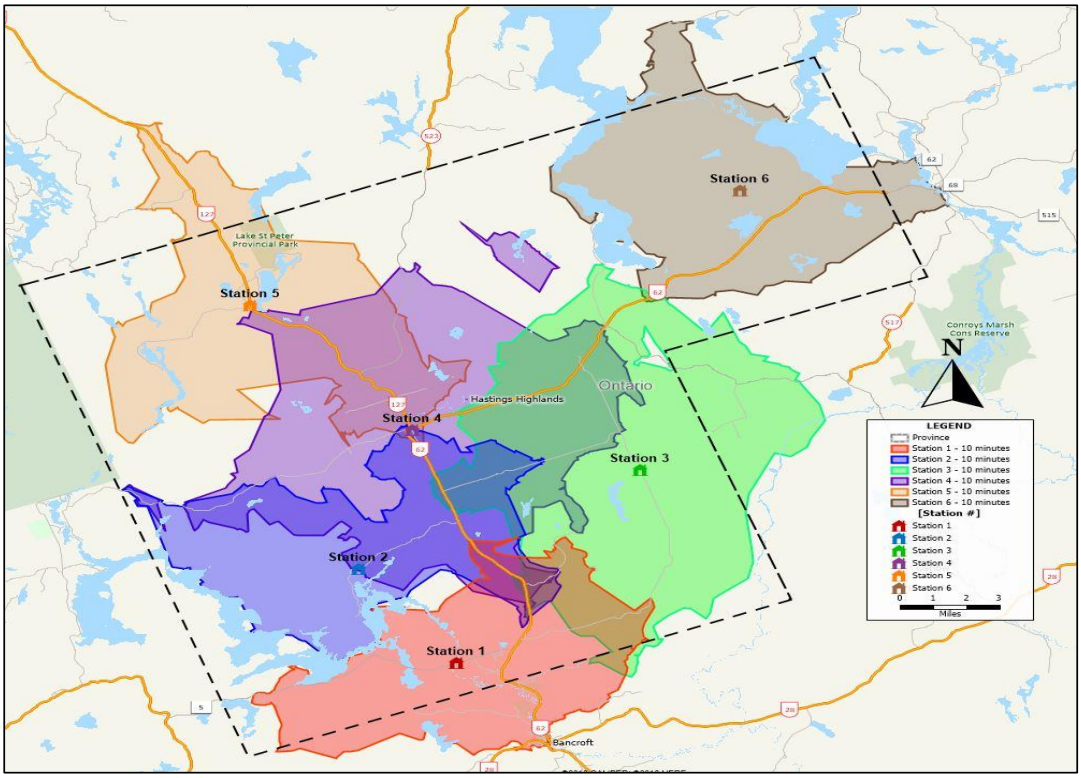
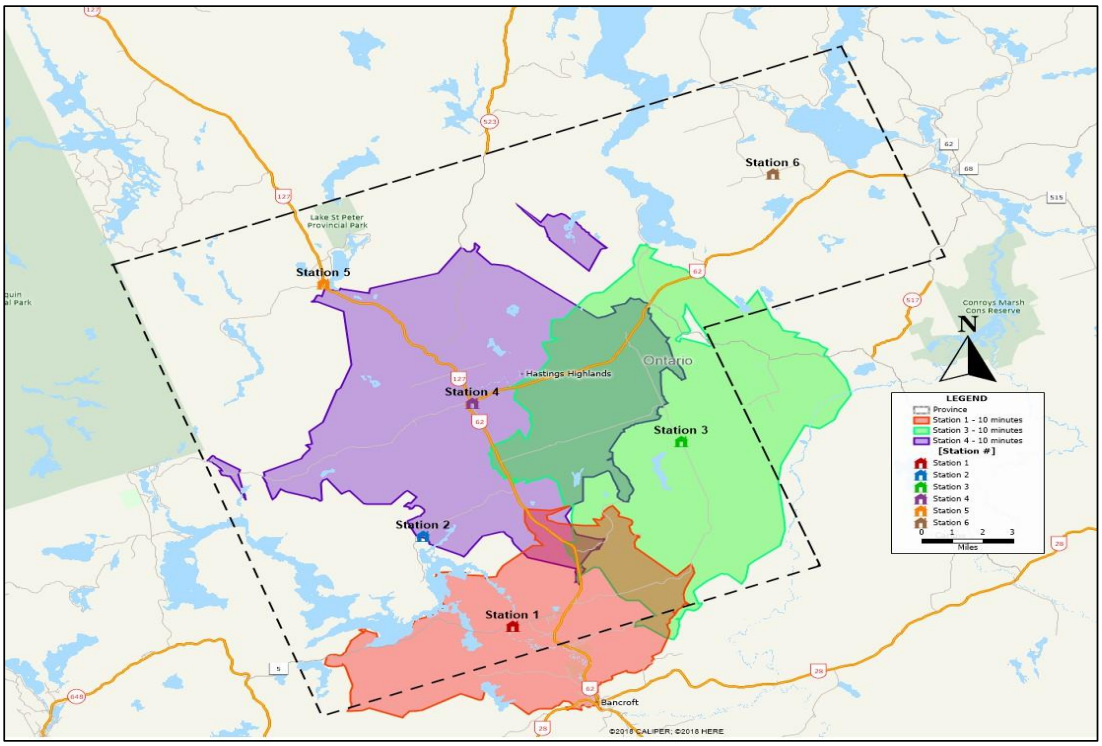


FIGURE #8(b) - LOCATION OF THE CURRENT OPERATIONAL FIRE STATIONS – OUTLINING 10 MINUTE DRIVE TIME GRIDS



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

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

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

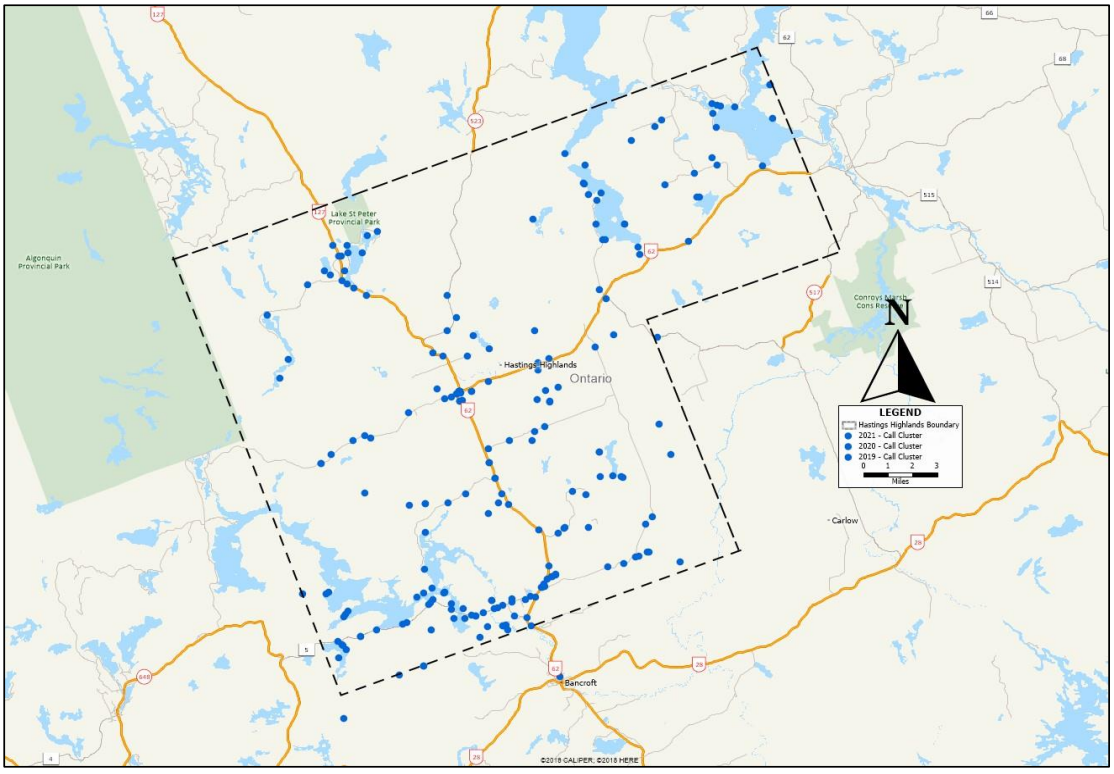
- Existing and proposed station locations based on desired response times
- Best and alternate emergency response routes to specific locations

- Ability of pumper, aerial, rescue, and support crews to cover all parts of the community based on desired response times
- Emergency response times for first, second and additional vehicles and personnel
- Areas for potential automatic aid responses

Fire stations should be located where they can serve the community in a timely manner by meeting NFPA Standards for response times. Although the NFPA response times are not mandated, it would be beneficial for the Fire Chief to have a response time goal supported by Council as a benchmark. It is recommended that the Fire Chief present a response time goal for the approval of council, which may reference NFPA 1720 (2020 Edition) – the expectation of 6 staff in 14 minutes, 80th percent of the time as a start.

The following map is a depiction of where the calls have been occurring within the Municipality over the past three years. This type of information can assist the Fire Chief in assessing present and future fire station locations in relation to improving response capabilities.

FIGURE #9: CALL CLUSTER MAP



The following chart (through the use, of the supplied data) helps to identify the types of calls that are creating the bulk of response demands.

FIGURE #10(a) - CALL TYPES FOR 2021

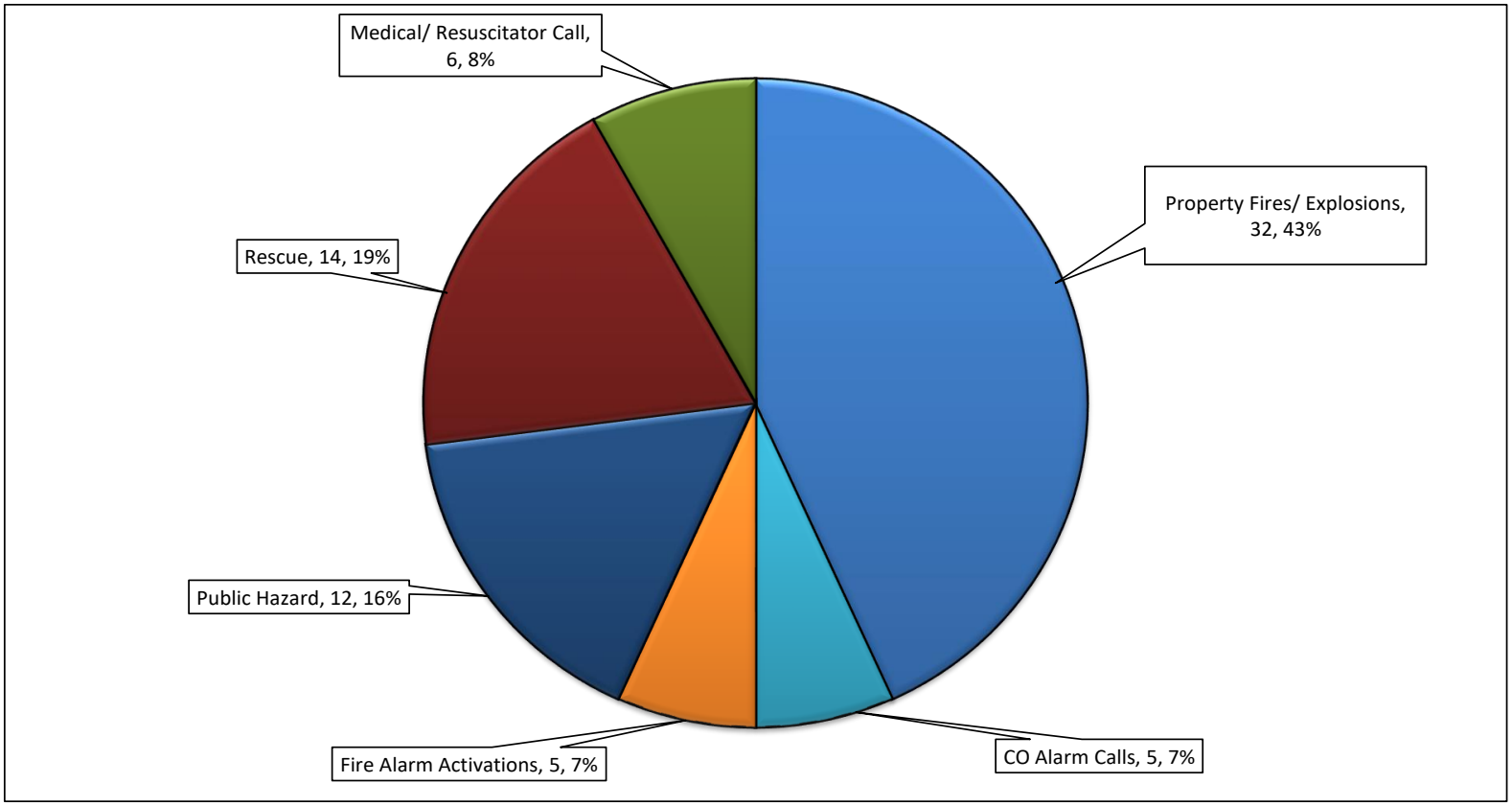
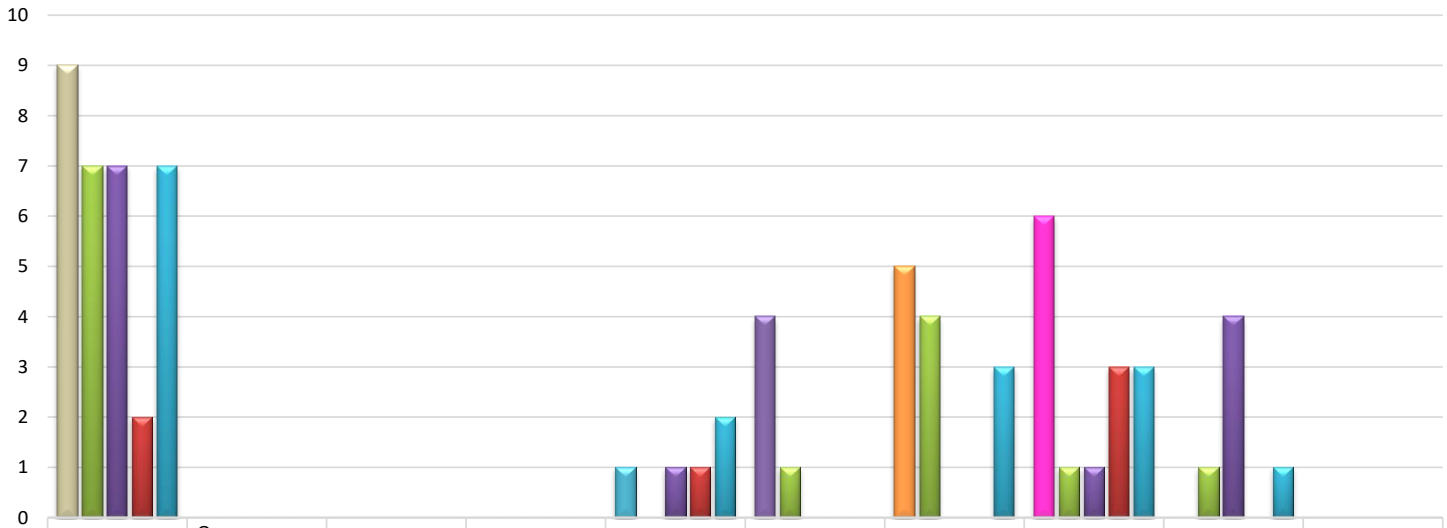


FIGURE #10(b) - CALL TYPES FOR 2021



	Property Fires/ explosions	Over pressure rupture/ explosion (no fire)	Pre-fire conditions/ no fire	Burning (controlled)	CO Alarm Calls	Fire Alarm Activations	Public Hazard	Rescue	Medical/ Resuscitator Call	Other Response
Station #1	9	0	0	0	1	4	5	6	0	0
Station #3	7	0	0	0	0	1	4	1	1	0
Station #4	7	0	0	0	1	0	0	1	4	0
Station #5	2	0	0	0	1	0	0	3	0	0
Station #6	7	0	0	0	2	0	3	3	1	0

FIGURE #11(a) - CALL TYPES FOR 2020

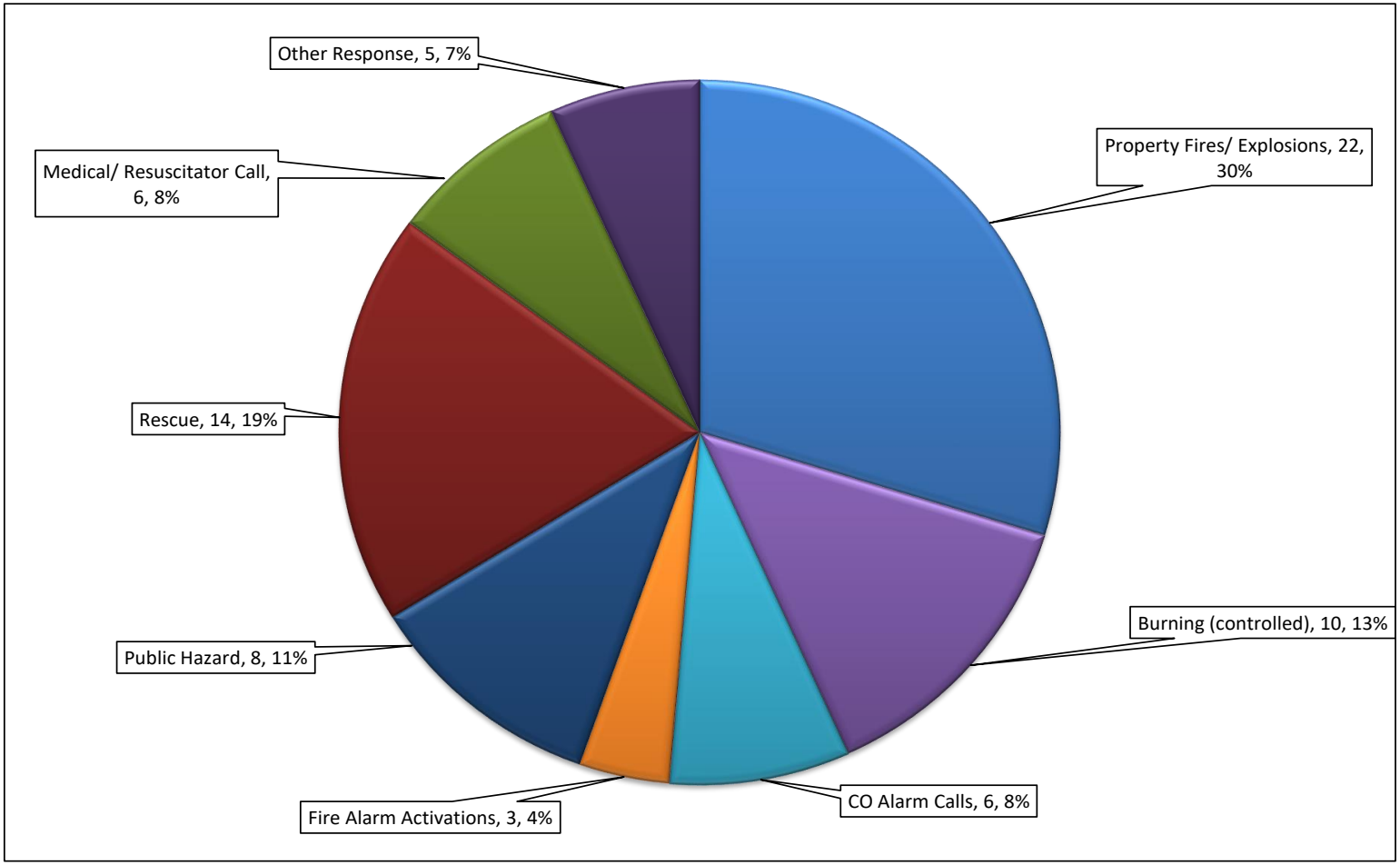
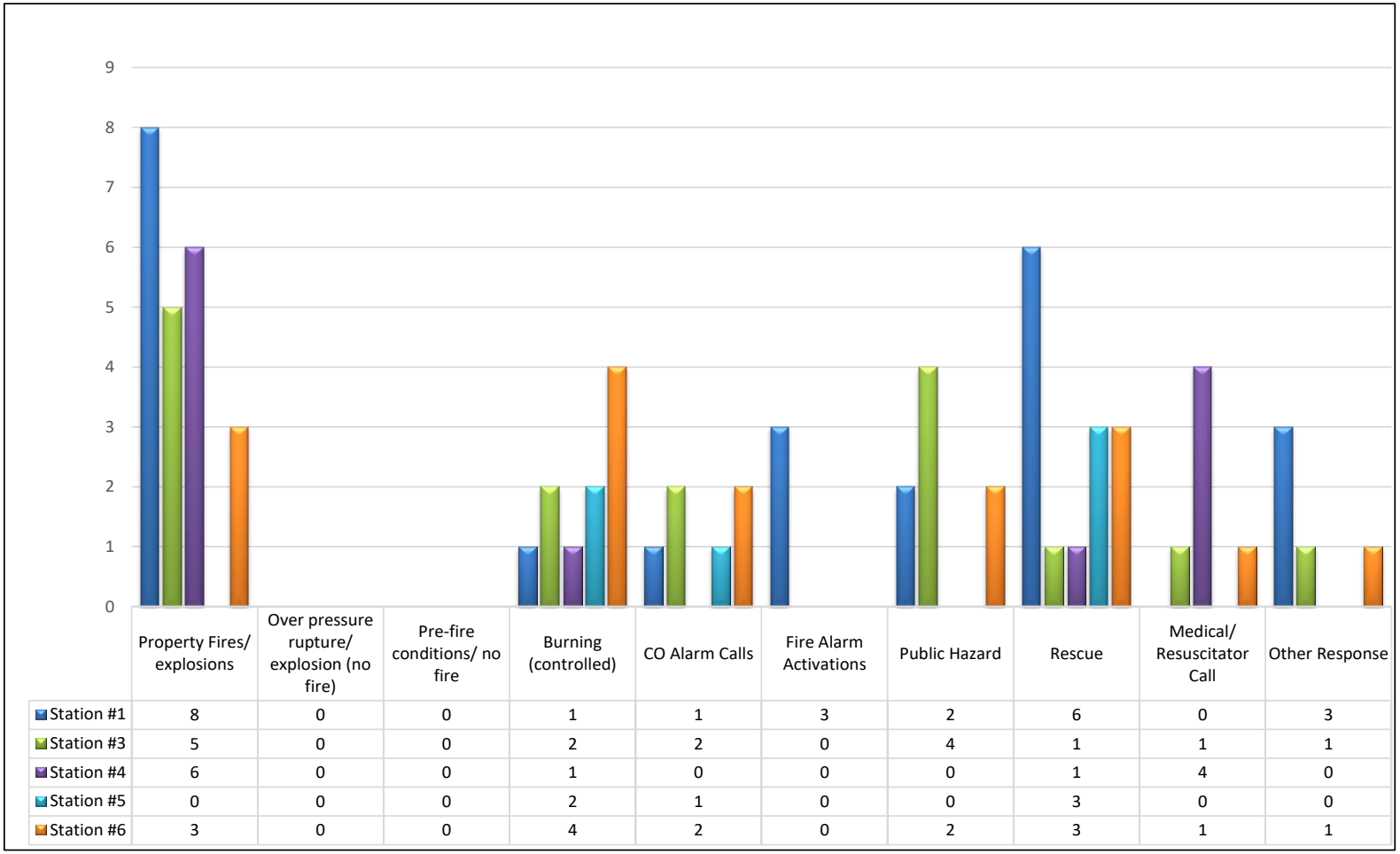


FIGURE #11(b) - CALL TYPES FOR 2020



	Property Fires/ explosions	Over pressure rupture/ explosion (no fire)	Pre-fire conditions/ no fire	Burning (controlled)	CO Alarm Calls	Fire Alarm Activations	Public Hazard	Rescue	Medical/ Resuscitator Call	Other Response
Station #1	8	0	0	1	1	3	2	6	0	3
Station #3	5	0	0	2	2	0	4	1	1	1
Station #4	6	0	0	1	0	0	0	1	4	0
Station #5	0	0	0	2	1	0	0	3	0	0
Station #6	3	0	0	4	2	0	2	3	1	1

3.11 Recruitment and Retention of Volunteer Firefighters

Recruitment and retention of volunteers is becoming more of a challenge within the fire service with the increasing training that must be committed to on an annual basis and with staff turnover. As with many volunteer fire departments, the daytime hours from Monday to Friday are the greatest challenge for volunteer response due to fact that many volunteer firefighters are either at work, school, or taking care of family. In some instances, members have had to leave the department to move closer to their work location, education facilities, or family needs.

EMG has also been advised that the Fire Marshal has announced the implementation of mandatory training and certification for firefighters. As of July 2022, all firefighters and officers will be required to meet the upcoming training/certification requirements and related timelines noted in the new regulation. Based on this, fire departments will need to conduct a full evaluation of their present training programs and implement whatever improvements are necessary to meet the new training and certification requirements. This increase in training will also add to the recruitment, and training of new recruits, along with the retention of present volunteers.

In a nationwide survey, the leading reasons why people stop volunteering include the following:

- No time to volunteer
- Conflicts within the organization
- Organizational leadership created an adverse atmosphere
- Too much training
- Attitude of existing personnel towards newcomers
- Criticism received from officers/ older members
- Lack of camaraderie

While some issues may be uncontrollable, other issues can be mitigated such as conflicts within the organization, leadership, training, attitudes, criticism, and camaraderie.

***Note:** the previously listed items are not a direct reflection on the status of the HHFD, they have only been listed for consideration in the department's recruitment and retention initiatives.*

Retention Issues:

The issue of retention has been identified as a challenge with just about every volunteer fire service. There are numerous reasons for leaving, including the firefighters not feeling appreciated by the

municipality, the time and effort required for both training and response to calls, firefighter's family not being recognised for "loaning" their family member to the community.

Opportunities to increase retention may include:

- Family nights at the fire station that would include a movie and activities for the children.
- Assign a seasoned member to mentor each rookie when a new member joins the department.
- Conduct a firefighter appreciation events (e.g., dinner, BBQ) where members are recognised by council for their long term, outstanding service, or something exceptional they did at a call.
- Council take time to acknowledge, the employers, of the firefighters for permitting their participation in the fire department and/or permitting them to leave work to attend fire calls.
- Survey other fire services to compare pay rates and adjust the honorarium accordingly.
- Implement a service recognition pay incentive. This might include paying extra in the form of a 5 to 10% pay increase for every 5 years they have been on the department; this would prevent the loss of years of experience.
- Performance pay, for those who reach high percentages of attendance at training sessions and fire calls.
- Offer benefit packages as many may not have benefits at their place of employment, and some are self employed. Such packages would include basic dental, drug, and eyewear coverage.
- Purchase a wellness benefit package for the firefighters such as mental, financial, and family counseling.
- Engage in treating Post Traumatic Stress Disorder (PTSD), which is a common illness among fire responders.
- Offer a RRSP/pension savings plan with contributions from the Town after they have been a member of the department for a predetermined length of time.
- Provide excellent training opportunities to make them want to remain a member of the fire department. Make the training sessions fun and memorable.
- Recognition and support of those who want to attend Fire College or regional courses, which sometimes requires firefighters using their vacation time from their full-time employers.
- The implementation of an "on call or platoon" program that would pay a week or weekend stipend to the volunteer firefighters s who commit to being available by signing up for weekdays and/or weekends
- Education assistance programs to support staff in their professional development.

- Maintain and improve morale by providing modern trucks, equipment, and stations.
- Endorse that each station designs their own logo for their station promoting their region of the town or the services they provide. They could include a tasteful mascot character. These could be placed on t-shirts and perhaps the apparatus as a sense of pride.
- Provide strong leadership that focusses on the Mission, Vision and Values of the department while resolving conflict resolution in a timely manner.
- Conduct exit interviews with those that leave the department to understand their reasons for leaving. While there may be simple reasons, there could be a deep-rooted issue that administration may not be aware was occurring such as taunting, bullying, harassment, a feeling of not being welcome, etc.
- Foster the history of each fire station by creating displays of pictures of past members, events, apparatus, to instill a sense of pride on how far the department has grown.

The HHFD is already implementing some of these noted recommendations. As such, they should be commended for their retention efforts. This list is simply intended for the Fire Chief to review and confirm what is being done and what may still be required. Some of these suggestions may imply an expense, but the value of keeping trained personnel longer, which in the end saves on the ongoing training of new firefighters is worth the effort.

It costs the municipality a large sum of money to train and equip new firefighters, therefore it is important that a means to retain their investment is developed and supported by council.

Another indicator for making this decision is tracking the number of volunteer firefighters that arrive at the fire station to respond. If, for example, the standard set by a fire department is that three or more volunteer firefighters must arrive at the station before the fire truck can respond, this should be monitored along with how many times the department is unable to assemble the needed personnel to effectively respond based on time of day, and day of the week. Continued monitoring of this data will assist with future fire service needs.

The Canadian Association of Fire Chiefs (CAFC) have also published a program – "Answer the Call" that is available on their website www.answerthecall.ca. It uses messaging and imagery to reflect the local challenges. Free of charges, there is a set of images that can be used as well as documentation that can be personalized to the organization. The "canned" images can, and do, reflect volunteers across all demographics, and the local community could add additional ones specific to their department. It has received significant support and it does not require considerable time or monetary investment.

Volunteer firefighter recruitment is a challenge in virtually every jurisdiction of Canada and utilizing resources available to promote recruitment and retention is always advisable.

3.12 Communications

The Hastings Highlands Fire Department receives its dispatching services from the Belleville Fire Department (BFD). Belleville dispatch is responsible for activating the pagers that alert the firefighters to respond to an incident. The HHFD uses the app, "Who's Responding" to communicate with the firefighters that there is a call. The app identifies the firefighters who are responding to the fire station/call. If responses are low, a call can then be sent out for additional resources. When the Municipality's Emergency Plan is activated, the same app is used to alert the members of the Municipal Emergency Control Group

The Dispatch Agreement with Belleville was not available during this review, but it appears that MHH is charged on a per capita basis at a rate of $2.26. There was also a charge for NG 9-1-1, for capital costs, but doesn't identify what those might be. It should be noted that the next generation 9-1-1 program will not be fully functional until 2025.

Dispatch is supported by the CAD (computer aided dispatch) software program CriSys, that assists with dispatch. Reports of each incident's dispatch log are forwarded, when requested to the HHFD for review. All records are maintained for future reference. One of the challenges is the CAD (dispatching) data is not transferable directly into the Fire Pro computer program that HHFD uses for its fire response reports to the OFM.

The agreement may not identify that Belleville is or should be working towards meeting the requirements of NFPA 1225 *Standard for Emergency Services Communications*, which is used to identify dispatching service criteria or 1061, *Standard for Public Safety Telecommunications Personnel Professional Qualifications.* It is recommended that future agreements include clauses identifying these NFPA Standards. The OFM has identified that the new training and certification processes also includes communications operators to be certifying to NFPA 1061.

Concerns were raised regarding the number of times in which Hastings Highlands Firefighters have been requested to stand-by or limit their radio communications as the Communications Centre is busy. When this occurs any urgent or life at risk messages should be prefaced with the words "Emergency Traffic, Emergency Traffic" so that the communications operators understand that messages of importance are about to be transmitted. This issue should be raised by the Fire Chief when in discussions with the Fire Chief of the Belleville Fire Department. For a firefighter to stand-by during a radio transmission is a health and safety concern, as delayed transmissions could put lives at risk.

Other concerns include only one dispatcher on duty at any time, and if they are busy, radio messages are and possibly phone calls are being missed. Also, if there is a major breakdown at BFD's

Communications Centre, they do not have a secondary location to dispatch from which is a requirement of NFPA 1225.

It was identified that on numerous occasions fire departments (dispatched by BFD) have had to take over radio communications themselves from one of their fire stations, due to the lack of staff at BFD or during periods of a higher-than-normal call volume.

Communications Operators have not been receiving supplemental training to enhance their skill sets in handling fire calls, and with the requirement for certification to NFPA 1061, may improve that.

The most recent By-Law approving BFD to dispatch the HHFD, was in 2011, under By-Law 2011-047. This may be an opportune time for the HHFD to renegotiate the level of service expectations of the Department, or perhaps resource another dispatch provider.

Summary of Dispatching Services Concerns:

- The current dispatch agreement with the Belleville Fire Department is not working well and is not meeting the needs of the Hastings Highlands Fire Department.
- Hastings Highlands currently pays approximately $2.26 per capita for fire dispatching services (2022 rate).
- There are provisions in some agreements that if the population doubles seasonally then there is an additional charge. It is unknown if this is the case with Hastings Highlands
- Prior to the expiration of the current contract, the Fire Chief should take the opportunity to review the agreement and the services being provided, along with any concerns and bring these, forward to the Belleville Fire Chief.
- Based on previous Fire Service Review of another fire department in Hastings County, it was identified that the dispatch agreement with BFD is renewed annually. It is unknown if this is the current situation with all other fire departments that use BFD's dispatch services.

3.12.1 Next-Generation Communications (NG 9-1-1)

The 9-1-1 Central Emergency Reporting Bureau (CERB) for Hastings Highlands is in Sudbury. Emergency 9-1-1 calls are directed to the answering service and then directed to the emergency service that is required by the caller (i.e., police, ambulance, or fire).

In June of 2017, the Canadian Radio-television and Telecommunications Commission (CRTC) created regulations regarding the next-generation communications for 9-1-1 centres.

This modern technology will *"…enable Canadians to access new, enhanced, and innovative 9-1-1 services with Internet Protocol (IP)-based capabilities, referred to as next-generation 9-1-1 (NG9-1-1) services. For example, Canadians could stream video from an emergency incident, send photos of accident damage or a fleeing suspect, or send personal medical information, including accessibility needs, which could greatly aid emergency responders."*[8]

The following is an excerpt from the CRTC website regarding the program and its benefits for enhancement to public safety communications.

Establishment Of New Deadlines for Canada's Transition To Next-Generation 9-1-1

The Commission sets out determinations in relation to new deadlines and other matters for the implementation and provision of next-generation 9-1-1 (NG9-1-1) networks and services in Canada, so that Canadians can access new, improved, and innovative emergency services with Internet Protocol-based capabilities. The Commission aims to maintain the NG9-1-1 framework roadmap for the establishment of NG9-1-1 networks and the introduction of NG9-1-1 Voice, albeit with new, extended deadlines.

Specifically, the Commission directs NG9-1-1 network providers, by 1 March 2022, to, among other things, establish their NG9-1-1 networks, complete all NG9-1-1 production onboarding activities, and be ready to provide NG9-1-1 Voice, wherever public safety answering points (PSAPs) have been established in a particular region.

The Commission also directs telecommunications service providers (TSPs) to (i) make the necessary changes to support NG9-1-1 Voice in their originating networks that are technically capable of supporting NG9-1-1 Voice, including completing all NG9-1-1 production onboarding activities and testing activities, by 1 March 2022; and (ii) begin providing, by 1 March 2022, NG9-1-1 Voice to their customers served by networks that are technically capable of supporting NG9-1-1 Voice, wherever PSAPs have been established in a particular region.

With respect to the implementation and provision of real-time text (RTT)-based NG9-1-1 Text Messaging (NG9-1-1 Text Messaging), the Commission is not establishing new deadlines as part of this decision. Instead, the Commission requests that, once standards are sufficiently advanced with respect to RTT callback and bridging, the CRTC Interconnection Steering Committee (CISC) file a

[8] Government of Canada, Canadian Radio-television and Telecommunications Commission, "Telecom Regulatory Policy CRTC 2017-182, Next-generation 9-1-1 – Modernizing 9-1-1 networks to meet the public safety needs of Canadians", last modified June 1, 2017, https://crtc.gc.ca/eng/archive/2017/2017-182.htm

report with the Commission with recommendations related to the provision of NG9-1-1 text messaging for all stakeholders.

Further, the Commission directs, among other things, incumbent local exchange carriers (ILECs) to decommission their current 9-1-1 network components that will not form part of their NG9-1-1 networks by 4 March 2025 or earlier if all the TSPs and PSAPs in an ILEC's operating territory have completed their transition to NG9-1-1.[9]

3.12.2 NG9-1-1 Considerations

- As noted in the CRTC excerpt, March 4, 2025, is the revised key date to work with. The Fire Chief must ensure that Hastings Highlands is a stakeholder at the steering committee table through direct involvement or as part of the regional committee for this implementation plan.
- The municipalities must understand that there will be significant expenses for the fire dispatch to implement NG9-1-1 and the Belleville Fire Department will likely increase fees for all fire departments it dispatches to cover these additional costs. It was evident in their invoicing that funds are already being obtained for NG9-1-1, but for what purpose, remains unknown.
- Currently there is no firm understanding as to the costs that are going to be incurred with the implementation and annual costs of NG9-1-1.
- Some fire services that have a communications centre have budgeted as much as $1M for the upgrades to 9-1-1.

3.12.3 Radio System

Hastings Highlands Fire Department radio system is operating on analogue technology, with repeater sites, including, by agreement, the Town of Bancroft's radio transmission tower. The Municipality has not updated its radio system for many years, and it is in deteriorating condition. There are no redundancies in the radio system in event of radio failure at the main transmission site.

The topography and land mass of Hastings Highlands creates poor to no radio communications depending on the location of the incident. In some cases, firefighters have had to resort to using cell phones to be in contact with Belleville Fire Dispatch.

[9] Government of Canada, Canadian Radio-television and Telecommunications Commission, "Telecom Decision CRTC, Establishment of new deadlines for Canada's transition to next-generation 9-1-1", last modified June 4, 2021, https://crtc.gc.ca/eng/archive/2021/2021-199.htm

Radio communications is a paramount lifeline for firefighters and complete coverage is a must for firefighter safety. To ensure adequate coverage may require additional transmission towers be installed, or the purchasing of several mobile repeaters. As previously mentioned, HHFD has implemented the "Who's Responding" program; many volunteer fire departments have implemented such a program because it helps to improve overall response, while at the same time, the program can track who is available, who is responding and even who is not available due to vacation or other commitments. This is a program that should be mandated by the Fire Chief to be utilized by all the Department's firefighters.

On a positive operational note, when required, HHFD has the capability of communicating to other fire services of Hastings County by simply changing to the radio frequency of the department, they wish to communicate with.

The Municipality of Hastings Highlands needs to complete a radio audit of the municipality and budget funds for upgrading the radio system to the digital platform, which includes new mobile and portable radios, pagers, transmission towers and transmitters, generators at each transmission tower, and possibly mobile repeaters if the audit warrants their purchase.

During the on-site visit, the present condition and stability of the HHFD radio communications tower is questionable and it is strongly suggested that a full assessment of this equipment be conducted by a systems expert. This review should also consider the effective coverage needs of the entire community.

3.13 Use of Personal Vehicles for Response:

It was also noted that the firefighters can respond to an emergency scene in their own vehicles, which means that some or most of the firefighters may be carrying their firefighting gear in their vehicles (most of the gear is located on the rescue van at each station). If the gear has not been properly cleaned this can pose a health risk to the firefighters and any other occupants of their personal vehicle. Many fire departments in Ontario have ceased the practice of allowing firefighters to respond to an emergency scene in their personal vehicles. All firefighters are required to attend at the fire station, don their gear and leave as a team.

By doing this, the department accomplishes three key things; the first being that no contaminated gear is transported in a private vehicle. The second, is that an emergency scene is not impeded with firefighters' personal vehicles. And third, it ensures full accountability of who is responding and how many firefighters are on the scene. When firefighters respond in their personal vehicles, there is an opportunity for "freelancing", which means that firefighters are working without direct supervision and support (of other firefighters and emergency vehicles).

By having all firefighters respond to the fire station first, this creates full accountability and supervision of staff. It is true that there are advantages of having firefighters go to the scene as opposed to passing the scene to get to the fire station. But personal vehicles are not emergency vehicles and should not be used in such a manner.

It is understood that many of the fire trucks used by HHFD do not have crew cabs and cannot accommodate more than two firefighters in the cab. However, many of the stations do have support vehicles that have space for several firefighters in each of these vehicles. Consideration needs to be

given to greater use of these support vehicles, while the Department moves towards reducing the practise of responding to the emergency scene with personal vehicles.

HHFD should develop policies and procedures that reflect the following. That structural firefighting gear (PPE) is not to be:

- Transported inside the cabs of fire department vehicles.
- Transported inside personal vehicles.
- Taken into living quarters of a fire station (this should include any areas of the fire station other than the apparatus bays).
- Taken into the firefighter's home.

3.14 Suppression Staffing

The main type of staffing that HHFD is comprised of is a volunteer/paid on call system. This type of system has proven to be a very cost-effective model for the Municipality. At present the Department responds to approximately 120 calls per year, which is an acceptable level and expectation for a volunteer fire department the size of HHFD to handle.

Research has identified that volunteer stations that respond to more than 350 calls per year are on the verge of moving towards a part-time or full-time type of staffing (within a specific area or station). This could be in the form of having a minimum level of (three or four) full-time firefighters on duty five days a week, during the daytime hours, with the evenings and weekends being covered by the volunteer firefighters. As call volumes increase so will the full-time staffing requirements.

The HHFD is not at this level of call volume per fire response district, but this does not mean that the Fire Chief should not be monitoring call volumes, response times and number of volunteer firefighters that are responding to these calls (as they are presently doing). An increase in response times and/or decrease in the numbers of volunteer firefighters that are responding to the calls could be an indication of possible burnout of the volunteers. As such, this is something that the Fire Chief should continue to monitor and report to Council on an annual basis.

3.15 Health, Fitness, & Wellness

Health and wellness of staff is a key focus for all municipalities and Hastings Highlands is no exception. Due to the nature of firefighters maintaining a separate primary vocation, a focus on fitness can be overlooked. The inherit nature of firefighting is both stressful and physically demanding. During the review by EMG, it was noted that there is no fitness equipment at the fire stations to ensure that staff have the ability, to keep fit, which helps to reduce work related injuries. As such, the Fire Department

should work towards standardizing the fitness equipment at all stations and having a fitness instructor work with the volunteers and full-time staff to set up a proper workout program and/or at the very least demonstrate the proper and safe way to use the exercise equipment. The Department should also have SOGs relating to the proper use of the fitness equipment.

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

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

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

4.1 Program Overview

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

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

Data suggests a correlation between the following:

- A proactive approach to health and fitness and a decrease in debilitating occupational injuries.

- A reduction in workers compensation claims and a decrease in acute and chronic health problems of firefighters.

Combining the health-related fitness program with a proactive occupational safety and health program provides a fire department with the level of quality needed for its members. It is suggested that, as part of a larger commitment to firefighter health and wellness, HHFD review the 14 essential job tasks from NFPA 1582 as they pertain to their recruitment and testing process and seek options for offering personnel the ability to exercise and maintain fitness levels as explained in NFPA 1583.

Post Traumatic Stress Disorder (PTSD)

In 2017, emergency services organizations were required by the Ontario, Ministry of Labour to submit a PTSD Prevention Plan. This was to coincide with PTSD and Occupational Stress Injuries (OSI) to be considered as workplace injuries and compensable through the Workplace Safety & Insurance Board. The HHFD has a package available to its members outlining what PTSD is, the dangers it presents, training, on-going support, early intervention, WSIB claims management, recovery, and return to work.

HHFD has included all its fire department staff in the Employee Assistance Program (EAP) offered through VFIS as an initial contact. This is part of their PTSD program. However, ensuring that the firefighters have full EAP coverage for all related needs is an important piece of employee wellness. The Fire Chief should meet with municipal staff who oversee EAP and related programs to ensure that firefighting personnel are fully aware of what benefits the EAP offers, should they need it. This may require a more inclusive package. As an opportunity to improve retention of the volunteer firefighters, this EAP could be offered as a family package.

3.15.1 Cancer Prevention

In recent years there has been a more intensive review of cancer prevention and a correlation of the disease to firefighting. The focus has been on contamination control surrounding fire incidents. From pre-fire, incident duration, to cleaning and decontamination post-fire, all aspects of prevention are currently under review by all levels of fire service management. The Department does have some decontamination equipment, which is a definite positive, but more is required. It is suggested that, as part of a larger commitment to firefighter health and wellness, HHFD begin work on a cancer prevention program. This may include items such as, but not limited to:

- Post-fire decontamination of personal protective equipment (PPE)
- Firefighter hygiene at fire scenes
- PPE during handling of contaminated gear/equipment
- Documenting potential exposures

- Reducing exposures to diesel exhaust

Section 21 Guidance Note – Firefighters Cancer Prevention Checklist, would be a good reference in developing such a program along with Section 21 Guidance Note on Hygiene and Decontamination.

The fire stations are not equipped with "at source" diesel exhaust extraction systems (that attach to a vehicles exhaust pipe) to reduce exposure to vehicle exhaust. Diesel exhaust has been contributed to health issues when people are exposed to it over long duration. By having these systems in the station, the health concern is greatly reduced. This would be a positive feature towards cancer prevention by having a system installed in the station.

In reviewing the Personal Protective Equipment (PPE) program, also known as structural firefighting ensemble, it was noted a plan has been established to review PPE inventories and forecasted replacements are identified so that budgetary submissions are effectively managed. This is important to note as NFPA 1851 Standard on *Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting* states in Chapter 10:

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

The appendices, to that section also references that "…it is imperative that the protective elements be routinely inspected to ensure that they are clean, well maintained, and still safe". HHFD has a program that PPE is inspected and cleaned in-house, and that there is a cache of used gear that can accommodate a portion of the Department.

HHFD has standard operating guidelines on PPE/Bunker Gear inspections and cleaning. There is a need for ongoing/refresher instructions ensuring the correct re-assembly of the ensemble, including how to check that the Drag Rescue Device (DRD) has been properly installed.

Cancer prevention may begin at the scene of a structure fire. The bunker gear becomes laden with contaminants and smoke, and off gas for some time after a fire. By decontaminating the firefighters at the scene of the fire and ensuring they do not wear their dirty gear back to the station or transporting it in the cab of the truck, is the step in the right direction of cancer prevention. The Department should also invest in some decontamination bags for transporting the bunker gear back to the station.

Cancer prevention does not stop at just taking off and bagging the bunker gear for cleaning at the fire station, the individuals clothing may also contain cancerous contaminants. The hygiene and decontamination program should also address the firefighters personal clothing or uniform worn in the fire. This may see the necessity of the firefighters in their personal vehicle, available for them to

change into after they have a shower at the station. This clothing should also be washed at the fire station (with the extractor) and not taken to the residence to be washed as they are then introducing the contaminants to members of their family.

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

3.14.2 Mental Well Being

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

- A near miss that threatened the health and safety of a member of the Department. This can include a situation where a member of the department experienced an event that could have resulted in significant harm or was a close call where they escaped significant harm.
    - The suicide or attempted suicide of a co-worker.
    - The sudden death of a fellow firefighter.
    - The loss of a patient after a rescue attempt.
    - The death or a critical incident involving a child.
    - A prolonged rescue or incident with excessive media coverage.

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

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

- An introduction about the plan.
- Goals and objectives
- Prevention and education focus areas
- Screening and initial intervention focus areas
- Support, WSIB claims management, recovery and return to work focus area
- An overview of PTSD, risk factors, signs, and symptoms.

- Legal requirements of the municipality under the OH&S Regulations.
- Organizational PTSD practices (promoting good mental health).
- Organizational anti-stigma practices.
- Roles and responsibilities for prevention, intervention, recovery, and return to work.
- Training on awareness and anti-stigma, recognising the signs and symptoms and responding to signs of PTSD, postexposure education and awareness.
- Develop a handbook that identifies what PTSD is, and the signs and symptoms, for family members to reference which also includes agencies, EAP program or peer support groups that may be of assistance.
- Consider initiating a chaplaincy program for the department as another form of support for members and their families, not only for situations involving PTSD, but everyday life, and the situations that may arise.

Section 3: Recommendations

Rec#	Recommendation	Estimated Cost	Timeline	Rationale
4	HHFD implements the position of a part-time Training Officer, or at the very least ensures that the new Deputy Chief position has the resources and time to implement the required training for the Department.	Staff time or creation of a part-time Training Officer	Immediate to Short-term	Hastings Highlands must ensure that all fire department positions that require training and certification are met. The inclusion of a part-time Training Officer position will go a long way to meeting this training requirement.
5	There will be a need for administrative support or the investment and implementation of a more efficient records management system (to replace the present paper-based system) that all staff can utilize to input their training and other required information.	Creation of a part-time administration person or a new records management system. Approximate cost $20,000.00 per year for admin. $5,000.00 to $20,000.00 for records management system.	Short-term (1-3 years)	The Department will need to keep more accurate and up-to-date information on their training programs, levels of completion and type of training being conducted for staff. The hiring of a part-time administrative position or the implementation of a robust records management system will meet these needs.

Rec#	Recommendation	Estimated Cost	Timeline	Rationale
6	A plan should be developed to identify what other inspections can be reasonably accomplished by the Fire Chief, and what options are needed to address the other fire prevention-related concerns.	Staff time	Short-term (1-3 years) ongoing	The Fire Protection & Prevention Act., specifically mandates public education and fire prevention inspections based on requests and demands. With only the Fire Chief conducting fire prevention-related functions, for the Municipality, prioritization of these required duties needs to be the focus.
7	All firefighters be offered the opportunity to become trained and qualified to the NFPA 1035 Public Fire & Life Safety Educator Level I as well NFPA 1031 Fire Prevention Officer, Level I. • Consideration is given to resourcing Public Education with a part-time dedicated, fully trained and qualified staff position.	Staff time or for part-time public education officer – Approximate cost $20,000.00 per year.	Short-term (1-3 years) ongoing	Greater utilization of department resources to support fire prevention and public education initiatives will ensure that HHFD is meeting the FPPA-mandated requirements.

Rec#	Recommendation	Estimated Cost	Timeline	Rationale
8	HHFD to work in conjunction with residential developers in promoting the advantages of installing residential fire sprinklers.	**Staff time**	**Short-term (1-3 years) and ongoing**	Sprinkler systems have been proven to save lives and property, by promoting this initiative the HHFD is demonstrating a proactive, life-saving program.
9	The Fire Chief to provide a business case to senior administration supporting either: • a fixed training facility, or • the purchase of a mobile training unit or a fixed site unit for the purposes of Live Fire Training. ***Note:** these options should be considered if the availability of the OFMs Training Trailer is not available as needed.*	**$200,000 - $700,000 (Mobile training unit)**	**Short-term (1-3 years)**	This is an option that the Fire Chief needs to evaluate if no other facility such as the OFMs training trailer is available for the firefighters to receive regular and ongoing hands-on training.
10	All firefighters receive live fire training annually.	**Dependent on facility costs and/or the purchase of a live fire training unit.**	**Short-term (1-3 years) ongoing**	With the introduction of the new Training and Certification Regulation, more ongoing and relevant training will be required and documented.

Rec#	Recommendation	Estimated Cost	Timeline	Rationale
11	HHFD adopts an educational progression plan. The proposed training programs and succession path for its officers should be supported for current and proposed positions. This would include fire officer 1 to 4.	**Staff time**	**Short-term (1-3 years) ongoing**	Succession/educational planning is paramount to the future success of any organization.
12	Develop job descriptions with a list of the minimum core job responsibilities. Further, the education and experience required for each of those positions should be outlined to chart the path for succession.	**Staff time**	**Short-term (1-3 years)**	Succession/educational planning is paramount to the future success of any organization.
13	The Fire Chief, review the present recruitment and retention programs and enhance them based on the information noted in the Fire Service Review document (as required).	**Staff time – minimal costs possibly incurred**	**Immediate to Short-term (0-3 years) ongoing**	Volunteer Firefighters are the most valuable resource for the Fire Department. Ongoing recruitment and retention of the Firefighters is critical to the success of the Fire Department.

Rec#	Recommendation	Estimated Cost	Timeline	Rationale
14	A full review of the Bellville Dispatching agreement is conducted to ensure that the needs of the HHFD are being met.	Staff time	Immediate to Short-term (0-3 years) and ongoing	Ensuring that the HHFD has a current agreement that meets the needs of the Department is paramount to ensuring an efficient service to the community.
15	The present condition (stability) of the HHFD radio communications tower is questionable and it is strongly suggested that a full assessment of this equipment be conducted by a systems expert. This review should also consider the effective coverage needs of the entire community.	Currently Unknown	Immediate to Short-term (0-3 years)	Ensuring a full coverage radio communications system is in place, will enhance firefighter safety.

Rec#	Recommendation	Estimated Cost	Timeline	Rationale
16	Consideration is to be given to the transition of Firefighters responding to the emergency scene in their personal vehicles, over to responding to the fire station.	Staff time	Short-term (1-3 years)	Responding directly to the fire station enhances the accountability of responding personnel because all firefighters are on the emergency vehicles, with all their proper safety gear. This also reduces congestion at the emergency scene by the firefighter's personal vehicles.
17	HHFD to review their Health, Fitness and Wellness programs to ensure that their Firefighters are receiving proper coverage in relation to PTSD, Cancer Prevention and Mental Well Being.	Based on the programs required / provided.	Immediate to Short-term (0-3 years) ongoing	Firefighters are the greatest asset of any fire service, and it is imperative that their Health, Fitness and Wellness is addressed in a genuine, consistent, and professional manner. This may include the establishment of a PTSD prevention plan by a committee of firefighters, chief officers, and mental health professionals. The "Supporting Ontario's First Responders Act", requires employers to have a PTSD program.

SECTION 4

Facilities, Vehicles, Equipment, & Water Supply

SECTION 4: FACILITIES, VEHICLES, EQUIPMENT & WATER SUPPLY

4.1 Fire Station Review

A review of the existing fire stations was conducted by EMG and will be addressed in this section. It should be noted that the walkthrough of the fire stations was a visual inspection; no destructive testing or engineering assessment was conducted.

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

Distance and travel time may be a primary consideration; however, if a basic expectation of response time is set by the community's decision makers, then a more realistic level of service and fire station location criteria can be identified.

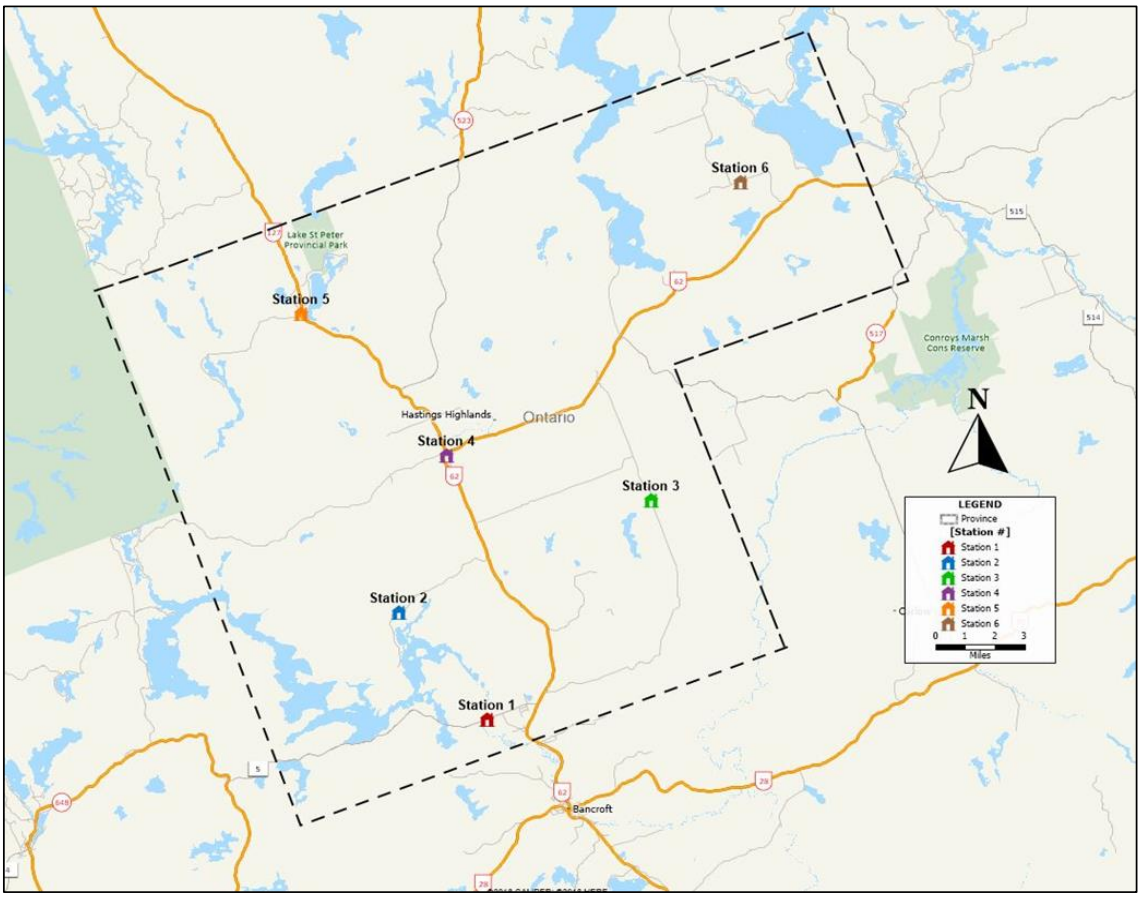
The following maps, depict:

- #12 - where each station is located throughout the Municipality,
- #13 - the stations that are operational or not active,
- #14 - the third map depicts 10-minute drive time zones.

The zones around each station represents 10-minute drive time, not including the 4-minutes for volunteers to arrive at the station and then respond in an emergency services vehicle. Even though the firefighters are allowed to respond directly to the location in their personal vehicles, actual firefighting procedures (such as extinguishment) will not occur until the fire trucks arrive. The 4-minute response to the fire station is used in overall averaging.

The response mapping and related response data supplied in this document should not be taken in isolation. A full in-depth study along with an annual report submitted to Council by the Fire Chief with an update on the key performance measures and expectations is required.

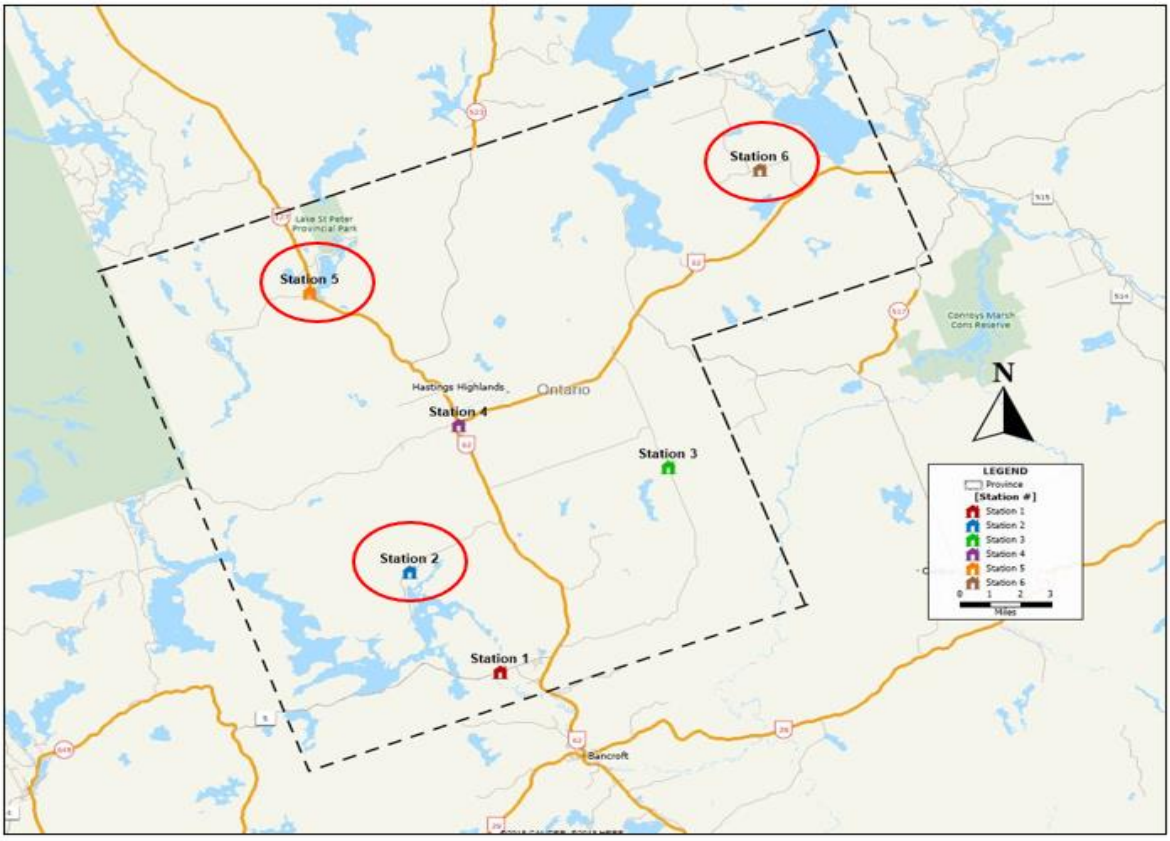
FIGURE #12 – HASTINGS HIGHLANDS EXISTING FIRE STATIONS



Although the Municipality does show six fire stations, as identified in the following figure, presently three of the stations are not active.

- Station 2 - Herschel North has not been active for several years due to lack of Volunteer Firefighters for this facility.
- Station 6 – Bangor, also not active due to lack of Volunteer Firefighters for this facility.
- Station 5 – Lake St Peter, has been closed due to black mold and structural issues. Recently (in July) the Ministry attended the facility and ordered that all vehicles and equipment be removed from the structure and that the building is now off limits.

FIGURE #13 – HASTINGS HIGHLANDS NON-ACTIVE FIRE STATIONS



- **Station 2** – Not active – Due to VFF shortages, however, can reopen if levels increase.
- **Station 5** – Closed – Due to black mold, Health & Safety Order by Ministry of Ontario. The building also has structural issues.
- **Station 6** – Not active – Due to VFF shortages, however, can reopen if levels increase.

FIGURE #14 - 10-MINUTE RESPONSE TIME FROM ALL CURRENT STATIONS

This map represented the coverage zones, if all the fire stations were active and able to respond to calls.

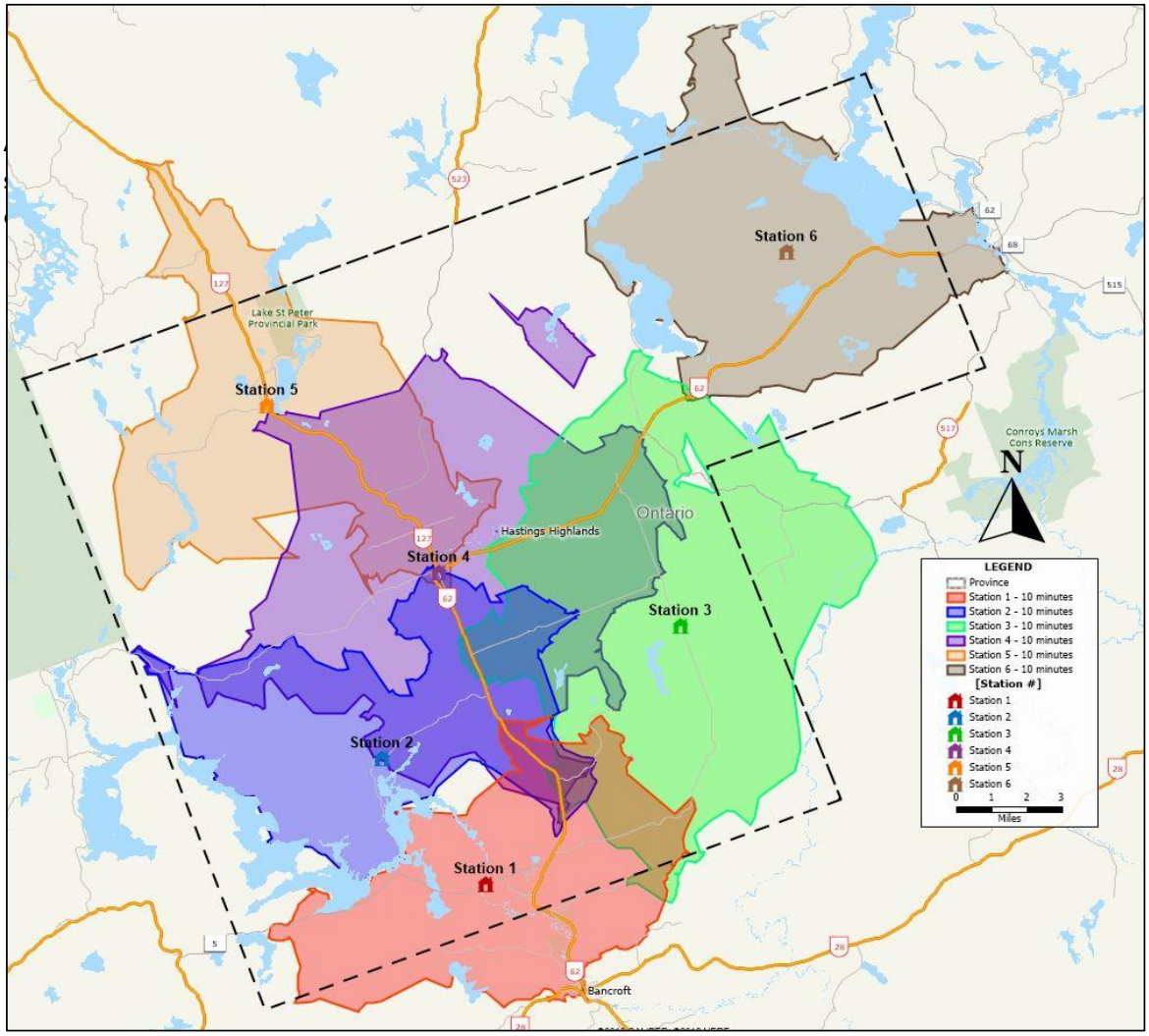
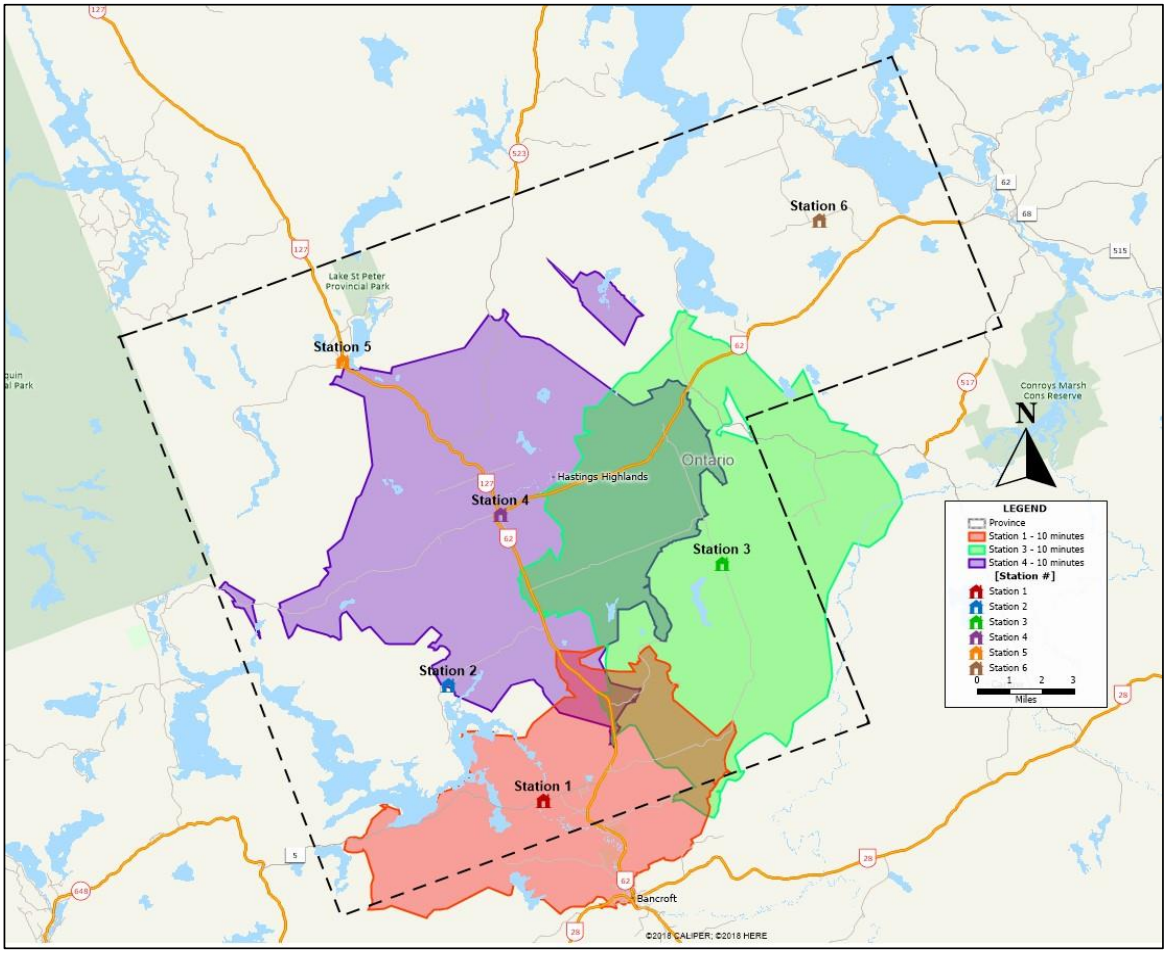


FIGURE #15 - 10-MINUTE RESPONSE FROM OPERATIONAL STATIONS



4.1.1 Hastings Highlands Fire Stations

Hastings Highlands Fire Department has six fire stations in its inventory, but presently provides emergency service response from three operational fire stations. Based on official visit to these stations, the buildings appear to need varying levels of repair and require updating. Each station will be addressed individually.

***Note** The station reviews that have been gathered in this report are general in nature. Therefore, if more in-depth structural analysis is desired by the Municipality, then a comprehensive station/facility review should be undertaken.*

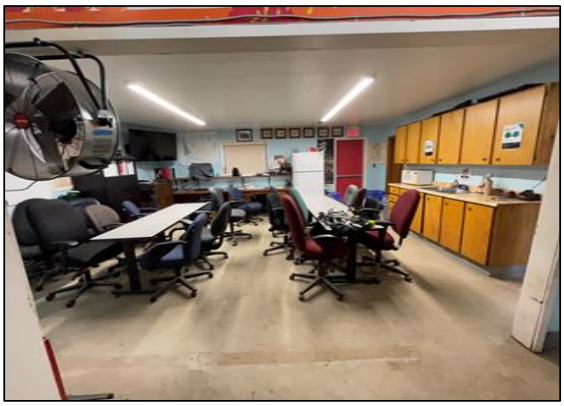
***Note:** Any health and safety related items have been bolded and italicized and a further overview of general health and safety related issues is also included at the end of this station review section.*

Station #1 – Birds Creek

Station #1 has three bays for fire apparatus. This is not a drive through station. This station has a total of 21 Volunteer Firefighters.

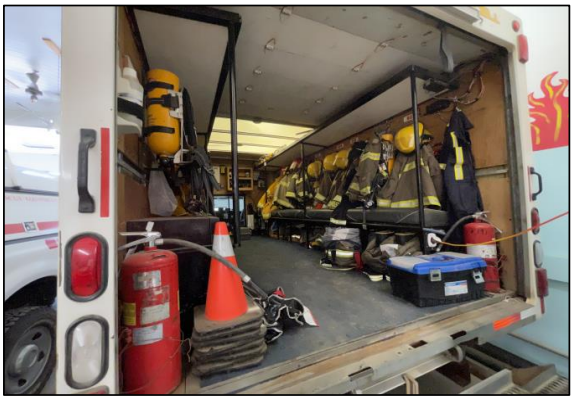
Apparatus Bays

Training/Office/Kitchen area



Washroom and Gear Washer

SCBA Filling Station



Apparatus Bay & Air Filling System

Rear of fire Station

Station #1 - Concerns:

- Lack of storage for equipment
- Firefighting gear exposed to exhaust contamination
- Floor drains do not have oil seprators in them
- There is no diesel exhaust removal system in the station
- No emergency back up power supply for station
- No showers facilities

Station #2 – Herschel North

Station #2 has one front bay and one side bay for fire apparatus. This is not a drive through station.

***Note:** This station has not been operational for the past seven years due to lack of Volunteers.*

Apparatus Bays

Firefighter Gear Stored in Bay

Office Area

Station #2 - Concerns:

- Lack of storage for equipment
- Washroom facility is lacking shower
- Floor drains do not have oil seprators on them
- There is no diesel exhaust removal system in the station
- No emergency back up power supply for station

Station #3 – Monteagle

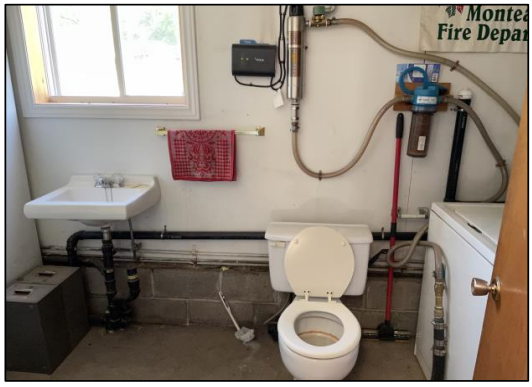
Station #3 contains two bays for fire apparatus. This is not a drive through station. There are approximately 9 Volunteer Firefighters at this station.

Rear of Fire Station

Apparatus Bay

Meeting and Kitchen Area - exposed to diesel exhaust

Washroom and Shower Facilities



Station #3 - Concerns:

- Although there is a shower stall, it is not used or designed to capture contaminates
- Firefighting gear exposed to exhaust contamination
- Floor drains do not have oil seprators on them
- There is no diesel exhaust removal system in the station
- No emergency back up power supply for station

Station #4 – Maynooth

Station #4 contains three bays for fire apparatus. This is not a drive through station. There are approximately 10 Volunteer Firefighters at this station.

Apparatus Bays and Storage

Workspaces/Desks on Apparatus Floor

Washroom, but No Shower Facility

Station #3 - Concerns:

- Lack of storage for equipment
- No shower facilities
- Desks/workspaces located on apparatus floor. Exposed to diesel exhaust
- Firefighting gear stored in cube van
- There is no diesel exhaust removal system in the station

Station #5 – Lake St. Peters

Station #5 has one bay, with no drive through capability. There are seven Volunteer Firefighters assigned to this station. The stations does have structural issues. This station is closed due to black mold.

Side View of Station

Vehicle Parked Outside for Response

Appartus Bay

Washroom

Empty Office

Station #5 - Concerns:

- Black mold has closed the station unit mold abatement or demolition of building
- Building has structural issues
- Lack of storage for equipment
- No shower facilities
- Firefighting gear exposed to exhaust contamination
- No emergency back up power for station

Station #6 – Bangor

Station #6 contains two bays for fire apparatus. This is not a drive through station. There are four Volunteer Firefighters assigned to this station. However, as of July 2022, EMG was advised that the number of VFFs is down to one, due to some recent resignations, which makes this station not operationally active until more VFFs can be recruited and trained.

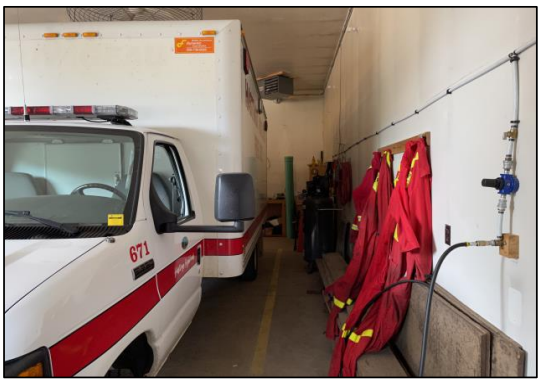
Review View of Station

Cracking of Floor Due to Settling

Appartus Bays

Washroom (No Shower Facilities)

Lack of Storage (Gear Exposed to Exhaust)



Station #6 - Concerns:

- Lack of storage for equipment
- No shower facilities
- Firefighting gear exposed to exhaust contamination
- No emergency back up power for station

4.2 Fire Station Concerns

During the walk-through by EMG, it was evident (as can be seen in the supplied photos) that many of the Hastings Highlands fire stations are nearing, or at maximum capacity for storage of vehicles and equipment. Overall, the concerns noted during the station visits include:

- The proximity of the firefighter's gear in relation to the vehicle exhaust. This could create an exhaust contamination issue. Firefighters' gear should be stored in a separate room away from any exhaust contamination.
- None of the fire stations' apparatus bays have floor drains with oil separator (catchment) systems.
- All the stations appear to be at maximum capacity for vehicles and equipment storage.
- There was a notable lack of proper storage areas/facilities for the equipment. This creates a tripping/safety hazard to the staff.
- Most of the stations need "flammable liquid" cabinets for such things as gas containers and other flammable and/or hazardous liquids storage.
- No diesel exhaust catchment system at any of the fire stations.
- No emergency back up power at any of the fire stations.
- Separations from the apparatus floor and the training/living areas of the station need to be installed and maintained – some of the fire stations have either desks/workstation or kitchen facilities on the apparatus floor. These areas are susceptible to exhaust contamination.
- Washroom facilities for both male and female firefighters were also an issue at the stations and should be addressed. This can also be accomplished by making the washrooms gender neutral.
- The main concern is the lack of shower/wash up areas that need to be made available at all the stations. Firefighters must be able to decontaminate themselves from exposures to smoke,

toxic gasses, chemicals, blood, and pathogens as soon as possible after a call and before going home.

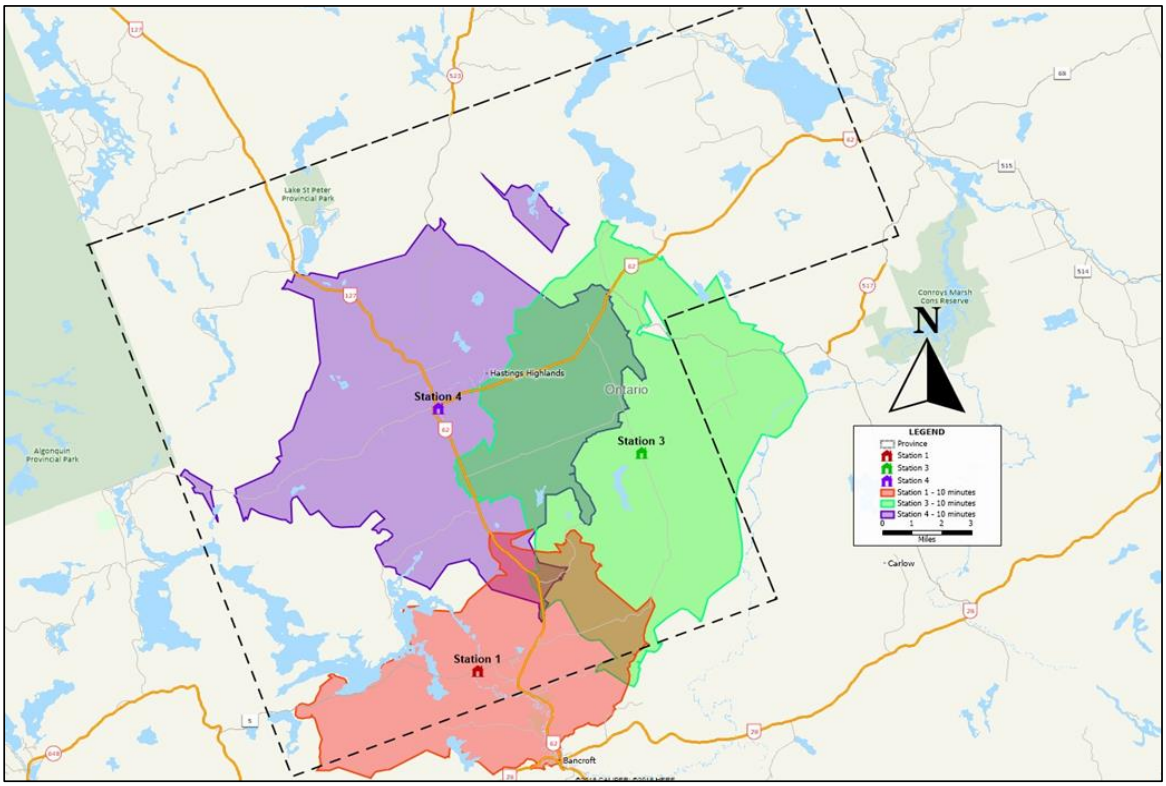
Based on the Occupational Health and Safety Act:

- Workers who may encounter hazardous chemicals are to be afforded proper washing and clean up facilities.
- Space between vehicles must allow for safe and easy access between vehicles to reduce the possibility of persons becoming trapped between vehicles as they are being driven in and out of the fire station.
- For many of the fire stations space is at a premium, and some type of storage facility should be incorporated at many of the fire stations. Future stations should be built with this space requirement in mind.

4.3 Future Station Options

The following map outlines the present operational three-station response coverage as noted, there is still good overlapping coverage in the south and southwest areas of the Municipality. However, the north-east section is left mainly uncovered.

FIGURE #16 - FIRE STATION OPTION #1 – THREE STATION REDUCTION

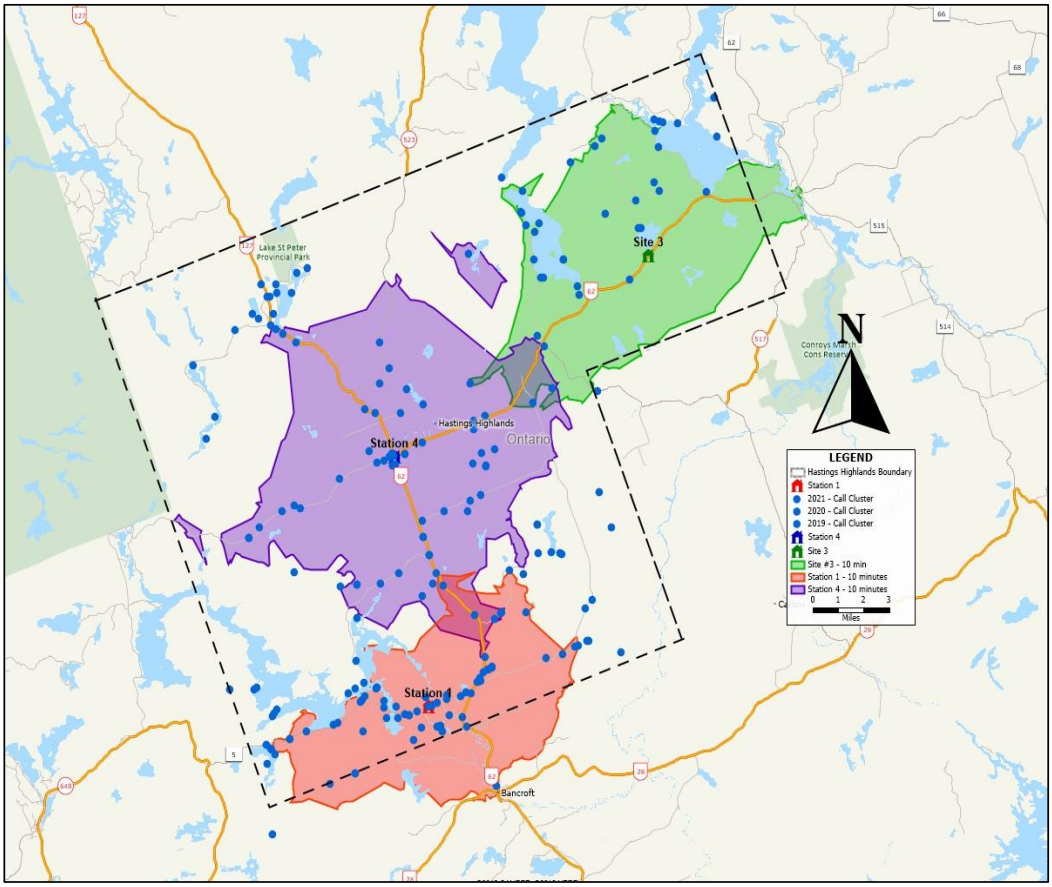


Option #1:

In this option the goal is to take advantage of where stations #1 and #4 are presently located (as noted in Figure #16) and create a new station #3 (site#3, noted in Figure #17) on the main highway for ease of access by the Volunteer Firefighters, which also offers quicker response due to being located on a main roadway. The call locations have been included in Figure #16 and #17 to show where the main bulk of calls occur, and the present level of coverage based on the active fire stations.

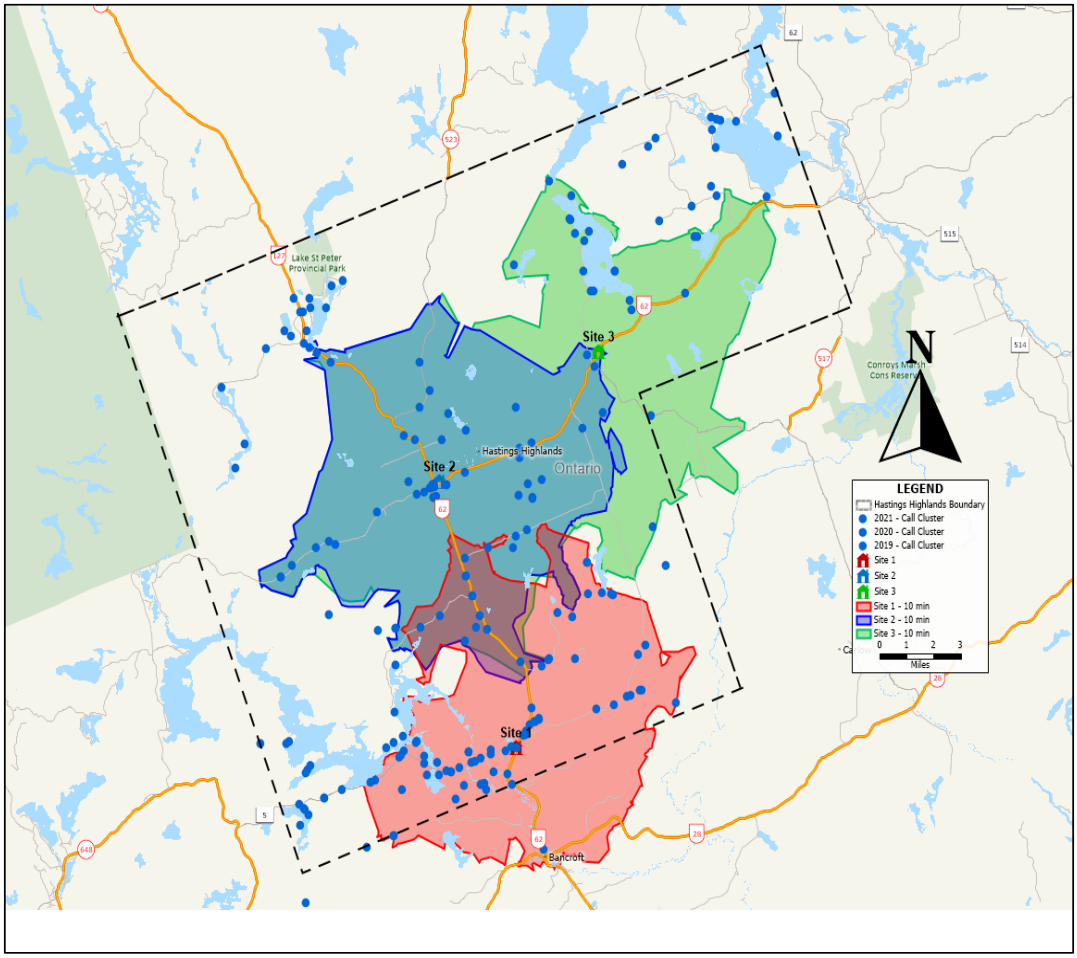
This option would see station #2 and station #5, along with original station #3 being closed. Therefore, only one new station would be required. The approximate cost of this option would be $1 million to $1.5 million dollars.

FIGURE #17 - CURRENT STATIONS #1 AND #4 WITH PROPOSED SITE#3



***Note:** This three-station set up with a new station 3 (site #3) offers decent (10-minute drive time) coverage to the community based on the noted locations of the calls.*

FIGURE #18 - FIRE STATION OPTION #2 – RESTRUCTURED STATIONS



Option #2:

Another identified option where a three-station model is now restructured along the main highway. As can be seen in the above map (Figure #18). The coverage for this model is impressive. The call locations have also been included to show where the main bulk of calls occur and the resulting level of coverage.

However, the concern with this alternative is the overall cost. Building three new fire stations at an approximate cost of $1 million to $2.5 million dollars per fire station (depending on size and overall design) could potentially lead to an overall cost of $3 to $7.5 million dollars. If this option were to be considered, it would be a long-term implementation over the course of 10 to 20 years.

4.4 Feasibility Study

There is a great deal of information to be considered with the options noted here. Before any decision is made, a full feasibility study by the Municipality or third party is recommended to understand what will be required to bring any of the noted stations (that will be kept) up to a state that will allow them to continue to serve the community for the next 10 to 20 years.

This study could be the deciding factor in what stations may in fact need to be rebuilt or even relocated.

The decision by Council on what option is approved, will be the starting point for this feasibility study. As noted, Option #1 recommends the closing of the three non-active stations, and building of a new station #3, which may not require a large study.

Option #2 offers questions that revolve around the cost of building new fire stations over the long term and the land availability for each site.

4.5 Type of Buildings and Options for Fire Stations

Traditionally, fire stations have been stand-alone structures. Municipalities like Hastings Highlands have been shifting to integrating services into shared-use buildings with emergency service response stations being built into community centres, libraries, public works buildings, etc. HHFD has taken advantage of joint facilities, in which they have built some of their fire stations into either a community centre, or as with the Glen Orchard Station, attached to the works yard facility. This partnership with other community buildings is a cost-effective measure in both the use of an existing/new facility but also, sensible use of available lands.

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

As technology, community demographics, and operational requirements evolve, maintaining an ability to be flexible in the station design, construction, and location will benefit the community in the long-term. Leasing of a facility reduces the initial capital outlay, placing building maintenance responsibility on the landlord and allows the municipality the flexibility to move, should there be a change in community development.

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

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

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

EXTREME Fire Station Assembly (On-Site)

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

EXTREME Fire Station (Multi-Bay Example)

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

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

Calgary Fire Department Waldon Station

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

4.6 Fire Apparatus - New and Replacement Schedules

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

The HHFD is well-equipped with pumper trucks, tankers and support vehicles required for primary response to calls within the Municipality. However, the replacement plan is for a 25-year cycle which takes all the vehicles outside of the NFPA and FUS recommendations. It was also noted that even though there is a 25-year replacement plan, some of the vehicles are older than 25 years.

4.6.1 Fire Underwriters Survey – Vehicle Replacement Recommendations

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

The Small Communities and Rural Centres section (outlined in blue) is the recommendation for vehicle replacement for a municipality the size of Hastings Highlands. This allows for up to a 20-year replacement cycle, in which the fire vehicle can be utilized as 2nd Line response status. It is, however, recommended that all 1st Line units be replaced by a new or younger unit when it reaches 15 years of age.

TABLE #3: FUS Vehicle Replacement Recommendations[10]

Apparatus Age	Major Cities [3]	Medium Sized Cities [4] or Communities Where Risk is Significant	Small Communities [5] and Rural Centres
0 – 15 Years	First Line Duty	First Line Duty	**First Line Duty**
16 – 20 Years	Reserve	2nd Line Duty	**First Line Duty**

10 TECHNICAL BULLETIN, FIRE UNDERWRITERS SURVEY™, A Service to Insurers and Municipalities, INSURANCE GRADING RECOGNITION OF USED OR REBUILT FIRE APPARATUS, accessed January 31, 2022, file:///C:/Users/EmergencyLT/Downloads/FUS-TechnicalBulletin-InsuranceGradingRecognitionofUsedorRebuilt%20(1).pdf

20 – 25 Years [1]	No Credit in Grading	No Credit in Grading Or *Reserve* [2]	**No Credit in Grading** **Or 2nd Line Duty [2]**
26 – 29 Years [1]	No Credit in Grading	No Credit in Grading Or *Reserve* [2]	**No Credit in Grading** **Or *Reserve* [2]**
30 Years +	No Credit in Grading	No Credit in Grading	**No Credit in Grading**

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

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

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

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

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

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

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

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

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

- 1st line is the first fire truck utilized for response at the fire station
- 2nd line is the next truck to be used if the 1st line unit is tied up at a call, and

- Reserve is the vehicle kept in the fleet to be put into service if a 1st line or 2nd line vehicle is out of service.

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

4.6.2 National Fire Protection Association – Vehicle Replacement Recommendations

The NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus* also supports a regular replacement schedule of fire vehicles. This standard includes guidance on retirement criteria for fire apparatus. NFPA 1911 recommends that all front-run vehicles are replaced on a 15 to 20-year cycle, depending on the community size.

For emergency services that are considering refurbishing their vehicles to extend the in-service life, reference can be made to the NFPA 1912, *Standard for Apparatus Refurbishing*. It should be noted that although the FUS do take refurbishment of vehicles into consideration, a credit rating is not assigned to vehicles over 30 years of age.

4.7 Purchase of Pumper Tankers

As previously documented, the HHFD is experiencing staffing issues that are currently impacting three of the fire stations. There is the option for the Department to reduce its tanker truck fleet by purchasing "pumper-tankers". The need for at least two tanker trucks would be required if all six fire stations are kept in the Department's inventory. By reducing the fleet to take advantage of the pumper-tanker trucks, less staff are required to drive (one vehicle now required to respond as opposed to two – the pumper and a tanker).

To reduce costs, consideration should be given to the purchasing of slightly used pumper/tankers which can be bought at greatly reduced prices.

However, if the decision is made to reduce the number of stations to three, then a liquidation of all nonessential vehicles would be recommended. By keeping the latest purchased vehicle as the first step that would be undertaken by the Department. Once the nonessential stations have been reduced and all equipment has been inventoried, a decision by the Fire Chief about what needs to be liquidated and what should be kept would need to be presented to the CAO and Council for approval.

4.8 Maintenance

HHFD does not have its own mechanical division, all work is handled by a third party. The standardization of what workshops are to be used by the Department along with a proper SOG in place to address repairs and other maintenance processes should be put in place.

4.8.1 Vehicle Technology

The HHFD should strive to advance the technological perspective on the fire apparatus through the acquisition of tablets. These units are data enabled and will allow the responding crews to obtain information about the incident they are responding to directly from the Communications Centre. This information includes mapping, responding apparatus, pre-incident plans, hydrant locations and access to the internet.

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

HHFD should initiate and develop a pre-incident plan program with the completion of plans. HHFD currently has no pre-incident plans completed. Resources should be allocated that enable the quality and quantity required of the plans developed to be consistent and current.

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

4.8.2 Bunker Gear

Every year, more and more firefighters are being diagnosed with cancer. A contributing factor to their illness has been proven to be the contaminants that adhere to the structural firefighting gear during fire fighting operations. After a fire, the structural firefighting gear should be packaged and sent for

cleaning to reduce this risk. The HHFD fire station has a commercial extraction washing machine made specifically for this type of cleaning.

Assuring gear is clean is a high-ranking priority after fires. To ensure that firefighters are always properly equipped replacement gear is required, while their structural firefighting gear is being cleaned. Firefighters need to have access to proper fitting bunker gear during the cleaning process as this will assist the Department in meeting its Decontamination and Hygiene program.

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

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

HHFD should ensure that SOGs pertaining to the cleaning, inspection of and maintenance of bunker gear is current and meet manufactures requirements. Special attention should be taken when reinstalling the drag rescue device (DRD) if equipped, which may also require an SOG to provide guidance on the procedure.

4.9 New Technologies

Technology is ever evolving within the fire service, with new pieces of equipment being added to the resources used by an incident commander. One such technology which has proven to be a valuable tool is the use of drones (Transport Canada refers to these as Remotely Piloted Aircraft Systems (RPAS). Police services have been using them for some time to locate missing persons or document accidents and crime scenes.

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

Drones can cover a lot of ground thus allowing valuable fire services personnel to be utilized elsewhere. They have proven beneficial for hazardous materials incidents, forest fires, and large-scale emergencies as the drone can be quickly deployed and give the Incident Commander a live view of the

incident. The reduction of risk to firefighting personnel is a significant benefit of drone technology along with the live view capabilities that provides invaluable information to the Incident Commander.

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

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

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

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

4.10 Elevated Device

Although the HHFD would benefit from having an elevated device (aerial or tele-squirt) within its fleet. EMG is not recommending one be purchased at this time. This is due the number of present issues that the Fire Department is presently dealing with.

Appendix “B” has some information on the Fire Underwriters recommendations relating to the need for an elevated device. The Municipality does have some large homes and other structures that do exceed the reach of the average (fire department) ground ladder of 10 meters (approximately 30 feet). But it has not recorded a recent fire in one of the large structures.

At this time EMG is suggesting that future consideration be given to the purchase of an aerial device once the fire stations and staffing issues have been addressed. There is also the option of requesting one through an agreement with a bordering fire department.

Section 4: Recommendations

Rec #	Recommendations	Estimated Cost	Timeline	Rationale
18	The list of station concerns noted in section 4.2 of the report be addressed. ***Note:** an overview of concerns is also noted in the adjoining Rationale section.*	Due to the number of upgrades required, a full assessment will be required by the facilities department to obtain an estimate of costs. These repairs could be anywhere from $100,000.00 up to over a million dollars.	**Short to Mid-term (1-6 years)**	During the walk-through by EMG, it was evident (as can be seen in the supplied photos) that many of the Hastings Highlands fire stations are nearing, or at maximum capacity for storage of vehicles and equipment. Overall, the concerns noted during the station visits include: • The proximity of the firefighter's gear in relation to the vehicle exhaust. This could create an exhaust contamination issue. Firefighters' gear should be stored in a separate room away from any exhaust contamination. • None of the fire stations' apparatus bays have floor drains with oil separator (catchment) systems. • All the stations appear to be at maximum capacity for vehicles

Rec #	Recommendations	Estimated Cost	Timeline	Rationale
				and equipment storage. o There was a notable lack of proper storage areas/facilities for the equipment. This creates a tripping/safety hazard to the staff. o Most of the stations need "flammable liquid" cabinets for such things as gas containers and other flammable and/or hazardous liquids storage. o No diesel exhaust catchment system at any of the fire stations. o No emergency back up power at any of the fire stations. • Separations from the apparatus floor and the training/living areas of the station need to be installed and maintained – some

Rec #	Recommendations	Estimated Cost	Timeline	Rationale
				of the fire stations have either desks/workstation or kitchen facilities on the apparatus floor. These areas are susceptible to exhaust contamination. • Washroom facilities for both male and female firefighters were also an issue at the stations and should be addressed. This can also be accomplished by making the washrooms gender neutral. o The main concern is the lack of shower/wash-up areas that need to be made available at <u>all</u> the stations. Firefighters must be able to decontaminate themselves from exposure to smoke, toxic gasses, chemicals, blood, and pathogens as soon as possible after a

Rec #	Recommendations	Estimated Cost	Timeline	Rationale
				call and before going home.
19	Council to consider the two future fire station options as possible alternatives based on the challenges the community is having in relation to the staffing of the fire stations, along with the cost of upkeep and vehicle replacement.	Depending on the option chosen, the cost could range from approximately 1 million up to 7.5 million.	This is a long-term investment. (1-10 years)	Both options 1 and 2 provide the council with information that can provide a good level of coverage for the community at an eventual reduction of costs. The two options have the stations being reduced from 6 down to 3 stations.
20	Based on the station recommendations of the Fire Chief, CAO, and Council to consider reduction of the Fire Department's fleet.	Assessment and recommendations to occur first before costing/saving can be determined	Short-term for decision (1-3 years)	Based on the decision by the Council on the number of fire stations, a review of what vehicles and equipment are to be kept will be required. If all six stations are kept, then an assessment of reducing the number of tanker trucks by replacing them with pumper-tankers may be required.
21	The Fire Chief's vehicle be replaced with a four-wheel drive pick-up truck. This will provide the Fire Chief with a more operational type of vehicle to carry equipment in a safer set up.	Approximate cost of $50,000.00 to 80,000.00.	Upon replacement of the present vehicle.	Having a vehicle that is more operational in its use, will allow for the safe transportation of equipment to and from an emergency scene.

SECTION 5

Emergency Management

SECTION 5: EMERGENCY MANAGEMENT

5.1 Emergency Management Program Overview

The Emergency Management and Civil Protection Act (EMCPA) prescribes responsibilities to municipalities to develop and implement an emergency management program, which must be adopted by the council of the municipality as a by-law. Further, under EMCPA the municipality is required to formulate an emergency plan governing the provision of necessary services during an emergency and is required to establish the procedures detailing how employees of the municipality and other persons will respond to the emergency. The council of the municipality shall by by-law adopt the emergency plan.[11] .

In the spirit of the EMCPA, EMG notes that the municipality of Hastings Highlands adopted By-law 2021-020 on the 20th of October 2021, repealing the previous By-law 2019-092. The By-law meets the requirements of the EMCPA with respect to an emergency management program, an emergency plan, and emergency response plan, as well as the requirement for the Emergency Plan to be reviewed annually.

The *EMCPA* also stipulates that municipalities are to conduct training programs and exercises. The municipality conducted a tabletop exercise last year, which keeps it in line with program expectations.

EMG also notes that By-law 2021-020 – A By-law to Adopt an Emergency Management Program, Emergency Response Plan and All Other Requirements Under the Emergency Management and Civil Protection Act conforms in principle to Part II Municipal Standard of Ontario regulation 380/04 made under the EMCPA. For instance, the composition and responsibilities of the emergency management program committee meet the requirements of section 11 of the regulation, members of the municipal emergency control group are identified as per section 12 of the regulation, an emergency information officer has been designated as per section 14 of the regulation, and the Municipality's Emergency Plan (MEP) consists of an emergency response plan that assigns responsibilities and sets out the procedures for notifying the members of the municipal emergency control group of the emergency, as per section 15 of the regulation.

The Community Emergency Management Co-ordinator (CEMC) duties have been assigned to the Chief Administrative Officer (CAO) with the Chief Building Official and a Volunteer Firefighter as the alternates. EMG recommends that, when the vacant full-time Deputy Chief position is filled, the alternate CEMC role be assigned to the Deputy Chief. This would allow the Fire Chief to maintain his

[11] Emergency Management and Civil Protection Act

operational role within the Fire Department to engage its resources as necessary in case of a declaration of emergency.

The latest version of the MEP is dated October 20, 2021. It is a legislative requirement for emergency response plans to be reviewed and updated each year. Changes could be minor, not requiring a complete document update. To catalog such changes, the CEMC should insert a page at the front of the document to include the following:

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

The MEP identifies a primary and secondary municipal emergency operation centre (MEOC) in which the two locations within 17 kilometres of each other[12]. Although the alternate MEOC is at the south end of the Municipality, in case of an emergency that may affect both MEOCs, EMG recommends a tertiary MEOC be identified through an agreement with the Town of Bancroft. The Town of Bancroft is an ideal partner, given the already existing cooperation through an auto extrication agreement and a dispatch agreement.

The alternate MEOC on South Baptiste Road does not have an automatic standby generator. Sub-section 13(2) of Ontario regulation 380/04 states:

> "*…the emergency operations centre must have appropriate technological and telecommunications systems to ensure effective communication in an emergency*".

Furthermore, EMG's review of the telecommunication system indicates that the South Baptiste Road MEOC has poor Information Technology and Wi-Fi capabilities. Consideration should be given to moving the secondary EOC to a location with enhanced IT and Wi-Fi capabilities.

Apart from the recommendations to the designated alternative CEMC and the alternate MEOC, the emergency management program is well administered and resourced.

[12] Google Map on August 17 from https://www.google.com/maps/dir/33011+Ontario+62,+Maynooth,+ON/168+S+Baptiste+Lake+Rd,+Harcourt,+ON+K0L+1C0/@45.1689497,-77.9731787,12z/data=!3m1!4b1!4m13!4m12!1m5!1m1!1s0x4cd46b93902212bb:0x731f426220690a22!2m2!1d-77.9398606!2d45.23079!1m5!1m1!1s0x4cd46f57fd9ad3c7:0x4c42a40b3ff83289!2m2!1d-77.88628!2d45.10717

5.1.1 Incident Management System

Interagency, multi-jurisdictional, multi-government and multi-disciplinary are terms used when operating in a large-scale emergency environment. The Incident Command System (ICS) is based upon best practices in Canada and the United States and is used for both small or large emergency and non-emergency planned events. It identifies roles and responsibilities to improve resource and interagency communications for a common purpose. In the Province of Ontario, the ICS is known as the incident management system (IMS).

During some emergencies there is a likelihood of the IMS being expanded into a Unified Command. The type of incident, complexity and location of an incident may require a Unified Command structure. The Unified Command "is a management structure that brings together the 'Incident Commanders' of all major agencies and organizations involved in the incident to coordinate an effective response while at the same time carrying out their own jurisdictional or functional responsibilities."[13]

The EOC is critical for providing coordination, resource management, communications, and critical assessments of the event with the Incident Commander. The strength of the IMS is in ensuring the safety of responders and other personnel are a priority and an effective use of resources or elimination of the duplication of services is achieved. Individuals that are expected to be part of the EOC, including designated alternates, should have training in IMS.

There is no minimum training identified for the MEOC, however, the IMS is identified in the Municipality's Emergency Response Plan. Most incidents are routinely dealt with without activating the MEOC and it must be noted that the MEOC is activated when an event is expected to expand in complexity and duration, requiring an efficient coordination among departments or responding agencies.

The IMS doctrine from the MEP is designed to be consistent with the Canadian Standards Association (CSA) *Z1600 – Canadian Emergency Management and Business Continuity Program Standard*.

5.2 Emergency Management Program Opportunities

Due to the importance of staff understanding their roles and responsibilities in the MEOC, it is recommended that a policy be implemented that identifies IMS 100 for all Municipality staff, IMS 200

[13] Deal, Bettercour, Deal, et al, (2010) Beyond Initial Response, ICS, p.I-33.

as the minimum standard for staff required to be in the MEOC, and IMS 300 being the minimum for all department heads.

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

Section 5: Recommendations

Rec #	Recommendation	Estimated Cost	Suggested Timeline
22	Update MEP and insert a page at the front of the document to include the following: • The date changes were completed. • A brief outline of the changes and the sections involved. • Name of individual completing the updates. • Whether the revised document requires Council approval.	**Staff time**	**Immediate (0-1 year)**
23	When the vacant full-time Deputy Chief position is filled, the alternate CEMC role is assigned to the Deputy Chief position.	**Staff time**	**Short-term (1-3 years) ongoing**
24	A tertiary MEOC should be identified through an agreement with the Town of Bancroft.	**Staff time**	**Short-term (1-3 years)**
25	Due to the importance of staff understanding their roles and responsibilities in the MEOC, a policy should be implemented that identifies IMS 100 for all staff, IMS 200 as the minimum standard for staff required to be in the MEOC with IMS 300 minimum for all department heads.	**Staff time (Courses are offered at no charge)**	**Short-term (1-3 years) ongoing**
26	The MEP should have a section dedicated to domestic terrorism. The section should include an integrated response program comparable to NFPA 3000, Standard for an Active	**Staff time**	**Short-term (1-3 years)**

Rec #	Recommendation	Estimated Cost	Suggested Timeline
	Shooter/Hostile Event Response (ASHER) Program. • Partnerships could be achieved with outside agencies such as the OPP and EMS to develop and deliver a presentation to the public and include local businesses as sponsors to assist in offsetting any expenses.		

SECTION 6

Mutual Aid, Automatic Aid & Fire Service Agreements

SECTION 6: MUTUAL AID, AUTOMATIC AID AND FIRE SERVICE AGREEMENTS

6.1 Mutual Aid Partners and Agreements

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

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

6.2 Mutual & Automatic Aid

Mutual aid is meant as a reciprocal agreement whereby one department aids another at a major incident. Mutual aid should not be used as a means of supplementing short comings in fire protection. If this is the case, then an automatic aid or fire service agreement should be entered into between the affected municipalities.

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

Automatic Aid and Response Agreements are an appropriate means of identifying areas of the home department's response capabilities and fill in any gaps that exist. This may include responses to remote areas of a municipality or the provision of a technical rescue team.

The HHFD is a member of the Counties of Hastings and Prince Edward Mutual Aid Plan and Program which includes all the fire services of each county and was last updated in 2019.

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

The HHFD currently has three agreements in place. The agreements are with the fire services of the Town of Bancroft (North Hastings Rescue Support Vehicle, By-Law 2014-063), and the Township of

Madawaska Valley (By-Law 2018-094), for fire protection in portions of Hastings Highlands. Hastings Highlands Fire Department also has an agreement with the Ontario Government's, Ministry of Northern Development, Mines, Natural Resources and Forestry (2017) for responses onto crown land.

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

- The agreement should identify the resources that each fire department can provide.
- The agreement should identify and authorize the fire department to leave their jurisdiction for automatic aid purposes.
- The identification of the Incident Command procedures by all parties.
- Fire departments must be suitably equipped to meet the functions they are expected to perform at an emergency.
- All fire departments have the legal obligation to serve and protect their own community prior to engaging in mutual aid activities and this must be clearly stated in the plan.
- Liability coverage and indemnification provisions.

EMG has reviewed the noted agreements and observed that, while in need of updating, they remain in effect. The effort that goes into maintaining these relationships has a direct benefit to the citizens being served, to protecting lives, homes, and infrastructure, and to keeping firefighters safe. Additionally, it is also in the best interest that fire departments in a fire protection agreement, automatic aid agreement or mutual aid plan identify annual training sessions where firefighters get acquainted with the equipment of other departments. These combined training sessions also build the working relationship and morale between fire departments. Without combined training sessions to practice as a team, the team cannot effectively function, and breakdowns can occur.

Another benefit of the mutual training session is the identification of gaps in equipment, communications, or training prior to a real emergency. It is highly recommended that when the current agreements are revised and updated, that a defined commitment to regular training be included that designates the position accountable for completion of this task. In addition, the agreements should lay out a commitment to ongoing meetings with senior fire department leadership. These mutual aid/automatic aid meetings allow fire chiefs and chief officers from the participating departments to discuss issues or gaps in response protocols and to identify a collaborative path forward that enhances fire protection for all participating agencies and communities. Even though these meetings are not identified in the current agreements, to the credit of the Fire Chiefs of Hastings County, they already frequently meet during the year.

EMG does recommend that all Automatic Aid, Mutual Aid and Fire Protection/Service Agreements continue to be annually reviewed and revised if necessary. Particular attention should be paid to adherences to regular defined review periods and/or expiry dates identified. Also, a page listing the dates of review and areas revised should be an addendum to any of the revised agreements and associated bylaws.

As mentioned previously and in the CRA, Hastings Highlands Fire Department does not have a technical rescue program to the operations level in any rescue discipline. The Fire Department should review opportunities of entering into response agreements with either outside fire services or a third-party for these services. The costs associated with technical rescue agreements should be recovered from those involved through the town's fee's by-law. It would be wise on the part of all the fire departments of Hastings County to review their response capabilities to technical rescues, and possibly be a member department to a technical rescue mitigation agreement.

Section 6: Recommendations

Rec #	Recommendations	Estimated Cost	Suggested Timeline	Rationale
27	Hastings Highland Fire Department explores opportunities of entering additional automatic aid/response agreements with neighbouring fire departments to better serve the residents of Hastings Highlands.	**Staff time**	**Short-term (1-3 years) ongoing**	With the current staffing level and distance to travel to some of the outer areas of Hastings Highlands, agreements will enhance the current level of protection for those residents.
28	The Hastings Highlands Fire Department should enter into response agreements with either an outside fire service or a 3rd party to provide support for technical rescues if the need arises.	**Staff time**	**Short-term (1-3 years) ongoing**	If a technical rescue call comes in that requires additional resources from outside the HHFD, a plan will already be in place ahead of time. Also reduces the response time of these agencies if agreements are in place, in advance as pre-response approvals will not be required.

SECTION 7

Finance, Budgeting, Fees, & Cost Recovery Mechanisms

SECTION 7: FINANCE, BUDGETING, FEES, & COST RECOVERY MECHANISMS

The costs associated with supporting public safety and operating a fire department can make up a large part of municipal finances. The Municipality of Hastings Highlands Finance Department provides a wide variety of administrative and financial services to all departments of the Municipality and to the public. The Department is responsible for coordination of the annual operating and capital budgets[14]. That said, the vast majority of a fire department's budget, such as with the HHFD, is a fixed cost.

While the Municipality of Hastings Highlands Financial Department is the primary stakeholder in managing the budget process, the HHFD is engaged and involved in this process through participation of the Fire Chief. This level of engagement ensures that management and elected officials are cognizant of the public safety needs of the community and its fire department.

As is the case with the HHFD, fire department budgets should be devised to meet the public safety needs of the community served in a sustainable manner. Research has demonstrated that if fire department resources are deployed to match the risks inherent to hazards in the community, then the community will be far less vulnerable to negative outcomes.

EMG notes that upon a review of HHFD operating budget, there are ten accounts associated with HHFD, including a Fire Services account, a Fire Services Equipment account, six accounts for each of the fire stations, a Bunker Gear Maintenance account, and a Mutual Aid/Rescue Unit account[15]. Overall, the accounts and the account codes do not appear to represent the true operational functions of the Fire Department effectively and efficiently. Consequently, it is difficult to evaluate the actual operating expenses of the Department to determine the actual day-to-day operations of the fire department.

During municipal budget deliberations, internal departments are competing against each other for scarce budget resources. The job of the Fire Chief is to educate administration and elected officials explaining why these costs are necessary for the fire department to provide the service levels identified in the Emergency Services Bylaw and for the safety of staff and citizens in the

[14] Municipality of Hastings Highlands website retrieved on August 18, 2022, from https://hastingshighlands.ca/municipal/financial-information/

[15] Municipality of Hastings Highlands General Ledger Annual Department Budget Report - Revenue and Expense Fiscal Year Ending: DEC 31,2022 To Period 4 printed on 2022-04-14 at 12:25pm

community. EMG notes that the current operating budget accounts and expenditure codes are not tracked with sufficient detail to support both transparency and accountability.

EMG recommends a review of the account codes and expense codes to depict a more accurate fiscal reality of the fire department.

7.1 Operating Budget

The Fire Services account does not have expense codes for the Suppression Division, Prevention Division, Public Education Division as per the Fire Department organizational chart. The generalization of the expenditures into general expense codes makes it hard to fiscally monitor expenditures.

An example of accounting issue from generalist expense codes is the Fire Volunteer Honorarium expense code. A breakdown of the expenditure showed that although District Chiefs have an honorarium of $3,500.00 per year, a breakdown of the wage paid per hour shows that in 2021 one district chief hourly was greater than the hourly rate of the Fire Chief (Table 1).

Table 1: 2021 Breakdown of Honorarium and Hours Worked for District Chiefs and Captains

Hourly rate calculation summary for 2021			
HOURLY RATE			
	Average	Low	High
Captain	$23.60	$20.76	$32.07
Deputy Captain	$33.92	$27.71	$44.56

The wage for Firefighters is $16.00 per hour. An hourly breakdown for a District Chief and Captain shows that they can make as much as 280% more per hour than a Firefighter for the number of hours worked during a year. EMG recommends a revision of the honorarium and wage model to ensure a more equitable salary amongst all members of the Fire Department. A new model may also help transparency and accountability, not to mention morale and retention of Volunteers within the Department.

Another example of issues with a generalist ledger rather than a specific ledger can be found in the review of the Fire Department fleet. HHFD has twenty-three apparatuses in their fleet, there is no expenditure breakdown or budget associated with maintenance of the fleet or fuel. Instead, fleet equipment/fuel is codified under each fire station (in isolation from each other). Without budgetary details, it is difficult for the Fire Chief to monitor expenditures or review operational needs leveraging budget allocation for budgetary prudence to meet the safety needs of the community. For instance, having an expenditure code for fleet fuel may help in evaluating fluctuating fuel costs.

Another issue is with individual maintenance/fuel expenditure codes for each station. This silo approach hinders a review of the overall accounting. For instance, a consolidated review of fleet equipment/fuel costs may inform the Municipality to consider shared resources with the Roads Department which has a fuel program in place.

This isolationist approach may also impact considerations for shared resources. For instance, the municipal Roads Department has a fleet mechanics. EMG notes that currently each fire station takes care of their fleet and there is no consistency where the apparatuses are repaired or fluctuating costs for repairs depending on the mechanics shop used. This can be procurement issue solvable through using a single vendor or sharing resources using the Roads Department mechanics to maintain the HHFD fleet.

With respect to the above-mentioned budgetary issues, EMG recommends the following:

- A review of the honorarium and wage distribution for members of the HHFD
- Consideration to HHFD accessing fuel program from Roads Department to alleviate fluctuating fuel costs
- Consideration to sharing resources amongst MHH departments, such as using Roads Department mechanics to maintain HHFD fleet.

7.2 Capital Budget

The Municipality's capital budget identified capital funding for the HHFD broken down into categories such as Fire Capital Trucks, Fire Capital Personal Protective Equipment, and Fire Capital Equipment.

During the budget process the Fire Chief prepares a capital budget report and works closely with the Financial Department to review, revise, and update, as necessary. The request is evaluated on whether it is a forced growth request that is a need based upon the ability to

provide a level of service. The recommended projects are consolidated into a report for Council to deliberate and approve or deny.

With respect to Fire capital Trucks, each station has a pumper and a tanker apparatus. This apparatus distribution is a remnant of the amalgamation of several municipalities unto the Municipality of Hastings Highlands. EMG recommends that HHFD considers future acquisition of pumper/tanker apparatus to replace aging pumpers at each station. Further, EMG recommends that the fleet of six tankers be eventually reduced through attrition reduced to three tankers strategically located at fire stations within the Municipality.

7.3 Revenues

The Municipality adopted a User-Fee Bylaw (2022-001 user-Fee-Bylaw)[16] and revenues are processed through general revenues account for the Fire Department. The fee schedule for fire related services is comprehensive, fair, and adequately represents Fire Department services within the Municipality.

EMG recommends that user fees from fire services related matters be reflected in the Fire Department Operating budget.

The HHFD is potentially looking at significant expenditures in the coming years. As noted previously, staffing costs associated with provision of training to meet standards and ensure adequate service provision and interoperability with neighbouring jurisdictions should be a priority. The amount to be directed for fire protection from both the municipal operating and capital budgets should be reviewed, and opportunities for additional revenues to support an appropriately resourced fire department should be examined to lessen the impact on the tax base.

Recently, the Fire Marshal's Public Fire Safety Council (FMPFSC) announced the creation of a $750,000.00 grant to support firefighter certification in Ontario. The grant will be provided over the next three years and is open to all Ontario fire departments who can demonstrate a need for educational materials to support training[17]. EMG recommends that HHFD apply for a grant through FMPFSC to help counter the costs associated with training.

[16] Municipality of Hastings Highlands User-Fee Bylaw retrieved on August 19, 2022, from https://hastingshighlands.ca/wp-content/uploads/2022/02/2022-001-User-Fees-Bylaw.pdf

[17] OAFC website retrieved on August 18, 2022, from https://www.oafc.on.ca/

It is worth noting that providing direct comparisons to other local jurisdictions regarding the fire department's budget as a percentage of the municipal budget can be challenging. This is primarily due to the geographically distributed nature of the Municipality and the need to deploy and support disbursed resources for efficient and effective incident response.

7.4 Fees By-Law

A means of generating revenue to offset the operating costs of the Fire Department is through a Fees By-Law for services provided. The Municipality is allowed to charge for services provided, as outlined in the *Municipal Act* of Ontario (2001), Part XII.

As mentioned in section 7.3, the Municipality has a comprehensive User-fee Bylaw (2022-001). During this review EMG notes that the list of fees for service currently charged is comprehensive and adequate. There are opportunities to capture more revenues for the services provided by the Fire Department. The opportunity of generating revenues could expand with the review and update of the current fee schedule vis-à-vis the Fire Department's prescribed levels of service.

The following are additional fire related services that can be added to the fire fee schedule:

COMMERCIAL PERMITS AND INSPECTION FEES

- Single occupancy less than 20,000 ft^2
- Single occupancy greater than 20,000 ft^2
- Multi-tenant Building. Fee covers the first three units. A fee of ½ of the current hourly rate will be charged for each additional unit.
    - Fireworks & Pyrotechnics Display Inspections

RESIDENTIAL PERMITS AND INSPECTION FEES

- Multi-tenant (up to and including twelve units)
- Two-unit House Registration Ontario Fire Code Inspection - The fee covers the cost of the initial inspection and follow-up inspection to a maximum of two (2) working hours. If subsequent inspections are required, the current hourly rate will be billed to the applicant.

FIRE APPARATUS STANDBY

- Shows, Exhibitions, Demonstrations - Current overtime rates per hour for the entire time fire department is in attendance and includes all assigned apparatus at the scene. $200

per apparatus per hour. Full cost recovery for 1 Captain & 3 Firefighters, minimum of 3 hours per apparatus.

- Fire Watch - Current rates per hour for the entire time fire department is in attendance and includes all assigned apparatus at the scene. $200 per apparatus per hour. Full cost recovery for 1 Captain & 3 Firefighters, minimum of 3 hours per apparatus.

ADDITIONAL EXPENSES

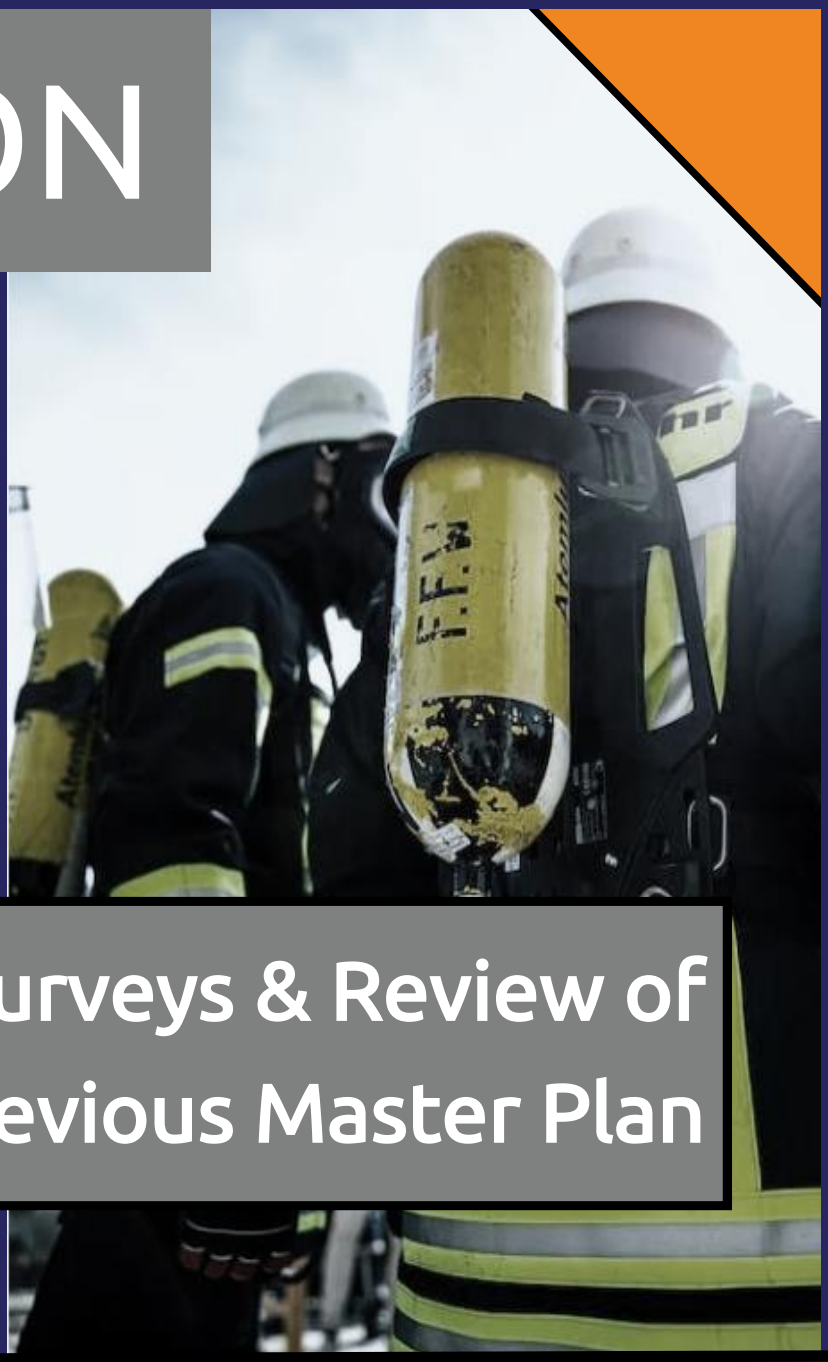
- If it is necessary to retain a private contractor, rent special equipment not normally available on a fire apparatus to determine origin and cause, suppress, or extinguish a fire, preserve property, prevent fire spread, make safe or otherwise eliminate an emergency (actual costs).
- Fees for responding to motor vehicle collisions for non-residents.
- Cost recovery for any technical rescues that are provided by the Department or a third party.

By exploring additional opportunities for revenue generation/cost recovery, the HHFD can ensure resources required to support effective and efficient fire service delivery remain available. From the review completed by EMG, the HHFD currently employs a sound approach to budget management, and the recommendation to investigate alternative funding sources, along with the other recommendations within this section will simply support the growth and development of this critical community service.

Section 7: Recommendations

Rec #	Recommendation	Estimated Cost	Suggested Timeline
29	EMG recommends expanding the account codes and expense codes to depict a more accurate fiscal reality of the fire department.	Staff time	Short-term (1-3 years) ongoing
30	EMG recommends the following: • A review of the honorarium and wage distribution for members of the HHFD • Consideration to HHFD accessing fuel program from Roads Department to alleviate fluctuating fuel costs. • Consideration of sharing resources amongst MHH departments, such as using Roads Department mechanics to maintain the HHFD fleet.	Staff time	Immediate (0-1 year)
31	EMG recommends that user fees from fire services related matters be reflected in the fire department Operating budget.	Staff time	Short-term (1-3 years) ongoing
32	EMG recommends that HHFD apply for a grant through FMPFSC to help counter the costs associated with training.	Staff time	Immediate (0-1 year)

SECTION 8



Stakeholder Surveys & Review of Previous Master Plan

SECTION 8: STAKEHOLDER SURVEYS & REVIEW OF PREVIOUS FIRE MASTER PLAN

8.1 Stakeholder Surveys

To get a complete understanding of how well HHFD is meeting the needs of the community and its volunteer force, both community and staff input were requested in the form of a blind survey, via Survey Monkey. This input was helpful in developing recommendations to assist Hastings Highlands Council with future strategic decision making as it relates to the fire service.

8.1.1 External Surveys

There was a total of 172 external surveys completed. Based on the information received The highlighted areas were extremely important to the respondents:

- Response to calls
- Response for service
- Relevant training
- Purchase and upkeep of equipment

Other information received, include:

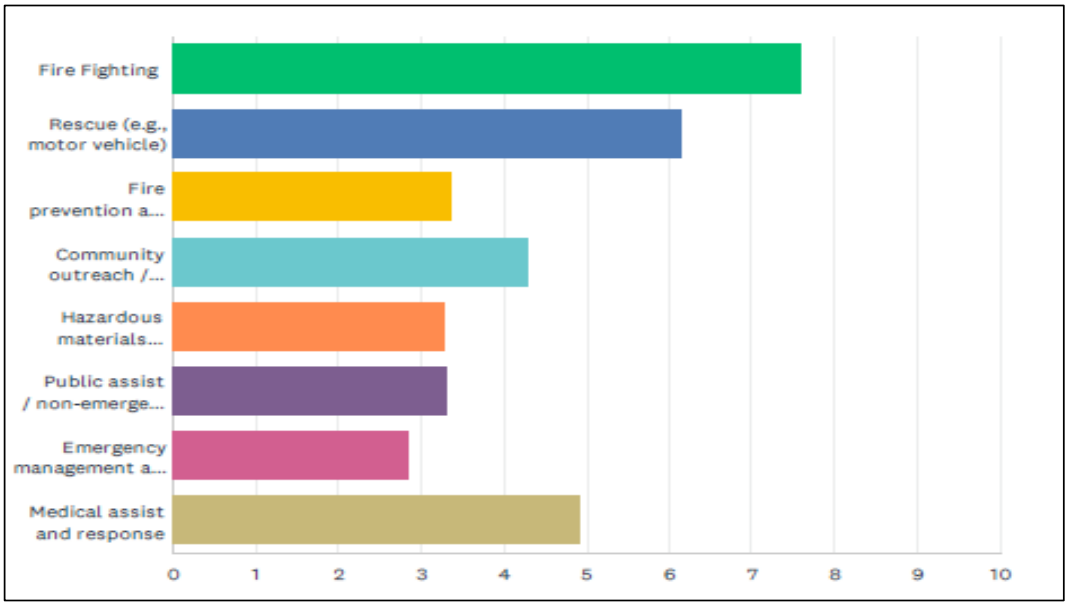
- The Fire Department is viewed as professional, "good to top notch", and a good community partner
- Some suggestions that the external stakeholders would like to see an increase:
  - More attendance at community events
  - More home inspections
  - More education and safety programs
- In relation to top issues/challenges:
  - Cost of supplying the services to the community
  - Dealing with cutbacks and aging equipment
  - Hiring of volunteers and keeping their skills current
  - Climate change
  - Access to island and/or isolated residences

- Continue to meet the needs of a growing population

8.1.2 Internal Surveys

There was a total of 12 internal surveys completed (by the firefighters). Much of the information received from the internal surveys identified the following:

- The majority of the staff are very proud of the service that they offer to the community and believe that the community feels that they are served by a professional and dedicated group of firefighters.
- Overall, the firefighters expressed a concern about some of the present emergency services facilities. There is a lack of proper space for equipment, vehicles, office and crew quarters.
- The top challenges put forward are the continued need to retain volunteer staff, ensuring properly trained and equipped staff in meeting response challenges.
- It was also noted that more community outreach and fire safety programs need to be delivered by the HHFD.
- The question on ranking the priority of services from 1 to 8 resulted in the following chart (from the firefighters):



8.1.3 Senior Staff Interviews

Input from senior staff supported a good working relationship between the Fire Department and other staff. There is a real sense of teamwork amongst the group.

- HHFD is seen as a valued member of the team,
- All of the departments are focused on meeting the needs of the community, as identified with the goals and expectations of Council.

8.1.4 Council Interviews

All members of Council are proud of the Fire Department and are in full support of this Fire Service Review and are interested in the recommendations that will result from this assessment.

The key points noted were:

- Continue to support the Fire Department in its endeavours to meeting the needs of the community
- Ensure the firefighters have the training and equipment they need to effectively do their jobs
- As for fire stations, there was a variety of comments that ranged from;
    - No reduction of stations to finding the best balance of station numbers
    - This could be in the form of several key (or super stations) with a few supporting stations. Or a reconfiguring of the station locations to provide the best possible level of coverage, no matter with the number of fire stations would be.

8.2 D.M. Wills 2016 Buildings, Facilities and Lands Report

The Municipality of Hastings Highlands (MHH) retained the service of D.M. Wills Limited (Wills) to complete a review of their existing buildings and facilities. The 2016 Wills Report presented the results of their investigation and recommendations for MHH's 2016 capital programs, as well as a 1-5 year and a 5–10-year projected recommendations.

Of the 25 buildings and facilities reviewed in the study, six assessments pertained to the HHFD fire stations. The study did not include the HHFD radio tower.

1. Lake St. Peter Fire Hall

2. Bangor Fire Hall
3. North Baptiste Road Fire Hall
4. South Baptiste Road Fire Hall
5. Maynooth Fire Hall
6. Monteagle Valley Fire Hall

The overall findings for the six fire halls indicated that none of the fire halls met up-to-date accessibility requirements outlined in the Ontario Building Code. Furthermore, the Wills Report suggested that, although the fire stations do not meet up-to-date accessibility requirements, the intended use of the building is not for the public and improvement for accessibility if not required. However, EMG suggests that the fire stations should be used by the public through a robust public education program prescribed by MHH By-law 2020-012 (Establishing and Regulating levels of service).

EMG recommends that MHH consider retrofitting the six fire halls to meet accessibility requirements, especially in view of support to public education programs.

Lake St. Peter Fire Station

Wills Report suggested that the structural adequacy of the building be further investigated. To EMG's knowledge, the structural adequacy of the building has not been investigated, however does have structural issues. At present, Ministry of Labour ordered the building closed due to black mold issues.

Bangor Fire Station

Wills Report suggested that, although the building does not meet up-to-date accessibility requirements, the intended use of the building is not for the public and improvement for accessibility if not required. However, Wills suggests some accessibility improvement could be made for staff. EMG visit of the fire hall in May 2022 did not indicate that recommended improvement in the 1-5 year for accessibility for staff was implemented.

North Baptiste Road Fire Station (Herschel North)

The Wills Report suggested a major capital investment to repair/replace the metal roof in the 1–5-year basis. During EMGs visit of the station in May 2022, it was revealed that the station has been inactive for the past seven years. It is suggested that if the station is to become active again, recommendation from the Wills Report regarding capital investment should be considered.

South Baptiste Road Fire Station (Birds Creek)

Wills Report suggested minor repairs to the siding on the south-east corner of the building. The report did not suggest any major capital investments for the next 10 years and no roof replacement for the next 15-20 years. This station appears to be one of the better structurally sound buildings of the current six fire stations.

Maynooth Fire Station

The Wills Report identified historic water damage located in the ceiling above the east bay area. During the station visit, it was noted that the water damage was still visible. Although, the Wills Report acknowledged that the water damage was historic and prior to the new roof replacement, for aesthetic reasons, public perception, and staff morale, repairs should be undertaken.

Monteagle Valley Fire Hall (Monteagle)

The Wills Report identified the need to replace some fascia located along the east wall of the building to protect exposed wood from the roof face plate. It would appear that the repairs have not been completed yet. EMG recommends that for aesthetic reasons, public perception, and staff morale, repairs should be undertaken.

8.3 Fire Underwriters Survey

The Fire Underwriters Survey (FUS) is a national organization that provides data on public fire protection for fire insurance statistical work and underwriting purposes of subscribing insurance companies. Subscribers of FUS represent approximately 90% of the private sector property and casualty insurers in Canada[18].

FUS Certified Fire Protection Specialists conduct detailed field surveys of the fire risks and fire defences maintained in built up communities including incorporated and unincorporated communities of all types across Canada. To complete this task, the specialists at FUS perform a detailed analysis of the overall fire protection by assessing four key areas: fire department, water supplies, fire prevention and emergency communications.

The results of these surveys are used to establish a Public Fire Protection Classification (PFPC) for each community. While the FUS is not involved in setting rates, the information provided

[18] Municipality of Hastings Highlands FUS Letter to Fire Chief Dan Koroscil dated January 9th, 2020.

through the Fire Insurance Grading Index is a key factor used in the development of commercial lines property insurance rates. The PFPC is also used by underwriters to determine the amount of risk they are willing to assume in each community or section of a community.

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

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

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

FUS described its grading process as follow[19]:

> *The Public Fire Protection Classification (PFPC) is a numerical grading system scaled from 1 to 10 that is used by Commercial Lines1 insurers. Class 1 represents the highest grading possible, and Class 10 indicates that little to no fire protection is in place.*
>
> *Fire Underwriters Survey also assigns a second grade for fire protection. The second grading system, entitled Dwelling Protection Grade (DPG), assesses the protection available for small buildings such as single-family dwellings and is used by Personal Lines2 insurers.*

[19] Municipality of Hastings Highlands FUS Letter to Fire Chief Glen Ackerman dated July 22nd, 2022.

The DPG is a numerical grading system scaled from 1 to 5. One (1) is the highest grading possible and five (5) indicates little or no fire protection is present.

Historically, community assessments were conducted by FUS on a predetermined basis, varying from 10 to 25 years. Best practice and changing industry standards suggest that moving to a grade update every five years would better reflect ongoing changes to fire protection and communities at large. The FUS has also introduced the FUS Municipal Fire Portal that would provide HHFD the ability to access and update data relevant to HHFD and forward updates in a timely fashion. By accessing this system regularly, the HHFD can provide frequent updates from which FUS Specialists will analyze and publish grade updates as deemed necessary. It is recommended that once a FUS assessment is complete, that the Fire Chief regularly access and provide input to the FUS Municipal Fire Portal.

The HHFD underwent two assessments by the FUS within the last two decades (2003 and 2022).

The following two (2) tables represent the fire insurance classifications based on the assessment that was conducted in 2003[20].

Table 1 – Public Fire Protection Classification (PFPC) Previous Update for Municipality of Hastings Highlands

SUB DISTRICT(S) and (contract protection areas)	PFPC	COMMENTS
Hershal South – Fire Station (F.P.A)	9	Fire Hall Protected Area – Commercial Lines insured properties within 5km by road of a fire station, but beyond 150m of a fire hydrant.
Hershal North– Fire Station (F.P.A)	10	Fire Hall Protected Area – Commercial Lines insured properties within 5km by road of a fire station, but beyond 150m of a fire hydrant.
Bangor– Fire Station (F.P.A)	9	Fire Hall Protected Area – Commercial Lines insured properties within 5km by road of a fire station, but beyond 150m of a fire hydrant.
Monteagle– Fire Station (F.P.A)	9	Fire Hall Protected Area – Commercial Lines insured properties within 5km by road of a fire station, but beyond 150m of a fire hydrant.
Maynooth– Fire Station (F.P.A)	9	Fire Hall Protected Area – Commercial Lines insured properties within 5km by road of a fire station, but beyond 150m of a fire hydrant.
Lake St. Peter– Fire Station (F.P.A)	10	Fire Hall Protected Area – Commercial Lines insured properties within 5km by road of a fire station, but beyond 150m of a fire hydrant.
Rest	10	Unprotected – Commercial Lines insured properties further than 5km by road of a fire station.

Table 2 – Dwelling Protection Grade (DPG) Previous Update for Municipality of Hastings Highlands

SUB DISTRICT(S) and (contract protection areas)	DPG	COMMENTS
Hershal South – Fire Station (F.P.A)	3B	Fire Hall Protected Area – Personal Lines insured properties within 8km by road of a fire station, but beyond 300m of a fire hydrant.
Hershal North– Fire Station (F.P.A)	5	Fire Hall Protected Area – Personal Lines insured properties within 8km by road of a fire station, but beyond 300m of a fire hydrant.
Bangor– Fire Station (F.P.A)	4	Limited Protection – Personal Lines insured properties within 8km by road of a fire station, but beyond 300m of a fire hydrant and assigned to stations without a Tanker Apparatus.
Monteagle– Fire Station (F.P.A)	4	Limited Protection – Personal Lines insured properties within 8km by road of a fire station, but beyond 300m of a fire hydrant and assigned to stations without a Tanker Apparatus.
Maynooth– Fire Station (F.P.A)	3B	Fire Hall Protected Area – Personal Lines insured properties within 8km by road of a fire station, but beyond 300m of a fire hydrant.
Lake St. Peter– Fire Station (F.P.A)	5	Fire Hall Protected Area – Personal Lines insured properties within 8km by road of a fire station, but beyond 300m of a fire hydrant.
Rest	5	Unprotected – Personal Lines insured properties further than 8km by road of a fire station.

In 2003, overall, none of the six fire stations faired well on the Public Fire Protection Classification (PFPC) scale with an average rating of nine (9) out of ten (10). Ten (10) indicates that little to no fire protection is in place. A similar pattern was identified for the Dwelling

[20] Municipality of Hastings Highlands FUS Letter to Fire Chief Dan Koroscil dated January 9th, 2020.

Protection Grade (DPG) scale. Where the average for the six fire stations was four (4) out of five (5). Five (5) indicates little or no fire protection is present.

FUS conducted another assessment in 2022. Nineteen years later, the grading for PFPC and GPD are unchanged (2022 PFPC and DPG Tables)[21]. This in itself should be a concern to Council and the Fire Chief, because in almost 20 years, no notable improvement in fire protection was identified by the FUS review.

2022 PFPC and DPG tables from FUS Letter dated July 22nd, 2022

Table 1 – Public Fire Protection Classification (PFPC) Previous Update for the Municipality of Hastings Highlands

SUB DISTRICT(S) and (contract protection areas)	PFPC 2003	PFPC 2022	COMMENTS
Hershal North F.S.	**10**	**10**	Fire Hall Protected – Commercial Lines insured properties within 5 km of a Fire Station but not 150 m of a hydrant
Hershal South F.S.	**9**	**9**	Fire Hall Protected – Commercial Lines insured properties within 5 km of a Fire Station but not 150 m of a hydrant
Bangor F.S	**9**	**9**	Fire Hall Protected – Commercial Lines insured properties within 5 km of a Fire Station but not 150 m of a hydrant
Monteagle F.S.	**9**	**9**	Fire Hall Protected – Commercial Lines insured properties within 5 km of a Fire Station but not 150 m of a hydrant
Maynooth F.S.	**9**	**9**	Fire Hall Protected – Commercial Lines insured properties within 5 km of a Fire Station but not 150 m of a hydrant
Rest	**10**	**10**	Fire Hall Protected – Commercial Lines insured properties further than 5 km by road of a fire hall.

Table 2 – Dwelling Protection Grade (DPG) Previous Update for the Municipality of Hastings Highlands

SUB DISTRICT(S) and (contract protection areas)	DPG 2003	DPG 2022	COMMENTS
Hershal North F.S.	**5**	**5**	Fire Hall Protected – Personal Lines insured properties within 8 km of a fire hall but not within 300m of a hydrant.
Hershal South F.S.	**3B**	**4**	Fire Hall Protected – Personal Lines insured properties within 8 km of a fire hall but not within 300m of a hydrant.
Bangor F.S	**4**	**3B**	Fire Hall Protected – Personal Lines insured properties within 8 km of a fire hall but not within 300m of a hydrant.
Monteagle F.S.	**4**	**4**	Fire Hall Protected – Personal Lines insured properties within 8 km of a fire hall but not within 300m of a hydrant.
Maynooth F.S.	**3B**	**3B**	Fire Hall Protected – Personal Lines insured properties within 8 km of a fire hall but not within 300m of a hydrant.
Rest	**5**	**5**	Unprotected – Personal Lines insured properties further than 8 km by road of a fire hall.

It would appear that HHFD has not incorporated best practices, as outlined by FUS to achieve and maintain the Accredited Superior Tanker Shuttle Service. Although EMG believes that the

[21] Municipality of Hastings Highlands FUS Letter to Fire Chief Glen Ackerman dated July 22nd, 2022.

HHFD has the experience and capability to pursue better results as per the industry standards and best practices as outlined by FUS assessments. It is recommended that a review of the Fire Department's operations to improve its FUS grading in the measurement of the ability of the protective facilities of the community to prevent and control the major fires that may be expected to occur.

Section 8: Recommendations

Rec #	Recommendation	Estimated Cost	Suggested Timeline
33	MHH consider retrofitting the six fire halls to meet accessibility requirements, especially in view of support for Public Education programs.	Cost dependant on facilities review by Municipality or 3rd party	Short to Mid-term (1-6 years)
34	All recommendations noted within the previous Wills report be reviewed and implemented as needed, based on the decision of the future fire station model – six stations or three stations.	Cost dependant on facilities review by Municipality or 3rd party	Short to Mid-term (1-6 years)
35	A review of the Fire Department operations to improve its FUS grading in the measurement of fire service operations and abilities be undertaken.	Staff time	Short-term (1-3 years)

SECTION 9

Recommendations, Timelines and Associated Costs

SECTION 9: RECOMMENDATIONS, TIMELINES, AND ASSOCIATED COSTS

9.1 Conclusion

During the review conducted by EMG, it was demonstrated that the full-time staff and volunteer firefighters are truly dedicated to the community they serve. The Council, Chief Administrative Officer, and Fire Chief are sincerely committed to ensuring the safety of the community and the firefighters.

Based on the present staffing, equipment, and fire station locations, Hastings Highlands Fire Department is endeavoring to offer the most efficient and effective service possible, but as noted within this document, more is still required.

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

This FSR is a long-range planning document; however, it is recommended that annual updates be completed, along with a full review to be conducted at the five-year mark.

9.2 Recommendations, Estimated Costs and Rationale

The following chart provides a detailed overview of the recommendations found throughout this report along with any estimated costs and suggested timelines for implementation. A section has also been added to the chart identifying potential efficiencies upon implementation of the recommendations presented by EMG.

This FSR document is a culmination of 35 recommendations.

HHFD Recommendations Chart

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
Section 1 – Community and Fire Department Overview				
1	That the Fire Chief brings forth a revised version of the Establishing & Regulating By-Law for Council's approval and going forward the Fire Chief annually reviews and updates, the By-Law as necessary. • And that all other by-laws noted in this document be reviewed and updated as required. All by-laws should be reviewed annually to ensure the currency of the documents.	Staff time	Short-term (1-3 years) ongoing	Having an up-to-date E&R By-Law will guide the operations of the HHFD and identifies response guidelines, fire prevention and public education programs and levels of training.
2	That a Department SOG Committee is created. It is further recommended that the department's SOGs be reviewed and regularly updated.	Staff time	Short-term (1-3 years)	Establishing a SOG committee will aid in maintaining current guidelines while allowing participation of members of HHFD in the operations of the Department.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
Section 2 – Risk Assessment				
3	That Hastings Highlands develops a comprehensive Community Risk Reduction Plan that falls in line with the Community Risk Assessment and the Fire Service Review recommendations.	**Staff time**	**Short-term (1-3 years) ongoing**	With the risks to the Municipality identified, the CRRP will aid in prioritizing the who, what, when and how these will be lessened or mitigated.
Section 3 – Fire Department Divisions				
4	HHFD implements the position of a part-time Training Officer, or at the very least ensures that the new Deputy Chief position has the resources and time to implement the required training for the Department.	**Staff time or creation of a part-time Training Officer**	**Immediate to Short-term**	Hastings Highlands must ensure that all fire department positions that require training and certification are met. The inclusion of a part-time Training Officer position will go a long way to meeting this training requirement.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
5	There will be a need for administrative support or the investment and implementation of a more efficient records management system (to replace the present paper-based system) that all staff can utilize to input their training and other required information.	Creation of a part-time administration person or a new records management system. Approximate cost $20,000.00 per year for admin. $5,000.00 to $20,000.00 for records management system.	Short-term (1-3 years)	The Department will need to keep more accurate and up-to-date information on their training programs, levels of completion and type of training being conducted for staff. The hiring of a part-time administrative position or the implementation of a robust records management system will meet these needs.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
6	A plan should be developed to identify what other inspections can be reasonably accomplished by the Fire Chief, and what options are needed to address the other fire prevention-related concerns.	Staff time	Short-term (1-3 years) ongoing	The Fire Protection & Prevention Act., specifically mandates public education and fire prevention inspections based on requests and demands. With only the Fire Chief conducting fire prevention-related functions, for the Municipality, prioritization of these required duties needs to be the focus.
7	All firefighters be offered the opportunity to become trained and qualified to the NFPA 1035 Public Fire & Life Safety Educator Level I as well NFPA 1031 Fire Prevention Officer, Level I. • And that consideration is given to resourcing Public Education with a part-time dedicated, fully trained and qualified staff position.	Staff time or for part-time public education officer – Approximate cost $20,000.00 per year.	Short-term (1-3 years) ongoing	Greater utilization of department resources to support fire prevention and public education initiatives will ensure that HHFD is meeting the FPPA-mandated requirements.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
8	HHFD to work in conjunction with residential developers in promoting the advantages of installing residential fire sprinklers.	Staff time	Short-term (1-3 years) ongoing	Sprinkler systems have been proven to save lives and property, by promoting this initiative the HHFD is demonstrating a proactive, life-saving program.
9	The Fire Chief to provide a business case to senior administration supporting either: • a fixed training facility, or • the purchase of a mobile training unit or a fixed site unit for the purposes of Live Fire Training. ***Note:** these options should be considered if the availability of the OFMs Training Trailer is not available as needed.*	$200,000 - $700,000 (Mobile training unit)	Short-term (1-3 years)	This is an option that the Fire Chief needs to evaluate if no other facility such as the OFMs training trailer is available for the firefighters to receive regular and ongoing hands-on training.
10	All firefighters receive live fire training annually.	Dependent on facility costs and/or the purchase of a live fire training unit.	Short-term (1-3 years) and ongoing	With the introduction of the new Training and Certification Regulation, more ongoing and relevant training will be required and documented.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
11	HHFD adopts an educational progression plan. The proposed training programs and succession path for its officers should be supported for current and proposed positions. This would include fire officer 1 to 4.	Staff time	Short-term (1-3 years) ongoing	Succession/educational planning is paramount to the future success of any organization.
12	Develop job descriptions with a list of the minimum core job responsibilities. Further, the education and experience required for each of those positions should be outlined to chart the path for succession.	Staff time	Short-term (1-3 years)	Succession/educational planning is paramount to the future success of any organization.
13	The Fire Chief, review the present recruitment and retention programs and enhance them based on the information noted in the Fire Service Review document (as required).	Staff time, but some costs may be incurred	Immediate to Short-term (0-3 years) ongoing	Volunteer Firefighters are the most valuable resource for the Fire Department. Ongoing recruitment and retention of the Firefighters is critical to the success of the Fire Department.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
14	A full review of the Bellville Dispatching agreement is conducted to ensure that the needs of the HHFD are being met.	Staff time	Immediate to Short-term (0-3 years) ongoing	Ensuring that the HHFD has a current agreement that meets the needs of the Department is paramount to ensuring an efficient service to the community.
15	The present condition (stability) of the HHFD radio communications tower is questionable and it is strongly suggested that a full assessment of this equipment be conducted by a systems expert. This review should also consider the effective coverage needs of the entire community.	Currently Unknown	Immediate to Short-term (0-3 years)	Ensuring a full coverage radio communications system is in place, will enhance firefighter safety.
16	Consideration is to be given to the transition of Firefighters responding to the emergency scene in their personal vehicles, over to responding to the fire station.	Staff time	Short-term (1-3 years)	Responding directly to the fire station enhances the accountability of responding personnel because all firefighters are on the emergency vehicles, with all their proper safety gear.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
				This also reduces congestion at the emergency scene by the firefighter's personal vehicles.
17	HHFD to review their Health, Fitness and Wellness programs to ensure that their Firefighters are receiving proper coverage in relation to PTSD, Cancer Prevention and Mental Well Being.	**Based on the programs provided to the Firefighters.**	**Immediate to Short-term (0-3 years) ongoing**	It is imperative that a firefighters Health, Fitness and Wellness is addressed in a genuine, consistent, and professional manner. This may include the establishment of a PTSD prevention plan by a committee of firefighters, chief officers, and mental health professionals. The "Supporting Ontario's First Responders Act", requires employers to have a PTSD program.
Section 4 – Facilities, Vehicles, Equipment and Water Supply				
18	The list of station concerns noted in section 4.2 of the report be addressed. ***Note:** an overview of concerns is also noted in the adjoining Rationale section.*	**Due to the number of upgrades required, a full assessment will be required by the facilities department to**	**Short to Mid-term (1-6 years)**	During the walk-through by EMG, it was evident (as can be seen in the supplied photos) that many of the Hastings Highlands fire stations are nearing, or at maximum capacity for storage of vehicles

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
		obtain an estimate of costs. These repairs could be anywhere from $100,000.00 up to over a million dollars.		and equipment. Overall, the concerns noted during the station visits include: • The proximity of the firefighter's gear in relation to the vehicle exhaust. This could create an exhaust contamination issue. Firefighters' gear should be stored in a separate room away from any exhaust contamination. • None of the fire stations' apparatus bays have floor drains with oil separator (catchment) systems. • All the stations appear to be at maximum capacity for vehicles and equipment storage. ○ There was a notable lack of proper storage areas/facilities for the equipment. This creates a tripping/safety hazard to the staff.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
				○ Most of the stations need "flammable liquid" cabinets for such things as gas containers and other flammable and/or hazardous liquids storage. ○ No diesel exhaust catchment system at any of the fire stations. ○ **No emergency back up power at any of the fire stations.** • Separations from the apparatus floor and the training/living areas of the station need to be installed and maintained – some of the fire stations have either desks/workstation or kitchen facilities on the apparatus floor. These areas are susceptible to exhaust contamination.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
				• Washroom facilities for both male and female firefighters were also an issue at the stations and should be addressed. This can also be accomplished by making the washrooms gender neutral. o The main concern is the lack of shower/wash-up areas that need to be made available at all the stations. Firefighters must be able to decontaminate themselves from exposure to smoke, toxic gasses, chemicals, blood, and pathogens as soon as possible after a call and before going home.
19	Council to consider the two future fire station options as possible alternatives based on the challenges the community is having in relation to the staffing of the fire	**Depending on the option chosen, the cost could range from**	**This is a long-term investment. (1-10 years)**	Both options 1 and 2 provide the council with information that can provide a good level of coverage for the community at an eventual reduction of costs. The two

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
	stations, along with the cost of upkeep and vehicle replacement.	$1 million up to %7.5 million.		options have the stations being reduced from 6 down to 3 stations.
20	Based on the station recommendations of the Fire Chief, CAO and Council to consider reduction of the Fire Department's fleet.	Assessment and recommendations to occur first before costing/savings can be determined	Short-term for decision (1-3 years)	Based on the decision by the Council on the number of fire stations, a review of what vehicles and equipment are to be kept will be required. If all six stations are kept, then an assessment of reducing the number of tanker trucks by replacing them with pumper-tankers may be required.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
21	The Fire Chief's vehicle be replaced with a four-wheel drive pick-up truck. This will provide the Fire Chief with a more operational type of vehicle to carry equipment in a safer setup.	Approximate cost of $50,000.00 to 80,000.00.	Upon replacement of the present vehicle.	Having a vehicle that is more operational in its use, will allow for the safe transportation of equipment to and from an emergency scene.
Section 5 – Emergency Management				
22	Update MEP and insert a page at the front of the document to include the following: The date changes were completed. A brief outline of the changes and the sections involved. Name of individual completing the updates.	Staff time	Immediate (0-1 year)	This will keep the document reviews up to date to ensure the currency of the document.

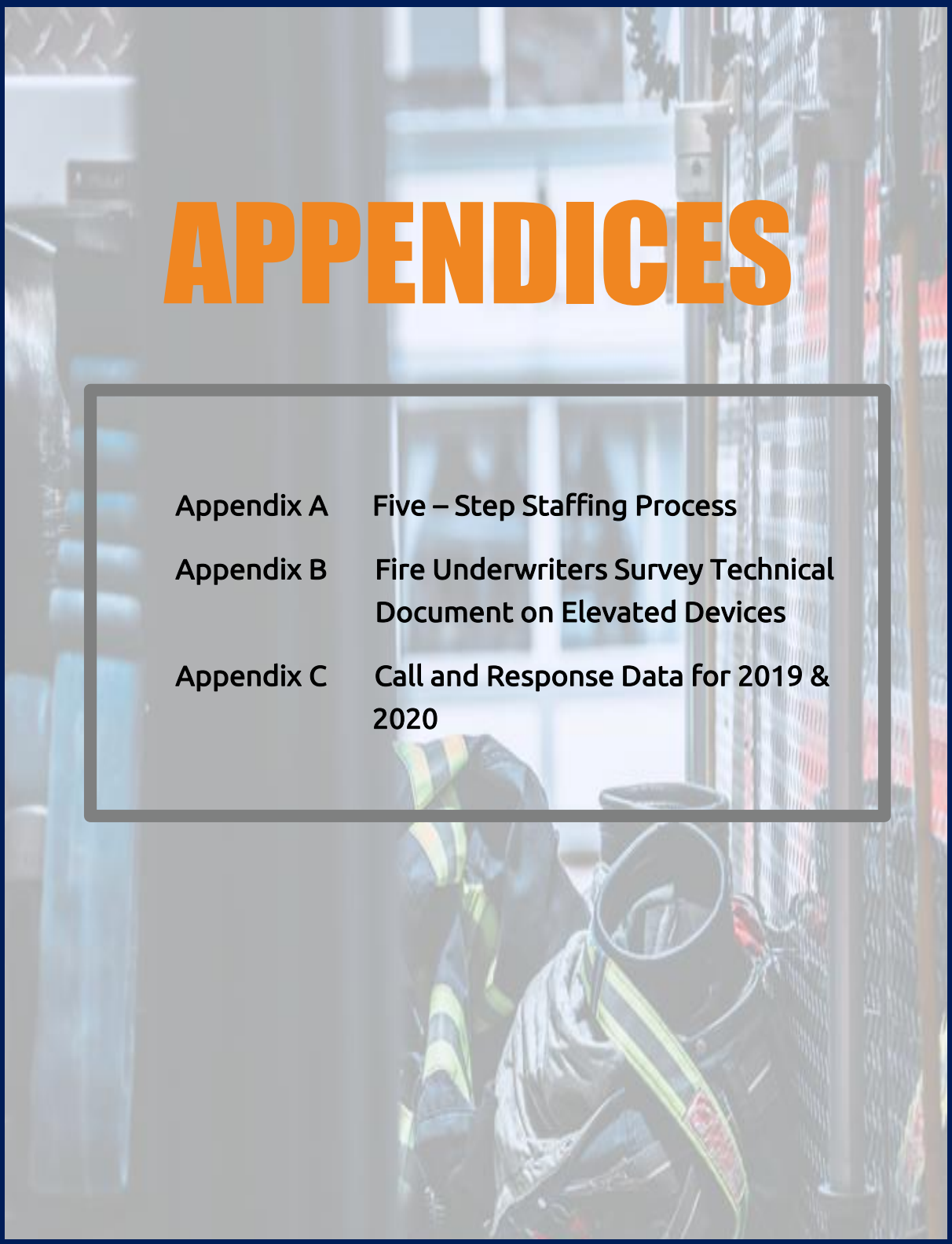
Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
	Whether the revised document requires Council approval.			
23	When the vacant full-time Deputy Chief position is filled, the alternate CEMC role is assigned to the Deputy Chief position.	Staff time	Short-term (1-3 years) ongoing	Having the Fire Chief and Deputy in CEMC roles ensures that someone is available in the event of an emergency.
24	A tertiary MEOC should be identified through an agreement with the Town of Bancroft.	Staff time	Short-term (1-3 years)	Ensuring a Tertiary location allows for an event that requires total evacuation of the Municipality.
25	Due to the importance of staff understanding their roles and responsibilities in the MEOC, a policy should be implemented that identifies IMS 100 for all staff, IMS 200 as the minimum standard for staff required to be in the MEOC with IMS 300 minimum for all department heads.	Staff time (courses are offered at no charge)	Short-term (1-3 years) ongoing	

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
26	The MEP should have a section dedicated to domestic terrorism. The section should include an integrated response program comparable to NFPA 3000, Standard for an Active Shooter/Hostile Event Response (ASHER) Program. Partnerships could be achieved with outside agencies such as the OPP and EMS to develop and deliver a presentation to the public and include local businesses as sponsors to assist in offsetting any expenses.	Staff time	Short-term (1-3 years)	
Section 6 – Fire Service Agreements				
27	Hastings Highland Fire Department explores opportunities of entering additional automatic aid/response agreements with neighbouring fire departments to better serve the residents of Hastings Highlands.	Staff time	Short-term (1-3 years) ongoing	With the current staffing level and distance to travel to some of the outer areas of Hastings Highlands, agreements will enhance the current level of protection for those residents.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
28	The Hastings Highlands Fire Department should enter into response agreements with either an outside fire service or a 3rd party to provide support for technical rescues if the need arises.	Staff time	Short-term (1-3 years) ongoing	If a technical rescue call comes in that requires additional resources from outside the HHFD, a plan will already be in place ahead of time. Also reduces the response time of these agencies if agreements are in place, in advance as pre-response approvals will not be required.
Section 7 – Finance, Fees and Cost Recovery				
29	EMG recommends expanding the account codes and expense codes to depict a more accurate fiscal reality of the fire department.	Staff time	Short-term (1-3 years) ongoing	This will better reflect the amounts being spent.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
30	EMG recommends the following: A review of the honorarium and wage distribution for members of the HHFD Consideration to HHFD accessing fuel program from Roads Department to alleviate fluctuating fuel costs. Consideration of sharing resources amongst MHH departments, such as using Roads Department mechanics to maintain the HHFD fleet.	Staff time	Immediate (0-1 year)	A review of the honorarium will balance out the rates for the Firefighters. Use of the Roads Department for any type of savings is good for the Department and the Municipality.
31	EMG recommends that user fees from fire services-related matters be reflected in the Fire Department Operating budget.	Staff time	Short-term (1-3 years) ongoing	More accurate reflection of the operating budget.
32	EMG recommends that HHFD apply for a grant through FMPFSC to help counter the costs associated with training.	Staff time	Immediate (0-1 year)	Possibility of receiving funding towards Fire Department improvements.

Rec #	Recommendation	Estimated Costs	Suggested Timeline	Rationale
Section 8 – Survey Results and Previous Recommendations				
33	MHH considers retrofitting the six fire halls to meet accessibility requirements, especially in view of support for Public Education programs.	Cost dependant on facilities review by Municipality or 3rd party	Short to Mid-term (1-6 years)	Discission is dependent on Council's recommended future fire station model
34	All recommendations noted within the previous Wills report be reviewed and implemented as needed, based on the decision of the future fire station model – six stations or three stations.	Cost dependant on facilities review by Municipality or 3rd party	Short to Mid-term (1-6 years)	A decision is required as to the future of the fire stations and their present conditions based on the Wills report and EMGs findings.
35	A review of the Fire Department operations to improve its FUS grading in the measurement of fire service operations and abilities be undertaken.	Staff time	Short-term (1-3 years)	This update will also provide a "roadmap" for the Fire Chief and Council as to what is required.



APPENDICES

Appendix A	Five – Step Staffing Process
Appendix B	Fire Underwriters Survey Technical Document on Elevated Devices
Appendix C	Call and Response Data for 2019 & 2020

APPENDIX A – FIVE-STEP STAFFING PROCESS

Step 1: Scope of Service, Duties, and Desired Outputs

Identify the services and duties that are performed within the scope of the organization. Outputs should be specific, measurable, reproducible, and time limited. Among the elements can be the following:

- Administration
- Data collection, analysis
- Delivery
- Authority/responsibility
- Roles and responsibilities
- Local variables
- Budgetary considerations
- Impact of risk assessment

Step 2: Time Demand

Using the worksheets in Table C.2.2(a)-(d), quantify the time necessary to develop, deliver, and evaluate the various services and duties identified in Step 1, taking into account the following:

- Local nuances
- Resources that affect personnel needs

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

Step 3: Required Personnel Hours

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

- Development/preparation
- Service
- Evaluation

- Commute
- Prioritization

Step 4: Personnel Availability and Adjustment Factor

Average personnel availability should be calculated, taking into account the following:

- Holiday
- Jury duty
- Military leave
- Annual leave/vacation
- Training
- Sick leave
- Fatigue/delays/other

Example: Average personnel availability is calculated for holiday, annual, and sick leave per personnel member (see Table C.2.4).

Step 5: Calculate Total Personnel Required

Branch of the unassigned personnel hours by the adjustment factor will determine the amount of personnel (persons/year) required. Any fractional values can be rounded up or down to the next integer value. Rounding up provides potential reserve capital; rounding down means potential overtime or assignment of additional services conducted by personnel. (Personnel can include personnel from other agencies within the entity, community, private companies, or volunteer organizations).

Correct calculations based on the following:

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

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

APPENDIX B– FIRE UNDERWRITERS SURVEY TECHNICAL DOCUMENT ON ELEVATED DEVICES

Fire Underwriters Survey™

TECHNICAL BULLETIN

FIRE UNDERWRITERS SURVEY™

A Service to Insurers and Municipalities

LADDERS AND AERIALS: WHEN ARE THEY REQUIRED OR NEEDED?

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

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

Fire Underwriters Survey

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

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

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

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

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AN SCM COMPANY

Western region 1-877-255-5240 fus@optaintel.ca
Central region 1-800-268-8080 fireunderwriters.ca
Eastern region 1-800-263-5361 optaintel.ca

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

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

NFPA

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

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

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

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

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

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

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

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

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

Excerpt: National Building Code 2012

A-3 Application of Part 3.

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

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

Firefighting Assumptions

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

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

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

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

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

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

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

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

Western Canada	Quebec	Ontario	Atlantic Canada
Fire Underwriters Survey	Fire Underwriters Survey	Fire Underwriters Survey	Fire Underwriters Survey
3999 Henning Drive	255, boul. Crémazie E	175 Commerce Valley Drive, West	238 Brownlow Avenue, Suite 300
Burnaby, BC V5C 6P9	Montreal, Quebec H2M 1M2	Markham, Ontario L3T 7P6	Dartmouth, Nova Scotia B3B 1Y2
1-800-665-5661	1-800-263-5361	1-800- 268-8080	1-877-634-8564

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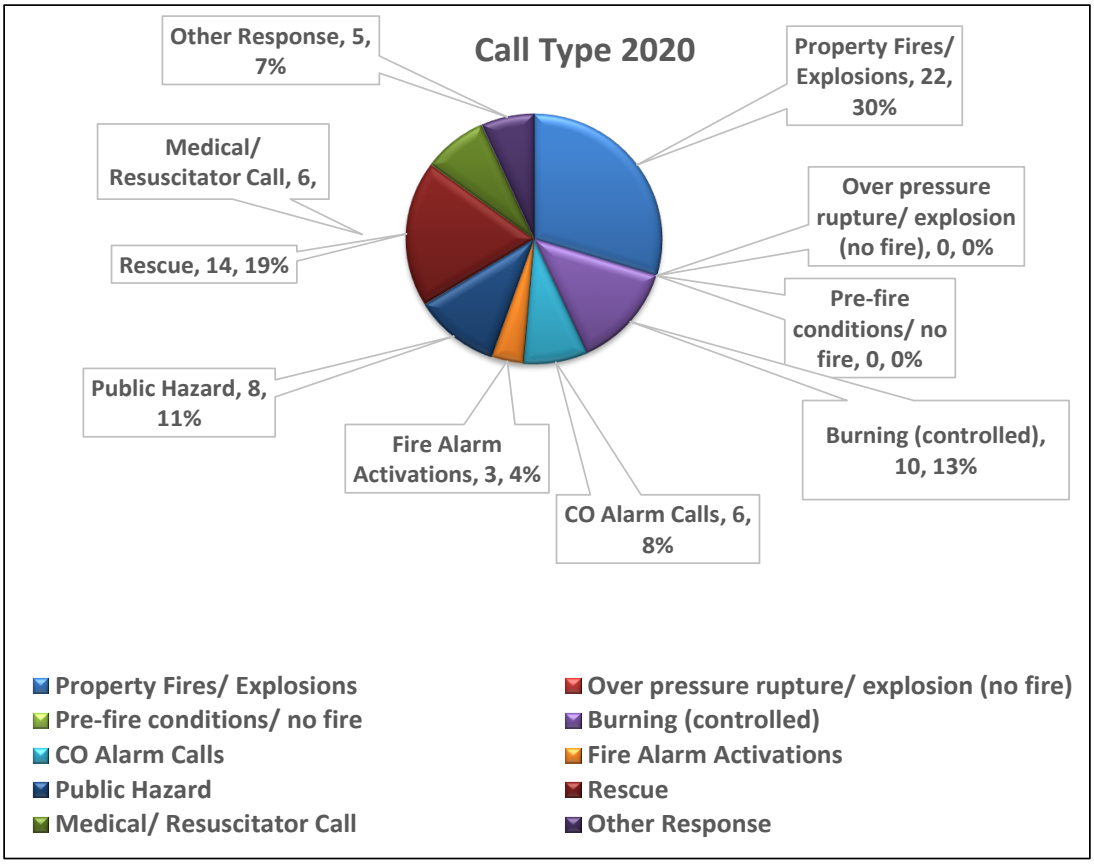
Western region 1-877-255-5240 fus@optaintel.ca
Central region 1-800-268-8080 fireunderwriters.ca
Eastern region 1-800-263-5361 optaintel.ca

APPENDIX C – CALL AND RESPONSE DATA FOR 2019 AND 2020

2020 - Yearly Comparisons of All Calls Type



2019 - Yearly Comparisons of All Calls Type