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Staff Report

Administration – Fire Department

Report To: **Special Committee of the Whole**
Meeting Date: May 3, 2022
Report Number: FAF.22.098
Title: Fire Master Plan and Community Risk Assessment
Prepared by: Steve Conn, Fire Chief

A. Recommendations

THAT Council receive Staff Report FAF.22.098, entitled "Fire Master Plan and Community Risk Assessment";

AND THAT Council endorse the thirty eight (38) recommendations listed within the Staff Report FAF.22.098 be included in future budgets for consideration as part of the implementation strategy of the Fire Master Plan.

AND THAT Council direct staff to suspend all technical and operational rescues to awareness level until such time Firefighters meet certification in those specialized disciplines as per recommendation number 5 in the Fire Master Plan.

B. Overview

This staff report provides information that will complement the scheduled presentation of the Fire Master Plan by the Town's consultant "Emergency Management Group" on May 3, 2022 at the Special Committee of the Whole Meeting.

C. Background

When the 2020 budget was presented to Council for consideration staff proposed hiring a consultant to complete a Fire Master Plan and Community Risk Assessment. A previous Fire Master Plan was completed in 2009. The purpose of these plans is to aid in strategically guiding the Fire Department through the next several years of population and Community growth. As well, it provides a comprehensive review of all aspects of the Town's Fire Service, ensuring that performance standards and guidelines reflect industry best practices, and are in compliance with the Ontario Fire Protection and Prevention Act (1997) and the Occupational Health and Safety Act. The Fire Master Plan Project was approved by Council in 2020 but this project was delayed until 2021 due to Covid uncertainty. This plan will provide a strategic planning framework for the delivery of Fire Protection Services within The Town over a 10-year community planning horizon.

D. Analysis

In June of 2021, Emergency Management and Training (now called Emergency Management Group), was retained to develop a Community Risk Assessment and a 10-year Fire Master Plan as part of the strategic planning process to prepare the Town in delivering fire protection services.

Community Risk Assessment

Community Risk Assessments are required pursuant to Ontario Resolution 378/18 and allow Fire Departments to make informed decisions about the types and levels of Fire Protection Services they will provide based on identified risks. This regulation outlines a standard set of information profiles that must be considered when conducting a Community Risk Assessment. The information and data gathered to address each of the profiles will assist in determining and prioritizing the risks to public safety and in the community and determining the fire protection services to be provided by Municipalities to address those risks.

Proposed Fire Master Plan

The primary objective of the Fire Master Plan is to present a comprehensive analysis of the Town's fire protection "Needs and Circumstances" as defined by the Fire Protection and Prevention Act 1997, to support decision-making with respect to the fire protection services and needs.

The Fire Master Plan reviewed all aspects of the Fire Department operations as follows:

- Governance
- Service Delivery
- Fire Prevention
- Public Fire Safety Education
- Emergency Response
- Firefighter Timeline
- Administration
- Human Resources
- Facilities
- Communications
- Mutual Aid/Automatic Aid
- Review of Fees and Charges and cost recovery mechanisms.

The analysis presented within the proposed Fire Master Plan has been informed by a comprehensive stakeholder engagement process which included opportunities for public consultation, interaction with members of Council, Committees of Council, consultation with Senior Management team and Fire Department staff, as well as consultation with both the volunteer Firefighters and Town Professional Firefighters Association, Local 4986.

The proposed Fire Plan recommends the optimization of the three lines of defense that was developed by the Office of The Fire Marshal and Emergency Management (OFMEM) and included within the comprehensive fire safety effectiveness model that includes:

1. Public Education and Prevention
2. Fire Safety Standards and Enforcement, and
3. Emergency Response

Subject to Council's consideration, the proposed Fire Master Plan is intended to inform the development of clear goals and objectives for the services provided by the Fire Department.

Emergency Management Group is presenting The Blue Mountains Fire Department 38 recommendations. Many are operational in nature, with little to no cost associated, however, there will be staff time for implementation. Some recommendations are strategic in nature because of the cost involved and/or the level of involvement by internal or external stakeholders.

To assist in prioritizing the recommendations, they have been presented in immediate, short-term (1-3 years), mid-term (4-6 years), and long-term (7-10 years) requirements based on growth, trends, regulatory requirement, and financial capabilities of the Town.

Attached as "Schedule "A" to this staff report is the proposed Fire Master Plan as prepared by Emergency Management Group.

Emergency Management Group Recommendations Section 11

Rec #	Recommendation	Estimated Costs	Suggested Timeline
SECTION 1 – Community & Fire Department Overview			
No recommendations			
SECTION 2 – Planning			
1	Regular meetings be scheduled with both internal staff and stakeholder groups by The Blue Mountains Fire Department to ensure the following: • Incorporate, where appropriate, updates to departmental goals and priorities, aligning service level expectations. • Maintain and enhance communications and relationships between The Blue Mountains Fire Department, staff and stakeholders,	Staff time	Short-term (1-3 years) and on-going

Rec #	Recommendation	Estimated Costs	Suggested Timeline
	including businesses in the community regarding inspection and enforcement activities. • Maintain a steady and robust public education program that includes outlining of services provided and proactive activities that individuals and businesses can undertake that ensure fire and life safety behaviours.		
SECTION 3 – Risk Assessment			
2	To enhance their efforts of identifying and providing effective public education, The Blue Mountains Fire Department staff should meet with relevant local community groups to form a partnership for organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community.	Staff time	Short-term (1-3 years) and ongoing
3	The Blue Mountains to develop a comprehensive Community Risk Reduction Plan that falls in line with the CRA information.	Staff time	Short-term (1-3 years)
4	The Blue Mountains Fire Department continue to work in conjunction with residential developers in promoting the advantages of installing residential fire sprinkles. The Blue Mountains review its option of mandating residential fire sprinkles in all new residential occupancies including those slated to be used as an STA.	Staff time	Short-term (1-3 years) and ongoing
5	The Blue Mountains Fire Department should suspend all operational level technical rescues until such time as policies, SOGs, and procedures are developed, and the firefighters meet the required level of training. This would require that notification	Staff time	Immediate

Rec #	Recommendation	Estimated Costs	Suggested Timeline
	of this change in the level of service to be communicated to the public.		
6	An SOG Committee be established with representation of all Divisions of the Department. It is further recommended that the Department's SOGs be reviewed and regularly	Staff time	Short-term (1-3 years)
SECTION 4 – Department Staffing & Programs			
7	The Fire Chief should provide a business case to senior administration supporting either: • The use of CFB Borden training facility for The Blue Mountains Fire Department with a training budget ranging from $25,000-$50,000, to be developed in the short-term, or • the purchase of a mobile training unit or a fixed site unit for the purposes of Live Fire Training. This could be a joint purchase in conjunction with bordering departments or be an initiative of the Grey County Fire Chiefs. • The Blue Mountains Fire Department could review options of developing their own training ground with the use of sea containers placed in the configuration of a building. • The Training Officer's position stay focused on The Blue Mountains Fire Department training, planning, and execution of the programs.	$25,000 to $50,000 for Borden, or $300,000 to $500,000 for a mobile training unit.	Short-term (1-3 years)
8	The Fire Chief should meet with bordering fire departments to discuss the option of sharing a full-time Training Coordinator's position.	Staff time initially. If agreement is made, would	Short-term (1-3 years)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
		depend on number of departments involved. Wages for full-time Training Officer would be approx. $80,000 to $120,000	
9	The Blue Mountains Fire Department should enhance its certification programs to the NFPA Standards thus ensuring that all staff are certified/qualified to the rank and duties held within the Department.	Staff time	Short-term (1-3 years and ongoing)
10	Enact a by-law for the operation of secondary units/suites that ensures they are compliant with provincial legislation and are registered or licensed with the Town.	Staff time	Short-term (1-3 years)
11	The Fire Prevention Division monitor inspection and public education requirements and consideration be given to the addition of more FPOs to assist with ensuring all needs of the Division are met.	Staff time	Short-term (1-3 years)
12	All Fire Prevention Division personnel who have completed the NFPA 1033 course seek certification.	Staff time	Short-term (1-3 years)
13	All firefighters be offered the opportunity to become trained and qualified to Fire Inspector I, and the PFLSE, Level I or equivalent certification.	Staff time and possible course costs	Short-term (1-3 years)
SECTION 5 – Fire Suppression and Dispatching			
14	The Blue Mountains Fire Department enter into response agreements with the surrounding fire	Staff time	Immediate

Rec #	Recommendation	Estimated Costs	Suggested Timeline
	services to provide an apparatus and staffing to any confirmed structure fires during the day, Monday to Friday.		
15	Fire Chief to present a response time goal (based on NFPA 1720) for approval by Council. These performance measures should then be monitored.	Staff time	Short-term (1-3 years)
16	Add medical kits and defibrillators to the Chiefs and FPO vehicles.	$10,000	Short-term (1-3 years)
17	The Blue Mountains Fire Department review its tiered medical response agreement to identify and implement opportunities to better serve the community.	Staff time	Short-term (1-3 years)
18	The Blue Mountains Fire Department dispatch agreement with Barrie Fire include references to NFPA 1221, 1225 and 1061.	Staff time	Short-term (1-3 years)
19	The Blue Mountains Fire Department to monitor its radio coverage in the area of the escarpment, which may require a radio coverage audit to be completed.	Staff time	Short-term (1-3 years)
20	The Fire Chief and HR survey other fire services that have specific firefighters on-call over the weekend to see if an increase in the stipend for firefighters being on call on weekends, be raised to $125/ day is warranted.	$7,800 to $8,500 in additional funds, to the amount already budgeted	Short-term (1-3 years)
21	A fitness room be incorporated into the new Station 2 in Craigleith and if renovations/additions take place at Station 1, a fitness room should be included there as well.	Cost dependant on size of room and construction costs at the	Short-term (1-3 years)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
		time of the build.	
22	The Blue Mountains Fire Department invest in decontamination equipment and develop the appropriate policies and SOGs in performing decontamination of firefighters at the scene of a fire.	$3,000	Short-term (1-3 years)
23	The Blue Mountains Fire Department to establish a committee to develop and implement a PTSD Awareness and Prevention program.	Staff time	Short-term (1-3 years)
SECTION 6 – Facilities			
24	Install tablets in all front-line apparatus including Chief and Fire Prevention vehicles, and full access be granted including internet, building files, and CAD.	$10,000 to $15,000	Mid-term (4-6 Years)
25	Discontinue storage of the bunker gear on the apparatus floor, and instead, in a negative pressure storage room specifically for bunker gear.	$400,000	Mid–term (4-6 years)
26	Consider interoperability with surrounding fire services when replacing SCBA.	$100,000 to $150,000	Short–term (1-3 years)
27	Install a permanently fixed standby generator at Station 2 Craigleith that starts up immediately upon detecting a power failure. It is further recommended that the generator be of such size and capacity to not only provide power to the present station but could be moved to the new location and used there.	$125,000	Short–term (1-3 years)
28	The Blue Mountains Fire Department review enhancements to its ancillary equipment cache with the acquisition of a drone.	$5,000 to $10,000	Mid–term (4-6 years)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
29	The Blue Mountains adopt the NFPA 291 colour code for identifying fire flow capacity of fire hydrants with the consultation and support of the water department.	Staff time and cost of material	Short–term (1-3 years)
30	The Blue Mountains Fire Department to acquire their Superior Water Shuttle Accreditation in compliance with Fire Underwriters specifications.	$3,000 to $5,000	Short–term (1-3 years)
SECTION 7 – Emergency Management			
31	The Blue Mountains to review partnership opportunities in the delivery of an ASHER program to the community.	$5,000 – Staff time	Short–term (1-3 years)
32	The Blue Mountains to review the feasibility of acquiring an emergency notification system, or at least gain access to messaging on the Alert Ready app.	Costs associated with the development of an app are unknown.	Short–term (1-3 years)
33	The Blue Mountains review opportunities of installing storm sirens in the built-up areas of the municipality. This should include opportunities of applying for funding in the form of grants made available by upper levels of government.	Cost per siren approx. $30,000 - $50,000 depending on model(s). Would also require the computer program.	Short-Mid–term (1-6 years)
34	Due to the importance of staff understanding their roles and responsibilities in the EOC, it is recommended that a policy be implemented that identifies IMS 200 as the minimum standard for staff required to be in the EOC with IMS 300 being the	Staff time. Course is completed on-line, and	Short–term (1-3 years)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
	goal for all department heads. It is further recommended that the IMS be included within the Town's ERP.	registration is no charge.	
35	The Blue Mountains CEMC prepare a 3-year schedule to identify EOC activation orientation and annual tabletop, and operations-based exercises for The Blue Mountains Fire Department, The Blue Mountains, and external agencies.	Staff time	Short–term (1-3 years)
SECTION 8 – Mutual and Automatic Aid			
36	The Blue Mountains Fire Department should enter into response agreements with either an outside fire service or a 3rd party to provide support at technical rescues if the need arises.	Staff time plus cost of the outside agency, dependant upon the length of time the event takes	Immediate
SECTION 9 – Finance, Budgeting, and Capital Investment Plan			
37	The Blue Mountains continue to review, annually, and amend the Fees By-Law to reflect the services provided by The Blue Mountains Fire Department.	Staff time	Short–term (1-3 years)
38	The Blue Mountains Fees By-Law should identify the requirement that the individual(s) that receive an invoice for fire services provided are responsible for ensuring all charges are paid to the Town.	Staff time	Short–term (1-3 years)

E. Strategic Priorities

1. Communication and Engagement

We will enhance communications and engagement between Town Staff, Town residents and stakeholders

2. Organizational Excellence

We will continually seek out ways to improve the internal organization of Town Staff and the management of Town assets.

3. Community

We will protect and enhance the community feel and the character of the Town, while ensuring the responsible use of resources and restoration of nature.

4. Quality of Life

We will foster a high quality of life for full-time and part-time residents of all ages and stages, while welcoming visitors.

F. Environmental Impacts

None

G. Financial Impacts

There are significant financial implications associated with the implementation of the proposed Fire Master Plan that will be included as part of future budget submissions for Council consideration and approval.

Approval of the Fire Master Plan does not request or imply the preapproval of any of these projects or implementation of these recommendations.

Town staff will work to develop a financial strategy to address the needs outlined in the Fire Master Plan considering other Town pressures related to growth and service levels.

H. In Consultation With

Senior Management Team

I. Public Engagement

The public consultation for the Fire Master Plan included a survey released to the public with 146 responses received, individual meetings with Council Members, and a virtual workshop with representation from members of the Town's Committees of Council.

Any comments regarding this report should be submitted to Steve Conn, Fire Chief firechief@thebluemountains.ca.

J. Attached

1. Schedule "A" – Fire Master Plan

Respectfully submitted,

Steve Conn
Fire Chief

Shawn Everitt
Chief Administrative Officer

For more information, please contact:
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Report Approval Details

Document Title:	FAF.22.098 Fire Master Plan and Community Risk Assessment.docx
Attachments:	- Attachment-1-Fire-Master-Plan.pdf - Attachment-2-Community-Risk-Assessment.pdf
Final Approval Date:	Apr 25, 2022

This report and all of its attachments were approved and signed as outlined below:

Steve Conn - Apr 25, 2022 - 2:32 PM

Shawn Everitt - Apr 25, 2022 - 3:37 PM

THE CORPORATION OF THE TOWN OF THE BLUE MOUNTAINS

Fire Master Plan

April
2022

Emergency Management & Training Inc.

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Executive Summary

This document has been prepared in response to The Blue Mountains Fire Department's request for consulting services to develop a Fire Master Plan that will provide a framework to guide future policy, organizational, capital, and operational planning decisions.

Every fire department should be guided by a master/strategic plan. A Fire Master Plan traditionally focuses on the identification of fire hazards and planning an appropriate suppression response force. Today, hazard and risk assessment programs have expanded well beyond just the fire response ability of the department to include emergency medical incidents, hazardous materials incidents, and many other emergency situations. As such, to help mitigate these emergencies as much as possible, more emphasis is being placed on fire prevention and public education as communities attempt to effectively reduce fire related losses.

Current challenges faced by The Blue Mountains Fire Department are like those faced by many rural/urban interface fire departments in Ontario. These challenges include but are not limited to increased rigour from statutory and standards requirements related to firefighter health and safety, increased skills and competencies required, changing work patterns of the paid per-call firefighters outside of the fire department (which can result in fewer paid per-call firefighters available in the community) and increased emphasis on prevention and public education are examples of some common themes.

This document includes plans for future needs of Town of The Blue Mountains and southern Georgian Bay region relating to equipment, facilities, human resources, fire prevention and training, as well as the many external influences that impact the fire service.

Objectives

The Fire Master Plan will include an analysis of current and forecasted fire protection service delivery needs and develop recommendations including a detailed 10-year implementation strategy for Council and staff.

To assist in prioritizing the recommendations, they have been presented in the following format:

- 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

Each recommendation is also supported with an estimated cost to the item, whether it involves staff time only, possible equipment purchases or even the building of a new station.

Ultimately, the timing of the implementation of the recommendations will depend on the Town's resources and ability to move forward with the associated recommendations contained within this document.

This plan will set the foundation for strategic decision making for the provision of fire and rescue services within the Town of The Blue Mountains.

Scope of Work

The review included but was not limited to the following key areas:

a. Staffing needs – review capabilities of existing staffing and identify future needs for each of the following divisions: Suppression, Training, Prevention, and Administration.

b. Facilities – review capacity and condition of existing facilities and plan for future needs. Specific attention is required to the facility needs for the Training Division, Prevention Division, and Administration.

c. Station location – review of existing locations relative to the current and future demands and consideration of potential needs for relocation or additional stations.

d. Apparatus – review existing vehicles and replacement plans relative to the existing and expected demands as well as the review of how apparatus maintenance is conducted and best practices thereof.

e. Service Level Standards – review established benchmarks to ensure they meet the communities' needs, reflect best practices, and establish comparable joint Key Performance Indicators that can/ will be used to identify performance of the various fire services.

f. Community Risk Assessment – review the community, anticipate growth, call volumes and related challenges that could pose a risk within the community presently and/ or in the future.

g. Emergency Management – review the present emergency management program along with any recommendations for future improvements.

h. The report is a review of the existing Fire Master Plan and an expansion of that document.

i. Plan outcomes must establish strategic priorities complete with action plans. These shall be expressed in terms of goals, objectives, action steps, resources (human and financial) and the timelines required to successfully complete the priorities.

Based on the summarized criteria above (a – i), and through meetings with the Fire Chief and other stakeholders, the consulting team was able to complete a thorough review of elements that are working well and those requiring improvement within The Blue Mountains Fire Department.

EM&T is presenting The Blue Mountains Fire Department with a total of 38 recommendations. Many of the recommendations are operational in nature, meaning that little to no cost is associated with that recommendation. Most of these imply the effort of staff time; however, there are recommendations that are strategic in nature because of the cost involved and/or the level of involvement by internal or external stakeholders.

The recommendations are noted within each section of this document and are also encapsulated in a quick reference chart located in Section 11. The quick reference chart includes suggested timelines for implementation, along with estimated cost for each recommendation.

***Note**: All estimated costing presenting in this document is based on current industry pricing and possible equipment and/or facility requirements. Taxes and/or other inflationary information has not been included in the estimates. Therefore, actual costing can vary depending on the date of implementation (by the town), the type of equipment used, level of staff involvement and other mitigating factors (i.e., pricing between contractors can vary).*

DEFINITIONS

Immediate	Recommendations that should be addressed urgently due to the legislative or health and safety requirements or operational critical need
Short-term	Recommendations that should be addressed within 1 – 3 years
Mid-term	Recommendations that should be addressed within 4 – 6 years
Long-term	Recommendations that should be addressed within 7 – 10 years
AED	Automatic External Defibrillator
AHJ	Authority Having Jurisdiction
ATV	All-Terrain Vehicle
AVL	Automatic Vehicle Locators
BFES	Barrie Fire & Emergency Service
CACC	Central Ambulance Communications Centre
CAD	Computer Aided Dispatch
CAO	Chief Administrative Officer
CBRNE	Chemical Biological Radiological Nuclear Explosive materials
CEMC	Community Emergency Management Coordinator
CFAI	Commission on Fire Accreditation International
CFPO	Chief Fire Prevention Officer
CISC	CRTC Interconnection Steering Committee
CISM	Critical Incident Stress Management
CO	Carbon Monoxide
CPSE	Centre for Public Safety Excellence
CRA	Community Risk Assessment
CRRP	Community Risk Reduction Plan
CRTC	Canadian Radio-television & Telecommunications
DPG	Dwelling Protection Grade
E&R	Establishing & Regulating (By-Law)
EAP	Employee Assistance Program
EM&T	Emergency Management & Training Inc.
EMCPA	Emergency Management & Civil Protection Act
EMS	Emergency Medical Services
EOC	Emergency Operation Centre
EVP	Emergency Vehicle Pre-emptive
EVT	Emergency Vehicle Technician
FESO	Fire and Emergency Services Organization
FPO	Fire Prevention Officer
FPPA	Fire Prevention & Protection Act
FUS	Fire Underwriters Survey

GCPS	Grey County Paramedic Service
GN	Guidance Note
GPM	Gallons Per Minute
GPS	Global Positioning System
HAZMAT	Hazardous Materials
HFSC	Home Fire Sprinkler Coalition
HIRA	Hazard Identification & Risk Assessment
HR	Human Resources
IC	Incident Commander
IP	Internet Protocol
IRM	Integrated Risk Management Approach
L/min	Liters Per Minute
MVC	Motor Vehicle Collision
NFPA	National Fire Protection Association
NG 9-1-1	Next Generation 9-1-1
NIOSH	National Institute for Occupational Safety & Health
NIST	National Institute of Standards and Technology
OAFC	Ontario Association of Fire Chiefs
OBC	Ontario Building Code
OFC	Ontario Fire College
OFMEM	Ontario Fire Marshal's Office and Emergency Management
OOS	Out of Service
OPP	Ontario Provincial Police
PFPC	Public Fire Protection Classification
PFLSE	Public Fire & Life Safety Educator
PFSG	Public Fire Safety Guideline
PPC	Paid-per-call firefighter
PPE	Personal Protective Equipment
PSAPs	Public Safety Answering Points
PSI	Pounds Per Square Inch
PTSD	Post Traumatic Stress Disorder
RFP	Request for Proposal
RTT	Real-time Text
SCBA	Self Contained Breathing Apparatus
SMT	Senior Management Team
SOG	Standard Operating Guideline
SOP	Standard Operating Policy
SRA	Simplified Risk Assessment
STA	Short Term Accommodation

TSP	Telecommunications Service Provider
TSSA	Technical Standards & Safety Authority
VoIP	Voice Over Internet Protocol
VSA	Vital Signs Absent
WETT	Wood Energy Technology Transfer
WSIB	Workplace Safety & Insurance Board

INTRODUCTION

Introduction

Project Initiation

In 2021, the Town of The Blue Mountains issued a Request for Proposal (RFP) on behalf of its fire department. As the successful bidder, Emergency Management & Training Inc. (EM&T) has worked collaboratively with The Blue Mountains and The Blue Mountains Fire Department in gathering data and developing the Fire Master Plan. EM&T would like to thank all staff and the community for their input into this plan.

Purpose

The principal purpose of the project is to obtain a detailed Fire Master Plan and a Community Risk Assessment (CRA) for the future delivery needs of Town residents, businesses, and visitors who request emergency services as provided by The Blue Mountains Fire Department.

To achieve the overall goal of this Fire Master Plan, input from the following was obtained:

- Planning and Development Services
- Operations Department - Water Services
- Legal Services
- Finance and IT Services
- Operations and Corporate Administration
- Professional Firefighters' Association
- Paid per-call Firefighters' Association
- Chief Administrative Officer
- Mayor and members of Council

Their observations, comments, and recommendations provided great insight for the present status and future vision of The Blue Mountains Fire Department.

The Fire Master Plan recommendations are based on industry standards, provincial, and federal laws where applicable, regulations and references to accepted practices recommended by the OFMEM and NFPA in the delivery of fire prevention, fire suppression, fire communications, fire training, as well as pre-hospital emergency medical care services and specialized rescues. A review of local and neighbouring municipality trends has also been considered during EM&T's review.

Review Process

To address the scope of work for this project, EM&T used both quantitative and qualitative research methodologies to develop a strong understanding of current and future needs and circumstances of the community, as well as the customer service demands of the public.

The aim of the project is to complete a comprehensive review of all fire department operations and develop an Fire Master Plan which will facilitate the provisions of an optimum level of fire protection and rescue services appropriate for the community. The Fire Master Plan must address these key areas:

1. Be conducted using best practices, current industry standards, and applicable legislation as the foundation for all work undertaken.
2. Use both quantitative and qualitative research methodologies to develop a strong understanding of current and future needs and circumstances of the community, and customer service demands of the public.
3. Analyze, comment on existing, and provide recommendations for enhancement in the following key areas:
    i. **Governance** – regarding applicable legislation and regulations, and municipal by-laws relative to the fire department.
    ii. **Service Delivery** – regarding the level and range of services and programs delivered currently, and future requirements considering predicted growth and service delivery expectations. Including review of existing service level standards and benchmarks to ensure they meet the community's needs and reflect best practices as well as recommendation on what service levels may be required in the future, both short-term and long-term.
    i. **Fire Prevention** – regarding the Fire Prevention Program including fire inspections, investigations, and code enforcement.
    ii. **Public Fire Safety Education** – regarding Public Education program, including demographics, website, and social media opportunities.
    iii. **Emergency Response** – regarding the emergency response call volume and trends, including types of calls, number of calls, apparatus deployment, response staffing, firefighter deployment and safety.
    iv. **Firefighter training** – regarding the Firefighter Training Program, including recruit training, firefighter training, and officer training.
    v. **Administration** – regarding the administration of the fire department, including organization, policies and procedures, administrative support, record keeping, information management, purchasing, inventory control, public and media relations, and customer service.
    vi. **Human Resources** – regarding fire department staffing, organizational structure, ratio of officers to firefighters relative to effective span of control, firefighter recruitment and retention, promotional policy, succession planning, and health and safety.

vii. **Facilities** – fire station locations and amenities. Review capacity of existing facilities and plan for future needs. Specific attention is required to the facility needs for the Craigleith Station 2 response area and future needs to the Thornbury Fire Station 1.

viii. **Communications** – fire department communications including dispatch, paging, telephone, and radio systems. xi) Mutual Aid/Automatic Aid – Agreements that are written, historic and understood/ assumed with neighbouring municipalities.

ix. **Review of Fees and Charges and Cost Recovery Mechanisms** – Review the Town's current Fees and Charges By-law for completion and possible other cost recovery options.

4. Include input from members of Council, senior town staff, senior fire department officers, paid per-call volunteer firefighters, and the community.

Performance Measures and Standards

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

- The Ontario Fire Marshal's Office and Emergency Management (OFMEM) Public Safety Guidelines
- The OFMEM Comprehensive Fire Safety Effectiveness Model
- *The Fire Protection and Prevention Act (FPPA)*
    - *O.Reg. 378/18 – Community risk assessments*
- The National Fire Protection Association (NFPA) standards
    - NFPA 1221 addresses recommended standards in relation to communications/ dispatching services
    - NFPA 1720 addresses recommended standards for volunteer fire departments
    - NFPA 1730 addresses recommended standards for fire prevention and education activities
- The Commission on Fire Accreditation International (CFAI), which is a program that evaluates a fire department based on related NFPA standards, local legislation, and industry best practices (the parent organization for CFAI is the Centre for Public Safety Excellence (CPSE))
- OFMEM Integrated Risk Management program
- The *Ontario Health and Safety Act*, National Institute for Occupational Safety and Health (NIOSH)

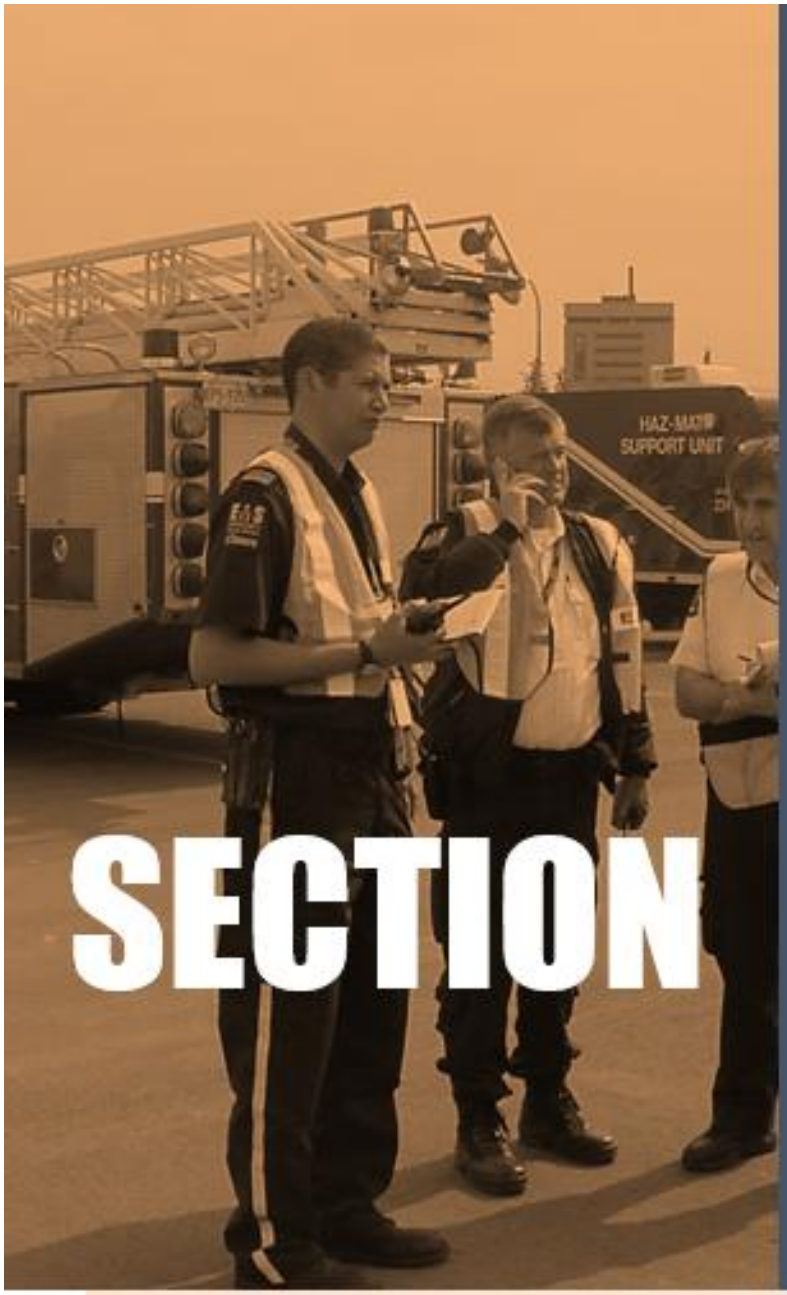
- Ontario Fire Service – Section 21 Guidelines
    - The Section 21 Committee is based on Section 21 of the *Ontario Occupational Health and Safety Act*. This committee is charged with reviewing industry safety concerns and developing recommended guidelines to reduce injuries for the worker.

Project Consultants

Although several staff at EM&T were involved in the collaboration and completion of this Fire Master Plan, the overall review was conducted by:

- Darryl Culley, President, EM&T
- Phil Dawson, Fire & Emergency Services Consultant
- Rick Monkman, Fire & Emergency Services Consultant
- Lyle Quan, Vice President of Operations, EM&T

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



SECTION 1

Community & Fire Department

Section 1: Community & Fire Department

1.1 Community Overview

The Blue Mountains was created in 2001 with the amalgamation of the municipalities of the Town of Thornbury and the Township of Collingwood. This amalgamation was imposed by the Province of Ontario as part of a province-wide municipal restructuring initiative.[1] Its populace has seen a significant increase between 1996 and 2006, with a slight downturn in 2011, only to increase again in 2016, at which time numbers turned around with the influx of new residents and continues to grow. There are approximately 9,390 permanent residents in 2021[2] and it is projected that this could increase to 16,300 by 2046 with the current rate of development in the town. In 2021 there are approximately 4,400 households, and it is projected that this could climb to 7,990 by 2046.[3]

There are several residential developments that have either begun or are in the approval/planning stages. Due to this growth, the amount of farmland within the municipality has decreased; however, the municipality remains primarily a rural area, with several built-up areas that The Blue Mountains Fire Department respond to. The area around the Blue Mountains Resort has also seen increased growth, due to its popularity and an increase in people wishing to move away from the Greater Toronto Area (GTA) to a more rural setting.

With a land area of approximately 287.24 km^2, the community contains an abundance of significant rural areas, agricultural and natural areas, including the Niagara Escarpment, Georgian Bay, wetlands, and environmentally sensitive areas.

Being located within the Niagara Escarpment and receiving, on average, 304 cm (120 in) of snow, makes it ideal for skiing. Blue Mountain Village is a significant year-round tourist attraction with events and concerts including snowmobiling, snow shoeing, and many conferences for small and large businesses, in both the private and public sectors.

Its seasonal population is normally very high due to the many tourist attractions throughout the Town. Due to the COVID-19 pandemic, previous estimates on the number of visitors to the Blue Mountain Resort per day are no longer valid and would be significantly lower due to governmental direction on capacity limits. With businesses allowing people to work remotely, many people are

[1] "The Blue Mountains Ontario", Wikipedia, Retrieved December 31, 2021, https://en.wikipedia.org/wiki/The_Blue_Mountains,_Ontario

[2] Data table, Census Profile, 2021 Census of Population - The Blue Mountains, Town (T) [Census subdivision], Ontario (statcan.gc.ca), Accessed February 10, 2022, https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=The%20Blue%20Mountains&DGUIDlist=2021A00053542045&GENDERlist=1&STATISTIClist=1&HEADERlist=0

[3] County of Grey Growth Management Strategy, Update 2021, Growth Forecasts to 2046

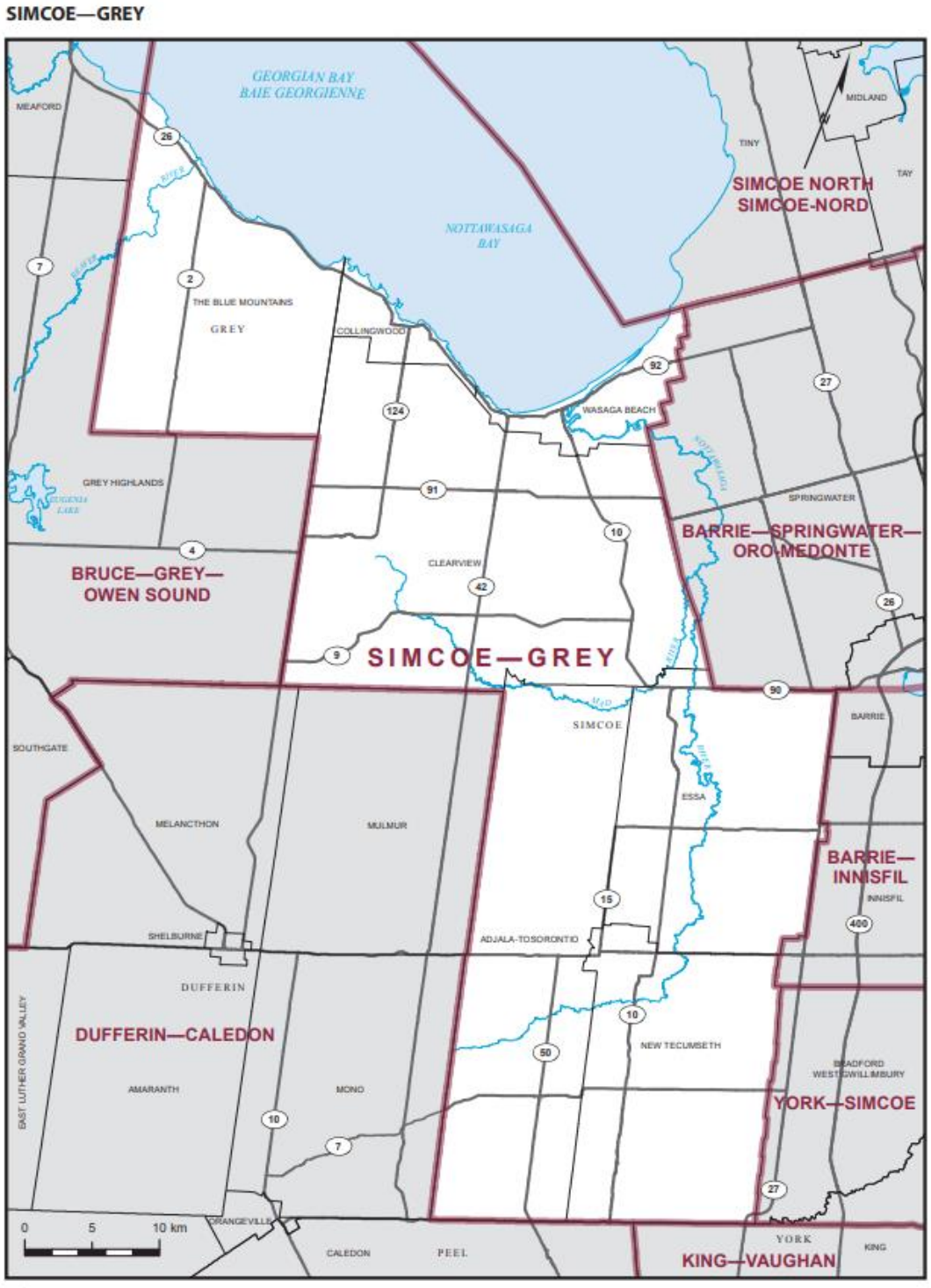
choosing to work at their vacation residence, resulting in seasonal residency becoming permanent. It will take time to reflect if this trend towards permanent residency continues.

The increase of year-round visitors has meant that short-term accommodations (STAs) are becoming fully booked months in advance. The Blue Mountains is world renowned for its ski facilities, five private ski clubs, and one of the largest public resorts in Ontario. It has 42 ski runs with the longest being 1.6km (1 mi). On average it sells over 750,00 lift tickets, making it the third busiest ski resort in Canada,[4] after Whistler-Blackcomb in British Columbia and Mont Tremblant in Quebec.[5] Fishing, sailing, boating, canoeing, and kayaking are also major tourism attractions.

Other visitors take advantage of the numerous hiking and biking trails including the Bruce Trail. There are several trails for those that prefer to use an all-terrain vehicle (ATV) or bicycle; along with small cliffs to climb and repel from. Hike or bicycle in either the Kolpaore Uplands, Three Stage Mountain Biking Trails or at the Pretty River Valley Provincial Park.

[4] Blue Mountain (ski resort) - Retrieved December 31, 2021, from-https://en.wikipedia.org/wiki/Blue_Mountain. –
[5] Blue Mountain (ski resort). Retrieved December 21, 2021, from https://en.wikipedia.org/wiki/Blue_Mountain.

FIGURE #1: The Town of Blue Mountains and the Surrounding Areas.



[6]

[6] Elections Canada, "Simcoe Grey," retrieved February 24, 2022, https://www.elections.ca/res/cir/maps2/images/atlas/35099.pdf

1.2 Fire Department Composition

The Blue Mountains Fire Department currently provides fire protection services from two fire stations located in the communities of Thornbury and Craigleith. Evidence of the history and tradition of service to their community remains visible within each of the volunteer fire stations. Pictures and plaques mounted on station walls reflect the years of dedicated service the paid-per-call (PPC) firefighters have provided. This sense of community continues in the commitment of today's PPC firefighters as indicated by their individual and coordinated efforts to provide fire protection services to the community. The two fire stations host PPC firefighter associations that remain active in local fundraising efforts and support of their local communities.

Note: Throughout this document the term "paid-per-call (PPC)" is used when describing the non-full-time firefighters. Though they are traditional called "volunteers", however, they do receive an hourly wage for training and emergency call outs, for the time served to The Blue Mountains Fire Department.

The Blue Mountains Fire Department responds to approximately 300 calls for service per year. These incidents include, but are not limited to, fire related incidents, medical assist, water rescue, high angle rescue, and motor vehicle collisions (MVCs). To ensure that they are meeting the needs of the community and its staff, the fire department recognizes that it is necessary to update and maintain a Fire Master Plan for the purpose of providing high-quality fire services to the residents and businesses of the community along with its visitors. This Fire Master Plan for The Blue Mountains Fire Department reviews and identifies current and anticipated community fire risks and needs over the next 10 years. With the ongoing support and approval of Council, this will greatly assist and guide the fire department with future planning relating to staffing and response, fire and life safety programming, and for asset management.

This review has examined and researched all aspects of the fire department operations including, planning, fire prevention, training and education, communications, apparatus and equipment, maintenance, human resources, station suitability (accommodations) and locations, budgets, and large-scale emergency preparedness.

The fire department staff includes:

- Full-time Fire Chief (1)
- Full-time Deputy Fire Chief (1)
- Full-time Chief Fire Prevention Officer (1) (Presently in the role of Acting Deputy Fire Chief)
- Full-time Fire Prevention/Suppression Officer (1)
- Full-time Fire Prevention Inspector/Suppression Firefighters (6)
- Full-time Training/Suppression Officer (1)
- Full-time Administrative Assistant/CEMC (1)

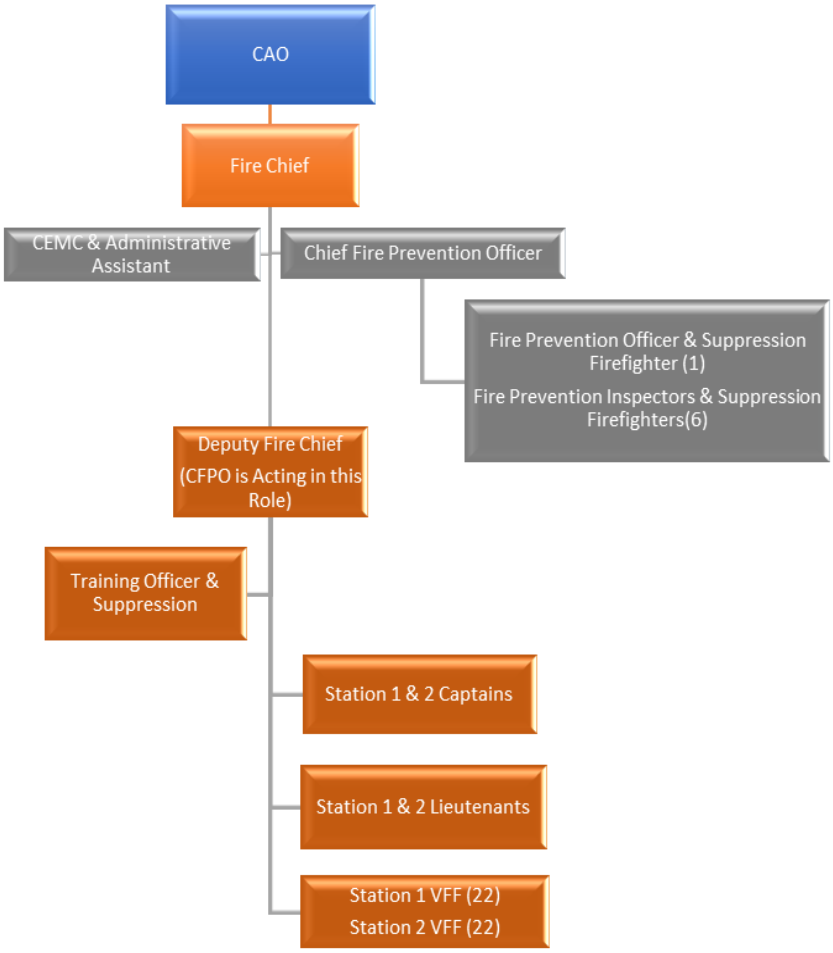
- Paid per-call firefighters (44)
- Late 2021, Council approved the hiring of four additional full-time firefighters, who started with the department in February 2022.

Each station has a complement of PPC captains, lieutenants, and firefighters who respond out of the two fire stations. The firefighting force for the Fire Suppression/Operations Division consists of a total of 44 PPC firefighters (when the roster is at full strength). Due to the loss of firefighters because of employment opportunities within and outside of the community, housing, the number of firefighters available is less than half the number it should be at. This is discussed further in this document.

It should also be noted that the full-time staff, namely, Fire Prevention Officer (FPO), Inspectors, and Training Officer, are also firefighters; they respond to all fire calls as well as performing their other duties.

The organizational chart noted in FIGURE #2 reflects the general reporting structure within the fire department.

FIGURE #2: The Blue Mountains Fire Department Organizational Chart



This current reporting arrangement allows for a sufficient level of involvement by the Fire Chief within the senior management structure of the Town and allows for a high-level of administrative oversight of the day-to-day operations of the fire department. The Fire Chief reports to the CAO and is invited to the Senior Management Team (SMT) meetings as a guest. At the time of this Fire Master Plan's composition, the Deputy Fire Chief was away from work on long-term leave and the Chief of Fire Prevention was acting in the Deputy Chief's role. This has created a void in the Fire Prevention Division's operations.

As noted in FIGURE #3, the two fire stations are situated in the two main populated areas of Thornbury, and Craigleith.

FIGURE #3: The Blue Mountains with the Station Locations & Response Boundaries

The yellow vertical line represents the station response boundaries, but due to staffing shortages, both stations are presently being dispatched to all fire calls.

The Town also has automatic aid agreements in place with Meaford, Grey Highlands and Clearview fire departments. This is discussed at length in Section 8 – Mutual & Automatic Aid.

The Department has developed a vision, goals, and mandate statements for their organization to follow and for all to view. Council approved these statements and they are included in the Establishing & Regulating (E&R) By-Law.

The following are the vision, goals, and mandate statements as contained within the E&R By-Law 2021-10 and approved by Council on January 27th, 2021.:

Mandate for The Blue Mountains Fire Department

The mandate of The Blue Mountains Fire Department is to provide fire protection services and emergency response, public fire and life safety education and fire prevention initiatives to protect the lives and property of the citizens, businesses, and visitors to the Town of The Blue Mountains.

Vision of The Blue Mountains Fire Department

To provide the citizens of The Blue Mountains with pro-active, effective, and efficient delivery of fire, rescue, public education, and fire prevention services, through a unified forward-thinking organization with a good morale and with the highest standards of personnel safety, fairness, and professionalism.

Goals of The Blue Mountains Fire Department

The primary goal of the fire department is to:

> *Provide appropriate public fire and life safety education and other fire prevention programs and measures as legislated by the FPPA.*
>
> *Provide exceptional training to its members through well planned programs followed by appropriate testing and documentation.*
>
> *Provide effective, timely, and adequately staffed emergency response and assistance as appropriate to the needs and circumstances of the municipality and as required by the FPPA and other applicable legislation.*

1.2.1 Community Growth

Presently, the population of The Blue Mountains is approximately 9,550 permanent residents and is forecasted to grow to roughly 16,300 people by 2046.[7] This growth is anticipated to occur across the town with a mix of permanent residences and STAs. This represents an estimated population increase of 7,000 citizens or 43%. This population growth will translate into an increase in call volume for the

[7]"County of Grey Growth Management Strategy – Update 2021, Growth Forecasts to 2046." Retrieved December 2021, file:///C:/Users/EmergencyMGT/Downloads/Hemson+Grey+County+GMS+Update+Slide+Deck+FINAL+v5+14Jul21%20(1).pdf

fire department. How much the call volume will increase, however, is unknown as population growth percentages is not the only factor related to calls for service. At this time, we can utilize how much responses have increased over the past few years and extrapolate this in predicting what the call volume may be approximately 10 years from now. This increase can be seen in the following chart (TABLE #1).

In 2021 there are approximately 4,400 households and is forecasted to increase to 7,990 by 2046.[8] There are currently 40 residential developments that are in varying stages of approval and completion. Many of these are being built for the sole use as STAs which translates into unknown number of seasonal visitors as well as those that stay at the Blue Mountains Resorts. During ski season, there is an unknown number of visitors to the many ski resorts in the town.

TABLE #1: Call Volumes for 2017 - 2021

2017	2018	2019	2020	2021	Percentage increase over the past five years	Estimated call volume for 2032
229	247	260	293	315	27%	– 500 - 525

The estimations noted in Table #1 are based only on data received for the past five years. The chart helps to illustrate a correlation with an increase of population and an associated increase in call volumes. The exact make up of future call types and their percentages are unknown, as they will be influenced by factors such as how quickly the new residents move into the community, their demographic, whether additional developments come online that are not already known, etc. This increase in call volume will also translate into an increase in demand on the department. This type of increase will need to be monitored in conjunction with response times and PPC firefighter turnout. To gain a more accurate understanding of anticipated call volumes, the Fire Chief needs to continue the tracking of percentage increases and report this to council to ensure that they are aware of the increases and what challenges are affecting the department.

An area of The Blue Mountains that is anticipating considerable development is the Castle Glen property which was recently sold to a developer in the GTA. There has been positive feedback from those involved which includes the expansion of the town's infrastructure to service the area. Possible inclusions in the development are a fire station, police station and schools. The town has a Castle Glen Secondary Plan completed for that area which permits up to 1,600 residential units, 300 hotel/commercial accommodation units, and 5,000 m² for commercial uses. This development is in

[8] "County of Grey Growth Management Strategy - Update Report – July 14th, 2021", Retrieved December 31, 2021, file:///C:/Users/EmergencyMGT/Downloads/Hemson+Grey+County+GMS+Update+Slide+Deck+FINAL+v5+14Jul21%20(2).pdf

very early discussions, and it will take some time for its completion but does identify that another significant development is being planned for the town.

1.3 Fire Department Comparators

A review was conducted of fire service comparators for benchmarking purposes. This type of review can offer a snapshot of what other similar sized communities and fire departments look like. Some of the communities reviewed do not have the same size population but will have similar sized fire departments and call volumes.

In completing this type of review, the Fire Chief and Council must be aware that no two communities are identical; each community has its own unique challenges due to demographics, topography, and percentage of residential, commercial, and industrial areas, along with transportation and road network challenges. The following chart provides a general overview of comparable communities and fire departments, their staffing levels and type, along with call volumes for each fire department.

TABLE #2: Fire Department Comparators & Population Ratio

Municipality	Population (2021 Census)	Land Area	# Of Stations	Staffing Paid Per-Call & Full-time firefighters	Fire Service Agreements in Place for Response by Other Fire Departments	Annual Incidents	Firefighter to Pop. Ratio
The Blue Mountains	**9,390**	**287.24 km^2**	**2**	**8 FT, 44 PPC FFs**	**3 agreements**	**300**	**180**
Perth East	12,595	715.1 km^2	3	68 VFFs	1 Agreement	252	185
Centre Wellington	31,093	407.54 km^2	2	4 FT, 60 VFFs	5 agreements	550	485
Woolwich	26,999	326.15 km^2	6	150 VFFs	2 Agreements	561	179
Uxbridge	21,556	420.65 km^2	1	2 FT,30 VFFs	6 agreements	400	6,732
Strathroy-Caradoc	23,871	270.77 km^2	3	78 VFFs,2 FT	6 agreements	400	298
Scugog	21,581	474.65 km^2	2	58 VFFs, 5 FT, 2 PT	4 agreements	452	332

Municipality	Population (2021 Census)	Land Area	# Of Stations	Staffing Paid Per-Call & Full-time firefighters	Fire Service Agreements in Place for Response by Other Fire Departments	Annual Incidents	Firefighter to Pop. Ratio
Niagara-on-the-Lake	19,088	132.81 km²	5	110 VFF, 5 FT	2 agreements	700	165
Saugeen Shores	15,908	171.05 km²	2	50 VFFs, 3 FT	No Data	150	300

As illustrated in Table #2 there is a range of population versus staffing ratios between the communities surveyed. No definitive conclusion or recommendation can be drawn from this comparison alone. This data does, however, offer a glimpse of information which can be used to identify whether The Blue Mountains Fire Department is functioning similarly in relation to call volumes, population versus staffing, and composition of the service. Based on the fire departments surveyed, The Blue Mountains Fire Department is functioning at a very good ratio for staffing when compared to some of the other comparable municipalities relative to population vs. staffing.

At this time, based on the data collected, EM&T is not able to draw any quantifiable conclusions and/or recommendations other than advising the Fire Chief to continue to use comparable data based on population and call volumes to identify if The Blue Mountains is experiencing above or below average response numbers and staffing levels (as those compared with). When fully staffed, there are 44 PPC firefighters; with eight full-time firefighters. At present there are only 22 PPC firefighters on the roster. This is discussed in-depth in Section 5.

It is also worth noting that based on data provided to EM&T, The Blue Mountains is in the lower third of cost per household of the municipalities listed. The top end is $496.00 per household, whereas The Blue Mountains is at $228.00 per household. This is a very positive reflection on The Blue Mountains Fire Department and the level of service it provides to the community of The Blue Mountains in a cost-effective manner.

TABLE #3: Comparable Funding of Fire Services

Municipality	Number of Households	Total Taxable Assessment	Total Fire Expenses	Per Household	Per Million of Assessment
The Blue Mountains *	**8,918**	**$4,888,605,467**	**$2,811,877**	**$315**	**$575**
Hanover	3,642	$738,694,016	$662,253	$182	$897
Meaford	5,840	$1,904,972,800	$897,141	$154	$471
Chatsworth	4,308	$1,052096,192	$328,822	$76	$313
Southgate	2,750	$1,287,178,112	$585,307	$213	$455
Georgian Bluffs	5,202	$1,840,873,856	$752,098	$145	$409
Grey Highlands	5,567	$2,296,094,720	$805,374	$145	$351
West Grey	5,899	$2,092,400,128	$1,065,782	$181	$509
Owen Sound	10,304	$2,017,571,328	$5,108,151	$496	$2,532
Collingwood	11,854	$4,354,736,640	$5,290,868	$446	$1,215
Clearview	6,328	$2,714,762,752	$1,983,641	$313	$731
Wasaga Beach	13,358	$4,221,760,512	$4,386,478	$328	$1,016
Springwater	8,190	$1,379,728,128	$1,921,644	$350	$1,393

Note: Data provided by The Blue Mountains Mayor's Office.

**The Blue Mountains is 2022 financial data, whereas the balance of information is 2021.*

SECTION 2 Planning

Section 2: Planning

Planning is a key function of any organization and should be done with a focus on the present needs of the community, coupled with its future growth and how this will affect the service demands on the fire department. Through the work completed on their previous Fire Master Plan (refer to Section 12 for further information) and the implementation of this Fire Master Plan process, The Blue Mountains Fire Department has clearly demonstrated a proactive approach towards its planning initiatives.

2.1 Three Lines of Defence

The OFMEM have identified "Three Lines of Defence" to be utilized by all fire departments in Ontario when planning to meet the needs of the community.

The identified three lines of defence, as noted by the OFMEM are:

1. **Education** – Fire safety education is the key to mitigating the fire and life hazards before they start. With the growth of the community, how will the municipality continue to meet the fire safety educational needs of the community?
2. **Fire Safety Standards and Enforcement** – If the public education program does not prove effective, then the next step is for the fire department to enforce fire safety requirements through inspections leading to possible charges under the *Act*.
3. **Emergency Response** – If the first two lines of defence fail for whatever reason, the community, through its fire department, should be prepared to respond in an efficient and effective manner to put the fire out and/or mitigate the emergency itself. By evaluating the effectiveness of the fire stations, staff, and equipment, this report will be able to make recommendations for related efficiencies.

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

2.2 Strengths, Weaknesses, Opportunities, & Threats (SWOT)

This entire Fire Master Plan document is the result of conducting a SWOT analysis on the community which has resulted in a list of recommendations for the Town's Council, Chief Administrative Officer (CAO), and Fire Chief to consider and implement.

The strengths and weaknesses portion of this SWOT are based on an internal review of the Department to identify existing efficiencies, along with recognizing areas for improvement. The opportunities and threats portion are related to external influences and how these influences affect the operations and response capabilities of the Department.

2.2.1 Strengths

- The stations are staffed by a team of dedicated PPC firefighters, along with a full-time component of administrative, fire prevention, and training staff, who are also available to respond to calls, as needed. All have expressed, during focus group interviews, that they are quite proud of the level of service they provide to the community. The fire stations and equipment are adequate, and the firefighters believe that they are well-equipped to effectively carry out their responsibilities.

- The Blue Mountains Fire Department has strong relationships with neighbouring fire departments and a long history of cooperative services. There is a mutual aid plan and other automatic aid/response agreements in place to help supplement the fire safety needs of the community of The Blue Mountains.

- The Fire Prevention Division is as proactive within the community in relation to education, fire safety inspections and enforcement as resources allow. However, more can still be accomplished, and will be addressed later in this document.

- The firefighters have a strong sense of leadership coming from the Lieutenants and Captains of the department. They have proven themselves to be competent in their roles, as proven in their training and fire ground knowledge. And the officers are genuinely concerned for the safety of their firefighters.

- During discussions with the firefighter focus groups, it became evident to EM&T that the members of the department have an identifiable character including a strong work ethic and purpose, that genuinely cares about the well being of their community and its safety.

- Strengths include, but are not limited to the following:
  - Condition of the stations, vehicles, and equipment
  - Standardization of the inspection process of STAs
  - The bargaining unit in good faith, has agreed in principle to permit the Acting Deputy Chief to train additional fire prevention personnel

2.2.2 Weaknesses

- The Blue Mountains Fire Department has a complement of dedicated PPC firefighters that respond to calls for service, however, due to other commitments, such as their full-time jobs and family obligations, there is no guarantee these PPC firefighters will be available to respond to every situation. Presently, the response data confirms that The Blue Mountains Fire Department is not meeting recommended industry best practices for staffing and firefighter response, which can be seen in the NFPA response charts in Section 5 and the response data noted in the appendices.
    - This staffing/response concern was reported to Council by the Fire Chief in October 2021.
- Due to the growth of the Town, along with increased traffic flow, the PPC firefighters that respond out of Station 2 are having increasing difficulty getting to the station in a timely manner which inevitably effects response times.
- During the focus groups it was identified, on numerous occasions, that training is lacking in the technical rescue disciplines, which is discussed at length further on in this document. The firefighters are anxious to receive training outside of the core training topics. The firefighters also noted that they would like to complete the NFPA 1031 and 1035 training for Fire Inspections and Public Education.
    - By receiving their certifications in 1031 and 1035, it will allow them to assist the Fire Prevention Division with their workload, which is rather heavy due to required inspections.
- The recruitment and retention of PPC firefighters are becoming an ever-increasing challenge. At present, the current number of active PPC firefighters are 22, and when the department has its full complement, there are 44. Recruitment and retention will also be discussed later in this document.
    - Because many of the younger PPC firefighters wish to pursue a career in firefighting on a full-time basis, this has meant the depletion in the number of firefighters on The Blue Mountains Fire Department. In 2021, there were seven that left the department for full-time firefighter career opportunities elsewhere. In addition, another four left for other reasons.
- Due to the reduction of PPC firefighters on the roster along with those that are unavailable during the daytime due to other commitments, there have been incidents where no apparatus responded to a call in their response zone due to the lack of responding firefighters.
- Over the past three years the following data identifies the number of times no PPC firefighters responded after a call-out was made for them to attend an incident:
- 2019 – 1

- 2020 – 2
- 2021 – 1

- Although the above numbers appear to be quite low, it must be stated that any failure to have the PPC firefighters respond to a call could end in the total loss of a structure or even worse the loss of life. This needs to be monitored and addressed by the Fire Chief and Council with fulsome supporting documentation to make a well-informed decision. This data collection should include calls in which only three PPC firefighters attend.
- Other weaknesses include some firefighters not supporting all aspects of training requirements. For unknown reasons, some are not forthcoming in identifying areas of training they are weak in and making a request for enhanced training on these areas. A review of firefighter training records could help identify any concerns in this area.
- With so many demands placed on fire prevention staff, for fire inspections and other aspects of their workload, the delivery of public education is not meeting the requirements of a growing community, which may require the hiring of addition staff.

2.2.3 Opportunities

- During the focus group sessions, it was evident that The Blue Mountains Fire Department has many firefighters that are wanting more training in a variety of subjects, which is seen as a positive. The Training Officer should be directed to work on training needs only and not be involved in fire prevention activities. To aid in the delivery of any specialized training, the department should review opportunities to bring in a third-party fire service trainer that is qualified in the delivery of the specialized disciplines that are outside of the present Training Officer's qualifications. Examples are all the technical rescue disciplines, including marine rescues, and Fire Inspector I and Public Education.
- There is a need to educate the new residents coming from urban areas that the fire department is primarily a volunteer organization and not full-time staffed 24/7. This could be addressed through the involvement of the town's Communications Department.
- The Town should work with local employers that have PPC firefighters employed with them to allow the firefighters to leave work (if at all possible) to attend a call. The Town may need to develop an agreement with the employer until the staffing issue is fully addressed and the firefighter complement is back to its limit.
- There is a need for a sustainable recruitment and retention program that involves the firefighters in promoting opportunities for the residents to join the fire department.

Retention Opportunities:

The high cost of a residence within the Town makes it almost impossible for some families to afford living within The Blue Mountains. Due to the lack of affordable housing, the Town should continue to encourage local developers to build more attainable housing within the community to help retain its volunteer component. Another option could be that the Town reach out to the community to see if there is a house available that single firefighters could live in and pay the rent at a reduced rate.

It is becoming more common for employers to acquire trailers that have been converted to living quarters. Examples include those found in Fort McMurray for the oil workers and, locally, Deerhurst Resort in Muskoka that has obtained this type of housing for their seasonal workers. The units have private bedrooms, common washrooms, kitchen, and clothes washing facilities.

Other opportunities include:

- Joint training opportunities with neighbouring fire services, which may reduce costs such as recruit training including driver training.
- Additional financial support for the fire department such as adjustments/ additions to the fees by-law and an increase in development charges funding.

2.2.4 Threats/ Challenges

- The present level of PPC firefighters and equipment must be considered as the community's population continues to grow in both the residential and commercial sectors. As noted earlier in this document, The Blue Mountains can expect to see up to a 43% increase in population by 2046. The bulk of this growth will occur in the areas of Castle Glen, Thornbury and Craigleith. Researching comparable communities in terms of how they dealt with such community growth can give The Blue Mountains Fire Department an indication of future call volumes. There are currently 40 developments in The Blue Mountains that are in various stages of completion.
- The high cost of housing and living in The Blue Mountains is making it very difficult on young families to remain in the area, and some have left the fire department for just this reason. The replacement of Station 2 should be implemented at the earliest opportunity, which could include discussions on the inclusion of housing for firefighters.
- The lack of training and availability of firefighters to respond to technical rescues may require the fire department to suspend such responses at the operations level and rely on outside resources to attend and mitigate the incident, until members are trained to the level required of them.
- To operate a fire department and provide the required training implies a financial expectation on the municipality. Maintaining the current level of service with the financial support required is becoming a challenge for most municipalities. When the OFMEM brings forth new

initiatives and programs, these may place an unexpected financial expectation onto municipalities.

- Another challenge being seen by all communities and coming to the forefront is the so-called *100-year storms*. Due to changes in climate, inclement weather incidents such as freezing rain/ice storms, high and extreme winds, and flooding are becoming more commonplace and need to be part of the response program for each community. Within the Town's Hazard Identification and Risk Assessment (HIRA) document, wind events are rated as a "Moderate" risk to the residents of The Blue Mountains. This change in climate conditions along with the resulting frequency and severity of incidents has created the need for a larger response component to these emergencies. This is another reason for ensuring strong ties with other departments of the municipality, along with neighbouring communities regarding mutual and automatic aid programs. These challenges support the necessity for exercising and updating the community's emergency preparedness/response program annually.
    - Climate change is a reality and fire services have a role to play in preparing for it's affects and adjusting their response accordingly. The fire department's fire prevention staff could be in a position to include, during inspections, a discussion on flood proofing buildings and property. This could include the installation of back-flow valves on sewer lines and ensuring sump pumps are operational. While some property owners may not see it as their responsibility to install back-flow valves, doing so is a great preventative measure that could lessen the number of calls to The Blue Mountains Fire Department, and the Town's Wastewater Services Department, for assistance due to household flooding.

There is a role for the fire department, in cooperation with other departments of The Blue Mountains, to build and maintain a resilient community especially as it relates to overland flooding. Insurance companies and allied agencies have initiated flood protection programs, and view fire departments as having a role to play in educating the public on flood prevention/protection.

Information in relation to community risks and recommendations for mitigation will also be highlighted within the OFMEM's CRA document. This CRA will be provided as a separate document.

2.3 National Fire Protection Association 1201

To assist with EM&T's review and resultant recommendations, reference has been made to NFPA Standards, the North American benchmark for fire services.

2.3.1 NFPA 1201

NFPA Standard 1201 – Standard for Providing Fire and Emergency Services to the Public

Section 4.3.5 notes:

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

To accomplish this, an FESO must ensure open and timely communications with the CAO and governing body (Council); create a master plan for the organization; ensure there are mutual aid and automatic aid programs in place, along with an asset control system and maintenance program.

It is quite apparent that the Fire Chief is very active in reporting to both the CAO and Council on Fire Department matters. By initiating this Fire Master Plan project, The Blue Mountains is endeavoring to meet the expectations of this section of the NFPA Standard and should be commended for doing so.

2.4 Establishing & Regulating By-Law

The current E&R By-Law was updated in 2021, making this a very current document. Many parts of the E&R document align with the expectations of the *FPPA*. The By-Law may be viewed at: https://www.thebluemountains.ca/sites/default/files/2022-02/By-Law-2021-10-Establish-and-Regulate-a-Fire-Department.pdf

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 of The Blue Mountains. The following list of core services has been extracted from the 2021 E&R By-law #2021-65.

APPENDIX "C" TO BY-LAW 2021-65

CORE SERVICES

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

1) Fire Suppression
2) Other Emergency Responses
3) Services Requiring Outside Agencies
4) Fire Prevention and Fire & Life Safety Education
5) Training
6) Emergency Dispatching and Communications
7) Emergency Management

Through meetings with The Blue Mountains Fire Department staff and a review of documentation supplied, it was evident that The Blue Mountains Fire Department is doing well in meeting some the expectations of the 2021 E&R By-law. Influences such as the low number of PPC firefighters being on the fire department makes it somewhat difficult to meet some of the requirements of the By-Law. Although no actual response time expectations are noted in the fire department's E&R By-law, a review of the past three to five years offers a good understanding and baseline for how the Department has been performing, along with identifying areas for improvement.

The Fire Chief is continuing to utilize the most recent set of three years of data as a baseline to evaluate the response capabilities of the fire department. This evaluation will be invaluable to measure population growth versus call volumes and response times, along with any challenges that The Blue Mountains Fire Department might be encountering regarding such things as increasing response times and/or number of PPC firefighters responding to the calls.

The present E&R By-law should be reviewed annually and updated to reflect such things as new legislation, service provision, and training expectations. Once updated, the document is to be presented to Council for approval. Consideration should also be given to including reference to such guidelines and standards as:

- Section 21 Guidelines for the Fire Services
- OFMEM Guidelines in relation to staffing and response recommendations, and
- Related NFPA standards that deal with:
    - Training
    - Fire prevention and public safety programs
    - Fire department response goals and objectives

By incorporating these noted guidelines and standards, The Blue Mountains 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.

2.5 Commission on Fire Accreditation International (CFAI)

"When a Fire Department applies a model of risk assessment to help determine their level of emergency services commitment, they have moved from being reactive to being proactive."[9]

The NFPA standards represent the benchmark to strive for in the fire service. Many of these standards have, to a large degree, been adopted by the OFMEM. The CFAI is recognized as the organization that has incorporated all national and local standards, which has become the model for best practices for all fire departments.

Benefits of Accreditation:

- A system for risk assessment, decision making, and continuous improvement
- A plan for sustainment and self-assessment
- Agency performance objectives and performance measures
- Verification by peers

While a fire department may not become an accredited agency, adoption of the CFAI goals and objectives will prove to be a good guide for any fire department. The CFAI program revolves around 10 categories:

1. **Governance and Administration** – includes such things as organizational reporting structure, establishing and regulating by-law requirements, etc.
2. **Assessment and Planning** – evaluating the organization in relation to future planning
3. **Goals and Objectives** – what are the goals of the fire service; do they have a strategic plan in place
4. **Financial Resources** – does the organization have sufficient funding in place to effectively meet the needs of internal and external stakeholders
5. **Programs** – this includes fire prevention, fire suppression, training, emergency management
6. **Physical Resources** – what is the state of the fire stations and are they located in the best location to respond to the community in a timely manner

[9] "CFAI overview information, Self Assessment Manual," Retrieved January 7, 2022 from https://www.cpse.org/

7. **Human Resources** – staffing of the organization in all divisions and how the fire service works with the municipality's Human Resources Department
8. **Training and Competency** – review of all training programs based on what the fire department is mandated to provide
9. **Essential Resources** – this section covers such things as water supply, communications/dispatch, and administrative services
10. **External Systems Relations** – includes such topics as mutual aid, automatic aid, third party agreements, etc.

These sections will be discussed within each related section of this Fire Master Plan plan document.

2.6 Focus Group Sessions & Public Survey

To get a clear understanding of how well The Blue Mountains Fire Department is meeting the needs of its staff and the community, focus group sessions and a public survey were conducted. Stakeholders included internal staff of The Blue Mountains Fire Department, senior municipal staff, Council, and various external stakeholders of The Blue Mountains.

To assist with the completion of the staff and external stakeholder focus group sessions, a mix of virtual and in-person meetings were held during the months of August through to October 2021 as well as an external stakeholder information session held in November 2021. The public survey was advertised through local media and was set up on the Town's website (in the form of an electronic survey).

The Town's Corporate Communications department, the Town's Fire Master Plan project manager, and EM&T collaborated on the production of a short video and public education campaign. This proactive education initiative accompanied the survey, taking advantage of the opportunity to assist the residents and businesses with The Blue Mountains Fire Department information regarding services provided and, more importantly, how those services are provided in a combination fire services model.

2.6.1 Internal Focus Group Sessions

During the Fire Master Plan process, feedback was gathered from internal staff, which included firefighters, Administration, Training, and Fire Prevention. Additionally, the Senior Management Team was interviewed. Finally, The Blue Mountains Council were interviewed individually or in small groups to ensure there was no quorum criteria requirement.

Much of the information received from the internal surveys identified the following:

- Staff are 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 feel they have adequate facilities to work out of, along with a general satisfaction regarding apparatus and equipment to do their jobs.
- The top challenges for The Blue Mountains Fire Department that became apparent from the many focus group sessions and feedback discussions are staffing, particularly the firefighter recruitment and retention; anticipated growth that is occurring in The Blue Mountains; meeting service level requirement and expectations; and the assurance of properly trained (specialities) and equipped staff in meeting response challenges.
- The top three services that the community feels are important are:
    - Firefighting
    - Medical responses (The Blue Mountains Fire Department responds to very few of this call type)
    - Rescue (i.e., motor vehicle accidents)
- In the future, staffing requirements should be reviewed which may include an increased full-time, career component as the community grows. This was identified as the likely possibility due to significant volunteer recruitment and retention issues.

Note: *Specific comments were received in relation to the fire operations, training, and other general items. These comments have been included in other related sections of the* Fire Master Plan*, which assist in forming the list of recommendations found within this document.*

2.6.2 Public Survey and External Stakeholder Meeting Results

Input from the community is vital for providing The Blue Mountains Fire Department an accurate indication of how the public perceives The Blue Mountains Fire Department. This consultation was accomplished by the public completing an on-line survey. Due to the pandemic restrictions, in person focus group session were held to a minimum, and several were conducted using virtual conferencing, which was quite successful.

The following input was received:

- Most respondents see The Blue Mountains Fire Department as a dedicated and professional service
- The top three priorities noted by external stakeholders are:
    - That The Blue Mountains Fire Department responds in a timely manner to calls for assistance

  - The presence of The Blue Mountains Fire Department within the community in relation to public/stakeholder education, stakeholder relationship building, and related inspections/enforcement
  - The value and cost of the fire service

- The three services most noted by public survey respondents are:
  - Firefighting, emergency preparedness
  - Rescue (i.e., motor vehicle accidents)
  - Medical assist and response

- In relation to what is needed over the next 10 years, the top responses were:
  - More full-time, career staff to meet the growing demands of the community
  - Would like to see more public safety education programs and attendance at community events. This could be supplemented by creating partnerships with local neighbourhood and non-profit groups to assist in promoting fire safety and education
  - Well-equipped and trained firefighters to meet the demands of a growing community

Overall, survey and stakeholder meetings were quite positive about the services being offered by The Blue Mountains Fire Department. The primary focus we heard (both internally and externally) was ensuring that the Department continues to expand its staffing and the OFMEM Lines 1 and 2 (Public education and inspections/enforcement) capabilities as the community grows so that The Blue Mountains Fire Department can continue to provide a quality service to the community.

Recommendation #1

Regular meetings be scheduled with both internal staff and stakeholder groups by The Blue Mountains Fire Department to ensure the following:

- **Incorporate, where appropriate, updates to departmental goals and priorities, aligning service level expectations.**
- **Maintain and enhance communications and relationships between The Blue Mountains Fire Department staff and stakeholders, including businesses in the community regarding inspection and enforcement activities.**
- **Maintain a steady and robust public education program that includes outlining of services provided and proactive activities that individuals and businesses can undertake that ensure fire and life safety behaviours.**

Rationale: Provides openness and transparency in the activities of The Blue Mountains Fire Department, while opening the doors to enhanced levels of community involvement within the fire department.

SECTION 3

Risk Assessment

Section 3: Risk Assessment

3.1 Community Risk Assessment

The first and most effective way to reduce injuries, death, and property damage due to fire is through public education, inspections, and enforcement. The Fire Prevention Program addresses these key components of fire safety which starts with conducting CRA.

3.1.1 Community Risk Assessment Profile

Risk assessment is the process utilized to identify the level of fire protection required within the boundary of the municipality. It is a means of measuring the probability and consequence of an adverse effect to health, property, organization, environment, or community, as a result, of an event, activity, or operation.

Council has the authority to establish the level of fire protection within their municipality. The Fire Chief is responsible for informing Council of any, and all risks existing within The Blue Mountains. It is based on this information that Council is able, to make an informed decision on the level of service to be achieved.

The Province of Ontario Regulation 378/18 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 basic risk categories associated with the fire service – **operational risk** and **organizational risk**. Operational risk is the responsibility of The Blue Mountains Fire Department to determine the risks within its community and develop 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/ strategic plan based on the overall risk assessment of the municipality.

It is the accumulation and analyzation of these factors that will assist in identifying potential risk scenarios that may be encountered. It is during the assessment of the information gathered, which includes the likelihood of these scenarios occurring and subsequent consequences, that will endeavour to answer the following questions:

- 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?

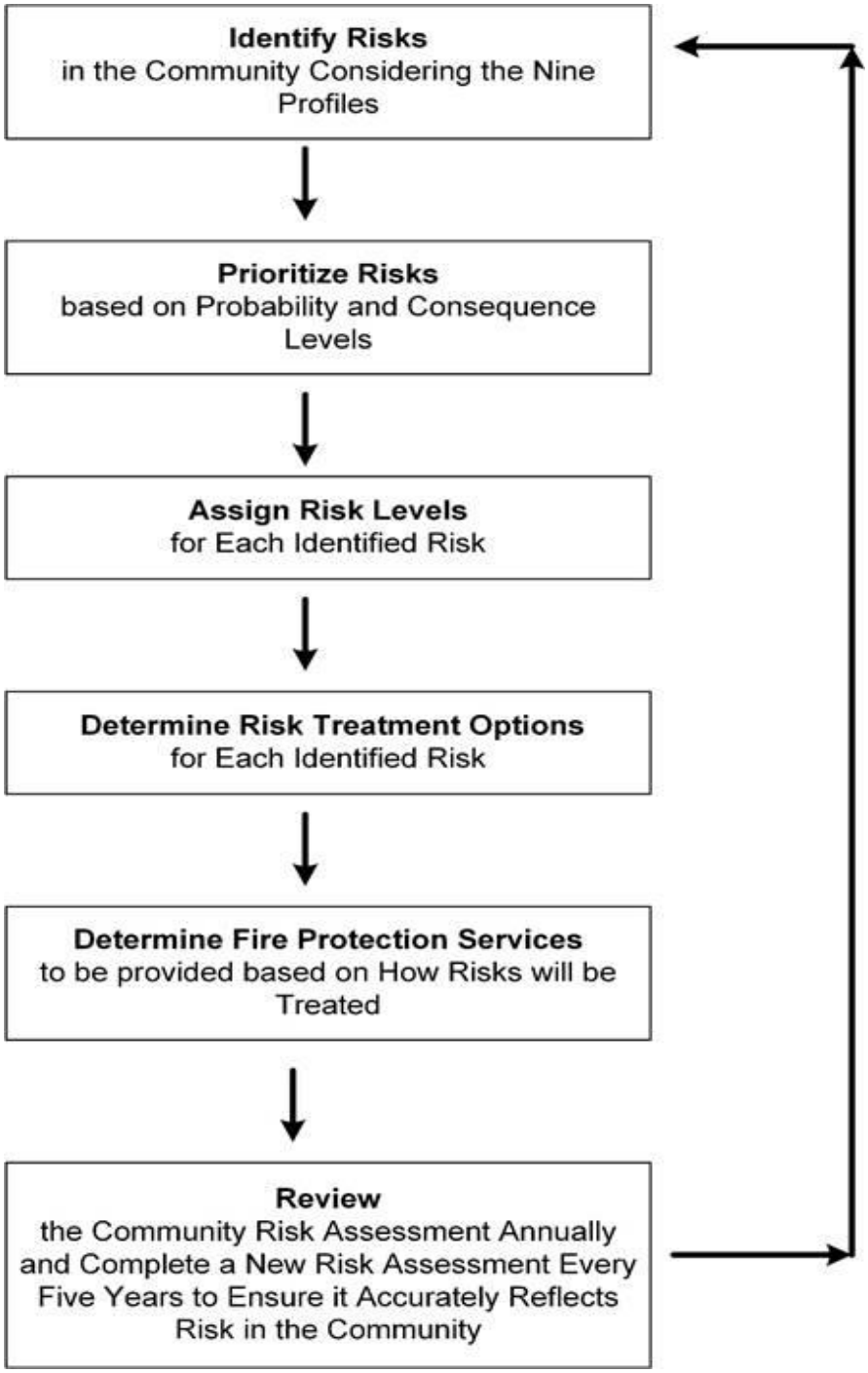
Once these questions are answered, they will frame the basis for formulating and prioritizing risk management decisions to reduce the likelihood of these incidents from occurring and to mitigate the impact of these incidents when they occur. This information will also assist in the completion of the CRA, which may identify gaps and areas where actual conditions vary from the desired outcomes.

Data to be review for each mandatory profile include:

- *Demographics Profile* – age, gender, educational attainment, socioeconomic makeup, vulnerable individuals or occupancies, transient population, ethnic and cultural considerations
- *Critical Infrastructure Profile* – the facilities and services that contribute to the interconnected networks, services and systems that meet vital human needs, sustain the economy, and protect public safety and security.
- *Geographic Profile* – waterways, highways, canyons and other landforms, railroads, wildland-urban interface, bridges, and other specific features of the community
- *Building Stock Profile* – potential high-risk occupancies, whether residential, commercial, or industrial, building density, building code classifications, age of the structure(s), occupancies that could be a high life safety risk, historic buildings
- *Public Safety Response Profile* – how are resources distributed within the community, their deployment and usage, types of incidents responded to and the frequency of such incidents including the seasonal variations and time of day
- *Community Service Profile* – existing planning and zoning committees, schools, seniors' organizations, ratepayers' associations, mental-health organizations, faith-based groups, cultural/ethnic groups
- *Hazard Profile* – be they human, technological, or natural hazards
- *Economic Profile* – infrastructure, local employers and industries, institutions, community's tax base, local attractions
- *Past Loss/Event Profile* – consideration to the impact and frequency of an event; identify large acute events which have a low frequency but a high impact, or small chronic events which have a high frequency with a low impact

In the interpretation phase of the data collected for the nine profiles, only matters that are relevant to fire protection services are considered. The following flow chart, as outlined in OFMEM Regulation 378/18, outlines the process whereby risks are to be identified from past events while also reviewing future growth trends within the municipality relating to demographics and building stock.

FIGURE #4: Community Risk Assessment Flow Chart



The probability or likelihood of a fire occurring within a community is estimated based on previous occurrences and the frequency of such events. It is this review of previous events, including the fire loss data, learning from what may have occurred in other jurisdictions, and discussions with those who may have been in attendance of the event, that will assist is creating a baseline for evaluation. The judgement of professionals with such experiences must not be missed during this process and may paint a more in-depth picture of what may have occurred in the past.

These evaluations are based on five levels of probability as outlined in the Ontario Fire Marshals Comprehensive Fire Safety Effective Model:

Rare – Level 1

- May occur in exceptional circumstances
- No incidents in the past 15 years

Unlikely – Level 2

- Could occur at some time, especially if circumstances change
- 5 to 15 years since last incident

Possible – Level 3

- Might occur under current circumstances
- 1 incident in the past 5 years

Likely – Level 4

- Will probably occur at some time under current circumstances
- Multiple or recurring incidents in the past 5 years

Almost Certain – Level 5

- Expected to occur in most circumstances unless circumstances change
- Multiple or recurring incidents in the past year

When an event occurs, whether minor or major in intensity, what are the consequences of it? The use of professional judgement and reviews of past events are important means for establishing the quantification levels. To establish this level, four components are to be considered:

1. Life Safety – any injuries or loss of life to anyone involved, public and firefighters (includes actual or potential situations)
2. Property Loss – the dollar loss relating to public and private buildings, contents, irreplaceable assets, significant/symbolic landmarks, and critical infrastructure
3. Economic Impact – monetary loses associated with income, business closures, downturn in tourism, tax assessment value, loss of employment

4. Environmental Impact – harm to humans, vegetation, and animals; the decline in quality of life due to air/water/soil contamination as a result, of either the fire or fire suppression operations

The consequences are categorized according to 5 severity levels.

- Level 1 – Insignificant – no or insignificant consequences to life safety, value of property loss, impact on the local economy or the general living conditions
- Level 2 – Minor – potential life safety risk to occupants is low, minor property loss or disruption to business or general living conditions
- Level 3 – Moderate – a threat to life safety of occupants, a moderate loss of property, the threat to loss of business or could pose a threat to the environment
- Level 4 – Major – large dollar loss with significant property loss, large threat to local commerce and tourism, impacts the environment that would result in short term evacuations
- Level 5 – Catastrophic – significant loss of life, multiple properties with significant damage, long term disruption of business, employment, and tourism along with environmental damage resulting in long term evacuations of residents and businesses

The different levels of treatment risks are:

1. **Avoid the Risk** – *implementation of programs to prevent fires or emergencies from occurring*
2. **Mitigate the Risk** - *programs and initiatives implemented to reduce the probability and/or consequences of a fire or emergency*
3. **Accept the Risk** – *after identifying and prioritizing a risk, it is determined that there are no specific programs or initiatives to be implemented to address this risk*
4. **Transfer the Risk** – *the fire department has chosen to transfer the impact and/or management of the risk to another organization or body or outside the agency*

3.1.2 Provincial Community Risk Statistics

While no recent Simplified Risk Assessment (SRA) was available, the Fire Chief and his staff can work with municipal staff to obtain an updated listing of building stock within the community, along with identifying other hazards such as railway crossings, major highways, and the introduction of any high-rise structures.

The first set of statistics noted are of the most recent provincial data found on the OFMEM website, which can be compared with the most recent The Blue Mountains Fire Department statistics.

Unfortunately, 2020 Provincial Statistics will not be available until some time in 2022.

Provincial - Loss fires by Property Class

From 2016 to 2020, there were 53,481 fires with loss reported to the OFMEM.

- *73% of these fires occurred in Residential occupancies.*
- *28% occurred in vehicles.*
- *5% occurred on structures/properties not classified by the Ontario Building code – this includes many non structure property types – land, outdoor storage, and some structures ranging from barns to weather stations.*
- *8% of loss fires occurred in Industrial occupancies.*
- *4% in Assembly occupancies.*
- *3% in Mercantile occupancies*
- *3% in Business and personal services occupancies.*
- *2% in Care and detention occupancies.*

The distribution of fire occurrence across property type has been relatively unchanged over the years.

Provincial - Loss Fires Property class: Structures only

From 2016 to 2020, there were 34,414 Structure fires with loss reported to the OFMEM.

- *Fires in residential occupancies account for 73% of structure loss fires.*
- *Properties not classified by the Ontario Building code – 5%*
- *Industrial occupancies – 7%*
- *Assembly occupancies – 4%*
- *Mercantile – 3%*
- *Business and Personal Services – 3%*
- *Care and Detention Occupancies – 1%*

This distribution of fire incidents across structure property types has been consistent over many years.

Provincial - Structure Loss Fires: Ignition source

8% of the structure loss fires were suspected to be arson or vandalism (intentionally set).

Between 2016 and 2020 the ignition sources in other (not intentionally set) structure loss fires were:

- *24% undetermined*
- *17% cooking*
- *14% open flame tools, smoker's articles*
- *9% electrical distribution equipment – wiring*

- *7% heating equipment, chimney etc.*
- *10% miscellaneous*
- *5% appliances*
- *5% other electrical, mechanical*
- *5% Exposure fires*
- *3% lighting - excluding candles*
- *1% processing equipment*
- *0% unknown, not reported*

3.1.3 Municipality of the Town of The Blue Mountains Community Risk Statistics

The following information was obtained from the OFMEM, as well as documents received and taken from the past reports supplied to EM&T. The data offers an overview of the areas of concern within The Blue Mountains. 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 in with fire prevention and public safety awareness initiatives.

Fire Loss by Occupancy Classification

The analysis indicates that between 2015 to 2020 approximately 80% of the fires reporting a loss occurred in Group C - residential occupancies.

Municipality of the Town of The Blue Mountains, Fire Loss by Property Classification

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

- Group C – Residential occupancies
- Other occupancies not classified within the Ontario Building Code (i.e., farm buildings)
- Classified under National Farm Building Code
- Group A – Assembly occupancies
- Group D – Business and Personal Services
- Group F - Industrial occupancies

Municipality of the Town of The Blue Mountains, Reported 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 of fire prevention initiatives as part of the community fire protection plan.

The leading causes of fire were:

- Misuse of ignition source/ material first ignited

- Design/ construction/ maintenance deficiency
- Undetermined
- Mechanical/ electrical in nature
- Other unintentional
- Other

Municipality of the Town of The Blue Mountains, Ignition Source Class

The leading causes for ignition sources were:

- Heating equipment, chimney, etc.
- Open flame tools, smoker's articles
- Appliances
- Cooking equipment
- Electrical distribution equipment
- Lighting equipment
- Undetermined

To assist The Blue Mountains Fire Department in its fire safety goals, it is recommended that department staff meet with relevant local community groups to form a partnership for organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community. These events can be based on the previous fire cause information supplied. An example of community groups would be a local group that wish to promote fire safety in the community or any local clubs, such as Lions, Kinettes, Rotary and Beaver Valley Outreach, Beaver Valley Community School, and the Seniors network as examples, that want to support fire safety initiatives.

In 2016 the "Targeted Residential Fire Risk Reduction"[10] report was released. This report was prepared by Len Garis, Sarah Hughan, and Amanda McCormick through the University of the Fraser Valley School of Criminology and Criminal Justice and the Centre for Social Research. The focus of the report was based on previous studies in England, Scotland, Sweden, and Norway. Those reports found that targeted home visits for public education efforts produced "promising results". By shifting public education efforts by way of door-to-door campaigns away from an entire community and towards identified at-risk households, not only are the campaigns more efficient but the effectiveness has measurable outcomes. The study team reviewed the 2011 Statistics Canada Census and National Household Survey, and the numbers presented were an estimate of households and at-risk populations intended to provide an approximation. The identified five areas for "at risk" criteria:

[10]"Targeted Residential Fire Risk Reduction", Retrieved December 5, 2021, https://www.researchgate.net/publication/307599464_Targeted_Residential_Fire_Risk_Reduction_A_Summary_of_At_Risk_Areas_in_Canada

1. Age >65
2. Age <6
3. Lone Parent
4. Unemployed
5. Mobility (movers)

The team evaluated and determined "the top 10th percentile of areas within municipalities that would be most at risk for fires to occur in their home". From this they created dissemination areas (areas which represent populations of between 400-700 persons) and focused on single-family detached dwellings. The project did not focus on residents of condominiums, apartments, or townhouses. Surrey Fire Rescue Service used this data to create a "HomeSafe" program that focused on installing smoke alarms in these identified homes.

The data shows that in the three measurable categories (At Risk Areas, Private Single Detached Dwellings, and At-Risk Population), The Blue Mountains is above the averages at both the provincial and federal levels. Federally and provincially the number of At-Risk Dissemination Areas per Total Dissemination Areas ratio is roughly 1 in 8. The Blue Mountains has a ratio of 1 in 3. Within the percentages of At-Risk Private Single Detached Dwellings and At-Risk Population, provincial and federal levels sit just 18 points below The Blue Mountains.

When reviewing this data, it identifies that The Blue Mountains has a higher percentage of at-risk dissemination areas, detached single family dwelling and population, when compared to the percentage of at-risk in each category of Ontario and Canada. Table #4 details the data as sorted within the report and breaks the information down into the three categories.

This information identifies there are areas of the municipality in which The Blue Mountains Fire Department will need to focus their fire safety messaging, inspections and enforcement and promote the installation of residential sprinklers. While the locations at risk are not identified in the report, The Blue Mountains Fire Department should start with public education to residences furthest from the fire stations. This may include home inspections that focus on smoke and CO detectors, and/ or the distribution of printed fire safety messaging.

TABLE #4: The Blue Mountains At-Risk Comparison

Garis et al Report Criteria	The Blue Mountains	Ontario	Canada
Number of At-Risk Dissemination Areas	4	2,630	7,198
Total Dissemination Areas	12	19,964	56,154
Percent of At-Risk Dissemination Areas	**33.33%**	**13.17%**	**12.82%**
Number of Private Single Detached Dwellings in At-Risk Dissemination Areas	845	501,990	1,320,785
Total of Private Single Detached Dwellings	2,375	2,712,000	7,301,825
Percent of At-Risk Private Single Detached Dwellings	**35.58%**	**18.51%**	**18.09%**
Population of At-Risk Dissemination Areas	1,827	1,420,807	3,585,822
Total Population	5,336	7,488,061	19,325,962
Percent of At-Risk Population	**34.23%**	**18.97%**	**18.55%**

Based on this data, it would benefit The Blue Mountains to focus its limited resources on targeting its public education campaigns. Fire Prevention would be able to concentrate public education programs where they are needed most, and better prioritize program scheduling. The data used in the Garis et al report is nearing ten years old, but a focus on local planning data would provide a clearer picture of the current state of The Blue Mountains as it pertains to its at-risk populations. All target audience public education programs should be fluent in the relevant language and be adaptive to the changing needs of the community. By including identification of at-risk groups, The Blue Mountains Fire Department could better utilize available personnel resources and improve efficiency of programs. They would likely find ways to cross reference the data and metrics obtained in other areas of fire safety (i.e., tracking fire calls with areas targeted public education).

Recommendation #2

To enhance their efforts of identifying and providing effective public education, The Blue Mountains Fire Department staff should meet with relevant local community groups to form a partnership for organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community.

Rationale: Involving community groups in identifying short falls in public education while introducing areas requiring enhancements in the public education programs, will continue to promote fire safety efforts within the community.

3.2 Simplified Risk Assessment

As noted in the Ontario Fire Marshal's Public Fire Safety Guideline, PFSG 04-40A-03, *"The simplified risk assessment (SRA) and ensuing fire concern profile will assist in identifying the degree to which these activities are required in accordance with local needs and circumstances. The simplified risk assessment is made up of the following components:*

- *demographic profile*
- *building stock profile*
- *local and provincial fire loss profiles*
- *information analysis and evaluation*
- *priority setting for compliance*
- *implementing solutions*

Conducting a simplified risk assessment was a practical information gathering and analysis exercise intended to create a community fire profile that will aid in identifying appropriate programs or activities that can be implemented to effectively address the community's fire safety needs."

The SRA was used as an integral building block in the data gathering process to understand the community that is served by the fire department. As the community changes, the document should not become stagnant as the results are only accurate to the time of which the review was conducted.

Since the Province of Ontario and the OFMEM has brought forth Regulation 378/18 that requires every municipality to complete a CRA by 2024, the need for the completion of an SRA no longer exists as the process of information gathering and assessments are very similar, if not broadened in a CRA.

3.3 Integrated Risk Management Approach

The Ontario Fire Marshal's Communiqué 2014-12 introduced the Integrated Risk Management (IRM) Tool to the fire service. The document notes:

"The IRM Web Tool was developed as part of a commitment made by the OFMEM to the OAFC and other stakeholders. The IRM Web Tool can be used by all Ontario's municipalities and fire departments to determine building fire risks in their respective communities by taking, into account building characteristics (building factors) and the three lines of defence against fire:

- Line one: Public Fire Safety Education
- Line two: Fire Safety Standards and Enforcement
- Line three: Emergency Response

The IRM Web Tool is intended for municipal and fire service decision-makers. The tool was designed to assist municipalities in fulfilling the responsibilities prescribed in Section 2 of the FPPA. The concept of the IRM is a building-by-building assessment, but its goal is to go beyond simply taking stock of buildings within the community; it was intended to be a holistic approach that is meant to combine all a fire department's efforts in relation to:

- Fire prevention and education initiatives, which includes updated community reviews, through the use of the OFMEM SRA
- Fire station locations and ability to respond in an efficient and effective manner
- Identification of hazardous situations/ locations within the community
- Training and equipping of the firefighters to execute their duties in a safe and efficient manner

The IRM approach is meant to combine a review of building stock, fire safety and prevention related issues to be addressed; ability to effectively, and efficiently, respond to emergencies; and how well equipped and trained the firefighters are to deal with emergencies within the community.

Conducting a review of every building within The Blue Mountains may not be practical but that does not mean that the IRM tool should not be used for specific buildings based on Department resources. This would still allow for the gathering of critical data for any identified high-risk facilities such as manufacturing, fuel storage or any other risk where having information relating to fire safety and emergency response would be of value.

3.4 NFPA 1730 – Community Risk Assessment

NFPA 1730 Standard on *Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations*, notes that this review should be conducted at a minimum every five years or after significant change. This standard also establishes a process to identify and analyze community fire risks.

There are seven components of a CRA outlined in NFPA 1730. These components are:

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

Within NFPA 1730, it breaks down how a fire service should evaluate and categorize the level of risk for each occupancy, when compiling data for the IRM document. 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.

NFPA 1730 defines the risks in three categories and provides examples for each. These risk categories are:

- **High-Risk Occupancy** – An occupancy that has a history of high frequency of fires, or high potential for loss of life or economic loss. Alternatively, an occupancy that has a low or moderate history of fire or loss of life, but the occupants have an increased dependency in the built-in fire protection features or staff to assist in evacuation during a fire or other emergency (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).

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.

When referencing either NFPA 1730, the OFMEM's SRA, using the IRM Tool, or the CRA, public education is a key component of having a successful Community Risk Reduction Plan.

TABLE #5: Top Risks or Concerns for The Blue Mountains

NOTE: The following features are not identified in the order of their level of risk.

Top Risk or Issues/Concerns	Risk and Treatment Option(s)
Bodies of water *See Worksheets #1 & 10*	**Streams and rivers within the municipality flow into Georgian Bay and the following actions can be considered for implementation.** **Presently, The Blue Mountains Fire Department provides shore-based and vessel water/ice rescue responses.** **The Blue Mountains Fire Department does not have the means to mitigate marine rescues in rough water or vessel fires offshore.**

Top Risk or Issues/Concerns	Risk and Treatment Option(s)
	Members of The Blue Mountains Fire Department have not completed the required Transport Canada training, such as the SVOP and MED-A3. **Suggested Treatment Options:** • Implement water safety public education initiatives through brochures and signage near bodies of water. • Review water rescue requirements under present legislation, regulations, and costs. • Promote water safety programs through swimming organizations and other first responders such as the Ontario Provincial Police (OPP), Canadian Coast Guard and Grey County Paramedic Services (GCPS). • Fire services develop response protocols, Standard Operating Guidelines and enhance level of service provision. • Promote seasonal safety measures for both in or on the water through signage along the shore and submissions to local media outlets. • Promote safety equipment that should accompany those that venture onto the ice such as whistles, wearing of flotation suits, air horns, throw ropes, etc.
The Blue Mountains *New developments will bring an increase in populous and building stock.* *See Worksheets #2 & 10*	**The Town of The Blue Mountains will see considerable growth over the next several years.** **There are approximately 40 either proposed or approved residential developments in The Blue Mountains, some of which are in the building phase, and when completed, will be occupied as either residential, seasonal residential or short-term accommodations, or were permitted by zoning and license.** **Hotels at the Blue Mountain Resort should be considered as being high-rises, due to their construction and features, even though they may not be at least 75' vertically, as a high rise is defined in NFPA 101, *Life Safety Code*.**

Top Risk or Issues/Concerns	Risk and Treatment Option(s)
	Five-storey residential/hotel occupancies (with two levels of underground parking and storage) are or have been constructed using ordinary construction materials as per the OBC. **Currently there are approximately 3,300 residential units under varying stages of construction.** **All the hotels are sprinklered, which is very positive safety feature.** **Suggested Treatment Options:** • May require additional staffing, possibly additional stations and apparatus, as additional developments are brought forward. • May require training for firefighters on techniques of fighting fires in high-rises.
Technical Rescues – Elevator, Silo, Trench/ Confined Space/ High & Low Angle/ Ice Water/ Vehicle Entrapment *See Worksheets #6 & 10*	**The Blue Mountains Fire Department performs technical rescues such as confined space, silo, and low and high angle. The Blue Mountains Fire Department provides shore-based and vessel ice/water rescues. The Department attends motor vehicle collisions (MVCs) and performs auto and farm equipment extrications.** **The department does not mitigate trench or elevator rescues.** **Suggested Treatment Options:** • Complete technical rescue training to the Awareness Level for all technical rescue disciplines. • Training on elevator rescues must be compliant with TSSA requirements. • Have policies, SOGs, and procedures in place to call in resources to mitigate such incidents. • Ensure Fees By-law reflects full cost recovery when attending a technical rescue.
Hazardous Material Incidents *See Worksheets #6 & 10*	**The Blue Mountains Fire Department does not mitigate hazardous materials incidents** **Suggested Treatment Options:** • Have policies, SOGs and procedures in place to handle an event to the level the firefighters are trained to.

Top Risk or Issues/Concerns	Risk and Treatment Option(s)
	• Have an agreement in place with either an outside fire service or enterprise to mitigate a HAZMAT incident. • Adjust the Fees By-Law to reflect full cost recovery for attending HAZMAT incidents. • Ensure all firefighters are trained to the awareness level to comply with the *OH&S Act* and Ministry of Labour, Sections 21 Guidance Notes.
Weather Event *Tornadoes* *See Worksheets #1 & 10*	**Tornado Events – early warning devices** **The municipality is situated in what is known as Tornado Alley.** **Historical high wind and tornadic events have been experienced in that region of the province each year.** **Some municipalities are using apps developed and operated by a third party as means of notifying community of important messaging.** **Environment Canada issues warning via media.** **Messages sent out via Alert Ready – Canada.** **Suggested Treatment Options:** • Municipality should consider the installation of storm sirens like other municipalities have begun doing in Southern Ontario. Not everyone carries a cell phone and may not be aware of a pending weather event. • Sirens could be placed in built-up areas such as Craigleith, Lora Bay, Castle Glen, Thornbury, and Clarksburg.
The Blue Mountains Fire Department *See Worksheets #6 & 10*	**Fire department staffing –** **The department has approval by Council to have 44 paid per-call firefighters.** **The roster was as low as 20 in July 2021.** **Many firefighters have less than or are just achieving five years experience.** **Daytime response is low in numbers of members available.** **Suggested Treatment Options:**

Top Risk or Issues/Concerns	Risk and Treatment Option(s)
	• Town requires an aggressive recruitment and retention program If FPOs are available, they respond to the incident. • May require discussing with neighbouring fire services the need for a temporary automatic aid agreement for responses to structure fires until the roster is increased. • Due to the high number of inspections required of the Town, may need to immediately increase the number FPO/firefighters. This will address completion of inspections and available firefighters to respond. For example, the Town could recruit four full-time firefighters that would be assigned as a crew to work on an apparatus at Station 2. These firefighters would work Monday to Friday during the daytime hours, and when on shift could complete some inspections as a crew. • The Blue Mountains Fire Department could consider entering into agreements with Meaford, Collingwood, Clearview, and Grey Highlands for them to be automatically dispatched to any confirmed structure fires in areas of The Blue Mountains that are not a part of any automatic aid agreements. This could take place during daytime hours on Monday to Friday when inefficient staffing is a high risk. • This could remain in effect until such time as firefighter's availability is enhanced during the daytime.
Structure Fires *See Worksheets #2, 9A, 9B & 10*	**Treatment options to help reduce and/or maintain a low number of structure fires within the community.** • Increased public education focusing on preventive maintenance of electrical/mechanical equipment. • Promote the dangers of unattended candles during festive seasons or ethnic traditions. • Where smoking related items is the cause of fire, continue public education (PE) programs to bring to the public's attention the dangers of careless smoking using statistics. • Provide information on the importance of having working smoke alarms and carbon monoxide detectors in the home. • Continue to encourage and practice home escape plans through discussions with children during school visits.

Top Risk or Issues/Concerns	Risk and Treatment Option(s)
	• For new home builds or major renovations, promote residential sprinkler systems. • Before the wood burning season begins, promote the need to have chimneys cleaned and inspected. Promote Wood Energy Technology Transfer (WETT) inspections. • Take advantage of speaking engagements that include senior citizens to discuss safe cooking procedures and what to do in the event of a grease fire. • Work with local industry and commercial establishments on the advantages of maintaining electrical/mechanical equipment and continued good housekeeping practices. • Focus a home inspection program on residences furthest away from a fire station. • Develop plans on initiating and continuing regular fire inspections based on the frequency outlined in the Fire Underwriters Survey (FUS) inspection schedule. • Proactive enforcement of Fire Code Violations. • Monitor both undetermined and miscellaneous fires to see if there is a trend. • Continue to work with OPP and OFMEM to come to a fire cause conclusion and address as required. • Develop programs so those that must complete community service, as prescribed by the Courts, may do so by assisting the fire department at community functions/public education/fire prevention related engagements. • Ensure members of The Blue Mountains Fire Department receive live fire training every 2 years. • Educate children on dangers of playing with smoker's articles and what to do if their clothing catches fire. • Continue ensuring Fire Safety Plans are current for occupancies legislated to have them on site and readily available for firefighters to acquire. • The Blue Mountains Fire Department should continue developing Pre-Incident Plans in accordance with NFPA 1620 – *Standard for Pre-Incident Planning.*

Top Risk or Issues/Concerns	Risk and Treatment Option(s)
	• All plans that are currently completed should be reviewed and updated, then uploaded by into the Town's IT system so they can be used on the tablets in fire apparatus.
The Blue Mountains Fire Department *See Worksheets #9A, 9B & 10*	**In 2016 there were 11 fires with $962,500 in property loss. In 2017, four fires saw a property loss set at $62,000. In 2018, eight fires resulted in the property loss of $2,502,000.** **In 2019, four fires had a dollar loss estimated at $21,000, and in 2020, the nine fires, loss was estimated at $1,794,300. This includes structure and vehicle fires.** **Suggested Treatment Options:** • Additional training provided to fire investigators to try to reduce the number of "undetermined cause" fires. • Monitor high dollar loss fires to see if trends are developing. • Those members of The Blue Mountains Fire Department that have completed NFPA 1033, should acquire their certifications so they may become involved in origin and cause investigations. *Note: Undetermined fire cause – in the circumstances where all fire causes have been eliminated and the investigator is left with no hypothesis that is evidenced by facts of the investigation, the investigator must conclude that the fire cause, or specific casual factors, remains undetermined (per NFPA 921). Nevertheless, ongoing training for investigators should be in place.
Illegal Second Unit/ Apartments *See Worksheets #2 & 10*	**Residents living in the municipality, could be residing in illegal second units and apartments that require inspection.** **Second units are covered under the Ontario Building Code (OBC) and Ontario Fire Code (OFC) standards, through the *Strong Communities through Affordable Housing Act*, 2011.**[11] **Units are enforced under OFC Div. B., 9.8.**[12] **Inspections are taking place for those second units that have been identified.**

[11] "Strong Communities through Affordable Housing Act, 2011, S.O. 2011, c. 6 – Bill 140", Retrieved January 6, 2022 from https://www.ontario.ca/laws/statute/s11006

[12] "O. Reg. 213/07: FIRE CODE", Retrieved January 5, 2022, https://www.ontario.ca/laws/regulation/070213

Top Risk or Issues/Concerns	Risk and Treatment Option(s)
	May lack basic fire safety measures. **Some residences may not meet OFC requirements.** **May be operating in areas that are not zoned for that purpose.** **Property owners may be either unaware of or do not have knowledge of fire safety requirements and their responsibilities.** **Language barriers are may exist.** **Migrant workers that may be employed in the service and agriculture industries, such as laundry facilities, food preparation, and cleaning may reside in seasonal or temporary accommodation.** **The Blue Mountains has developed a by-law which permits second units, but also identifies local requirements to meet specific needs in the municipality.** **Suggested Treatment Options:** • Conduct a public education awareness program through media outlets publicizing the risks of illegal second units. • Municipality could investigate a reporting system of notifying authorities of the location(s) of a possible illegal unit. • Additional training for all staff to work with a more diverse community.
The Blue Mountains Fire Department *See Worksheet #10*	**Recruitment & Retention of Paid Per-Call Firefighters** **Current staffing levels are presently about 50% of the allotment as approved by Council.** **Local housing costs are at a level that makes them difficult to afford for the paid per-call firefighters.** **A previous member of the department moved out of the town due to the lack of rental units and/or housing costs.** **Difficulty with having adequate number of firefighters available to respond during daytime hours.** **Suggested Treatment Options:** • Conduct a public education awareness program through media outlets publicizing the risks of illegal second units.

Top Risk or Issues/Concerns	Risk and Treatment Option(s)
	• Should investigate recruitment programs which other volunteer fire services have implemented to attract and retain firefighters. • May need to actively advertise for firefighters in local media and social media outlets. • May need to look at creative and innovative ways in recruiting firefighters.
The Blue Mountains Fire Department *See Worksheets # 10*	**Continue monitoring response times to ensure compliance with NFPA 1720.** This includes the following: • Achieve a goal of 6 firefighters on the scene within 14 minutes 80% of the time in rural areas, which have less than 500 people/ mi^2 (2.6 km^2). • Monitor the turn out and response times. • Continue to achieve a goal of having 4 firefighters arriving on scene of an incident in which the travel distance is greater than 8 miles within a predetermined travel time, as directed by the AHJ. Travel time is directly affected by the travel distance. • In 2019 there were 248 calls for service, with 186 of those meeting the benchmark of a 14-minute response time, 75.4% of the time. • In 2020 there were 289 calls, of which 219 met the 14-minute benchmark 75% of the time.
The Blue Mountains Fire Department *See Worksheet #10*	**Standard Operating Guidelines, and Policies** • The Blue Mountains Fire Department has several SOGs developed. However, the SOGs in place are, in some cases, very outdated and some are no longer in effect in the industry. • There is a lack of SOGs and policies pertaining to training. Training SOGs should include how to develop a Safety Plan, what is to be included in one, etc. • The Blue Mountains Fire Department should establish an SOG Committee that develops a Terms of Reference that provides direction on how SOGs are to be developed and reviewed, including Legislation, Standards and Regulations to be followed.

Top Risk or Issues/Concerns	Risk and Treatment Option(s)
	• Reference material used should be listed in the SOG, such as Ministry of Labour Section 21 Guidance Notes, NFPA Standards, OFMEM Regulations, *OH&S Act* of Ontario. • SOGs and policies should be reviewed and updated every 2 to 3 years. • SOGs and Policies, unless a Corporate Directive, are for internal initiatives of the fire department, and do not require Council approval.

Recommendation #3

The Blue Mountains to develop a comprehensive Community Risk Reduction Plan that falls in line with the CRA information.

Rationale: The Blue Mountains *has identified the risks present within the community and to reduce or minimize these, a plan needs to be developed identifying priority areas to be addressed, formulate a plan on how to lessen and/or mitigate the risks, then implement the plan, while evaluating the plan's successes and shortcomings.*

3.4 Residential Fire Sprinklers & Monitored Fire Alarm Systems

The NFPA, along with the OAFC, 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 residents and firefighters.

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.

3.4.1 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, 8% of occupied homes (including multi-unit) had sprinklers in 2010-2014, up from 4.6% in 2009.

Source: U.S. Experience with Sprinklers[13]

- 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.
- The average firefighter injury rate of 13 per 1,000 reported home fires was 78% 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[14] were released which includes:

- 40% of fire deaths happen in homes with no smoke alarm
- 17% of home fire deaths occur due to a non-functional smoke alarm.
- 25% of smoke alarm failures with a deadly outcome occur due a dead battery
- $235 million per year in property damage is caused by children starting fires
- Smoke alarms decrease the risk of dying in a home fire by 50%
- Electric space heaters are the cause of 80% of house fires with a deadly outcome
- Fire sprinklers can reduce the chance of death in homes by 80%
- According to the NFPA, firefighters in the US respond to a fire every 24 seconds
- Fire sprinklers use less water than fire hoses
- Sprinklers activate on an individual basis
- The risk of property loss is reduced by 70% in homes with sprinklers

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

[13] "NFPA Research - U.S. Experience with Sprinklers, Marty Aherns, October 2021", Retrieved December 31, 2021, https://www.nfpa.org//-/media/Files/News-and-Research/Fire-statistics-and-reports/Suppression/ossprinklers.pdf

[14] Safeatlast - The Latest Fire Safety Statistics - Stay Safe in 2021 (safeatlast.co), Published January 30, 2021, retrieved December 31, 2021, https://safeatlast.co/blog/fire-safety/

By working with the developers and the public in promoting the installation of home sprinkler systems, The Blue Mountains Fire Department 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. To date, it was noted that The Blue Mountains Fire Department has been initiating discussions with developers on the advantages of installing residential sprinkler systems, with very limited success. As such, it is recommended that The Blue Mountains Fire Department continue to promote this safety initiative as part of their fire prevention and public education initiatives.

Presenting a demonstration at community events by The Blue Mountains Fire Department would assist in driving the safety factor of having sprinklers in the home. There are demonstration trailers available for sprinkler presentations that The Blue Mountains Fire Department can acquire. A practical demonstration identifying the advantages of sprinklers 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 3rd party will ensure constant surveillance of alarms systems and the prompt notification of an alarm to the fire department.

Having a residential fire sprinkler system and fire monitoring system in place will enhance the level of protection within a home. The Blue Mountains has a range of dwelling ages and sprinklers in new builds does not reduce the need for a fire service and its service capacities but reduces the impact to those with sprinklers in the event of a fire.

Recommendation #4

The Blue Mountains Fire Department continue **to work in conjunction with residential developers in promoting the advantages of installing residential fire sprinklers. The Blue Mountains review its options of mandating residential sprinklers in all new residential occupancies including those slated to be used as an STA.**

Rationale: Studies have shown that no lives have been lost in residential occupancies that are equipped with residential sprinklers and damage to property is reduced. The Blue Mountains Fire Department is lacking firefighters; enhancing public education on the effectiveness of sprinklers in controlling fires will provide The Blue Mountains Fire Department the time required to amass resources on the scene. Having residential sprinklers have proven to be a cost saving when purchasing insurance.

3.5 Risk Assessment & Community Growth – Current Condition

A Simplified Risk Assessment was completed by The Blue Mountains Fire Department in 2017. In completing the CRA it has been identified that there has been significant building stock growth in the community (namely residential, but not exclusively). This growth has impacted the demographic profile and, consequently, the needs and circumstances for the delivery of services by the fire department. Also, as the population and infrastructure grow to meet the needs of the community, the types of calls and related frequency will need to be monitored by the Fire Chief to ensure that they are in fact meeting the response needs of the community and the training and equipment needs of its firefighters to do their jobs in an efficient and effective manner.

In relation to its Fire Prevention & Public Education initiatives, The Blue Mountains Fire Department's Fire Prevention Division has ensured that it has a list of all the vulnerable occupancies (care facilities), schools and other special needs facilities that require attention and inspections due to legislated standards. In relation to the setting of inspection goals and frequency, the Fire Prevention Division should worked towards adopting the Fire Underwriters frequency schedule as a guide to developing realistic and attainable inspection goals.

In relation to automatic and mutual aid agreements, The Blue Mountains Fire Department has been working with other regional fire departments to ensure that automatic aid agreements are in place. The Town, at the time of this report, did not have a Mutual Aid Response By-Law permitting the department to participate in mutual aid responses, even though they have in the past. These agreements are designed to allow for a seamless response by each community's fire department in support of each other. With these in place, when The Blue Mountains Fire Department's resources are exhausted due to a large-scale incident, they will have the ability to call on bordering departments for assistance. Doing so has ensured fire protection response in a timely manner to those areas.

As for a large-scale hazardous material (HAZMAT) incident or some technical rescue response issues that are outside of the Department's capability, The Blue Mountains Fire Department has identified what the fire department can be called upon to assist. The Blue Mountains Fire Department currently performs confined space, low/high angle rope rescue, and ice/water rescues. The department does not mitigate elevator, trench, or structural collapse rescues. The Blue Mountains Fire Department should continue working with bordering communities and their fire departments in preparing for such large-scale incidents in a pro-active partnership. This may include entering into response agreements with other fire services that do provide HAZMAT and technical rescue response capabilities.

All The Blue Mountains Fire Department members require training to at least the awareness level for all technical rescues and HAZMAT incidents to be compliant with the Ministry of Labour, Section 21, Guidance Notes. The OFMEM would be a resource for the Fire Chief to better understand the

response capabilities of other fire services in the area to better protect the residents of The Blue Mountains.

The following table identifies the number of times in which The Blue Mountains Fire Department has been called out to a technical rescue from 2018 to 2020.

TABLE #6: Technical Rescue Calls from 2018 to 2021

Call Type	2018	2019	2020	2021
Confined Space	0	0	0	0
High Angle Rope	1	2	0	0
Low Angle / Slope Rope	1	1	0	0
Ice Rescue	0	1	0	0
Water Rescue / Boat Used	2	5	6	9
Elevator	1	2	1	1
Hazardous Materials	12	12	12	7
Total	**17**	**23**	**19**	**30**

Upon review, there were a lack of policies, SOGs, and procedures for responding to technical rescues and HAZMAT incidents. The policies that are in place require updating.

The Town is also lacking experienced firefighters who are trained and confident in these disciplines to perform such rescues. The technical rescues of concern include confined space, low/high angle rope rescue, and ice/water. This then becomes a risk to the firefighters and the town under legislative requirements. As such, The Blue Mountains Fire Department is at significant risk regarding adequate operational policies, procedures, and training of staff to attend technical rescues as outlined in the current E&R Bylaw.

Recommendation #5

The Blue Mountains Fire Department should suspend all operational level technical rescues until such time as policies, SOGs, and procedures are developed, and the firefighters meet the required level of training. This would require that notification of this change in the level of service, to be communicated to the public.

Rationale: The Blue Mountains Fire Department is lacking firefighters, SOGs, and policies relating to technical rescues. Allowing The Blue Mountains Fire Department to pause and regroup will give the fire department time to re-develop and deliver the training required to meet NFPA and Section 21 standards and bring the department in line with the requirements of the OH&S Act.

3.6 Future Needs

Understanding the community and its needs allows The Blue Mountains Fire Department to be proactive in its education and enforcement programs for the community and to all fire department

staff. Therefore, when fires or other emergencies occur within the community, the firefighters can be better prepared to cope with the fires and other related emergencies because they are trained, not only in the basics of firefighting, but in the special hazards that are found within the community. These hazards are noted in the CRA which is separate document to this Fire Master Plan.

As the community grows, the frequency of calls and the need for service will grow. Based on this growth, there may be a future need for additional staff in the Fire Prevention Division , the Fire Suppression Division, and Training. More supporting information relating to the staffing needs of each division can be found in the associated sections within this Fire Master Plan document.

3.7 Department Policies & Standard Operating Guidelines

Fire department policies and guidelines have enormous value for a department. In fact, they can be seen as the key foundation to a department's success. The backbone of any fire service is its policies, Standard Operating Policies (SOPs), and Standard Operating Guidelines (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 a given situation with non-mandatory controls.
- **A procedure** is a standard with an acceptable level of quality or attainment in a series of detailed steps to accomplish an end. There are step-by-step instructions for implementation.

The Blue Mountains Fire Department's SOGs, while numerous and encompassing, are not current and thorough. To ensure all the SOGs are current, the Fire Chief should review and revise existing policies and SOGs regularly and develop new policies and SOGs as required. Some fire departments review a third of the SOGs annually so that the entire set of documents receive a full review every three years.

The review of the SOGs is a very involved process and the Fire Chief should not take this task on by themselves. The establishment of an SOG Committee that creates its own Terms of Reference would be a great asset to the Department in many ways; the SOGs would be updated and current, staff are more involved in the Department's operations, and provides a safer environment for members of the Department to work.

A good source of information 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 *Ministry of Labour's*, *OH&S Act* safety initiative for firefighters. Other sources include the NFPA Standards, training manuals, Provincial Legislation and Regulations.

Communicating changes to existing SOGs and the implementation of new ones, is a key function within the fire department as an organization. The importance of communication such changes could mean the difference in operations that can make the difference between a member becoming injured or not, at an incident.

For a fire department to operate in a safe and efficient manner it is imperative that all members, are aware of, and adhere to all policies, SOGs, and operating procedures and those that fail to do so should be held accountable. The development and implementation of an SOG Committee is recommended.

Recommendation #6

An SOG Committee be established with representation of all Divisions of the Department. It is further recommended that the Department's SOGs be reviewed and regularly.

Rationale: The department is lacking SOGs and policy directives in several areas of the department's operations. Having representation of all divisions (with SOGs) will provide a more comprehensive set of operational documents, reflecting the roles and responsibilities of each division of the department

SECTION 4

Department Staffing & Programs (Non-Supression)

Section 4: Department Staffing & Programs (Non-Suppression)

4.1 Overview

Within the scope of work noted in the RFP document, human resources regarding fire department staffing, organizational structure, effective span-of-control, firefighter recruitment and retention, and promotional and succession planning was identified. As such, EM&T has reviewed the capabilities of existing staffing and identified future needs for each of the divisions. This section is focused on the following divisions:

- Administration
- Training & Education
- Fire Prevention & Public Education

The Fire Suppression (firefighting) and Dispatch (communications) divisions will be addressed in Section 5.

When considering the overall staffing needs for The Blue Mountains Fire Department, some general questions that should be considered are:

- Is there a proper level of senior staff to manage the fire department and its divisions?
- Is there adequate administrative support staff to assist with such things as records management and addressing day-to-day operations of the fire department?
- Is there a need for other support staff in relation to vehicle and facility maintenance?
- When does a fire department need to consider moving from a volunteer service to a composite or full-time fire service – or does it?

There is no identified standard dictating how many firefighters/staff are required within a given division, or whether a fire department needs to be composed of full-time, composite (blend of full-time and PPC firefighters) or volunteer staff. As such, a careful monitoring of required public education, fire prevention inspections and enforcement, as well as call volumes and response times is critical when it comes to determining if The Blue Mountains Fire Department is keeping up with its service level and response expectations.

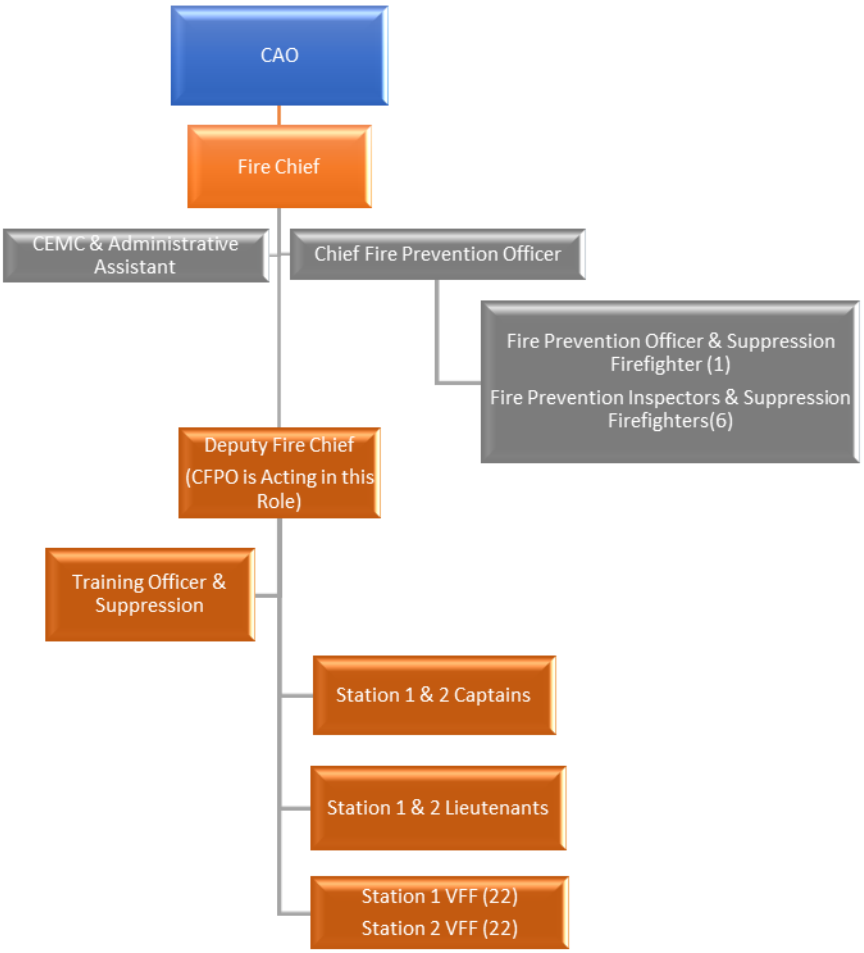
EM&T requested at least three years of response data to establish a reliable baseline for identifying how well The Blue Mountains Fire Department is meeting industry response standards, such as those noted in the NFPA. This response data has been utilized in other sections of the Fire Master Plan when addressing fire suppression capabilities and service levels. See Section 5 for more information.

4.2 Fire Department Organizational Overview

Based on the *FPPA*, 1997, section 6(3) "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." The Fire Chief of The Blue Mountains Fire Department reports to the Town's CAO in a council-manager style of government.

The Fire Chief serves as the head of the fire department and is supported by:

- One Administrative Assistant/ CEMC
- One Deputy Fire Chief
- One Chief Fire Prevention Officer (currently in the role of Acting Deputy Chief)
- One Fire Prevention/ Public Education/ Suppression Officer
- Six Fire Prevention/ Public Education Inspectors/ Suppression Firefighters
- One Training/ Suppression Officer



To make an informed decision on staffing requirements for Administration, Training and Fire Prevention, consideration is dependent on the following points:

- What local and national standards and guidelines exist to help direct the fire department in its decisions relating to staffing models?
- What increase or decrease in population and industry is occurring that may precipitate more or less staffing?

For fire departments in Ontario, reference can be made to the Public Safety Guidelines that are created and distributed by the OFMEM. These Guidelines advise fire services on all aspects of delivering fire prevention, training, fire suppression and fire station location programs. There is also the *Occupational Health & Safety Act* that identifies the duties of employers relative to training and equipment. Along with these Ontario documents, there is the NFPA's 1201, 1400 series and 1730 standards:

- 1201 – Standard for Providing Fire and Emergency Services to the Public
- 1401, 1402 and 1403 – Training related standards
- 1730 – Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations

4.2.1 Occupational Health & Safety Act.

Section 25 of the *Act* sets out the *Duties of Employers*, which are in essence (paraphrased for quick reference)[15]:

25 (1) An employer shall ensure that,

(a) the equipment, materials and protective devices as prescribed are provided;

(b) the equipment, materials and protective devices provided by the employer are maintained in good condition;

(c) the measures and procedures prescribed are carried out in the workplace;

(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;

[15] "Occupational Health and Safety Act, R.S.O. 1990, c. O.1," Retrieved December 24, 2021, https://www.ontario.ca/laws/statute/90o01?_ga=2.73946706.1195715303.1640857772-1187305352.1640857772#BK47

(d) acquaint a worker or a person in authority over a worker with any hazard in the work and in the handling, storage, use, disposal and transport of any article, device, equipment or a biological, chemical or physical agent;

(e) afford assistance and co-operation to a committee and a health and safety representative in the carrying out by the committee and the health and safety representative of any of their functions;

(h) take every precaution reasonable in the circumstances for the protection of a worker;

4.2.2 NFPA 1201 – Standard for Providing Fire and Emergency Services to the Public

The FESO shall provide customer service-oriented programs and procedures to accomplish the following:

1. Prevent fire, injuries and deaths from emergencies and disasters
2. Mitigate fire, injuries, deaths, property damage, and environmental damage from emergencies and disasters
3. Recover from fires, emergencies, and disasters
4. Protect critical infrastructure
5. Sustain economic viability
6. Protect cultural resources

Within NFPA 1201, section 4.11.1 notes that *"the FESO shall have training and education programs and policies to ensure that personnel are trained, and that competency is maintained in order to effectively, efficiently, and safely execute all responsibilities."*

All the previously noted document excerpts assist the fire chief and its council in identifying what programs need to be delivered to fire department staff and the community. Based on this information, what level of staffing may be required to effectively develop and deliver the approved programs can be extrapolated.

Based on data reviewed and discussions with the Fire Chief and stakeholders, The Blue Mountains Fire Department is struggling to meet its service level requirements and expectations regarding non-suppression services. By this we mean that there needs to be greater emphasis placed on the first two lines of defence – public education, and fire safety standards and enforcement. To accomplish this, The Blue Mountains Fire Department has increased their full-time fire prevention staffing with the recent hires and is to be commended for demonstrating their commitment to supporting these two lines of defence.

4.3 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 85 % of the private sector property and casualty insurers in Canada.[16]

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. 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 rate making matters, the information provided 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 a given 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 utilized 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, and 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.

[16] Fire Underwriters Survey, “Who We Are,” Retrieved December 24, 2021, https://fireunderwriters.ca/

Unfortunately, no recent FUS report was available for review. As such, it is recommended that the Fire Chief contact the FUS office to inquire about locating a copy of the most recent survey and inquire with the FUS as to what would be required for an updated assessment to be conducted.

To The Blue Mountains Fire Department's credit the process of completing a new FUS has begun and should be continued to its completion.

4.4 Commission on Fire Accreditation International

The CFAI Accreditation program has a specific section that evaluates the administration component of a fire department. In this section the following points are noted:

Category 9C: Administrative Support and Office Systems

Administrative support services and general office systems are in place to conduct and manage the agency's administrative functions, such as organizational planning and assessment, resource coordination, data analysis/ research, records keeping, reporting, business communications, public interaction, and purchasing.

Due to the growing demands of The Blue Mountains Fire Department, the administrative staff (Fire Chief, Deputy Fire Chief, and Administrative Assistant) are challenged to meet the daily operational demands of the department, along with ensuring that all departmental data and documents are kept up to date. Having the Fire Prevention and Training Officers focus fully on their respective roles and responsibilities would greatly reduce and distribute the workload of all full-time staff, along with allowing for a more definitive outline relating to the roles, duties, and responsibilities of The Blue Mountains Fire Department fire prevention and training requirements as set by the Fire Chief.

By setting up these 'focused' responsibilities for the FPO and TO, the Fire Chief will be able to obtain a better understanding of each position's duties, accountabilities, and any possible gaps in service levels and/or needs within the administration function of the Department.

4.5 Training & Education Division

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

In relation to training and professional development, NFPA 1201 – *Providing Fire and Emergency Services to the Public* notes:

- **4.11.1 Purpose.** *The Fire & Emergency Services Organization shall have training and education*

programs and policies to ensure that personnel are trained, and that competency is maintained to effectively, efficiently, and safely execute all responsibilities.[17]

In The Blue Mountains Fire Department, the responsibility for department training falls under the scope of the Training Officer who is responsible for identifying department training needs, with the input from the Fire Chief, Deputy Fire Chief, and the Officers group. The training needs of the suppression staff are based on industry requirements. The Training Officer is responsible for planning, executing, and tracking of all the training of the PPC firefighters, in addition to numerous other duties, namely, the expectation of response to emergency calls while performing the primary function of Training Officer.

The Training Officer is attempting to ensure that required training programs are being addressed to the best of The Blue Mountains Fire Department abilities. However, it was found that training is significantly challenged with meeting the following criteria:

- What training programs are required for the services that The Blue Mountains Fire Department is providing
- The number of hours that are required to meet each of those training needs
- Resources required to accomplish this training
- Constant volunteer recruitment and retention challenges which significantly affect training requirements.
- An annual training program matrix, with measured goals and expectations, and reporting on the completion success rate at the end of each year.

Clarification of the Training Officer's duties and responsibilities would assist with such things as:

- Records Management System
    - analytics, statistics, reporting
    - planning
- Liaising with the local fire training groups
- Risk Management of The Blue Mountains Fire Department training and service level requirements

4.5.1 Live Fire Training

The purpose of live fire training is to provide realistic fire training evolutions under safe and controlled conditions. Live fire training evolutions are intended to simulate the actual fire conditions that a firefighter may encounter such as fire spread, high heat, humidity, restricted vision, and smoke

[17] "NFPA 1201: Standard for Providing Fire and Emergency Services to the Public," Retrieved December 24, 2021, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1201

conditions. This training must comply with NFPA 1403, Standard on Live Fire Training Evolutions. The Blue Mountains Fire Department options for this critical training have been non-existent locally.

The current editions of the NFPA Professional Qualification standards require fire service members to "remain current" with the knowledge and skills related to their qualifications or certifications. This expectation is also noted in the *Occupational Health & Safety Act*.

Advancements in fire science reveal that continuing education in the fire service goes beyond maintenance of initial skills and core competencies. Continuing education is necessary to ensure that firefighters are current with changes in suppression and ventilation techniques, building construction, fire behavior, personal protective equipment, firefighter health, and safety."[18]

As such, industry best practice indicates that firefighters should be participating in live fire training exercises at least annually. This type of hands-on training and exposure to heat and smoke conditions should be considered a mandatory component of a The Blue Mountains Fire Department comprehensive training program.

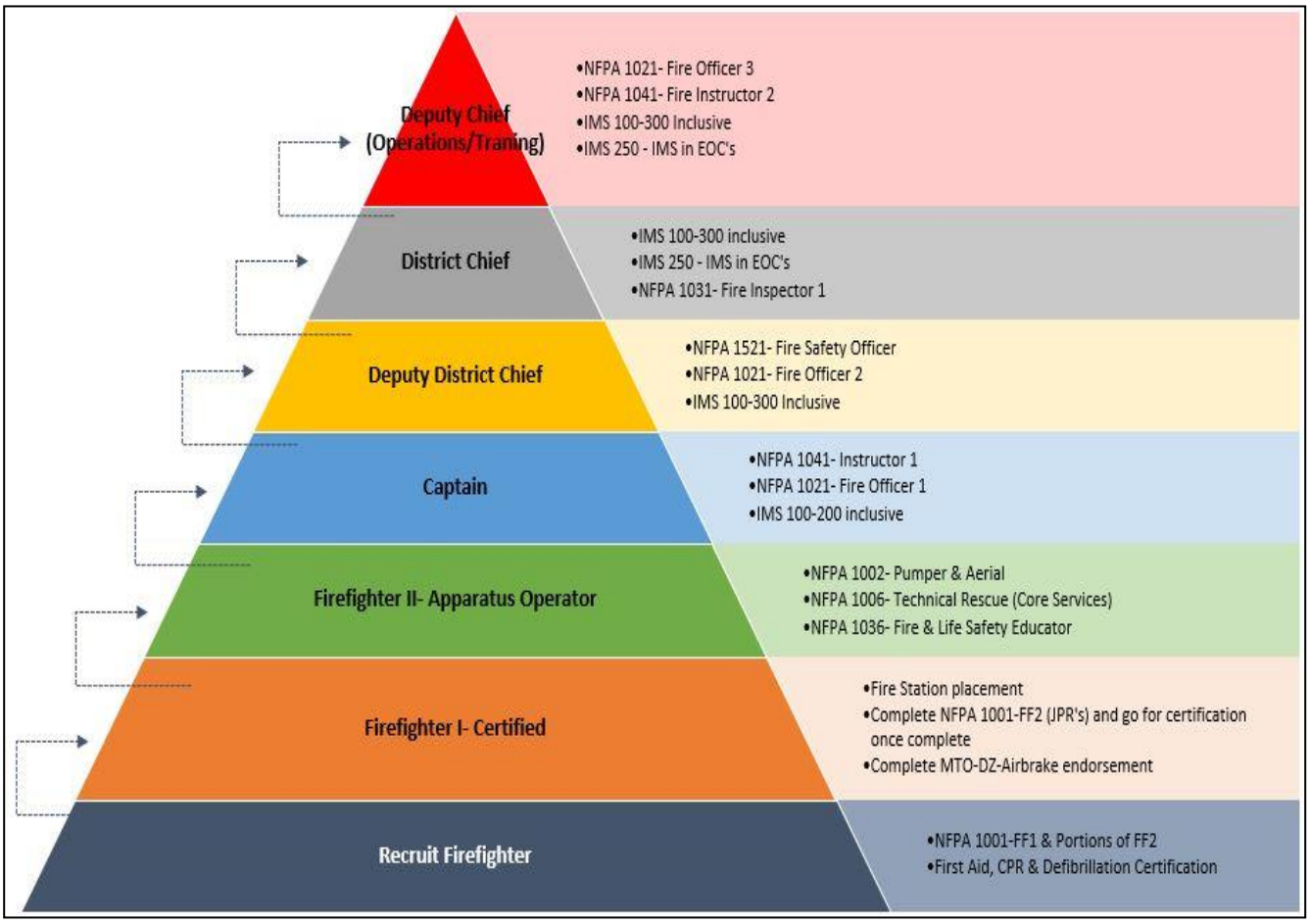
4.5.2 Training Program

EM&T has reviewed the training programs presently in place. For staff to obtain the necessary knowledge, skills, and experience, it is suggested that a clear understanding of how the progression through the ranks should occur. It is the sole responsibility of 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.

A multi-year training matrix should be developed and followed as the pathway towards continual staff development as well as progression through the ranks. The example in Figure #5 provides a visual that can be adjusted to suit the needs and organizational structure of The Blue Mountains Fire Department.

[18] Brian McAllister and Jamie McAllister, Research Foundation, "Fire and Emergency Service Personnel Knowledge and Skills Proficiency", September 2019, Retrieved December 24, 2021, https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/RFFEMSProficiency.pdf

FIGURE #5: Example of Proposed Training Standards to Current & Potential Future Positions



4.5.3 Training Facilities

As mentioned earlier, The Blue Mountains Fire Department lacks its own training facility to conduct regular hands-on programs such as live fire training and other specialized programs (as identified in the current E&R Bylaw), that require more training props outside of those available at a fire station.

All firefighters are in critical need of receiving live fire training annually as a minimum standard, along with being fully trained on any of the other services provided by The Blue Mountains Fire Department.

Recommendation #7

The Fire Chief should provide a business case to the Senior Management Team supporting either:

- **The use of CFB Borden training facility for The Blue Mountains Fire Department with a training budget ranging from $25,000-$50,000, to be developed in the short-term, or**

- **The purchase of a mobile training unit or a fixed site unit for the purposes of Live Fire Training. This could be a joint purchase in conjunction with bordering departments or be an initiative of the Grey County Fire Chiefs.**
- **The Blue Mountains Fire Department could review options of developing their own training ground with the use of sea containers placed in the configuration of a building.**
- **The Training Officer's position stay focused on The Blue Mountains Fire Department training, planning, and execution of the programs.**

Rationale: The Blue Mountains Fire Department having its own training facility will give it control when it may be used and how often, to ensure the firefighter's skill sets are maintained, while giving new recruits the experience required in fighting structure fires. This unit could also be an opportunity of revenue generation, by allowing other fire departments access to the unit when The Blue Mountains Fire Department does not require it.

4.5.4 Commission on Fire Accreditation International

The CFAI Accreditation program has a specific section that evaluates the training component of a fire department. In this section the following points are noted:

- Category VIII: Training and Competency
    - *Training and educational resource programs express the philosophy of the organization they serve and are central to its mission. Learning resources should include a library; other collections of materials that support teaching and learning; instructional methodologies and technologies; support services; distribution and maintenance systems for equipment and materials; instructional information systems, such as computers and software, telecommunications, other audio-visual media, and facilities to utilize such equipment and services. If the agency does not have these resources available internally, external resources are identified, and the agency has a plan in place to ensure compliance with training and education requirements.*

The Fire Chief and Training Officer are aware of the program needs and facility requirements and have indicated that the Training Officer is tracking much of this. However, to verify in a more formal manner that the Training Division is meeting the related NFPA program recommendations, the Training Officer should identify:

- What training programs are required in relation to the services that BMFD is providing
- The number of hours that are required to meet each of those training needs
- Resources required to accomplish this training

- Joint partnerships with bordering fire departments and private organizations that can be entered to achieve the training requirements identified by the Training Officer
- An annual program outline at the start of each year to the Fire Chief, with noted goals and expectations and completion success rate

To complete the evaluation on The Blue Mountains Fire Department training programs and related successes in meeting the training needs of the firefighters, EM&T has recommended the following:

Recommendation #8

The Fire Chief should meet with bordering fire departments to discuss the option of sharing a full-time Training Coordinator's position. For example, a Training Coordinator's position has been utilized in Wellington County to assist with such things as:

- **Consistent training amongst neighbouring fire departments**
- **Assisting with training records management**
- **Scheduling of training programs amongst neighbouring fire departments**
- **Design, plan, and implement multi-year training programs with costing and delivery and potential partnership options**

Rationale: The implementation of a regional training officer position, in which the individual is responsible for training multiple fire departments, will provide continuity in what is taught, how it is taught, and ensure compliance with NFPA Standards. It will also aid in ensuring (when the fire departments attend an incident together) that each department knows how each will perform their assigned tasks as they will all be completing them the same way. Most of all, there will be a cost savings to all involved by dividing the costs associated with the position, rather than each municipality be responsible for their own training officer.

4.6 Certification

Many of the firefighters noted that they wanted more professional training opportunities in the form of certification to the NFPA standards that are offered through the OFMEM and some of the local RTCs.

Therefore, EM&T is recommending that the Department enhance the certification program for staff for each position (that requires or recommends certification) to ensure that certifications are maintained. This includes the certification of firefighters, officers, training officers, and fire prevention staff. It is recognized that there is a certification initiative in place at this time, and the Department and its staff should be commended for this pro-active endeavour. Enhancing this program to ensure that certifications are maintained will put The Blue Mountains Fire Department in a very good position with the possible reintroduction of mandatory firefighter certification by the Province on Ontario.

Recommendation #9

The Blue Mountains Fire Department should enhance its certification programs to the NFPA Standards thus ensuring that all staff are certified/qualified to the rank and duties held within the Department.

Rationale: The OFMEM has announced that mandatory training with optional certification in each position within a fire department will be implemented before long and a requirement of every fire department to ensure training and certifications are to the NFPA Standards.

4.7 Fire Prevention & Public Education

EM&T has conducted a review of the existing fire prevention programs, identifying strengths, gaps, and areas for growth and improvement. 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 program.

NFPA 1035 Standard on Fire and Life Safety Educator, Public Information Officer, Youth Fire Setter Intervention Specialist and Youth Fire Setter Program Manager Professional Qualifications (3.3.11) identifies fire and life safety education as a *"comprehensive community fire and injury prevention program designed to eliminate or mitigate situations that endangers lives, health, property, or the environment."* With that, public education is seen as the first line of defence in relation to the 'Three Lines of Defence' presented by the OFMEM; therefore, the more resources assigned to this endeavour, the more proactive a community and its fire department are regarding fire safety.

Fire Safety Standards and Enforcement is the number two line of the 'Three Lines of Defence', in preventing fires before they begin. Public education, combined with Fire Safety Standards and Enforcement, are the most effective methods of reducing injuries and death associated with fires and associated emergencies.

After reviewing data provided by The Blue Mountains Fire Department, it was confirmed that there is an annual inspection and public education program in place. The Chief Fire Prevention Officer (CFPO) oversees all facets of the program to ensure that the Fire Prevention Division is meeting their goals. The CFPO reports on the Division's activities to the Fire Chief. At present, the CFPO is also in the role of Acting Deputy Fire Chief and as such, the time available to work on fire prevention matters is somewhat limited.

The Blue Mountains Fire Department Fire Prevention Division is staffed with one full-time FPO/PFLSE that report to the CFPO, who oversees all prevention and education activities and sets overall program goals. The Fire Prevention Division is charged with managing all community outreach programs, data analytics, and Division staff are the primary investigators for fire origin and cause investigations. Building development plans are examined and reviewed by the Building Department

and either the Fire Chief or the CFPO conduct reviews to provide comments on behalf of the fire department. The Blue Mountains Fire Department should encourage all members of Fire Prevention Division to complete and become certified in plans examinations as well. The Training and Fire Prevention staff including the CFPO belong to the International Association of Fire Fighters (IAFF) and have a Collective Agreement.

The FPOs are scheduled to work in a manner that allows for an officer to be on duty seven days a week. This allows for issues that may arise on weekends to be addressed at that time rather than waiting until someone is back in the office on the Monday.

The school program includes public education at elementary schools only (as there are no high schools in The Blue Mountains). Topics discussed include smoke and CO alarms, escape planning, fire safety in the home, and playground safety, along with the required fire drills. The Blue Mountains Fire Department has a great working relationship with the many businesses in the Town and it is possible that some of those stakeholders would be interested in sponsoring some contests that the school-aged children could participate in such as a fire safety poster contests or recording their family practising their home escape plan. It is the younger school-aged children that help drive fire safety messaging within the home, and it is important to continually engage this age group in understanding the importance of fire safety.

Engaging with the public is a priority of the Fire Prevention Division in getting the fire messaging out. They have engaged the public at club meetings, community events such as the seniors fair and activities at Blue Mountain Village. When making a presentation to a senior's group, many topics are discussed/actioned ranging from conducting a fire drill, what to do when a fire, smoke, or CO alarm is activated, how to check the that the smoke and CO alarms are still within their life cycle, and testing procedures.

As with many communities in Ontario, The Blue Mountains has experienced an increase in STAs becoming more prevalent. Some owners may not be well informed relating to the needs of fire safety regarding what is required and their responsibilities as an operator of these dwellings. It is a requirement of the Fire Prevention Division to annually inspect every STA. How many are currently operating in The Blue Mountains is to a large degree, are known, and there is a by-law that regulates their operation, including licensing.

Another area of concern is dual and or multiple occupancies in a residential structure which are also known as second units. Many of these (second units) involve basement apartments that may not meet OFC Standards. It is unknown how many are in operation in The Blue Mountains, even though they are permitted under municipal by-laws and provincial legislation. The owners/operators may not have proper smoke and/or CO alarms, lack fire extinguishers, lack a direct exit out of the structure or have windows that are too high and small for a person to escape through. Fire deaths have occurred

from people residing in basement apartments that do not meet the OFC and they are unable to escape when a fire occurred. Some municipalities have resorted to establishing a “reporting line” for citizens to report possible illegal second units.

The Blue Mountains currently has only one vulnerable occupancy that is known as being a high-risk structure that requires constant monitoring by the Fire Prevention Division. It is in Thornbury and has portions of the structure sprinklered. Inspections are completed as legislated. During the composition of this report, The Blue Mountains was notified by the Province of Ontario that they will be receiving funding for a senior’s building to be built in Thornbury, which is good news for the community, but will add to the inspection and response demands for the Fire Department.

The Fire Prevention Division has also identified high-risk audiences and targeted these for their fire prevention and public education efforts. These efforts have focused on engaging the vulnerable occupancy in The Blue Mountains, with resources dedicated to conducting monthly mandatory inspections, supervising fire drills, and supporting the training of onsite staff. The Fire Prevention Division can be proud of their Smoke Alarm Program, their School Program, and the various partnerships with local businesses.

The Fire Prevention Division initiated the “Alarmed for Life” Program in 2015. The program encourages residents to call the Fire Prevention Division for a free in-home visit that ensures smoke and CO alarms are installed properly and operating. This may include relocating the detector and changing batteries. During the first three years of the program, approximately between 20 to 30 residents each year take advantage of the service. In 2020 and 2021, the number of requests has subsided due in part to pandemic restrictions. It is anticipated that once things return to the new normal, requests will increase.

The Blue Mountains Fire Department has a very successful Fire Prevention and Public Education program, and other municipalities would be well advised to draw from these successes and incorporate them into their municipality. Even though the Fire Prevention Division is constantly conducting inspections and public education, the workload is ever increasing.

The FPOs of The Blue Mountains are unique in that when on duty they are required to respond to fire calls (on top of their fire prevention duties). This is due to the lack of PPC firefighters on the department and during daytime hours a significant shortage of available firefighters is quite prevalent. It is difficult when an FPO must leave an inspection to attend a fire call. To increase the efficiency of the FPOs, the Town should review its staffing options for the daytime hours, which may necessitate the hiring of full-time firefighters to work Monday to Friday daytime hours. This is discussed further in Section 5.

During EM&T’s review of by-laws, it was noted that there is no Outdoor Burning By-Law and should be initiated and passed by Council. It should be stated that the licensing of STAs does identify that fire

pits are not allowed unless approved by the fire department. Council is currently considering a Fireworks By-Law, with direction coming from the Town's Legal Services.

If by-laws are enacted, they should be reviewed and updated to meet current and changing requirements annually. Suggestions for the Burning By-Law include the discontinuance of permitting burning leaves in built up residential areas due to noted health concerns for those with breathing ailments such as asthma and emphysema. The by-law should make note of the approved or unapproved use of outdoor burning appliances that stores now sell such as chimineas.

Recommendation #10

Enact a by-law for the operation of secondary units/suites that ensures they are compliant with provincial legislation and are registered or licensed with the Town.

Rationale: Having a by-law in place will ensure the town is able to identify and monitor the location of every STA, and through the required fire inspections, ensure the early fire detection/warning systems and fire safety measures are in place.

4.7.1 Code Enforcement/ Inspections

For a Community Risk Reduction Plan to be successful, ongoing fire inspections are a necessity. It is the inspections that will identify deficiencies and contraventions of either the Fire Code or Building Code of Ontario before they cause a fire.

The FPOs address Fire Code violations and fire safety hazards within the authority of the *FPPA* and applicable regulations and Fire Marshall directives. Fire inspections of all types of occupancies in the municipality, with the intent of compliance with the Fire Code, is crucial to the protection of persons and property from the hazards of fire. The reduction of risks from fire and other life safety hazards with detection and reporting through the inspection process is necessary for the creation of a fire safe community, occupant safety, and building preservation. Inspections also provide assurances that fire detection equipment in buildings meet code standards, are present and operational, and that firefighting equipment in buildings have been tested to the standards. They also manage issuing orders, filing court documents, and carrying out inspections.

Through the utilization of the FUS Inspection Frequency Chart (TABLE #7), the Fire Chief can assess resource requirements to meet inspection benchmarks, developing a plan with what can be accomplished with the Department's present staffing complement, along with presenting options for increasing inspection frequencies. Currently the FPOs do not conducts fire inspections in accordance with the recommended FUS inspection frequency. This is due in part to the department not having completed a FUS.

TABLE #7: 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, STAs, and industrial buildings.

The Fire Prevention Division has made significant efforts to address many issues that may arise with STA building stock. This includes the need to inspect the rapidly increasing number of existing buildings being converted to STAs as well as new construction with the sole purpose of being used as an STA. The inspection of STAs will enhance the safety of the traveling public.

Table #8 lists the number of inspections completed between 2013 and 2021. It is evident that the demands and workload placed on the Fire Prevention Division, has been continually increasing aside from 2020 and 2021 when the number of inspections took a drastic drop due to the pandemic.

TABLE #8: Number of Fire Inspections Each Year

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total Number of Inspections	856	890	737	674	858	801	883	297	265

NOTE: The number of inspections in 2020 was significantly less due to the pandemic.

The Blue Mountains Fire Department is tracking the time spent on each of the fire prevention activities (ranging from site plan reviews, routine inspections, licensing, complaints, requests, etc.). This is entered into the HRISMyWay computer program. By identifying the time spent on each project and collating this into approximate baseline times, the Fire Chief can then use this information in applying future initiatives.

The Fire Chief is encouraged to review the number of inspections and associated orders/fines issued. This information can also be applied to identifying those business that reoffend, and/or are requiring more inspections, more follow-up, and therefore more time of the FPO, versus those which require minimal assistance or interaction of the FPO. A business or owner with tendencies to reoffend or ignore the primary concepts of fire prevention may preoccupy the FPO unnecessarily. The involvement of the Town's By-Law Department may be of assistance in these matters of enforcement.

It is recommended that the Fire Prevention Division continue to report annually on activities being conducted to reset baselines and benchmarks to indicate success or challenges with achieving any of the noted benchmarks. If it is found that the number of required inspections is becoming a taxing workload, a review of the Fire Prevention Division's activities should be conducted, with consideration given to realigning priorities, including the need for additional FPOs.

Recommendation #11

The Fire Prevention Division monitor inspection and public education requirements and consideration be given to the addition of more FPOs to assist with ensuring all needs of the Division are met.

Rationale: By having more accurate accounting of inspections and public education initiatives conducted by the Department, there will be a better understanding of what resources, if any, are required to meet the goals and expectations of the Fire Prevention Division. There are 40 residential developments in progress, of which an unknown number may be used as STAs thereby requiring inspections.

4.7.2 Origin and Cause

The fire service in Ontario 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 investigation is a part of the FPO's role. The *FPPA* requires The Blue Mountains Fire Department to investigate and determine the origin and cause of all fires. The Fire Prevention Division has two officers who successfully completed a portion of NFPA 1033, the *Standard for Fire Investigation*, but are not yet certified fire investigators. The final portion of their certifications was delayed due to the pandemic.

Knowledge from determining origin and cause assist in targeting groups or causes to better educate the public on fire safety. Another purpose is to ensure fire code compliance (i.e., were there working smoke alarms).

Recommendation #12

All Fire Prevention Division personnel who have completed the NFPA 1033, Fire Investigation course, seek certification.

Rationale: Having all members of fire prevention certified in fire investigation will provide multiple individuals trained in what to look for during a fire investigation, which will in the end produce a more encompassing and effective investigation process for The Blue Mountains Fire Department.

4.7.3 Public Education

The Fire Prevention Division has a successful program that teaches fire safety to all ages in a variety of formats and settings. Each FPO also takes on the role of PFLSE and is responsible for running education activities and creating and/or delivering education programs. The Blue Mountains Fire Department is committed to delivering a full array of fire prevention services and public education programs with available resources. Numerous partnerships with local businesses, media outlets, and other municipal entities such as the library should be established to aid in the delivery of this public education programming. The Blue Mountains Fire Department continues to be proactive in this regard, identifying and implementing opportunities for increased effort in promoting public education. The Blue Mountains Fire Department should increase its efforts to leverage social media platforms and to develop partnerships with internal and external stakeholders to support the advancement of public safety messaging campaigns.

Further to what has already been noted by the NFPA and FUS, the CFAI outlines the following regarding fire prevention and public education:

> *A public education program is in place and directed toward reducing specific risks in a manner consistent with the agency's mission and as identified within the community risk assessment and standards of cover. The agency should conduct a thorough risk-analysis as part of activities to determine the need for specific public education programs.*

The utilization of existing resources is a cost-effective option for the promotion of fire prevention and public education programs. To accomplish this, some fire departments have trained suppression staff to conduct inspections or assist in public education. This not only brings more resources to the table but also enhances the level of fire safety awareness by those trained staff.

Currently, The Blue Mountains Fire Department does not utilize suppression personnel to support the inspection program. It was noted, however, that some members of suppression are currently enrolled in courses to complete NFPA 1031 and 1035, which are related to fire prevention and public education. Opportunities exist to enhance these fire safety programs and to implement innovative approaches with support from within The Blue Mountains Fire Department directed towards the Fire Prevention Division. It is recommended that consideration be given to training any suppression personnel, who may be interested, to PFLSE, Level I. Having more The Blue Mountains Fire Department personnel trained to the 1031 and 1035 standards will enhance fire safety and education initiatives.

Documentation of the public education events, including the topics discussed and the number of participants in attendance is something that should be more accurately tracked. The OFMEM has provided a means of documenting these events and The Blue Mountains Fire Department should use this tool as a means of records management of public education events. For more information on this, the OFMEM's Public Education, Planning and Tracking Tool is located at : https://drive.google.com/file/d/0B0f8qgi7_vN2LVloem5tdFl1aEk/view?resourcekey=0-22HF5jDfUiF-R7E-OnxtiQ

The Blue Mountains Resort/Village sees many visitors each year. Many are from areas outside of Canada and either do not speak English at all or have limited knowledge of the language. It is important to reach out to those non-English speaking visitors about fire safety features in the accommodations they are staying in. The Fire Prevention Division should have multi-lingual fire safety pamphlets available for guests. The department could partner with all the accommodation providers throughout the town, in providing this information when they register at the resort.

The Blue Mountains Fire Department documents the number of attendees in attendance at any public education events. Table #9 highlights the number of attendees. These numbers were on a steady increase until the pandemic occurred which resulted in much fewer public education events.

TABLE #9: Number of Participants at Public Education Events Each Year

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total # of Participants	229	285	700	1,553	2,935	1,150	1,550	12	5

NOTE: The number of participants in 2020 and 2021 was significantly fewer due to the pandemic.

Recommendation #13

All firefighters be offered the opportunity to become trained and qualified to Fire Inspector I, and the PFLSE, Level I or equivalent certification.

Rationale: By having more fire department staff trained to these NFPA standards, the Department increases their ability to conduct inspections and promote fire safety education initiatives.

4.7.4 Determination of Current Staffing Requirements

To assist fire departments in the determination of present and future staffing needs, NFPA 1730 *Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations* outlines a five-step process within Annex 'C' of the standard. Ultimately, Council determines the level of Fire Prevention based on the local needs and

circumstances of the community; this is made possible with input from the Fire Chief, based on quality data.

Note: The following steps are excerpts from Annex 'C' which is not part of the requirements of NFPA 1730 Standard, but is included in this Fire Master Plan, for informational purposes only. The following five steps are a quote from Annex "C".

The five-step process involves a review of the following items:

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) through Table C.2.2(d), quantify the time necessary to develop, deliver, and evaluate the various services and duties identified in Step 1, considering the following as examples:

- *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 (travel time to training sessions)*
- *Prioritization*

Step 4: Personnel Availability and Adjustment Factor

Average personnel availability should be calculated, considering 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

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

Correct calculations based on the following:

- *Budgetary validation*
- *Rounding up/down*
- *Determining reserve capacity*
- *Impact of non-personnel resources (materials, equipment, vehicles) on personnel*[19]

[19] "NFPA 1730: Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations," Retrieved December 23, 2021, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1730

More information on this staffing equation can be found within the NFPA 1730 standard. The Fire Prevention Division should assess these five steps and evaluate their level of activity and the future goals of the division.

To assist in this process, the CFPO should more closely track the actual time spent on each of the Fire Prevention activities (ranging from site plan reviews, routine inspections, licensing, complaints, and requests, to name a few). Staff are presently entering public education events along with how many people attend these events. By identifying the time spent on each project that The Blue Mountains Fire Department does, and collating this into baseline (approximate) times, the Fire Prevention Division can use those hours spent as a baseline figure in applying future initiatives.

SECTION 5

Fire Suppression & Dispatching

Section 5: Fire Suppression & Dispatching

5.1 Fire Suppression/ Emergency Response

The Blue Mountains Fire Department is primarily a paid-per-call (PPC) department, and as such the NFPA 1720 standard for volunteer fire departments is applicable for this review. It should be noted that although the NFPA is not a mandated standard, it is recognized as an industry best practice. As such, it is advisable that fire departments use NFPA standards as goals and guidelines to strive for.

When volunteer departments receive a call for service, the PPC firefighters are rarely in the station when the call comes in. They must drive to their assigned fire station, get into their bunker gear, board the apparatus, and then respond; this is known as the "turnout" or "chute" time. NFPA 1720 does not identify a benchmark for turnout times. The AHJ should establish a turnout time benchmark that is achievable and can be monitored. If this time becomes less than the benchmark, that will indicate an improvement in their turn-out time. By having this information, the Fire Chief will be able to implement an awareness program for his firefighters, so goals can be set and monitored. Or the tracked information may also identify the inability to meet the turnout benchmark which could mean more PPC firefighters are needed, or that the set benchmark is too aggressive and needs to be adjusted.

The total number of calls are almost evenly divided between the Thornbury and Craigleith stations. Each station is currently allotted 22 firefighters by direction of Council. Unfortunately, The Blue Mountains Fire Department is exposed to a very high turnover of personnel each year and recruiting new members is quite challenging. Having firefighters available during the daytime is difficult. To supplement this shortfall, the department has four FPO/Training Officer/firefighters, as well as one Captain and three fire prevention inspectors/firefighters, working during daytime hours, every day of the week, including weekends. If an emergency call comes in, these full-time staff respond as firefighters to the incident.

During EM&T's review of the department, PPC firefighter staffing levels were below half the approved staffing level. With staffing levels so low, this is becoming a health and safety issue because having adequate staffing at an incident is paramount to ensuring firefighter safety and meet industry best practices. Some members have left the department to become full-time firefighters at larger urban fire services; some have left for family reasons; and others find it is becoming very expensive to live in The Blue Mountains community. While recruitment programs are ongoing, there appears to be a low level of interest from willing and able individuals within the community to join the department.

With the shortfall of PPC firefighters on the department, the Fire Chief has implemented an automatic two station response protocol to all incidents. Along with this two-station response protocol, to ensure adequate staffing during the day, The Blue Mountains Fire Department should enter into automatic aid agreements with the four surrounding fire services to respond during daytime hours to

any confirmed structure fires. A pumper (fire truck) and four firefighters should be sent from the department closest to the location of the incident. If additional resources are required, they should be dispatched from the next closest department so not to deplete resources from any one department. As a means of good faith, The Blue Mountains could cover the cost of the responding outside department, so not to place the cost of supplementing their needs on the taxpayers of the neighbouring municipality.

Note: having this automatic aid agreement is place is a good idea (to help supplement staffing needs at the scene of an emergency). However, there is no guarantee that the bordering fire departments will be able to respond due a possible emergency occurring within their own communities at the same time as The Blue Mountains emergency. Hence the need to ensure a full roster of firefighters for The Blue Mountains.

To make an informed decision on present and future staffing requirements, consideration is dependent on the following general points:

- Does the fire department have an approved response criterion as a baseline?
- Has Council given direction to the Fire Chief (based on his recommendations) on expected response times that are to be met by the fire department?
    - If so, is the fire department meeting this response criterion on a consistent basis or is it struggling to meet the response times and, perhaps, falling behind?
- Does the fire department have issues/concerns with getting enough PPC firefighters to respond during daytime hours (or other times) on a consistent basis to ensure a viable level of response?
- What local and national standards and guidelines exist to help direct the fire department in its decisions relating to station location and staffing models?
    - Specifically, NFPA 1720 along with reference to the CFAI “industry best practices” recommendations
- What increase or decrease in population and industry is occurring that may precipitate more or less fire stations and division staffing?

Due to the inconsistency in firefighter availability during the day and difficulty in recruiting new firefighters, The Blue Mountains Fire Department needed to review its response capabilities and experience levels. The current hiring of four firefighters will now provide the department with up to eight full-time firefighters to respond. This staffing level could still be affected by vacations and time off. However, the hiring of these four new staff, will go a long way to ensuring a more consistent response to calls for service.

The additional staff may also be deployed by the Fire Chief to aid in other daily functions such as fire inspections and public education events. They should be assigned to work out of the Craigleith Station as that station has the most difficulty mustering firefighters during the day.

To be more efficient with response to stations by the firefighters, it is recommended that The Blue Mountains Fire Department review the firefighters' station assignments to realign them so that firefighters may be assigned to stations close to their place of residence. Further, The Blue Mountains Fire Department should develop a policy that requires firefighters to notify their chief officers when they move to allow the fire department to transfer them to the most appropriate station. This has the potential to improve turnout times on emergency calls.

Recommendation #14

The Blue Mountains Fire Department enter into response agreements with the surrounding fire services to provide support apparatus and staffing to any confirmed structure fires during the day, Monday to Friday.

Rationale: Until The Blue Mountains Fire Department has staffing levels as approved by Council, implementing this recommendation will ensure additional resources are enroute to assist at the fire, which will optimally enhance firefighter safety and reduce the risk of injury due to firefighter fatigue.

5.1.1 National Fire Protection Association (1720)

To provide the fire department clearer focus on what the ultimate goals for emergency response criteria are, the NFPA suggests that response times should be used as a primary performance measure.

Staffing and Deployment (NFPA 1720)

1.3.1 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.

1.3.2 Table 4.3.2 (as noted in Table #11) 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.

TABLE #10: NFPA 1720 Table 4.3.2 Response Times

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

5.1.2 Staffing and Response Time

- *In Urban areas (population greater than 1000 per square mile), there should be a minimum response of **15 staff within 9 minutes**, 90 percent of the time*
- *In Suburban areas (population of 500 – 1000 per square mile), there should be a minimum response of **10 staff within 10 minutes,** 80 percent of the time*
- *In Rural areas (population of less than 500 per square mile), there should be a minimum response of **6 staff within 14 minutes,** 80 percent of the time.*[20]

Based on 2016 Canadian Census (which is the most recent), the Town has a population density of 24.5/km² (63/sq mi), which places the Town in the rural section according to NFPA 1720. Therefore, The Blue Mountains Fire Department should set its response goal of having six firefighters on the scene of a residential structure fire, within 14 minutes, 80% of the time. To provide the fire

[20] "NFPA 1720: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments," retrieved December 24, 2021, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1720

department clearer focus on what the ultimate goals for emergency response criteria are, the NFPA suggests that response times should be used as a primary performance measure.

The fire department should also endeavour to meet the stated minimum staffing response standards based on responding to a 2,000 ft^2 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 in The Blue Mountains, however, have basements and are built close enough to each other to create an exposure risk for potential fire spread, which must be considered by the fire department in its response efforts.

The Blue Mountains Fire Department is diligently working to meet the NFPA 1720 standard in relation to population versus staff/response times. And for the most part The Blue Mountains Fire Department is generally meeting the response criteria and is to be commended for their efforts. It should also be noted that with its complement of dedicated PPC and full-time staff, they are also doing an admirable job at meeting the needs and expectations of the community, as noted by the input received through the community surveys and stakeholder meetings.

5.1.3 Response Times:

When considering the response times and needs of a community, (as previously noted) the fire response curve (FIGURE #6) 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 the burn rate or suppress it through fire control measures within the structure.

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

- The distance between the fire department 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.
    - 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 many firefighters are at their full-time jobs and cannot respond to calls during work hours.

FIGURE #6: Fire Response/ Propagation Curve

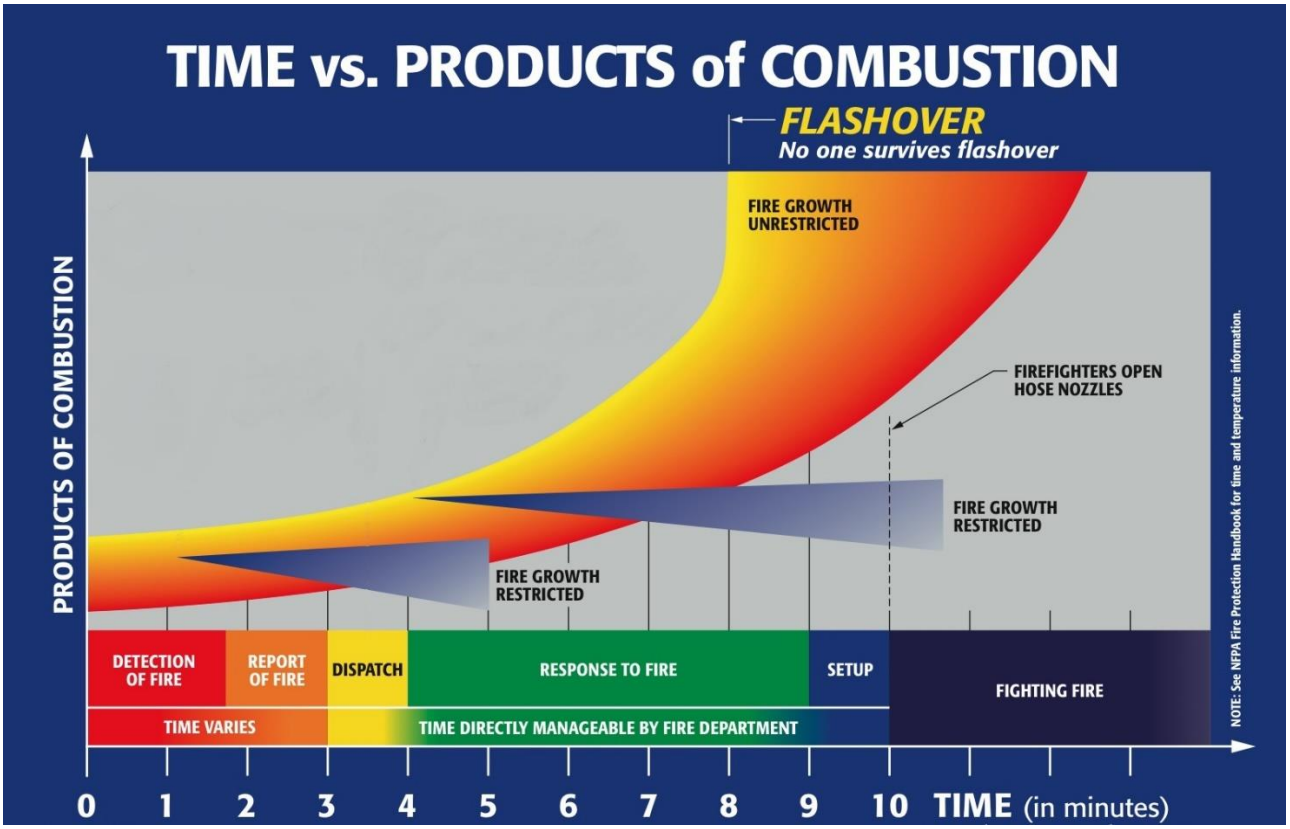


FIGURE #6 notes the following time variables:

- Detection of fire – this is when the occupant discovers that there is a fire. The fire may be in a very early stage or could have been burning for quite some time before being detected
- Report of fire – this is when someone has identified the fire and is calling 9-1-1 for help
- Dispatch – the time it takes the dispatcher to receive the information and dispatch the appropriate resources
- Response to the fire – response time is a combination of the following:
    - Turnout time – Also known as chute time, is how long it takes the career firefighters to get to the fire truck and respond or how long it takes the PPC firefighters to get to the fire station to respond on the fire truck
    - Drive time – Also referred to as response time, is 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, and
- 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 fire and/or incident as quickly and as effectively as possible. If a fire truck arrives on scene in eight minutes or less, with a recommended crew of four or more firefighters, there is increased opportunity to contain the fire by

reducing further spread 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. 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 must 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.

5.1.4 Response Data

The following series of charts identify a comparison of response types and the response breakdown among the two fire stations. As noted in the following charts, The Blue Mountains Fire Department responds to more than just fires; for example, motor vehicle collisions can create a medical or fire emergency that also needs immediate response. Whether it is a fire or other type of emergency, it is imperative to be as efficient and effective as possible in responding to calls for assistance.

There needs to be a review of the future growth statistics and demographics of the community to understand where the potential needs will be and where some efficiencies can be made. As such, The Blue Mountains Fire Department response times should be monitored based on the OFMEM definition, which is from "dispatch time, to time of arrival at the incident"; in other words, from the time the call is received, to when the fire station or pager tones activate, to when the firefighters get on the fire trucks and arrive at the emergency scene location.

Performance measurements that the fire department could benefit from include monitoring:

- Response time: the total time from receipt of call (on 9-1-1) to the time the fire vehicle arrives at the incident location.
- Firefighter turnout time: time from page until the first vehicle is responding.
- Travel time: time tracked from when the fire vehicle has left the station until arrival at the incident location.

- Staffing time: time from the page until the appropriate number of firefighters are on scene (e.g., 10 firefighters).

In reviewing the time, it takes to arrive at an incident once leaving a fire station, it was found most of the time, the apparatus arrives between 9 and 12 minutes after leaving the station. The following maps, (FIGURES 7 and 8) indicate the areas the crews may arrive within a 10-minute drive time.

Note: *In monitoring time measurements, the 80th percentile criterion is the recommended practice that is endorsed by the NFPA and CFAI. 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:*

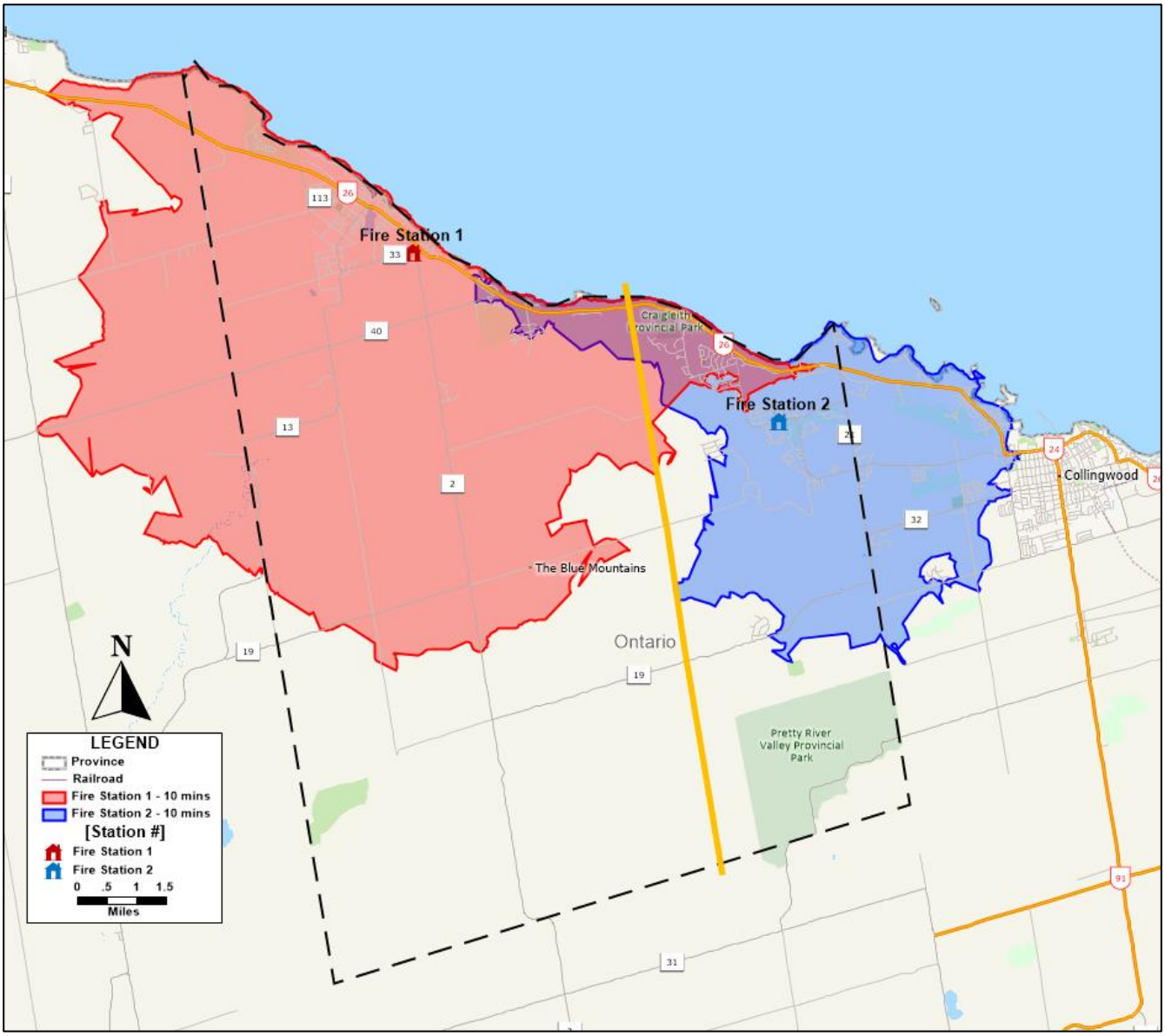
- *8 out of 10 times the fire department arrives on scene in 10 minutes or less, which means that only 20 percent of the time they are above that 10-minute mark*
- *as opposed to 5 out of 10 times (average) the fire department arrives on scene in 10 minutes or less, which means that 50% of the time they are above the 10-minute mark.*

The travel time grids 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.

Fire Station Locations and Response Zones

The vertical orange line indicates the response zones of the stations. At the time of this report's composition, both stations were being dispatched to all calls due to the shortage of firefighters.

FIGURE #7: 10 Minute Travel Time in Relation to Station Response Boundaries

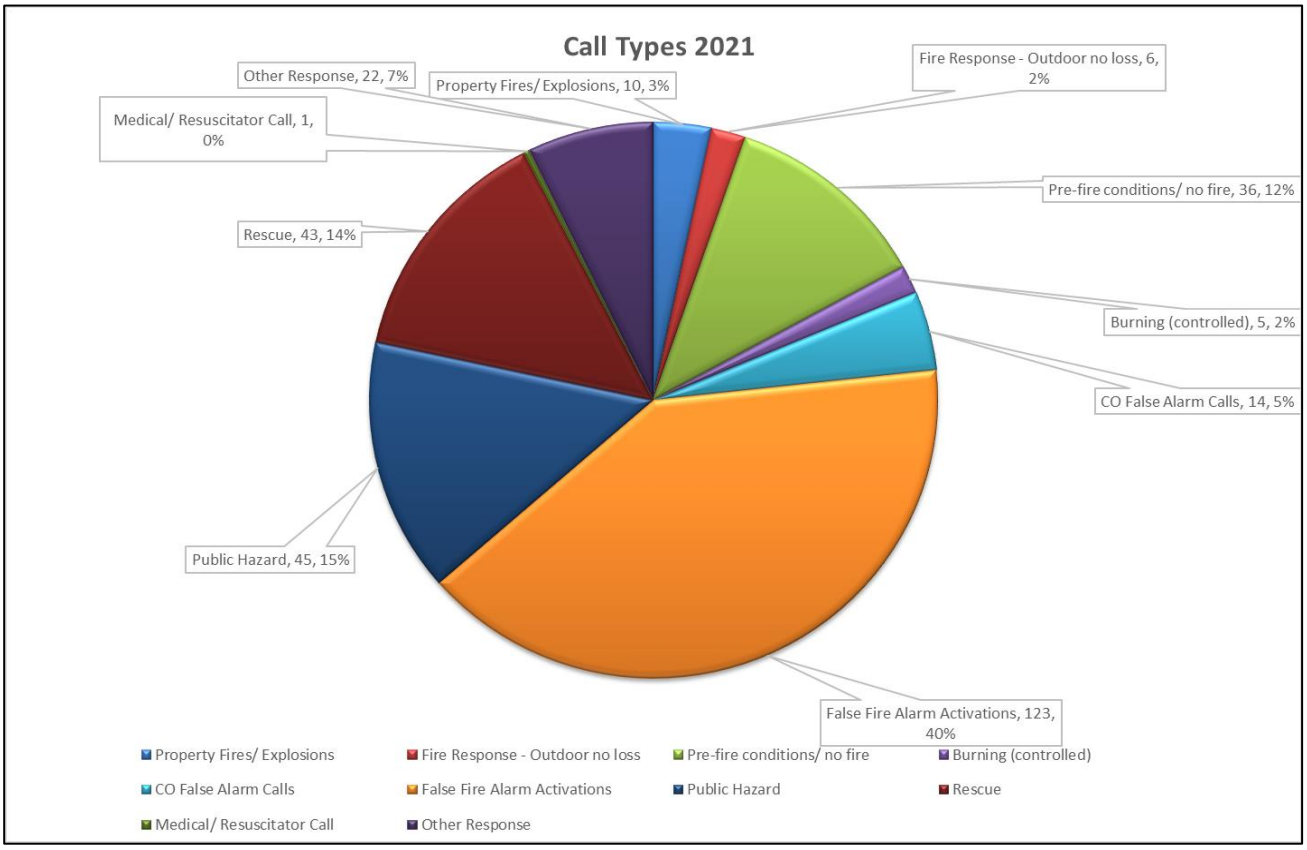


While the map on this page identifies 10 minutes response zones, and NFPA recommends a 14-minute response time based on The Blue Mountains population density. For the purposes of this mapping, EM&T has taken into consideration a four-minute timeline (on average) for the PPC firefighters to assemble at the station prior to responding. That in turn, allows for the 10-minute response time to be identified.

The following set of charts (through the use, of supplied data) help to identify the types of calls that are creating the bulk of response demands and which station(s) are called upon the most for these responses.

FIGURE #8 illustrates the types of calls responded to by The Blue Mountains Fire Department in 2020. The 2021 data will not be available from the OFMEM until late 2022.

FIGURE #8: 2021 Call Types by Total Percentage



Call types from 2017 to 2020 is available in the Appendices.

As can be seen in the above chart, the top three types of calls that The Blue Mountains Fire Department responds to are:

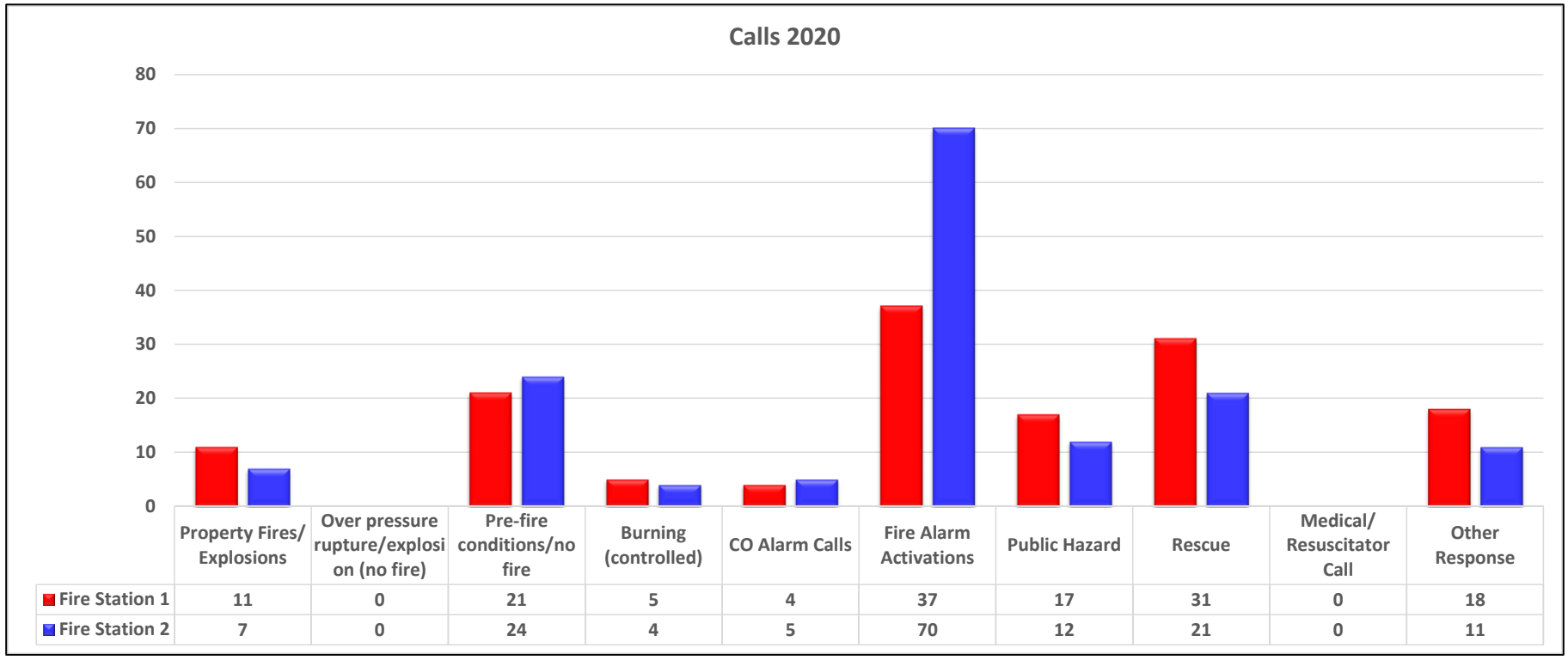
1. Fire alarm activations accounted for 40% of the responses
2. Public Hazards accounted for 15% of the responses
3. Rescues accounts for 14% of the responses

The number of false alarms when compared to previous years is significantly lower. This in part due to the pandemic and the closure order of STAs by the Province of Ontario. Between 2017 and 2020 the number of false alarm call percentages were between 43% and 48% of the total calls.

FIGURE #10 breaks down the call types by station. As indicated, most of the call types are fire alarms, rescues, and pre-fire conditions. With so many fire alarm activations, many of them are false alarms caused by faulty equipment or testing of alarm systems without notifying the answering service, etc.

Another reason for so many false alarm calls is individuals staying at STAs in the area of the Blue Mountains Resort. There might be a tendency of cooking setting off the alarm or the lighting of a woodstove/fireplace without opening the damper in advance of lighting the fire. The Fire Chief has taken measures to assist in reducing the number of false fire alarm calls that the crews are called out in the form of invoicing for unnecessary call outs.

FIGURE #9: 2020 Call Types by Station

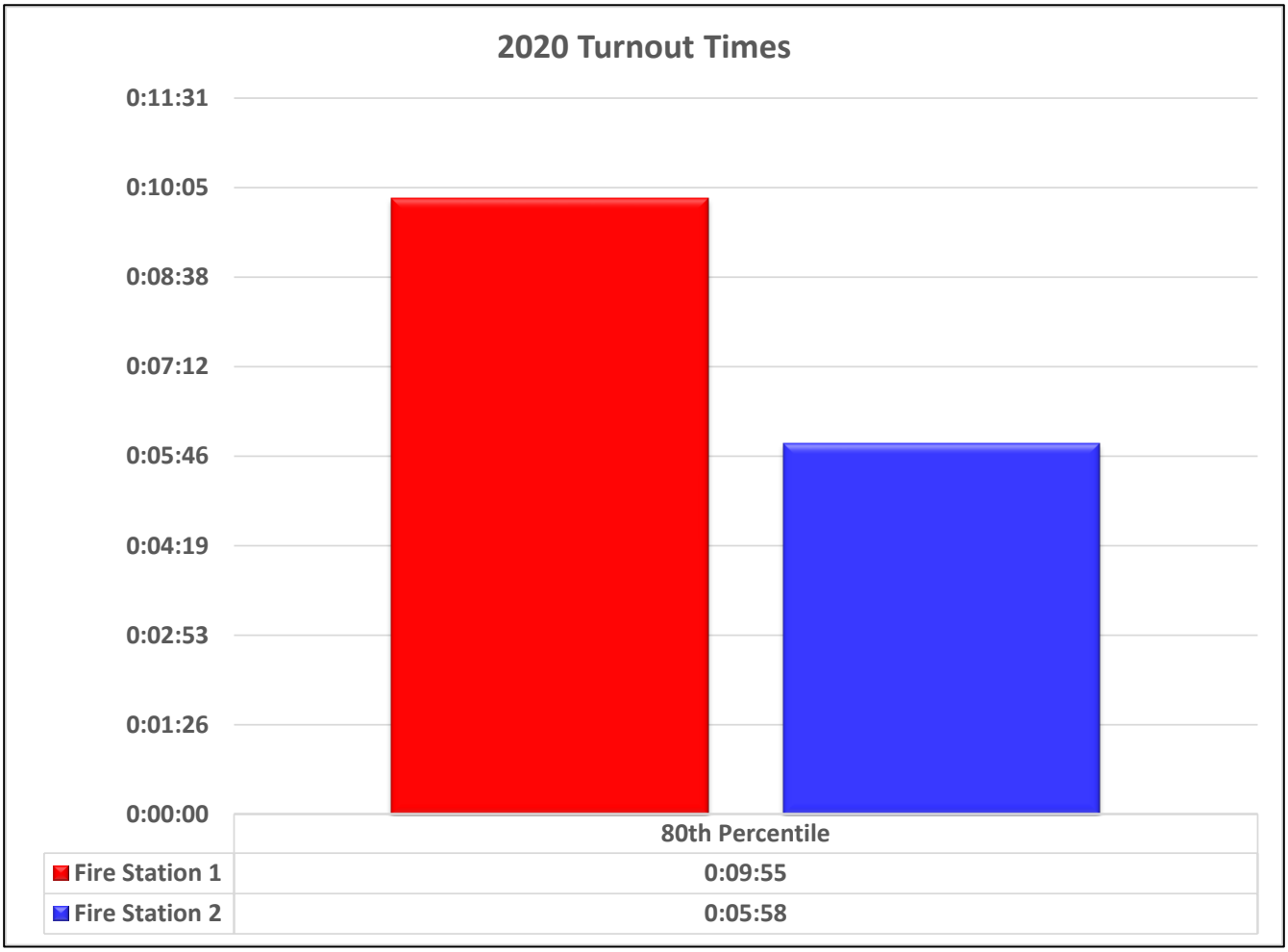


	Property Fires/ Explosions	Over pressure rupture/explosion (no fire)	Pre-fire conditions/no fire	Burning (controlled)	CO Alarm Calls	Fire Alarm Activations	Public Hazard	Rescue	Medical/ Resuscitator Call	Other Response
Fire Station 1	11	0	21	5	4	37	17	31	0	18
Fire Station 2	7	0	24	4	5	70	12	21	0	11

The call types by station from 2017 to 2019 is available in the appendix.

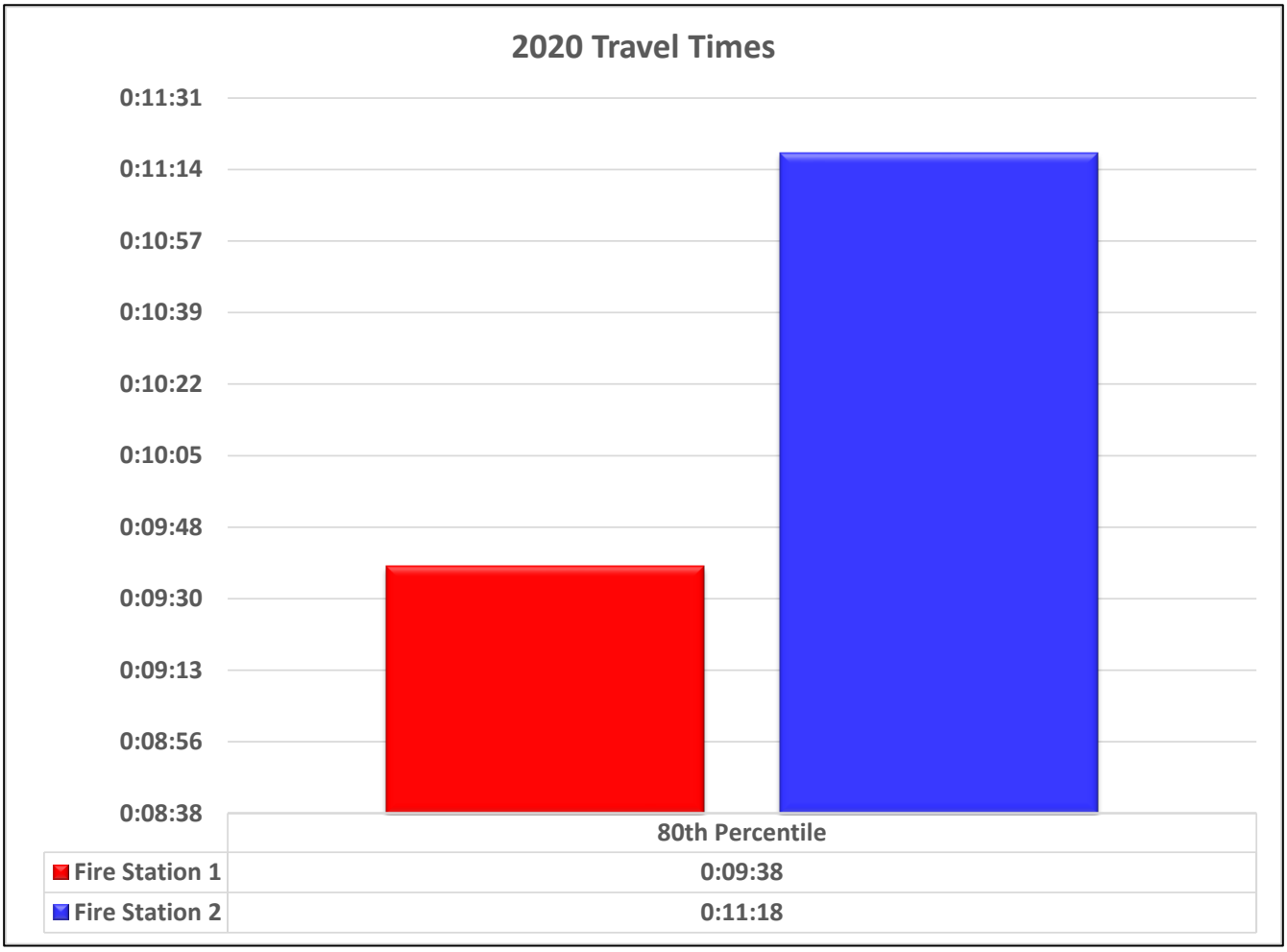
Note: The 2021 call type breakdown by station was not available.

FIGURE #10: 2020 Turnout Times by Station



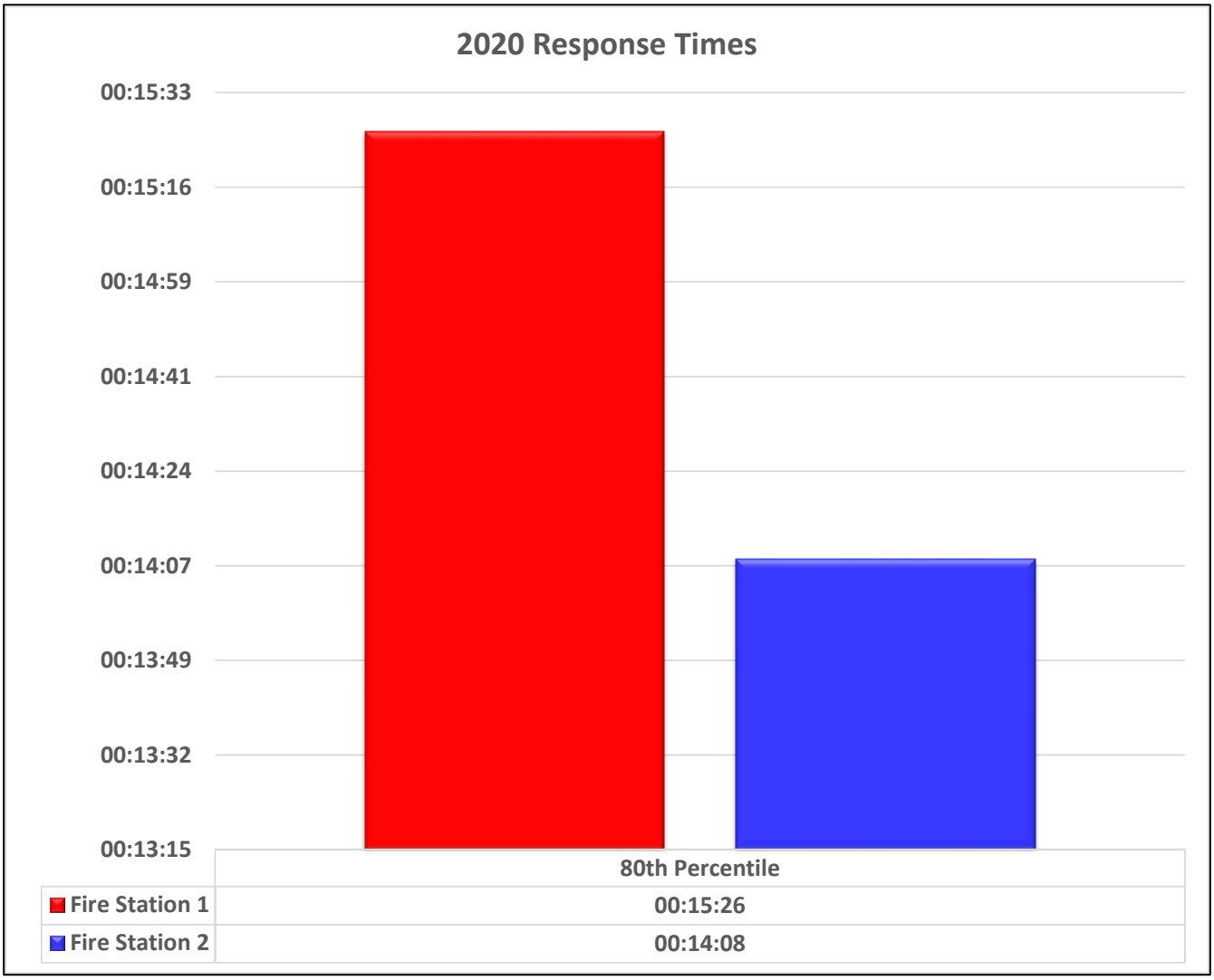
The turnout times are the time it takes from the last dispatch page to the time the trucks are in motion proceeding to the location of the incident. The turnout times from 2018 to 2019 are available in the Appendices. NFPA 1720 -Standard for Volunteer Fire Departments, does not identify the requirements for turnout times in volunteer fire departments. The AHJ may, in discussions with the fire chief, establish a turnout time goal, if so desired.

FIGURE #11: 2020 Travel Times by Station



The Travel Times indicate the amount of time it takes for the first apparatus to leave the station to their arrival at the incident. The Travel Times from 2018 to 2019 are available in the Appendices. Within NFPA 1720, Travel Times are not identified and therefore are for information purposes in this report.

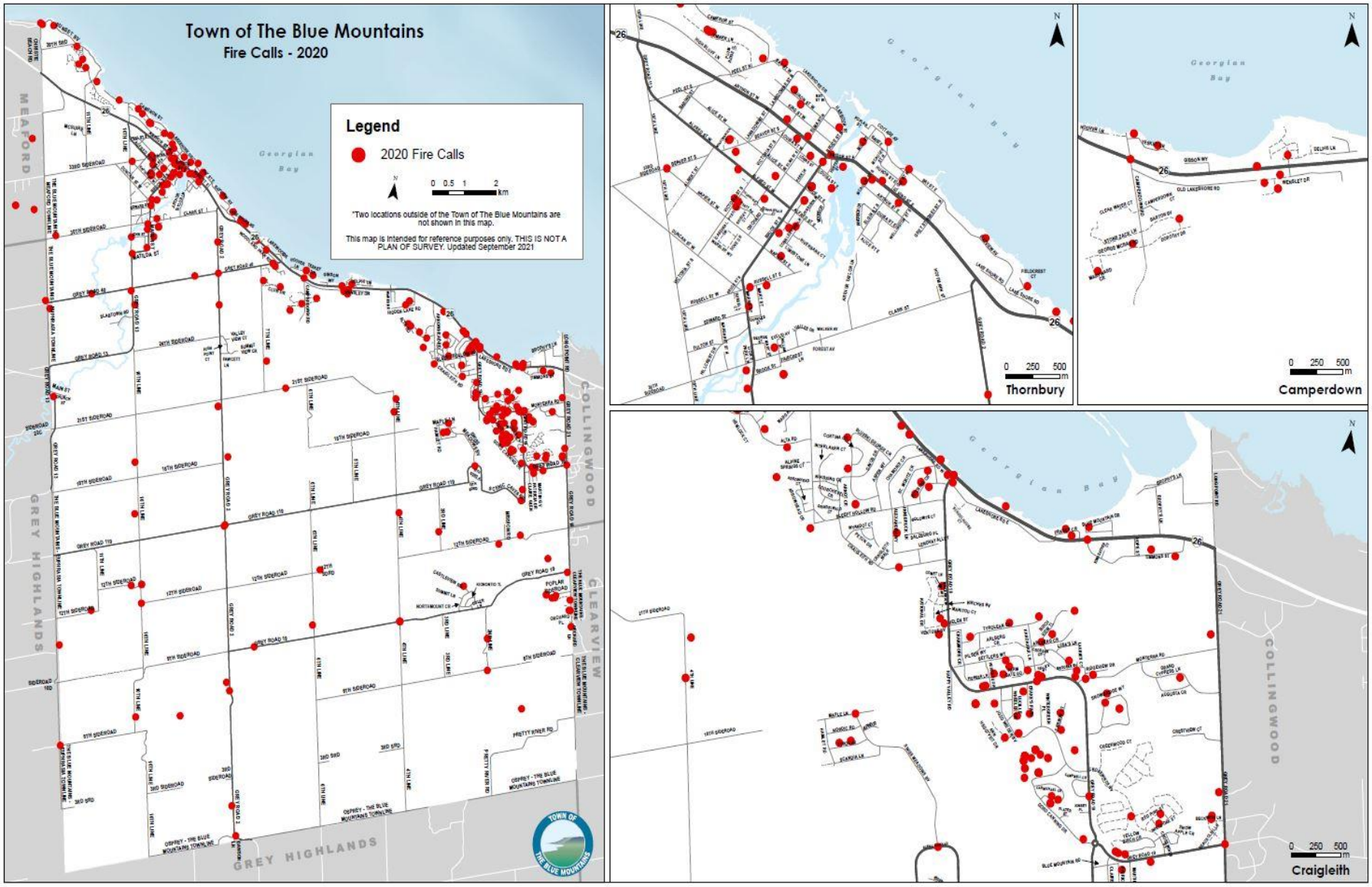
FIGURE #12: 2020 Response Times by Station



The response times from 2018 to 2019 are available in the appendix. As stated previously, with The Blue Mountains Fire Department identified as being a rural department, the goal is to have six firefighters at the scene of a structure fire with 14 minutes.

Another useful tool in measuring fire service response can be done through pinpointing where the bulk of the emergency responses are occurring. This clustering of responses will help to identify where the majority of calls are occurring, which will indicate if the present fire station locations are adequately positioned.

FIGURE #13: 2020 Call Cluster Map



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. As such, it is recommended that the Fire Chief present a response time goal for the approval of Council (which may reference NFPA 1720 – the expectation of 6 staff in 14 minutes (80th percentile)), and that performance measures are continuously monitored. This recommendation is only meant to provide The Blue Mountains Fire Department a goal/guideline to aim for, not as a mandated expectation.

5.2 Medical Responses

Medical responses account for 2% of all calls responded to by The Blue Mountains Fire Department. The department entered into a Tiered Response Agreement with the County of Grey and the Grey County Paramedic Services (GCPS) dating back to 2018. The current agreement states that the Department will respond to only certain types of medical emergencies, namely, motor vehicle collisions, farm, and industrial accidents. The department does not respond to chest pain/heart, strokes (cardio-vascular accidents), or uncontrolled bleeding incidents.

Many fire services respond to cardiac and stroke related illness, but The Blue Mountains Fire Department chose not to respond to these calls due to the time it takes to muster the firefighters and arrive on the scene, and the GCPS has a station located behind the Craigleith Station. The paramedics would most likely be on scene long before the firefighters. This could be reviewed as a future enhancement if the Town chooses to hire full-time firefighters.

The firefighters are trained to the First Responder with Health Care Provider level, which includes defibrillation. The Blue Mountains Fire Department should review opportunities to enhance its level of response to include cardiac related illnesses including Vital Signs Absent (VSA) patients.

A way to improve response times is the addition of medical equipment to chief and fire prevention vehicles. This would include a medical kit and defibrillator. Daytime medical calls could be handled by a senior officer of FPO that is closest to the call. Calls in the evenings and weekends would be handled by the paid per-call firefighters. This change should include a trial period to monitor its effectiveness.

Due to the timeframe from when the current agreement came into affect, it is recommended that the Fire Chief contact GCPS, and London Central Ambulance Communications Centre (CACC), to discuss and update the tiered medical agreement.

Recommendation #15

Fire Chief to present a response time goal (based on NFPA 1720) for approval by Council. These performance measures should then be monitored.

Rationale: This will enable the Fire Chief to identify shortcomings (if any) in their response timelines and take the necessary steps to ensure compliance with Council's direction, all in an effort to meet the NFPA 1720 Standards.

Recommendation #16

Add medical kits and defibrillators to the Chiefs and FPO vehicles.

Rationale: Having medical supplies in the support vehicles will provide the opportunity for The Blue Mountains Fire Department to respond directly to the scene of the incident, rather than go to a station to take an apparatus with medical supplies. This in turn will see a shortened response *time and could save a person's life by arriving sooner.*

Recommendation #17

The Blue Mountains Fire Department review its tiered medical response agreement to identify and implement opportunities to better serve the community.

Rationale: Currently The Blue Mountains Fire Department responds to very few medical calls; changing the protocols when they are to be called to attend will improve the department's level of medical service provision to the town.

5.3 Dispatching Services

The Blue Mountains Fire Department receives its dispatching services from the Barrie Fire & Emergency Service. Based on information received, along with a review of the dispatching data, it would appear that The Blue Mountains Fire Department is receiving adequate dispatching services.

Barrie Fire & Emergency Service is also responsible for activating the paging over the portable radios and real time texting (RTT) systems to alert the paid per-call firefighters to respond. The Blue Mountains Fire Department uses the app, "Sinirji Responder" to communicate with the firefighters that there is a call, which is also interactive. The app identifies the firefighters who are responding to the fire station/ call. If responses are low, a call can then be put out for additional resources.

The agreement with Barrie details a fee for services provided along with related infrastructure and operations activities. The current agreement with Barrie for call taking and fire dispatch reflects an effective strategy for The Blue Mountains Fire Department in providing these services. Dispatch is supported by the CAD (computer aided dispatch) software program Symposium that effectively assists with timely dispatch. Reports of each incident's dispatch log are forwarded to the Town for review and records are maintained for future reference. The CAD data is transferred to the Firehouse computer program for reports to be completed and submitted to the OFMEM.

The agreement does not identify that Barrie is working towards meeting the requirements of NFPA 1061, *Standard for Public Safety Telecommunications Personnel Professional Qualifications* and NFPA 1225 (2021 edition), *Standard for Emergency Services Communications*, which is used to identify dispatching service criteria. NFPA 1221, *Standards for the Installation, Maintenance, and use of Emergency Services Communications Systems*, should also be referenced. It is recommended that future agreements include clauses identifying these NFPA Standards.

Recommendation #18

The Blue Mountains Fire Department dispatch **agreement with Barrie Fire should include references to NFPA 1221, 1225 and 1061.**

Rationale: Identifying these NFPA Standards in the agreement will bring Barrie Fire in line with the standards while ensuring the level of service provision is maintained.

5.3.1 Next-Generation Communications (NG9-1-1)

The 9-1-1 Central Emergency Reporting Bureau (CERB) for The Blue Mountains is the Owen Sound Police Services. Emergency 9-1-1 calls are directed to the police service and then directed to the emergency service that is required by the caller (i.e., 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 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."[21] 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

[21] 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

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 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.*

Moreover, the Commission directs Northwestel Inc. to inform the Commission, by 22 June 2021, of its intent to either (i) comply with the new NG9-1-1 implementation deadlines as determined in this decision, or (ii) file for the Commission's approval, by 1 October 2021, an updated transition plan including the location of NG9-1-1 points of interconnection and timelines for the establishment of an NG9-1-1 network in its incumbent territory, wherever PSAPs have been established.

Finally, the Commission is adjusting the deadlines for the CISC Emergency Services Working Group to file certain reports. [22]

<u>Current Condition</u>

Dispatching Services:

[22] 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

- The current dispatch agreement with the Barrie Fire & Emergency Service is working well and meeting the needs of The Blue Mountains Fire Department.
- The Blue Mountains currently pays approximately $2.80 per capita for fire dispatching services.
- There are provisions in the agreement that if the population doubles seasonally then there is an additional charge. In 2021 this fee is $0.66 / capita.
- 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 Barrie Fire Chief.
    - The current agreement which came into effect on January 1st, 2019, expires on December 31st, 2023.

Next-generation 9-1-1:

- As noted in the CRTC excerpt, March 4, 2025, is the revised key date to work with. The Fire Chief must ensure that The Blue Mountains 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 NG 9-1-1 and the Barrie Fire & Emergency Service will likely increase fees for all fire departments it dispatches to cover these additional costs.
- 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.

5.3.2 Radio System

Radio systems have many technological advancements every year, making it difficult for fire services to maintain current standards. Some of these technologies are:

Simplex vs Repeater Radio Signals

A simplex radio system is best explained as radios that talk directly to each other (i.e., radio to radio). Radio signal strength using a simplex system is not as strong as using a repeater; a repeater system receives a radio message and then rebroadcasts it at a higher strength, thus providing better coverage. Most fire services operate a repeater system for the enhanced radio signal.

Analogue vs Digital

An analogue signal weakens as it travels further way from the radio that sent the signal; a digital radio signal maintains the same strength no matter how far the signal goes.

The Blue Mountains Fire Department radio system is operating on analogue technology, with a two repeater sites. The Town updated its radio system five to six years ago. There are no redundancies in the radio system in event of radio failure at the main transmission site. The escarpment creates poor radio communications depending on the location of the incident. Firefighters have had to resort to using cell phones to be in contact with Barrie Fire. 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 to be installed.

The Blue Mountains Fire Department has implemented the "Sinirji 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. It was found during EM&T's evaluations, that not all firefighters are using this app. This is a program that should be mandated by the Fire Chief, to be utilized to best identify the needs for additional resources due to the lack of available firefighters.

The Blue Mountains Fire Department radio infrastructure is not reliant upon Grey County's, radio system's infrastructure. When required The Blue Mountains Fire Department has the capability of communicating to other fire services of Grey County by simply changing to the radio frequency of the particular department, they wish to communicate with.

There are some areas of The Blue Mountains in which the quality of radio coverage is weak, and this is primarily around the escarpment. Many incidents have occurred whereby other means of communication needed to be used such as cell phones as the radio signal, could not reach the radio transmission tower.

Recommendation #19

The Blue Mountains Fire Department to monitor its radio coverage in the area of the escarpment, which may require a radio coverage audit to be completed.

Rationale: Monitoring areas of poor radio coverage will identify the areas of the town in need of improvements to the radio infrastructure and enhances firefighter safety.

5.4 Recruiting & Retaining Paid Per-Call Firefighters

Recruitment and retention of volunteers is becoming more of a challenge within the volunteer fire services. This loss of volunteers is contributed to many factors, such as:

- the increase in training that must be committed to annually,
- many paid per-call firefighters are either at work, school, or taking care of family and are no longer available,

- in some instances, members have had to leave the department to move closer to their work location, education facilities, or family needs,
- conflicts with the organization, lack of good leadership and lack of camaraderie.

As with many volunteer fire departments, the daytime hours from Monday to Friday are the greatest challenge for volunteer response due to the volunteer being at their place of work. To augment this, some municipalities add full-time firefighters Monday to Friday dayshift to compensate for a reduced volunteer availability.

The Blue Mountains Fire Department has had a retention problem for many years and at the time of this writing the number of PPC firefighters on the department was almost 50% of the approved complement. One of the key issues (that has already been noted in this document) is the cost of living within The Blue Mountains. After reaching out to the community, a local municipality has acquired a home to be used by single firefighters as their lodging. The firefighters are responsible for the rent and utilities, but it is acquired at a reduced amount of rent. The Blue Mountains may have to look at options such as this as the cost of housing is becoming unaffordable for some of the firefighters and some have left the area due to the high cost. A possible public partner in attaining affordable housing could be The Blue Mountains Attainable Housing Corporation and should be investigated.

The Blue Mountains Fire Department recruitment program has had limited success thus far. Some reasons for the limited response may include:

- The lack of marketing the fire service as being volunteer based as some newcomers may not be aware it is.
- A weakening sense of community among the population, in part because the fire department may not adequately reflect the diversity of the people it serves.
- The ratio of men versus women in the fire service giving the misconception that a department is looking for firemen versus firefighters.
- The lack of the fire department to fully connect with the community by promoting the activities and services provided by The Blue Mountains Fire Department.

It is suggested that The Blue Mountains Fire Department continue their proactive approach being taken to recruit new members, which includes:

- Establishing a proper marketing strategy including the use of a professional employment recruiting agency.
- Establish a recruitment committee that includes firefighters.
- Placing ads in local media such as newspapers, rate-payers association newsletters, and websites along with working with local radio stations to provide public service announcements about the recruitment.

- Posting notices on social media such as Facebook, Twitter, Instagram, and the Town's website including increasing the fire department profile by posting pictures of the firefighters in action and statistics on social media outlets.
- Posting signage on the front lawn of the fire stations may yield interest.
- Develop a recruitment video and use local students to help develop and record the video as part of their required community service time.
- Start to recruit new members when they are young by starting a Junior Fire Fighter Club. This has been very successful in the United States and is beginning to grow in Canada as a means of gaining interest in the fire service at an early age. The local youth centre would be a great asset in seeing this to fruition. Make sure those that join the Club feel that they are important and welcomed to the department and are valued members of the fire service family.
- Promote and conduct an information night at a couple of the stations for potential new members to drop by to see what being a firefighter is all about. Encourage attendees to bring the entire family and have activities for children to promote that the fire service is a family unit.
- During the information sessions, members of the department could provide tours of the stations and apparatus. Administration could outline the expectations of members of the department such as the number of fire calls and training sessions they must attend; the honorarium that is paid; satisfaction gained knowing that you are helping your neighbour on the worst day of their lives; describe the life-long friendships that are started; understand what true teamwork is like and the bond that is garnered between firefighters.
- Diversity can only thrive in a welcoming, inclusive environment. This will require a plan on making new members feel accepted and welcomed. There needs to be a change in attitudes and overall fire department culture. Involve some of the female firefighters in the recruitment process. Include a focus on visible minorities that live in the community.
- Fire departments tend to recruit in a one-dimensional fashion which is not always successful. Departments need to adapt the recruitment strategies to better suit the individuals in the community and recruit those that believe in the department's Mission and Values.
- Focus on Millennials; as they are generally social media savvy, a great way to reach out to this demographic is through social media.
- The Town may have to go to the extreme of establishing a housing strategy for members of the department.

During the latest recruitment for PPC firefighters, the HR department posted the recruitment on the Town's website with 26 applicants and on Indeed with 11 additional applicants. The word of mouth and Facebook posts also aided in spreading the word that the fire department needed PPC firefighters.

The Blue Mountains Fire Department has also created an incentive for members of the department to bring forth names of those of the public that would be a good fit with the department. If their candidate successfully becomes a member of the department, the firefighter that brought forth the name, will receive a monetary reward.

The issue of retention has been identified as a challenge with just about every volunteer fire service with a high turnover of members. 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 firefighter appreciation events (e.g., dinner, BBQ) where members are recognized 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 five 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 PPC firefighters 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 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 related courses at RTCs, 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 PPC firefighters who commit to being available by signing up for weekdays and/or weekends.
- EAPs 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, conducted by Human Resources (HR) 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.
- If new stations are built in the future, add a small fitness room.
- Foster the history of each fire station by creating displays of pictures of past members, events, and apparatus, to instill a sense of pride on how far the department has grown.

Some of the above suggestions may imply an expense, but the value of keeping trained personnel longer saves on the ongoing training of new firefighters. It costs the Town a large sum of money to train and equip new firefighters, therefore it is important that a means of retaining their investment is developed and supported by Council.

The OFMEM has put out a document on recruitment and retention in an effort to offer some criteria and/or guidelines that departments can utilize. Refer to Appendix D for the document.

On weekends up to three firefighters are on call and must be available to respond to all fire calls. This restricts extra-curricular activities they can partake in and around the town to ensure availability to potential calls. The present stipend they receive per day is approximately $85. Due to the low number of firefighters, this also requires members to take on-call duties more frequently than in the past. With this in mind, EM&T is recommending that The Blue Mountains Fire Department review the current rate of stipend for being on call and give consideration to increasing the stipend to $125/ day as a means of appreciation for ongoing service to the residents of the town.

Recommendation #20

The Fire Chief and HR survey other fire services that have specific firefighters on-call over the weekend to see if an increase in the stipend for firefighters being on call on weekends, be raised to $125/ day is warranted.

Rationale: Completing such a survey will identify any shortcomings and bring The Blue Mountains Fire Department in line with what other fire departments are paying their members.

5.5 Health & Wellness

Health and wellness of staff is a key focus for all municipalities and The Blue Mountains is no exception. Due to the nature of paid per-call 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 EM&T, it was noted that neither of the fire stations have been equipped with workout facilities to ensure that staff can keep fit, which helps to reduce work related injuries. The fire department should work towards adding fitness equipment to the stations. With a new Station 2 in Craigleith in the early stages of being considered, when approved and development begins, an option would be the inclusion of a fitness room into the structure.

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. The Blue Mountains Fire Department 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, The Blue Mountains Fire Department 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 The Blue Mountains Fire Department to understand the expectations they are placing on their personnel. The following job tasks are listed in the NFPA Standard:

5.1 Essential Job Tasks and Descriptions

5.1.1 The fire department shall evaluate the following 14 essential job tasks against the types and levels of emergency services provided to the local community by the fire department, the types of structures and occupancies in the community, and the configuration of the fire department to determine which tasks apply to their department members and candidates:

1. While wearing personal protective ensembles and self-contained breathing apparatus (SCBA), performing firefighting tasks (e.g., hose line operations, extensive crawling, lifting, and carrying heavy objects, ventilating roofs or walls using power or hand tools, forcible entry), rescue operations, and other emergency response actions under stressful conditions, including working in extremely hot or cold environments for prolonged time periods.

2. Wearing an SCBA, which includes a demand valve-type positive-pressure facepiece or HEPA filter mask, which requires the ability to tolerate increased respiratory workloads.
3. Exposure to toxic fumes, irritants, particulates, biological (infectious) and nonbiological hazards, and heated gases, despite the use of personal protective ensembles and SCBA.
4. Depending on the local jurisdiction, climbing six or more flights of stairs while wearing a fire protective ensemble, including SCBA, weighing at least 50 lb (22.6 kg) or more carrying equipment/tools weighing an additional 20 to 40 lb (9 to 18 kg).
5. Wearing a fire protection ensemble, including SCBA, that is encapsulating and insulated, which will result in significant fluid loss that frequently progresses to clinical dehydration and can elevate core temperature to levels exceeding 102.2°F (39°C).
6. While wearing personal protective ensembles and SCBA, searching, finding, and rescue-dragging or carrying victims ranging from newborns to adults weighing over 200 lb (90 kg) to safety despite hazardous conditions and low visibility.
7. While wearing personal protective ensembles and SCBA, advancing water-filled hose lines up to 2 ½ in. (65 mm) in diameter from fire apparatus to occupancy [approximately 150 ft (50 m)], which can involve negotiating multiple flights of stairs, ladders, and other obstacles.
8. While wearing personal protective ensembles and SCBA, climbing ladders, operating from heights, walking, or crawling in the dark along narrow and uneven surfaces that might be wet or icy, and operating in proximity to electrical power lines or other hazards.
9. Unpredictable emergency requirements for prolonged periods of extreme physical exertion without benefit of warm-up, scheduled rest periods, meals, access to medication(s), or hydration.
10. Operating fire apparatus or other vehicles in an emergency mode with emergency lights and sirens.
11. Critical, time-sensitive, complex problem solving during physical exertion in stressful, hazardous environments, including hot, dark, tightly enclosed spaces, that is further aggravated by fatigue, flashing lights, sirens, and other distractions.
12. Ability to communicate (give and comprehend verbal orders) while wearing personal protective ensembles and SCBA under conditions of high background noise, poor visibility, and drenching from hose lines and/or fixed protection systems (sprinklers).

13. Functioning as an integral component of a team, where sudden incapacitation of a member can result in mission failure or in risk of injury or death to civilians or other team members.
14. Working in shifts, including during nighttime, that can extend beyond 12 hours.

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

> **4.1 Program Overview**
>
> **4.1.1** The fire department shall establish and provide a health-related fitness program (HRFP) that enables members to develop and maintain a level of health and fitness to safely perform their assigned functions.

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

Data suggests a correlation between the following:

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

(2) A reduction in workers compensation claims and a decrease in acute and chronic health problems of 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, The Blue Mountains Fire Department 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.

The Blue Mountains has included all its fire department staff in the Employee Assistance Program (EAP) offered through its municipal employee benefits. This is an important piece of employee wellness. The Blue Mountains Fire Department should meet with administrative staff from the Town who oversee it to ensure that firefighting personnel are fully aware of what benefits the EAP offers, should they need it.

In 2017, emergency services organizations were required by the Ministry of Labour to submit a Post Traumatic Stress Disorder (PTSD) Prevention Plan. This was to coincide with PTSD and Occupational Stress Injuries (OSI) to be considered as workplace injuries and compensable through the Workplace Safety & Insurance Board (WSIB). To the credit of the Department, The Blue Mountains Fire Department has an in-depth 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.

Initial awareness training for existing staff and recruits is essential in establishing minimum levels of resiliency. Through their PTSD Prevention Plans, departments are expected to outline a full spectrum plan. They are encouraged to address four pillars of managing a PTSD/OSI event: prevention, peer support, treatment/recovery, and return to work programs.

Not all EAP services include accredited availability of trained mental health professionals (psychologists/psychiatrists), and some only offer limited assistance through counselling and therapy.

Recommendation #21

A fitness room be incorporated into the new Station 2 in Craigleith and if renovations/additions take place at Station 1, a fitness room should be included there as well.

Rationale: This will provide opportunities for the firefighters to enhance their level of fitness to perform their duties as a firefighter. While at the same time keeping them in station to respond to calls.

5.5.1 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. Departments are limiting opportunities for cross contamination and secondary exposure of carcinogens involved in fire scenes. It is suggested that, as part of a larger commitment to firefighter health and wellness, The Blue Mountains Fire Department 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

The stations are equipped with diesel exhaust systems 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 each station, the health concern is greatly reduced. The Ministry of Labour, through its Section 21 Committee, sets out fire service guidance notes. Guidance Note: 3-1 Reducing Exposure to Diesel Exhaust states:

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

In reviewing the PPE, also known as structural firefighting ensemble, it was noted that some of the gear is nearing ten years of age. 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:

> **10.1.2** Structural fire fighting ensembles and ensemble elements shall be retired in accordance with 10.2.1 or 10.2.2, no more than 10 years from the date the ensembles or ensemble elements were manufactured.

The appendix 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". The Blue Mountains Fire Department 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. The Blue Mountains Fire Department is also reviewing options on the issuance of a second set of gear to firefighters in the coming years.

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

The *Occupational Health & Safety Ac*t, (OH&S), Section 21 Health & Safety Guidance Note 6-1, Hygiene and Decontamination[23], states:

- "Employers should develop a program of decontamination, which includes engineering controls (ventilation), decontamination procedures, personal protective equipment

[23] "Section 21 Guidance Note 6-1", Accessed December 22, 2021, https://www.ontario.ca/document/firefighter-guidance-notes/6-1-hygiene-and-decontamination

(respiratory protection devices, gloves) and hygiene practices, in consultation with the joint health and safety committee."

Cancer prevention may begin at the scene of a structure fire. The bunker gear becomes laden with contaminants and smoke and can 'off gas' for some time after a fire. The department should invest in some on-scene decontamination equipment and bags for transporting the bunker gear back to the station.

Guidance Note 6-1 also states that soiled equipment should not 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.

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 require the firefighters to have spare clothing at the fire station or 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 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.

Recommendation #22

The Blue Mountains Fire Department invest in decontamination equipment and develop the appropriate policies and SOGs in performing decontamination of firefighters at the scene of a fire.

Rationale: This will reduce the risk of members contracting cancer and bring the department in compliance with Provincial directives.

5.5.2 Mental Well Being

Firefighters are like law enforcement, paramedics, and military as they 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 Blue Mountains Fire 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 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.

Municipalities generally have EAPs, but these tend to have gaps when dealing with long-term mental health injuries because of continued exposure to extraordinary and horrific events in a firefighter's career. Being proactive in recognizing the reality of this issue and committing resources to educate members and provide mental health services prior to a member suffering from PTSD is the best recourse. It is common that all Fire Department members and their families are enrolled in the municipal Employee Assistance Program.

Firefighters are the greatest asset of any fire service, and it is imperative that their mental well being 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, mental health professions, and representatives of the bargaining unit.

The 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 Act* of Ontario.
- 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.

Recommendation #23

The Blue Mountains Fire Department to establish a committee to develop and implement a PTSD Awareness and Prevention program.

Rationale: This program will bring The Blue Mountains Fire Department inline with Provincial legislation.

SECTION 6 Facilities

Section 6: Facilities, Vehicles, Equipment and Hydrants

6.1 Fire Stations Review

This section will assess facility needs and station locations - review existing facilities and provide recommendations for future locations relative to current and future service delivery demands and applicable standards.

The Blue Mountains Fire Department fire stations are in Thornbury and Craigleith. This review consisted of a walkthrough of the fire stations as a visual inspection; no destructive testing or engineering assessment was conducted.

6.1.1 Fire Stations

Historically, fire stations may be looked upon as a focal point for a community. They have traditionally been located at main roadways in communities to provide quick access and response by the firefighters. They are built with the intent to last 30 to 40 years, and as such the planning and design should not only address the needs of today but those of the department in 20 years and beyond.

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 always 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 station staffing (full-time or PPC firefighters). Another consideration is the geographical layout of the community that can include natural barriers or divides, such as water, making it necessary to have some stations located within proximity of each other.

The OFMEM Public Fire Safety Guideline – PFSG 04-87-13 (found in the appendices) on Fire Station Location states that fire stations should be situated to achieve the most effective and safe emergency responses. 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.

6.1.2 Fire Station #1 - Thornbury

This station was built in 2000 and is in very good condition and is well maintained. The offices for the Chief officers and support staff are located here. There is a large meeting room for the firefighters to train which has upgraded audio visual equipment available. A small kitchen with cooking facilities is also available for use.

The apparatus bays are large and spacious for additional equipment to be stored, with the appropriate separation tanks for the runoff while washing the vehicles. The station has its own septic

system and weeping beds. The driveway and parking lot are in excellent condition, but water drainage issues at the OPP entrance and Clark Street entrance require remediation.

There were some deficiencies, including:

- Lack of unisex locker room
- Bunker gear is stored on the apparatus floor; they should be stored in a negative pressure storeroom, away from the apparatus floor.
- There is an ongoing issue with ice dams in the winter on the roof due to the lack of insulation.
- The roof leaks in a few locations.
- Security should be upgraded to swipe card scanners rather than the current punch keypad due to the turnover of staff.
- There is a need for the proper bio-hazard disposal bins, and removal by a company that specializes in this.
- While there are diesel and gasoline storage tanks on site, they lack proper containment in the event of a catastrophic failure of a tank or spillage during the refilling of containers.
- Lack of a fitness room.
- Emergency eye wash/ decontamination shower.
- Post disaster engineering.

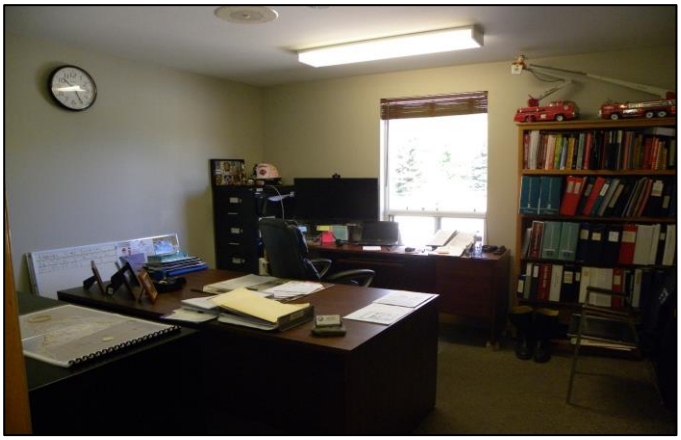
Front View of Station 1 Thornbury

Rear View of Station 1

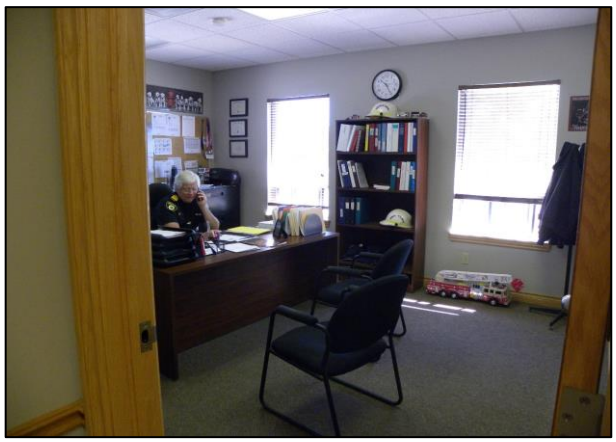
Training Room

Kitchen

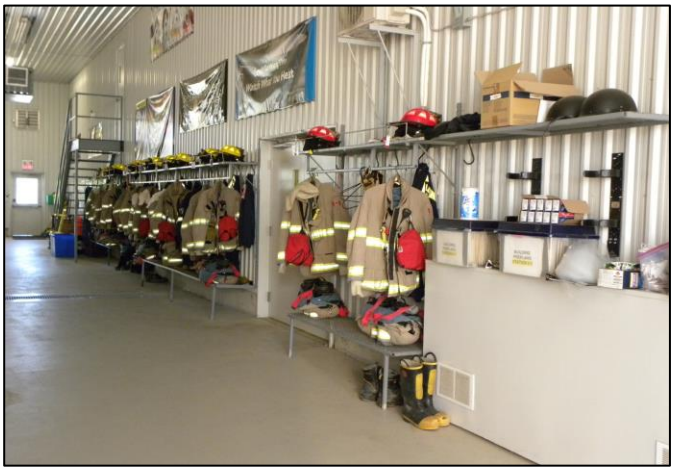
Office



Fire Chief's Office

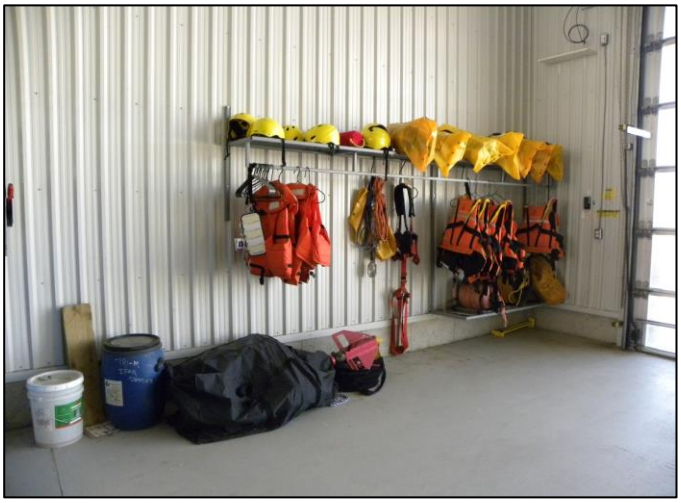


Apparatus Floor



Apparatus Floor

Apparatus Floor



Apparatus Floor

6.1.3 Station #2 - Craigleith

This station was built in 1989 and is showing signs of wear and needs replacement. The full-time staff working in Fire Prevention have their offices in this station. During EM&T's visit it was noted that plans are underway for the replacement of this station on a nearby location. It is anticipated that the new station could be completed within three to four years.

The full-time staff work from 08:00 until 18:00 hrs. in this station. As mentioned in the response section of this document, PPC firefighter staffing is an issue, and the Town may need to look at hiring full-time firefighters that work 24/7. This will require planning of the new station that accommodates full-time staff, such as dormitories, fitness room, gender neutral washrooms, etc.

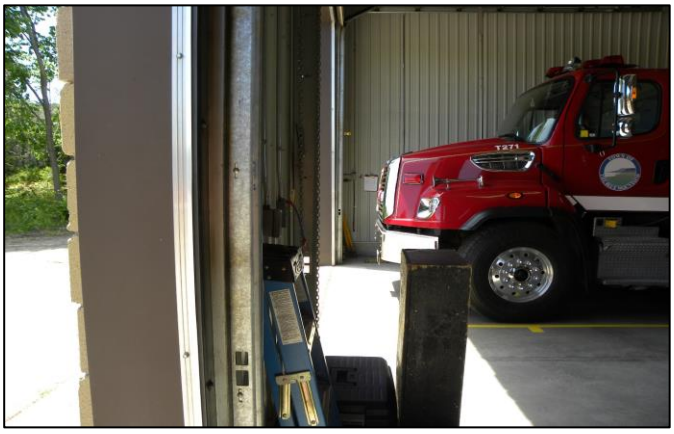
While the new station is in the planning stage, the staff must continue to work from this facility which lacks several amenities or requires upgrades such as:

- A gender-neutral locker room and proper showers
- Negative pressure bunker gear storeroom
- Fitness room
- Does not meet AODA requirements for public accessibility.
- Security system requires upgrading to card scanning.
- Windows are original and not energy efficient.
- Driveway is original and breaking down
- Apparatus floor is becoming crowed for apparatus.
- The roof leaks due to ice jams and there could be mold in the attic space.
- Lacks an automatic standby generator.
- Requires new flooring and paint.
- Washrooms require upgrades.
- Does not have post-disaster engineering

Front View of Station 2 Craigleith

Rear View of Station 2 Craigleith

Apparatus Bay



Apparatus Bay

Apparatus Bay

Apparatus Bay

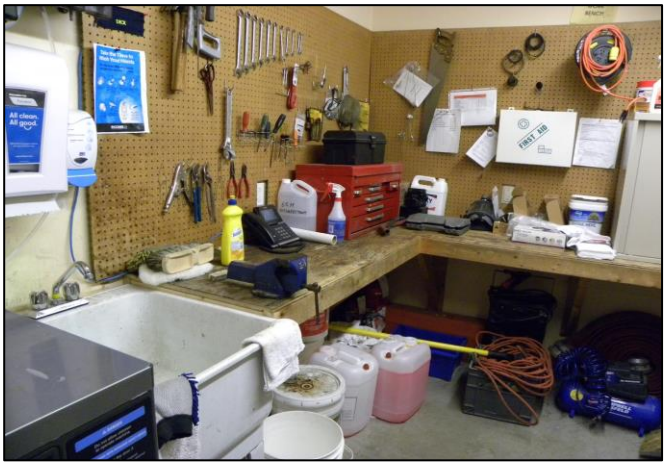
Apparatus Bay

Apparatus Bay

Kitchen

Training Room

Workshop



Apparatus Bay

6.1.4 Summary

Station #1 was found to be in very good condition. Consideration should be given to adding a negative pressure bunker gear storeroom and a fitness room. A means of preventing ice jams on the roof in the winter should be explored.

Since Station #2 is being replaced, minimal repairs should be considered to keep it operational. The construction of a new Station #2 should be expedited.

6.2 Fire Apparatus - New and Replacement Schedules

This section assesses the general state of the Department's apparatus, vehicles, and equipment, reviewing existing vehicles and equipment condition, maintenance programs, capital replacement schedules, and plans relative to existing and expected service demands.

When assessing a fire department's ability to respond and meet the needs of the community, FUS considers the age of a fire truck as one of its guidelines. It was noted that The Blue Mountains Fire Department endeavours to keep fire vehicles on a 15 to 20-year replacement cycle to and keep them within the FUS recommendations and, more importantly, creates a benchmark for forecasting fire truck replacements.

6.2.1 FUS – Vehicle Replacement Recommendations

The *Small Communities and Rural Centres* section (highlighted in orange) is the recommended schedule for vehicle replacement for a town the size of The Blue Mountains. This allows for up to a 20-year replacement cycle, in which the fire vehicle can be utilized as second-line response status. It is recommended that all first-line units still be replaced by a new or younger unit when it reaches 15 years of age.

TABLE #11: FUS Vehicle Replacement Chart

Apparatus Age	Major Cities [3]	Medium Sized Cities [4] or Communities Where Risk is Significant	Small Communities [5] and Rural Centres
0 – 15 Years	First-line	First-line	First-line
16 – 20 Years	Reserve	Second-line	First-line
20 – 25 Years [1]	No Credit in Grading	No Credit in Grading Or *Reserve* [2]	No Credit in Grading Or *Reserve* [2]
26 – 29 Years [1]	No Credit in Grading	No Credit in Grading Or *Reserve* [2]	No Credit in Grading Or *Reserve* [2]
30 Years [1]	No Credit in Grading	No Credit in Grading	No Credit in Grading

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

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

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

- *a 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.*

FUS definition of first-line, second line and reserve is:

- ***First-line is the first fire truck utilized for response at the fire station***
- ***Second-line is the next truck to be used if the first-line unit is tied up at a call, and***
- ***Reserve is the vehicle kept in the fleet to be put into service if a first-line or second-line vehicle is out of service.***

FUS is reviewed by insurance companies; by ensuring that the vehicles are being replaced on a regular schedule, the Town is demonstrating its due diligence towards ensuring a dependable response fleet for the Fire Department and the community it serves. This will keep the community's fire rating in good stance, which can also reflect on commercial and residential insurance rates.

6.2.2 NFPA – Vehicle Replacement Recommendations

Although there is no national standard that legally mandates the replacement of emergency vehicles, it must be kept in mind that it is critical to replace these and other apparatus before they become unreliable. Over the long-term, delaying the replacement is inadvisable as it will add to the overall maintenance costs of the apparatus and can have an influence on insurance costs based on the fire department's FUS rating.

The NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus* is an industry standard that addresses vehicle replacement. Like the FUS recommendations, this standard includes guidance on retirement criteria for fire apparatus. This standard recommends that all front-run vehicles are replaced on a 15 to 20-year cycle, depending on the community size. These replacement recommendations are for fire vehicles with pumps. For general purpose fire department vehicles, most communities refer to their town's vehicle replacement policies.

It is becoming quite common in fire services to standardize fleet and ancillary equipment. By doing so, the department may realize savings in training hours and repairs as the variety of parts for repairs is lessened and the time to train firefighters on the apparatus is reduced. Additionally, the firefighters would be able to operate any apparatus in the fleet if they have the same chassis and pump.

Ancillary equipment could also be standardized such as the hose, nozzles, chainsaws, circular saws, extrication tools, SCBA, ventilation fans, foam equipment, etc. Again, there are savings in repairs and time required for training.

For the most part, The Blue Mountains Fire Department is well-equipped with pumper trucks, aerial ladder, rescues, and tankers. There also appears to be a sufficient level of support vehicles and equipment to meet the general needs of the Department. Replacement schedules are identified in the capital forecast for the fire trucks. It is worth noting that some fire departments place their tanker trucks on a 20-year replacement cycle due to the lack of use and mileage put on these units. To help with replacement forecasting, this is a vehicle type that can be considered 2nd line vehicle and may not require replacement at the 15-year mark.

Unit 261

The E-One Cyclone aerial device (Unit 261) is approaching 17 years in service and plans for its replacement has begun. It takes 1.5 to 2 years to develop specifications, go out to tender and manufacture an apparatus. It is also suggested that the department look at replacing this unit with a 30 m (100') aerial platform with two nozzles due to height and construction of the hotels at the Blue Mountain Resort. The safety of firefighters in a platform is significantly enhanced when compared to a non-platform outfitted aerial device that is just a ladder. For budgeting purposes most aerial devices range in cost between $1.1 and $1.6 million.

An option for consideration is the acquisition of a used aerial device that has 10 years or less service time. A considerable amount of money could be saved by exploring this avenue.

Below is an example of a 30 m (100') aerial platform with two nozzles installed on the platform.

In relation to vehicle replacement and refurbish, the industry standard for the design and replacement of vehicles is the NFPA 1901 and in Canada, departments also use ULC S-515-12. It is recommended that these and other related NFPA standards relating to vehicle design, replacement, and refurbishing be utilized.

The following table lists the current fire apparatus, not including support vehicles.

TABLE #12: List of Current Apparatus

Asset	Estimated Useful Life	Age	Km	Condition Index	Condition Rating	Useful Life Based on km.	Replacement Year
E-One Cyclone Unit 261	20	16	16,900	80.00 %	Very Poor	20	2025
Freightliner Unit 181	20	15	40,855	75.00%	Very Poor	20	2026
Sterling Unit 171	20	13	11,110	65.00%	Poor	20	2028
Freightliner Unit 281	20	11	17,140	55.00%	Poor	20	2030
Freightliner Unit 271	20	8	12,175	40.00%	Fair	20	2033
Spartan Metro Star Unit 191	20	5	8,505	25.00%	Fair	20	2036
Freightliner Unit 291	20	3	5,990	15.00%	Good	20	2038

It should be noted that the Condition Rating for the apparatus is assigned by the administration of The Blue Mountains Fire Department, as a measure of condition, both mechanically physically (of the vehicle's body). This may include costs for repairs, both in the past and possibly in the future, based on the vehicle's history. This practise is a good measure to make decisions whether an apparatus should be replaced sooner due to high costs for repairs and the amount of down time experienced with that apparatus (i.e., it was not available to respond to a call as it was in the mechanical shop for repairs). When an apparatus is taken OOS and replaced before its scheduled time, it may bring a higher value when it is liquidated.

6.3 Vehicle Maintenance

The Blue Mountains Fire Department does not have its own in-house mechanical division to complete repairs and testing to its vehicles and equipment. This is handled in the following manner:

- Firefighting staff are expected to complete all weekly and monthly inspections and testing of vehicles and equipment.
- Grey County looks after normal maintenance and repairs to the chassis and charges The Blue Mountains Fire Department for this service.
- Steer Enterprises Ltd., in Clearview, conducts some repairs to the apparatus.
- If any mechanical repairs are required for the pump on a vehicle, it is contracted to a third-party facility/ mechanic that has an Emergency Vehicle Technician (EVT) namely Ontario Fire Truck, from Dundas, ON.
- Pump testing is completed by a third party

Apparatus and equipment are checked monthly as part of a training night's activities. This takes up the entire allotted time to complete and takes the crews away from training. A suggested means of continuing the truck checks as required, without using dedicated training nights for apparatus checks is the development of duty rosters.

This would require the firefighters to be divided into groups of three or more including an officer. Each team would be required to check the apparatus and equipment during a month assigned to them. Doing so frees up a training night for its intended purpose and ensures the apparatuses are checked. The apparatus checks should be completed over the first two weeks of each month.

While this plan may increase costs for pay, the firefighters are gaining an additional 24 to 36 hrs. of training per year. The extra expense is the cost of the assigned firefighters coming in to check the trucks for three hours per month.

When planning for future fire stations, consideration should be given to adding facilities to house a fleet maintenance division for all the Town's vehicles and related equipment. This could be in the form of building a station on property that is large enough to facilitate additional bays, a parts storage area, and offices that can be added to the structure at a later date, or the inclusion of the maintenance bays at the time of the structure's build. Savings may be realized for the Town by not sending all its vehicles to a third-party to complete repairs.

One of the fire prevention inspectors that was hired as a full-time employee in 2022 is a certified EVT and will be able to conduct some minor repairs for the department, thereby saving funds on labour costs charged, when repairs are outsourced.

6.4 Vehicle Technology

The Blue Mountains Fire Department has endeavored to advance the technological perspective on the apparatus through the acquisition of tablets in some of the apparatus. These units should be data-enabled and permit the responding crews to acquire the following information about the incident while they are enroute:

- Direct two-way communication from the Barrie Fire's Communications Centre (important due to poor radio communications in the escarpment area)
- Computer Aided Dispatch (CAD) information accessibility
- Mapping
- Responding staffing levels via Sinirji app
- Pre-incident plans
- Hydrant locations
- Access to the internet, for weather reports, weather radar and hazmat information
- Some SCBA manufacturers have telemetry built into their SCBAs that aid the Incident Commander keep track on the location of their firefighters in a structure, which is an important tool if the interior crew requires rescuing.
- Having the apparatus check lists, including inventories, would enable the firefighters to efficiently complete apparatus checks.
- Monthly station inspection forms could also be made available to be compliant with the *OH& S Act*.

At present, these are only on the rescue apparatus. All apparatus, including Chief's cars, should have these units installed.

While the tablets have been acquired, they have been removed from service due to issues of connectivity to the Town's server and the information available. In the future, The Blue Mountains Fire Department should upgrade these units to a full Mobile Data Terminal function, which permits enhanced communications directly to the Barrie Fire Communications Centre and many more features. This includes vehicle GPS so that apparatus may see the location of the responding apparatus.

Recommendation #24

Install tablets in all front-line apparatus including Chief and Fire Prevention vehicles, and full access be granted including internet, building files, and CAD.

Rationale: Having these tools available will result in efficiencies within the performance of their duties.

6.5 Equipment

Tracking the completion of annual testing should be an organization's priority to ensure the functionality of equipment for the front lines. Tracking will allow the fire department to confirm that apparatus and equipment testing can be scheduled accordingly to minimize frontline apparatus being unavailable.

An important piece of equipment that is issued to each firefighter is their bunker gear. Cancer diagnoses amongst firefighters are ever-increasing, making the cleaning and maintenance of ensemble that much more important. A contributing factor to their illness has been proven to be the contaminants that adhere to the bunker gear during firefighting operations. After a fire, the bunker gear should be packaged and sent for cleaning to reduce this risk. The fire stations have commercial washing machines for this cleaning. During this time, the firefighter requires a replacement set of bunker gear until theirs is returned. Ensuring that the cleaning of gear is a high priority after fires and that firefighters have access to properly fitting bunker gear during the cleaning process will assist the Department in meeting its goals within its decontamination and hygiene program.

Along with the cleaning of the gear, the life cycling of the gear needs to be tracked. 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*.

The bunker gear at both stations is currently stored on the apparatus floor and the particulate being exhausted from the apparatus may adhere to the fabric of the gear. New fire stations store the bunker gear in negative pressure storage rooms that ventilate the air in the room every 15 minutes or so. Any renovations planned for the Thornbury Station should include a ventilated storage room for the gear. When planning for the new Craigleith Station, the storage room should be included. There is a cache of spare bunker gear which ensures no FFs are without clean gear.

Firefighting Foam

An important tool in fighting fires that involve ordinary products of combustion, is Class A foam. The Blue Mountains area has an ever-increasing number of structures being built in the community, and the use of Class A foam when fighting a fire in these occupancies will aid in extinguishing the fire faster, while at the same time reduce the amount of water required, thereby reducing the fire loss and water damage. Foam develops a covering layer over the product and assists in smothering the burning products. Currently the department uses Class A foam products and has a cache of approximately two to four pails of foam concentrate available. When ordering the department's next pumper, consideration should be given to adding a Class B foam system on the truck as well as a Class A.

Respiratory Protection

The Blue Mountains Fire Department CSA Z94 Respiratory Protection Program is overseen by the Department. The SCBA are nearing their end-of-life cycle and will be replaced in the coming years, pending budget approval. It is recommended that when considering procurement of new SCBA there should be consideration for the interoperability with fire service partners. It was noted that as the SCBA are replaced, it is anticipated that each firefighter will be assigned their own face mask. This is a positive endeavour to ensure proper hygiene and a proper mask fit.

Fire Administration is in the process of establishing an asset management program to ensure that equipment replacement is occurring where applicable. It is a common practice to tie this equipment to the parent apparatus.

Backup Power Supply

When there is a power interruption there is not an automatic power back up system at Station 2 in Craigleith. There is a portable generator that may be placed in service to provide power to the station. The downfall to having a portable generator is that firefighters must attend the fire station if there is a power failure, move the generator into place, connect it to the station's electrical system, and then start it. If the power failure is caused by a weather-related event that creates emergency calls (e.g., summer storms, ice storms, flooding), then the firefighters have this additional demand at the same time as responding to calls. There might be times when there is a power failure in the immediate vicinity of the fire station and no firefighters are aware of it and therefore no one attends the station to establish temporary power supply.

Drones

Fire services in North America are embracing drones for emergency and non-emergency roles. 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 HAZMAT incidents, enhance search and rescue functions, and be used in pre-incident planning.

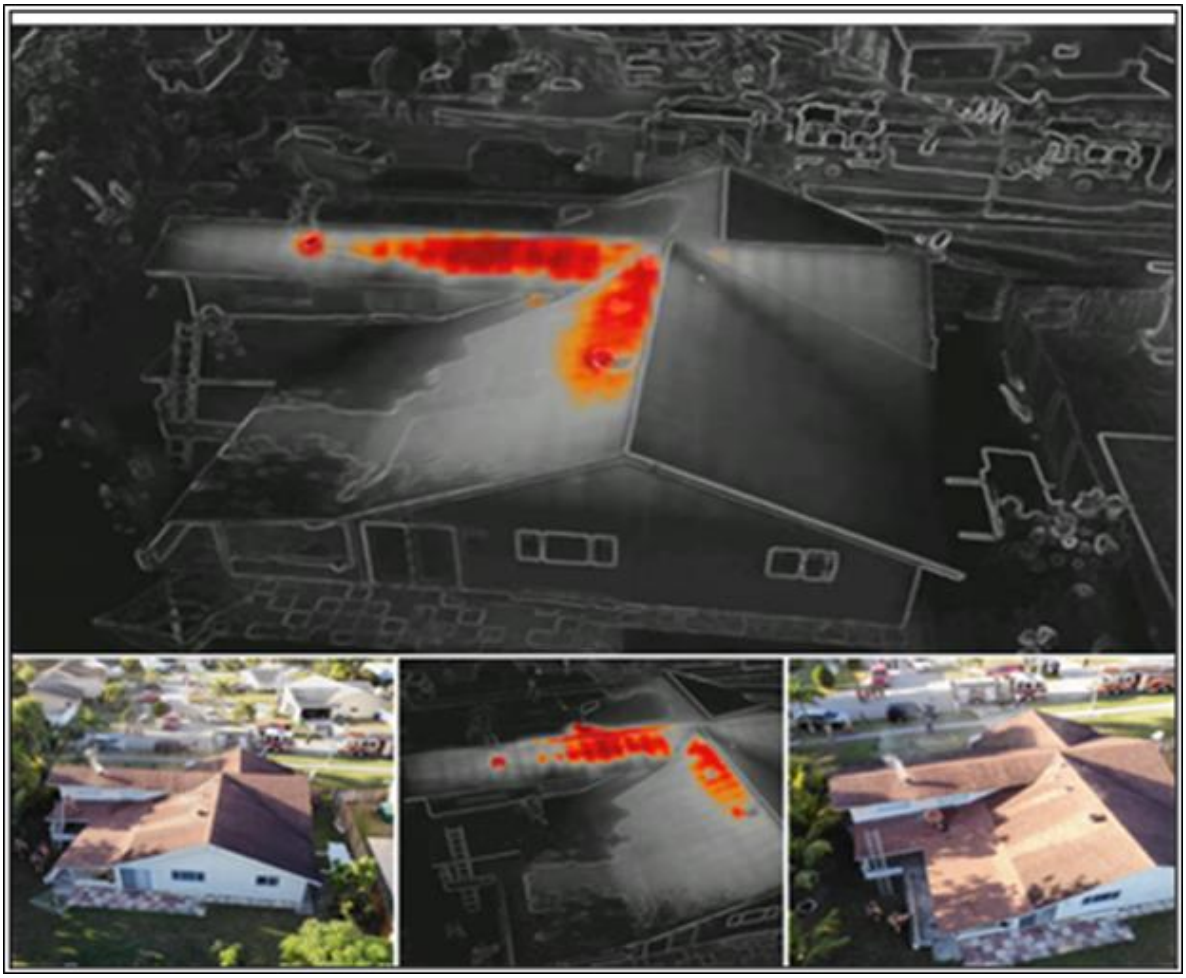
Drones can cover a lot of ground thus allowing valuable fire services personnel to be utilized elsewhere. They have proven beneficial for HAZMAT incidents and large-scale emergencies as the drone can be quickly deployed and give the Incident Commander a live view of the incident. The reduction of risk to firefighting personnel is a significant benefit of drone technology along with the live view capabilities that provides invaluable information.

This technology is used by many fire departments in Canada that vary in size from a large metro fire department such as the Winnipeg Fire Paramedic Services to a volunteer fire department like Grey Highlands Fire Department and Clearview Fire Department. In 2021 the Grey Highlands Fire Department deployed their drone at a technical rescue involving climber; the person became injured

from a fall and the drone was able to locate them, which resulted in the crews attending to the patient's needs much sooner.

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.

A structure fire attended by the Lauderhill Fire Department in Florida is an example of utilizing a thermo imaging equipped drone to locate the hidden fire that was travelling in the attic space of this residence. [24]



[24] Lauderhill Fire Department (2021) Facebook post of February 10, 2021 on the use of their drone to locate a hidden fire in the attic space of the home.

Recommendation #25

Discontinue storage of the bunker gear on the apparatus floor, and instead, in a negative pressure storage room specifically for bunker gear.

Rationale: Removing the bunker gear from the apparatus floor will reduce exposure of the gear to cancer causing agents from the exhaust of apparatus.

Recommendation #26

Consider interoperability with surrounding fire services when replacing SCBA.

Rationale: If the fire departments move forward with this option, it will assist in training each firefighter on the same make and model of SCBA, thereby saving time. At fire scenes, having this interoperability will mean the SCBA cylinders will be able to be installed in SCBA belonging to a different jurisdiction, and provides continuity of equipment between fire departments.

Recommendation #27

Install a permanently fixed standby generator at Station 2 Craigleith that starts up immediately upon detecting a power failure. It is further recommended that the generator be of such size and capacity to not only provide power to the present station but could be moved to the new location and used there.

Rationale: The generator currently in use at Craigleith must be started manually, requiring someone at the station to start it. A standby generator will ensure immediate power supply which will enhance firefighter safety by providing lighting, and ensures the station is fully operational.

Recommendation #28

The Blue Mountains Fire Department review enhancements to its ancillary equipment cache with the acquisition of a drone.

Rationale: The acquisition of a drone will provide another means of locating lost/injured persons in a timely manner, by covering more area in a shortened length of time. It can also be of value while fighting a large fire by providing the Incident Commander a view from to gauge the size/progress of a wildland fire.

6.5.1 Maintenance - Small Equipment

During the review it was noted that there is a program in place for small equipment testing and evaluation. The equipment such as ladders, breathing apparatus, small engines, ropes, and hoses are tested annually or based on manufacturers recommendations.

- NFPA 1932 Standard identifies the type and frequency of testing for ground ladders.

- NFPA 1983 outlines the testing process for life safety rope.
- NFPA 1914 outlines testing for aerial devices.
- The *Health and Safety Act* Section 21 guidance notes also make note that all equipment used by workers must be in good condition.

The Blue Mountains Fire Department should be commended for ensuring that these regular testing and maintenance.

6.6 Hydrants

The Town draws its water supply from Georgian Bay. The primary water supply main from Peel Street Thornbury/Highway 26 area is 300 mm (12”) in diameter. The main runs along Highway 26 towards Thornbury and supplies water to several areas along the Georgian Bay, towards the Townline bordering Collingwood. The Blue Mountains supplies water to the populated areas as well as some rural areas and as such has installed approximately 830 municipal hydrants and 143 private hydrants. The fire service relies on the use of these hydrants to draw water in an emergency. In the Craigleith area, water is supplied by The Blue Mountains but also has a supporting connection to water supply from Collingwood, to be drawn from when peak demands require. The Blue Mountains and Collingwood have an agreement on the quantity of cubic meters of water available for use.

Water mains have a minimum size of 150 mm (6”) and there are presently three water reservoirs in service, and another one planned to be built in the near future. There are some areas that have had a 4” (100 mm) water main installed due to extenuating circumstances. When responding to structure fires in those areas, the fire department should be cognisant that supplemental water supply may be required in the form of tankers. The Town has identified areas with older, aging infrastructure of water mains that are found primarily in the Thornbury area. Doing so will reduce the number of water leaks, and water main failures, thereby saving funds on repair costs.

All the fire hydrants should be inspected and tested as required in Articles 6.6.5.2. through 6.6.5.7. of Ontario Regulation 213/07 of the *Municipal Act*, and NFPA 291, *Recommended Practices of Fire Flow Testing and Marking of Hydrants*. Any hydrants installed on private property should be done in compliance with NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*. The failure of a hydrant to operate as required may present catastrophic results and expose the Town to risk of litigation. For this reason, The Blue Mountains Water Department, ensures that every hydrant is serviced annually, to maintain their expected operation.

The Blue Mountains should ensure that each hydrant is coloured coded in compliance with NFPA 291 Standards, for fire flow. There are long upright reflectors affixed to the 65 mm ports, that indicate the location of the hydrant, which is helpful during the winter months. Some municipalities have gone the

extra step and installed reflectors on the 65 mm ports that are colour coded identifying the hydrants fire flow. Having the reflector aids firefighters in locating hydrants at night.

NFPA 291, states hydrants should be identified in the following manner:

- Article 5.2.1.1: *All barrels are to be chrome yellow except in cases where another colour has already been adopted.*
- Article 5.2.1.2: *The tops and nozzle caps should be painted with the following capacity indicating colour scheme to provide simplicity and consistency with colours used in signal work for safety, danger, and immediate condition*:

  Class AA – Rated capacity of 1500 gpm (5,700 L/min) or greater is to be light blue.

  Class A – Rated capacity of 1,000 – 1,499 gpm (3,800 – 5,699 L/min) is to be green.

  Class B – Rated capacity of 500 – 999 gpm (1,900 – 3,799 L/min) is to be orange.

  Class C – Rated capacity of less than 500 gpm (1,900 L/min) is to be red.

The Town has adopted a standard that all new hydrants will include lug style (Storz) connectors on the 100 mm steamer port.

When a fire hydrant is out of service, repairs should be completed in an expedited manner, along with notifying the fire department of such breakages and the anticipated time to complete the required repairs. Currently, the water operators notify The Blue Mountains Fire Department by email of when a hydrant is covered with an out of service bag and is inoperable. They also follow up with The Blue Mountains Fire Department when repairs have been made and are back in service. The email from the water operators goes into a general mailbox that all full-time fire department staff read.

There are less than six farms and industries throughout the Town that have water supplied by The Blue Mountains, that include the installation of private wet hydrants. The Town will maintain and complete any required repairs to these private hydrants and charge the property owner for the service. Other private landowners have dry hydrants at their locations which is another source of water for the fire departments usage. There are four dry hydrants in service that are primarily on farms, and large estate residences, where there are no water mains, and these too should be maintained in accordance with industry regulations and standards.

In discussions with the water department, they identified future challenges which include:

- Upgrading the water infrastructure (acquiring funding and approvals)
- Working towards reducing the number of failures within the infrastructure (these will be reduced as replacement of older infrastructure is completed)

- The financial challenge associated with repairs/expansion (lack of funding due to higher priorities that require the funds)
- There are some 100 mm (4") water mains (the smaller water mains do not provide enough fire flow to support the needs of The Blue Mountains Fire Department during a fire)
- The need for additional water storage and pumping stations (as the town building stock increases, so does the demand for water and the additional reservoirs will aid in reducing the risk of water shortages)
- Providing municipal water supply to the Clarksburg area (the engineering plans and environmental studies are completed, the town is only lacking the funding and final approvals, from the upper levels of government)

To the Town's credit, the water system may not have been designed in such a manner to anticipate the amount of residential building stock that has been or is planned to be built in The Blue Mountains. The amount of growth will undoubtedly influence water supply capacity in the coming years, and the Town is making plans to present any issues that may arise due to this growth.

The Blue Mountains Water Department was very co-operative during the consultation stages, and in the sharing of information and data during for the completion of this section.

Recommendation #29

The Blue Mountains adopt the NFPA 291 colour code for identifying fire flow capacity of fire hydrants with the consultation and support of the water department.

Rationale: This will bring The Blue Mountains in line with the NFPA Standard and provide vital fire flow information to firefighters when locating a fire hydrant for use that provides adequate water flow.

6.6.1 Couplings and Hose

Modern fire hydrants have three ports for attaching fire hose when required. The two ports on the side are 65mm (2 ½") in diameter and the large steamer port on the front may vary in size from 100 mm to 150 mm (4" to 6"). Normally the large steamer port has threads on it, in which fire services attach large diameter water supply hose ranging in size from 100 mm to 150 mm. The water supply hoses do not have threads but Storz couplings or lug locks to attach the hoses together. Attaching a hose with these couplings to a hydrant requires the fire service to use an adaptor.

Many municipalities like The Blue Mountains are now ordering new or replacement fire hydrants with Storz couplings on the large steamer ports so the need for an adaptor to be used is eliminated. If an adaptor is not available to be used on the hydrants, then the firefighters are unable to attach the hose to the steamer port.

The Blue Mountains Fire Department currently uses 4" (100mm) water supply lines on their apparatus. When a fire occurs a constant flow of water supply is key to saving a structure. In many incidents the amount of water supplied becomes an issue and may result in additional fire loss due to the shortage. There are many high value and vulnerable occupancies within The Blue Mountains and if they caught fire, getting the fire extinguished quickly to preserve the structure is paramount. To aid in attaining adequate water supply could be as simple as increasing the size of the supply hoses used. The aerial device in use by The Blue Mountains Fire Department has a large capacity pump and as such require strong water supply to maximize their operation; going from a 4" (100 mm) supply line to a 5" (125 mm) supply line will make a difference. They could have the same sized 4" (100 mm) Storz couplings. The Town is planning on purchasing a new aerial in the coming years that will reach higher elevations and have an even larger pump on it.

Water supply hoses with a diameter of 5" (125 mm) or greater have a very worthwhile purpose during relay pumping water along long farm laneways.

6.6.2 Superior Tanker Shuttle Accreditation

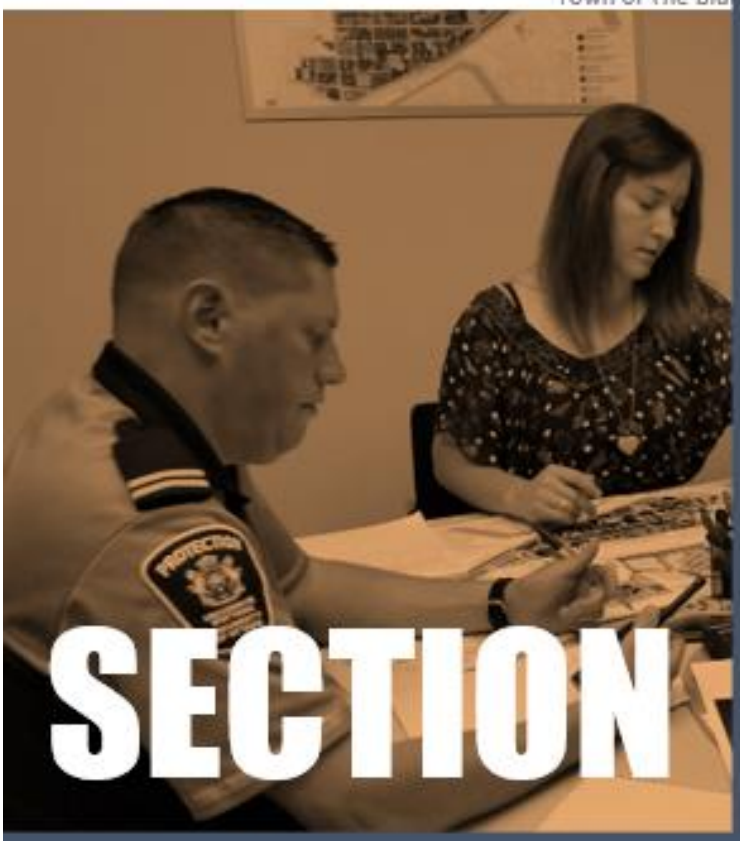
Many fire services have attained their Superior Tanker Shuttle Accreditation. In those communities, Fire Underwriters reduces insurance rates, which represents a small savings to the residents. The Tanker Shuttle Accreditation demonstrates that the fire department can aggressively attack rural fires as the department can maintain a consistent large volume of water flow in areas without fire hydrants. Part of the process is to ensure Tankers have adequate and nearby locations with which to refill, using regular hydrants, dry hydrants, cisterns, streams, or the lake (preferably with a dry hydrant). The Blue Mountains should continue to maintain and expand the water source infrastructure that may be needed to improve the access to water supplies in rural areas such as wet and dry hydrants.

The Blue Mountains Fire Department has not attained this accreditation and should strive towards achieving it as a means of lowering insurance costs to some residents in the community. By achieving this accreditation, it also demonstrates the effectiveness of the Department in obtaining and supply the required water flow to effectively attack a structure fire.

Recommendation #30

The Blue Mountains Fire Department to acquire their Superior Water Shuttle Accreditation in compliance with Fire Underwriters specifications.

Rationale: This will enhance rural water supply operations, while also reducing the insurance rates of those that meet the criteria for lower rates.



SECTION

7

Emergency Management

Section 7: Emergency Management

7.1 Emergency Management Program

As mandated by the *Emergency Management and Civil Protection Act* (EMCPA), all municipalities in Ontario must have an Emergency Response Plan (ERP) and an emergency planning program. The *Act* also stipulates that municipalities are to conduct an annual training exercise. For every community in Ontario, there must also be an identified Community Emergency Management Coordinator (CEMC). Currently this duty falls to the Fire Administrative Assistant/CEMC, with the Town's Fire Chief as the Alternate.

While the latest version of the ERP was completed in 2020, it is a requirement for them to be reviewed and updated each year. This may require minor changes and not a complete document update. A recommended means by cataloging such changes is the insertion of a few pages at the front of the document to record 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

After a review of the current ERP, consideration should be given to the inclusion of emergency plans of outside agencies being included in the appendices, such as flood plans. These agencies may include conservation authorities, major industry, airports, and EMS.

With so many acts of domestic terrorism taking place each year throughout the world, including Canada, a municipality must plan for such an event actuality within their own community. The ERP should have a section dedicated towards 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. Aside from aforementioned risks, the town has its own infrastructure risks that are listed in its Critical infrastructure and the Hazard Identification and Risk Assessment (HIRA) lists, that should also be taken into consideration as possible targets.

Grey County has an excellent document available that addresses a variety of emergency situations that the public may access. It speaks to being prepared in advance and have supplies readily available for an emergency, the differences between a weather watch and a warning, supplies required to be self sufficient for up to 72 hours, and the need to prepare in advance.

The Grey Sauble Conservation Authority owns and maintains several dams throughout its watershed. They operate two structures that are flood control structures and one of them is the Clendenan Dam on the Beaver River (to prevent sheet ice from moving downstream into the Village of Clarksburg). Each spring there is the threat of flooding in Beaver River. Flooding events are controlled and mitigated by the Town in coordination with the Grey Sauble Conservation Authority, by way of their Flood Emergency Plan. Prior to the spring melt, the community should receive direction on what could occur, the resulting effects to expect, what they should be prepared for in the event of significant flooding, and ways to self prepare for such events. This could be achieved through social media, public messaging on radio and television stations, and print media. The Blue Mountains has been proactive in addressing any incidences of frazil ice forming before it becomes an ice jam, causing a back-up of water in the river.

One of the largest challenges in emergency planning is the notification system that there is a pending or active emergency in the community. Communication is essential for any large-scale incident; a mass notification system sends messages via personal cell phones to communicate to the public during an emergency. There are several alerting apps available using text messaging or an actual app that is installed in a cell phone, tablets, and/or computers. In Canada, the Alert Ready notification may be used for notifying the public of emergency situations. Environment Canada uses some of these apps as do police services.

Many communities will also use the mass notification system to communicate local issues like a water main break to advise residents in the affected area. The Blue Mountains should explore the feasibility of a proprietary warning system to alert citizens in the event of an actual or possible catastrophic event.

Some communities in Ontario have reached out to third parties to develop an app that meets the needs and circumstances for their communities. Some communities are now giving serious thought to installing storm sirens, such as those found throughout the United States, as another means of notification of a pending emergency, as not everyone may own or have a cell phone with them.

As noted, there are several means of notifying the public of a pending or active emergency. There have been several tornado events each year in Ontario. The Blue Mountains has experienced a tornado in 2009 and as recent as 2020. It would be unreasonable to install them throughout the entire Town, but focus should be on the populated areas such as Craigleith, Thornbury, and Clarksburg.

The County of Grey and its municipalities have entered into a Mutual Assistance Agreement. This agreement would come into play during an emergency that has been declared and a municipality may require a building official's equipment and staff to mitigate a situation such as flooding or a natural disaster. This agreement was signed into effect in 2017 and there are most likely changes that have occurred. The document should be reviewed and updated by those involved.

Recommendation #31

The Blue Mountains to review partnership opportunities in the delivery of an ASHER program to the community.

Rationale: Domestic terrorism is occurring all too frequently in Canada. Providing a program on what to do in such an event will enhance public safety by proactively providing pertinent information before an occurrence.

Recommendation #32

The Blue Mountains to review the feasibility of acquiring an emergency notification system, or at least gain access to messaging on the Alert Ready app.

Rationale: Another means of communicating with the community before and during an emergency. Warnings may be issued in a timely manner of a pending event.

Recommendation #33

The Blue Mountains review opportunities of installing storm sirens in the built-up areas of the municipality. This should include opportunities of applying for funding in the form of grants made available by upper levels of government.

Rationale: Provides another means of warning the public, especially those that do not carry a cell phone, of a pending weather event with possible catastrophic consequences.

7.2 IMS & EOC

Interagency, multi-jurisdictional, multi-government and *multi-disciplinary* are terms used when operating in a large-scale emergency environment. On May 1, 2016, a wildfire seven kilometers outside of Fort McMurray became the worst wildfire incident in Canadian history with losses and economic impacts to the community close to $10 billion.[25] The Incident Management

[25] "Forged by fire: Fort McMurray 5 years after the disaster," Jamie Malbeuf, CBC News, May 3, 2021, https://newsinteractives.cbc.ca/longform/fort-mcmurray-five-years-on-from-disaster

System (IMS) was implemented during this serious event in Canadian history and was a valuable tool during the decision-making processes taking place. Agencies understood their roles, while making sound judgment during the establishment of a plan for the fire's control and mitigation.

The Incident Command System (ICS) is based on 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. This is referred to as the IMS in the Province of Ontario.

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."[26]

The EOC for The Blue Mountains is where Town management will operate during the emergency. The primary EOC is in the Town Hall in Thornbury with the secondary location at the Wastewater Treatment Centre in Craigleith, approximately 16 km to the east of Thornbury.

Both the primary and secondary EOCs have automatic standby generators. Although the EOC may not operate often, they should be maintained in a state of readiness including updates to the information technology (IT) system. There have been discussions of making the Thornbury fire station an EOC, due to limited space being available at Town Hall. It is recommended that the secondary EOC should be relocated to a facility other than this fire station. During an emergency, the fire stations will be busy with firefighters and apparatus coming and going and with the extra traffic in the area, this may impede their response.

Both EOCs are not accessible to the public and have secure card access. To ensure uninterrupted operations public access needs to be monitored and controlled.

Some communities have established a tertiary EOC that is further away from the existing primary and secondary EOCs. In this instance, the new Craigleith station, once constructed, could be considered a tertiary EOC. This would be an appropriate location as it should be built with appropriate IT features, parking, and security measures to make it feasible as an EOC.

[26] "What is Unified Command?" retrieved January 4, 2022, https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=101258&inline

During a wildfire, severe weather, or earthquake, there is a high likelihood of the implementation of a Unified Command structure. Additional agencies to consider for the EOC include:

- OFMEM
- EMS
- OPP
- Conservation Authority
- Social services
- Red Cross and/ or Salvation Army

The EOC is critical for the providing coordination, resource management, communications, and critical assessments of the event with the Incident Commander.

The strength of the IMS is in making sure that 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 a part of the EOC should have training in IMS, included designated alternates.

There are four different types of Incident Management levels and Emergency Management Ontario (EMO) identifies the following levels:

- **IMS 100**: The awareness level training that introduces the participant to IMS topics and concepts.
- **IMS 200:** The awareness level training that is designed to help people function within the IMS. This level of training provides a greater depth regarding the functional areas and positions in the IMS.
- **IMS 300**: The level that is directed for supervisory functions and provides exposure to setting objectives, unified command, planning, demobilization, and termination of command. This level is focused on developing skills through practical exercises.
- **IMS 400**: The level that is directed for supervisory functions and is orientated to developing skills for complex incidents and the coordination of multiple incidents.

There is no minimum training identified for the EOC, however the IMS is not identified in The Blue Mountains ERP. Most incidents are routinely dealt with without activating the EOC and it must be noted that the EOC is activated when an event is expected to expand in complexity and duration requiring an efficient coordination among departments or responding agencies.

Recommendation #34

Due to the importance of staff understanding their roles and responsibilities in the EOC, it is recommended that a policy be implemented that identifies IMS 200 as the minimum standard for staff required to be in the EOC with IMS 300 being the goal for all department heads. It is further recommended that the IMS be included within the Town's ERP.

Rationale: Many of the senior management team may have very little experience on how to manage an emergency, especially when the ERP is enacted. This type of training also provides consistency to the level of expertise amongst the members of the EOC.

7.3 Emergency Planning, Training, & Exercises

Emergency planning and IMS are skills that need to be used regularly. Several training options will be identified to assist The Blue Mountains to plan and exercise in IMS and their emergency plan activation.

EOC Activation: Planning for a practice activation of the primary and secondary EOC keeps staff orientated to their roles and all staff members that are expected to have a role in the EOC should participate in these practice sessions.

Discussion-Based Exercise: In discussion-based exercises the primary intent is to have dialogue regarding the emergency plan, procedures, by-laws, and any policies that could impact an emergency. The discussion sessions are low key, low pressure, and a great tool for familiarization. The secondary intent of discussion-based exercises is to build confidence through familiarization amongst team players in the application of the plan. These discussion-based exercises are great tools to facilitate the learning process for the staff designated as alternates expected to fill a role in the EOC.

Discussion-based training is a great way to orientate new staff or existing staff that have not had a real opportunity to familiarize themselves with the emergency plan or organizational plans, by-laws, procedures, and policies.

Tabletop Exercise: These exercises are low cost with minimal stress, but preparation can require some time to create a scenario that is relevant to the Town. A tabletop exercise is generally led by one facilitator depending upon the complexity of the scenario. Tabletop exercises are great ways to identify gaps in plans, policies, and procedures in the post-exercise discussions. To complete the exercise an After-Action Report is completed to identify any shortcomings or deficiencies that need to be addressed. The Blue Mountains conducts tabletop exercises as legislated.

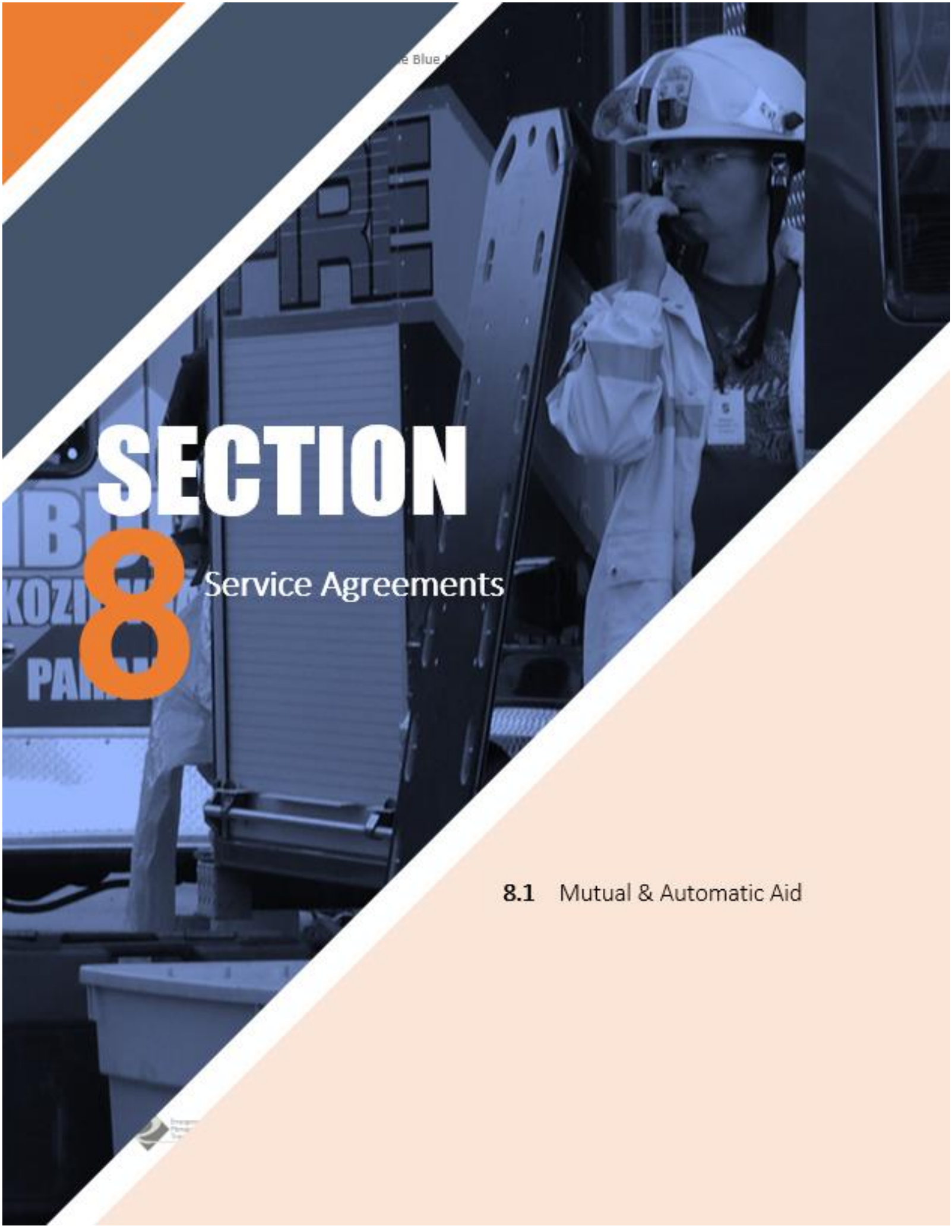
Operations-Based: The primary intent is to deploy personnel and equipment in a drill, functional exercise, or a full-scale exercise. The disadvantage of an operations-based exercise is that they require a significant amount of time to plan and prepare for as resources will be required from multiple agencies. Operations-based exercises generally reveal gaps and weaknesses in training, inter-agency communications, resource allocation, and operational procedures. Operations-based exercises include:

- Drills - These are exercises that are intended to evaluate a specific operation. For example, The Blue Mountains Fire Department and Grey County Paramedics may conduct a drill of carbon monoxide leak in a long-term care home.
- Functional exercises - These exercises can be complex with a high degree of realism and are used to test plans, procedures, and policies into the training scenario which is at a single site. These exercises are used by agencies to test their capabilities of performing multiple functions in a scenario that is located at a single site.
- Full-scale exercises - A complex exercise that tests multiple agencies in a single scenario at multiple sites. These exercises are in real-time, highly realistic, and usually stressful for agency personnel participating in the exercise. A full-scale exercise can take from 6-10 months to prepare for and require a significant investment in resources and funds. Several facilitators are required to ensure safety and compliance to the storyline of the exercise. A full-scale exercise is developed with clear objectives to test multiple agencies. Upon completion of the exercise, a hot wash is conducted which is a formal discussion of the involved agencies performance during the exercise. An After-Action Report and a formal Improvement Plan are prepared and distributed that identify actions required to address and improve performance.

Recommendation #35

The Blue Mountains CEMC prepare a three-year schedule to identify EOC activation orientation and annual tabletop, and operations-based exercises for The Blue Mountains Fire Department, The Blue Mountains, and external agencies.

Rationale: Identifies any deficiencies beforehand and permits the CEMC to address these ahead of time. Also provides the CEMC the opportunity to plan their budget, makes participants aware of what to expect, what is expected of them, and allows the CEMC the opportunity to acquire supplies required in advance of the exercises.



SECTION 8

Service Agreements

8.1 Mutual & Automatic Aid

Section 8: Service 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.

8.1 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. The Council of the responding fire service may serve notice that the municipality of which they are responding to has identified an exposure risk and should take appropriate action to make corrections.

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 Blue Mountains Fire Department is a member of the County of Grey Mutual Aid Plan and Agreement which includes the fire services of Owen Sound, Grey Highlands, Meaford, West Grey, Hanover, Southgate, Chatsworth, and Inter Township.

The Region's Mutual Aid Plan is established to aid in the mitigation of any emergency that may arise and identify and provide the resources available to respond to the situation. It should be reviewed and updated annually with the updated version forwarded to the OFMEM.

The Blue Mountains Fire Department currently has three agreements in place. The agreements are with the fire services of the Municipality of Grey Highlands, and the Township of Clearview, for fire protection in the southern most portions of The Blue Mountains. The Blue Mountains Fire Department also has an agreement with the Municipality of Meaford for The Blue Mountains Fire Department to provide fire protection to the eastern edge of Meaford.

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.

As mentioned previously, The Blue Mountains Fire Department has a technical rescue program. Due to the shortage of firefighters, The Blue Mountains 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.

Recommendation #36

The Blue Mountains Fire Department should enter into response agreements with either an outside fire service or a 3rd party to provide support at technical rescues if the need arises.

Rationale: If Council chooses to temporarily suspend technical rescues at the operational level, a plan will need to be in place ahead of time in the event of an incident requiring outside resources. Also reduces the response time of these agencies if agreements are in place in advance.

SECTION 9

Finance, Budgeting, & Capital Investment Plan

SECTION 9: Finance, Budgeting, & Capital Investment Plan

9.1 Operating & Capital Budgets

The Blue Mountains Fire Department has an annual operating budget that appears to offer the Fire Chief the funds required to manage and support the Department's staff, facilities, and equipment in an effective manner. The Blue Mountains Financial Services has reviewed and have been consulted in the development of the financial plan.

The Blue Mountains Fire Department's capital forecast fluctuates annually based on the equipment that has been identified for replacement

During the review of the budget process for both operating and capital, it was evident that The Blue Mountains Fire Department is well configured in both areas. This would also indicate an adequate level of support by Council and the Town's senior management team for assisting the fire department in meeting its service goals.

When reviewing this section, one of the key areas that EM&T looks for is whether actual operating expenditures are identified and tracked by the Department. There has been a very clear message that as the town looks at additional full-time personnel that the cost per fire fighter is an important matrix that the town should be developing. During the review of the operating budget, it was noted that all key accounts and operating sections are identified, such as:

Operating Budget Line Items:

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

Capital Budget Line Items:

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

Operating Budget

A review of the operating budget for The Blue Mountains Fire Department shows that all general expenses and related revenues are accounted for.

Capital Forecasts

It would appear that there is a 15 to 20-year replacement cycle for the fire trucks that is based on the FUS recommendations for frontline vehicles.

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

- one pumper truck for every eight,
- one spare aerial truck for every eight,
- one spare tanker truck for every eight, etc.
- consider replacement of the rescue trucks at 15-year cycle due to the high level of use.

This applies even when there are less than eight units; there should be a replacement vehicle designated for up to eight vehicles for back up if one of those units goes out of service.

The Fire Chief with the support of SMT and Council, along with fire department staff are working hard to ensure that equipment is being replaced and/or upgraded on a regular cycle and on an as needed basis.

9.2 Development Charges Program

The Blue Mountains has enacted a Development Charges By-Law (2019-17); the current by-law became effective on April 24th, 2019. Fees are charged to those that wish to develop land and these funds are dedicated to specific services the town provides in a reserve account for that service. The said funds must be used for capital projects that are necessitated by the development of lands that have increased the need of enhanced service provision in that area of the municipality.

Within Schedule “C-1” of the by-law it outlines the amount of funds that will be dedicated towards fire protection and these amounts are dependent on the type of development taking place (i.e., detached residential vs. apartments vs. commercial). Even though funds are directed to the fire service, the amount dedicated towards the fire protection is at the lower end of the scale.

The fire department is looking at significant expenditures in the coming years and the amount to be directed for fire protection should be reviewed and amended to lessen the impact on the tax base. These expenditures include new fire station two, addition to station one, a new aerial device and replacement pumpers and tankers.

The following table lists the amount of funds dedicated to fire protection from other communities of the region. This is taken out of the total development charge that is aligned with each type of occupancy.

TABLE #13: Comparators of Funding for Fire Protection from Development Charges

Municipality	Residential				
	Total $ of Development Invoiced for Single/ Semi Detached	**Single/ Semi Detached – $ to FD**	**Apartments 2-bedroom – $ to FD**	**Apartments 1-bedroom – $ to FD**	**Other Multiples – $ to FD**
South Huron	$2,801	$207	$143	$787	$403
Innisfil	$36,752	$1,554	$1,120	$856	$1,347
The Blue Mountains (Craigleith)	**$33,070***	**$491**	**$293**	**$293**	**$392**
Lucan Biddulph	$6,400	$310	$179	$131	$251
Meaford	$9,975	$751	--	--	$504
Middlesex Centre	$10,567	$1,614	$1,033	$652	$1,060
Thames Centre	$11,693	$1,122	$600	$510	$828
West Grey	$6,176	$549	$370	$247	$352
Springwater	$14,559	$2,480	$1,405	$981	$1,912
Saugeen Shores (with water and wastewater)	$23,357.59	$884.76	$544.96	$378.27	$580.22
Kincardine	$18,077	$1,318	$690 / unit	$690 / unit	$921

Municipality	Residential				
	Total $ of Development Invoiced for Single/ Semi Detached	**Single/ Semi Detached – $ to FD**	**Apartments 2-bedroom – $ to FD**	**Apartments 1-bedroom – $ to FD**	**Other Multiples – $ to FD**
Southgate	4,988	$253	$162	$104	$177
South Bruce Peninsula	$10,708	$0.00	$0.00	$0.00	$0.00
Grey Highlands	$11,364.41	$319.42	$185.75	$185.75	$205.41
Owen Sound	$8,000	$0.00	$0.00	$0.00	$0.00
Clearview (In Stayner)	$26,652.51	$1,252.46	$720.58	$503.58	$1,000.08
Wasaga Beach	$27,585	$1,076	$613	$613	$894
Collingwood	$35,386	$1,142	$685	$397	$860

**TMB's total charge varies between locations in the Town. Total charges range from $17,436 to $60,707, but the amount. dedicated for each service, except for sanitary sewer, remain constant.*

9.3 Fees By-Law

A way to generate revenue to offset the operating costs of the fire department is through a Fees By-Law for services provided. The Blue Mountains is permitted to charge for services provided, as outlined in the *Municipal Act* of Ontario (2001), Part XII.

The Blue Mountains has a by-law in place for the charging of fees for several municipal services provided. Fee By-Law 2021-15 allows for the invoicing of services provided by The Blue Mountains Fire Department, under Schedule "B". During a review of Schedule "B", it was found that the list of fees for service currently being charged is limited and should be reviewed and enhanced. Doing so will capture more invoicing opportunities for the services provided by the fire department. The opportunity of generating revenue could be expanded with the review and update of the current fee schedule to meet standards.

Another form of revenue generation is the invoicing of all fire responses to the property owners' insurance companies through a third-party company specializing in these services. The Blue Mountains Fire Department has used Fire Marque in the past year, for invoicing purposes, with Council having approved a three-year contract to continue. Many fire services in the

province have implemented this to aid in offsetting the cost of operating the fire service. Within insurance policies for both vehicles and structures, there are provisions for the payment of services provided by fire departments.

The following are some services that fire services may charge for:

1. 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

2. RESIDENTIAL PERMITS AND INSPECTION FEES

- Multi-tenant (up to and including 12 units)
- Multi-tenant (over 12 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.

3. OTHER INSPECTIONS

- Liquor Licence
- Day Care, Foster Care and Group Homes
- Business Licence Inspection Fee (hourly rate)
- Fire Inspection Fee (hourly rate)
- Shows, Exhibitions, Special Events (hourly rate)
- 3rd or subsequent review of Fire Safety Plans

4. 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 one Captain and three firefighters, minimum of three hours per apparatus.
- Respond to all vehicle fires: (vehicles as described in the OFM Standard Fire Report). No charges to permanent residents and businesses. Current MTO* hourly rate per hour.

- 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 one Captain and three firefighters, minimum of three hours per apparatus.

5. TECHNICAL RESCUE

- Technical Rescue (such as ice/water rescue, confined space, high angle, trench, elevator,
- Hazmat and vehicle extrication). Full Cost Recovery.
- Motor Vehicle Collisions (all) Cost equally divided by all parties involved. No charges to permanent residents and businesses. Current MTO hourly rate per hour.

6. MISCELLANEOUS FEES

- Administrative charge for invoices
- File Search
- Fire Report (Copy)
- Training other fire departments and agencies - by the hour per trainer plus course materials and expenses, i.e., fire extinguisher training
- Environmental - Service Calls: Permanent residents and businesses. If fire department required on scene greater than two (2) hours, or failure of companies for persons to obtain service locates. Current MTO rates per hour per apparatus.
- Environmental - Service Calls: Non-Residents - fee charged from time fire department receives the call. Current MTO hourly rate per hour
- Burn permit – annually, for trailer parks
- Outdoor Solid Fuel Burning Appliances Annual Permit
- Review and approval of Risk and Safety Management Plans submitted by propane operators related to the storage and handling of propane (hourly rate)

7. ADDITIONAL EXPENSES

- If it is necessary to retain a private contractor, rent special equipment not normally carried 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).

There have been incidences whereby the insurance company has paid the policy owner rather than sending the funds directly to the municipality. The policy holder in turn failed to forward the funds to the municipality which meant all parties became involved in a court case. The judge in the case ruled in favour of the insurance company and the policy holder due to the

municipality failing to have a by-law in place that ordered the policy holder to pay the fire department.

The municipality developed a by-law that would require either the insurance company or policy holder (property owner) for the payment of fire department response fees. If not paid, the municipality in turn would add the amount to the property owner's tax bill.

Recommendation #37

The Blue Mountains continue to annually review and amend the Fees By-Law to reflect the services provided by The Blue Mountains Fire Department.

Rationale: Doing so will identify areas in which revenues may be generated to reduce operational costs of the fire department.

Recommendation #38

The Blue Mountains Fees By-Law should identify the requirement that the individual(s) that receive an invoice for fire services provided are responsible for ensuring all charges are paid to the Town.

Rationale: Provides direction on who is responsible to ensure fees are paid for services provided, thereby reducing possible challenges to the invoicing practices of the town.

SECTION 10

Review of Previous FMP

SECTION 10: Review of Previous Fire Master Plan

Listed below are the recommendations submitted in the 2009 Fire Master Plan. Most of the recommendations have been or are in the process of being actioned by the Fire Chief, as appropriate. In total, The Blue Mountains Fire Department completed 15 of the 30 recommendations made in the 2009 Fire Master Plan.

10.1 Conclusions & Recommendations

The conclusions and recommendations contained within the past report are summarized below, by topic, along with the present status of each recommendation.

Based on the 2009 Fire Master Plan recommendations update, it would appear that less than 50% of the recommendations found within the 2009 plan came to fruition. Some of the 2009 recommendations appear as recommendations once again in this Fire Master Plan. It should be noted that in September of 2014 the CAO brought forward a report to Council asking that the 2009 Fire Master Plan be immediately suspended. As such, the following information is for review purposes only.

TABLE #14: Recommendations of 2009 Fire Master Plan & Status

Recommendation	Specific Year for Completion	Current Status
1. Implement an improved volunteer retention strategy (as described above under Option 1), to attempt to bring the number of volunteersup to the prescribed roster levels. The strategy would involve increased compensation based on level of training, so that the time a volunteer is trained to the level required of a full-time fire-fighter,compensation should be approximately at that level as well. The Town should also consider providing some level of employment benefits to the volunteers and encourage career growth and development in The Blue Mountains. This is not expected to entirelyreplace the need for hiring full-time staff.	2009	VFFs now have a small benefit plan available provided; their spouse has no benefits available.
2. Develop a program to continuously network with employers in The Blue Mountains to	2009	Not Completed

Recommendation	Specific Year for Completion	Current Status
encourage them to accommodate their employees who wish to be paid per-call firefighters.		
3. The continued use of the OFM's Recruitment and Retention Guide as a minimum standard in developing new strategies for volunteer recruitment is recommended. These guidelines, along with Town- specific enhancements, should form the basis of the Comprehensive Recruitment and Retention program.	2009	Not Implemented
4. Increase the Volunteer Complement at each Fire Station to 24 from 20		Current structure is 22 firefighters at each station.
5. Create 2 new positions, "part-time firefighter / part-time Fire Prevention Officer", as a key component of the Comprehensive Recruitment and Retention Program.	2009	Two positions filled in September of 2010
6. Restructure the current role of Fire Prevention Officer to that of Chief Fire Prevention Officer, III order to better reflect the responsibilities of the position, including the supervision of a number of part-time FPO positions.	2009	Completed in September of 2010
7. Create the position of Station Captain at the Craigleith Station. This new position would encompass the positions of Station Captain and supervisor of operations in the eastern half of the fire department's response area.	2009	Completed in August of 2010. This position no longer exists in the current structure of the department.
8. Create the position of Training Officer/Fire Captain with the responsibility for the oversight of the Department's overall training program and supervision of the existing Trainer Facilitators at both stations. The successful candidate would also be expected to fulfil the role of Fire Captain and would respond to	2009	Completed in August of 2010.

Recommendation	Specific Year for Completion	Current Status
emergencies as such. This position will also provide first aid and CPR training to Staff in other Departments.		
9. Implement the expanded Public Education Program and the Fire Prevention, Inspection & Investigation Program as outlined in the Plan.	2010	Not Completed
10. Undertake a public education initiative via the resort operators, to make visitors more aware of the need to provide a clear path for emergency vehicles. Work with the operators to define the form of that program and participate m its implementation. This is conceived as (at minimum) including notices in hotel rooms including fire safety public education materials distributed by the resorts.	2009	Not completed
11. Conclude an agreement Grey County Emergency Medical Service (EMS) for the construction of a new EMS station at the Craigleith Fire Station site. Ensure that the site planning and design also allows for the expansion of the existing Fire Station	2009	Completed in 2012
12. Meet with the development community to review the issue of sprinklering low-density housing, focusing on the benefits of sprinklers for fire suppression in isolated pockets of development. This would be a voluntary program given the current lack of provincial legislation. Assuming that consensus on this benefit is obtained, proceed to make this a condition of approval for low- density housing approvals in areas outside the 4-minute travel timecontour for the existing fire stations.	2010	Fire department did have meetings with local contractor's association. Fire department built a sprinkler prop for live fire demonstrations at the fire department open house to demonstrate the effectiveness of sprinklers.

Recommendation	Specific Year for Completion	Current Status
13. Complete the construction of the new EMS station and theexpansion of Fire Station# 2.	2010-11	EMS building built in 2012 – 2013. No addition was completed on Station 2.
14. Based on the results of an annual review of the Comprehensive Recruitment and Retention Program, begin the hiring of full-time firefighters for the Craigleith Station. The action plan should be revised as appropriate, based on continuing annual reviews of the program and an on-going needs assessment of fire department staffing.	2010 or beyond (depending on program results/ funding availability)	Not Completed
15. It is recommended that the dispatch service acquire the capability of electronically sending data to each Fire Station, so that running route information (running cards) can be printed at each Fire Station, at the time of dispatching. This will assist in providing faster response.	2010	Dispatching services moved to Barrie Fire Control and still ongoing.
16. Reserve property for Station 3 in the Castle Glen development area	2014	Not completed, as the development has not yet proceeded.
17. It is recommended that fire-fighters at the Craigleith Fire Station be trained and utilized to conduct fire inspections, assist with pre-planning, and perform public education tasks, to assist the CFPO.	2014	Completed in 2010 – 2011 and still ongoing.
18. Review staffing needs for the Thornbury Station when 500 residential units are developed in Lora Bay, based on call volume and response time adequacy	2014-beyond (based on development and economic indicators)	Not completed,

Recommendation	Specific Year for Completion	Current Status
19. Design and tender the construction of Station 3 in Castle Glen, then proceed to construction when the development reaches approximately 500 occupied units (or if total call volume accelerates the need). It is expected that three bayswill be required. Construction of this station is expected to take place beyond 2015 (in the period 2015 to 2018). This new station will also require a new Pumper Truck and Tanker Truck.	Beyond 2018(estimated, based on development expectations - when 500 units are developedin Castle Glen)	Not completed, as the development has not yet proceeded.
20. Areas with low fire flows from hydrants should be modified to increase flow rates, via introduction of larger water mains, looping of mains, adjustments to pressure relief valves, and installation of booster pumps. This would be an ongoing program of improvements, to be coordinated with the Engineering and Public Works Department	No timeline provided	Ongoing work with the Operations Department
21. All hydrants should be tested, Maintained and colour coded in accordance with NFPA Standard 291. This is a standard intended to assist in the efficiency of fire suppression.	No timeline provided	Not completed
22. It is recommended that the FUS publication, "Water Supply for Public Fire Protection" be consulted and used as a guide when developing and/or expanding the water distribution system.	No timeline provided	Not completed
23. It is recommended that the municipality maintain its existing formal Vehicle Replacement Program for Fire Service vehicles.	No timeline provided	Continue to follow truck replacement schedule.
24. It is recommended that there be an annual review of the operating budget for the Training Division, as the municipality grows, to cover the increased requirement of courses,	No timeline provided	Completed annually through the budget process.

Recommendation	Specific Year for Completion	Current Status
training materials and equipment.		
25. It is recommended that consideration be given to the use of a written examination for Officer Positions.	No timeline provided	Not completed
26. It is recommended that any new facilities or facility expansions be designed to house modern firefighting apparatus and equipment, administration offices, training room and full-time staffing requirements.	No timeline provided	No new facilities within this Fire Master Plan.
27. There are a number of recommendations specific to fire prevention. These are as follows: A) Firefighters should be recruited such that their duties include fire prevention duties during the times they are not actively responding to emergencies. It is a common practice within the Fire Service to assign routine inspections to on-duty firefighters. The thinking is that having these firefighters out in the community inspecting properties only serves to make them more familiar with these buildings, something which could become very valuable in the case of an emergency;	No timeline provided	Current practise for fire inspectors / suppression firefighters.
B) Maintaining the current requirement for annual inspections of commercial properties within the municipality, in order to maintain our high standards of compliance with the Fire Code and other legislation.	No timeline provided	Current practise following the Establishing & Regulating By-Law.
C) Continue the existing pre-planning program. This program defines the "plan of attack" for specific properties of concern, and the pre-plans enhance	No timeline provided	Current practise as time permits.

Recommendation	Specific Year for Completion	Current Status
firefighter safety and the effectiveness of the response.		

In 2014, Staff Report CAO.14.10 was presented to Council providing an update on the status of the 2009 Fire Master Plan. In it they identified the key recommendations of the 2009 Fire Master Plan that had been completed. The town had recently lost seven of its “two-hatter” paid per-call firefighters and continued to face challenges attracting and retaining firefighters for Station #2 in Craigleith. It called for the suspension of the 2009 plan and not to see any further recommendations move forward until the plan was reviewed by the fire department. The Department was to report back to Council with recommendations on the plan’s revival and include amendments as required. This was not addressed until 2021 with the new Fire Master Plan being developed.

SECTION 11

Summary

11.1 Conclusion

11.2 Recommendations & Estimated Costs

SECTION 11: Summary

11.1 Conclusion

The Blue Mountains Fire Department staff are truly dedicated to the community they serve. Council, CAO, and the Fire Chief are sincerely committed to ensuring the safety of the community and the firefighters. Based on the present equipment and fire station locations, The Blue Mountains Fire Department is endeavoring to offer the most efficient and effective service possible. Staffing continues to be an issue as the department is currently at about 50% of its allotment of paid-per-call firefighters. Having identified the need to provide proper fire protection, efforts are currently underway to address to staffing shortage.

All costs and associated timelines to the following recommendations are approximations that can be implemented through prioritization between the Fire Chief, CAO, and Council.

Most Fire Master Plans are 10-year documents with a review to be conducted at the five-year point. Due to some of the specific recommendations made in this document, it is advisable that the Fire Chief view this as a "living document", conducting more frequent reviews of the recommendations, and bringing forward updates to Council, as required.

11.2 Recommendations & Estimated Costs

The following chart provides further overview of the recommendations found throughout this report along with any estimated costs that may be incurred.

Rec #	Recommendation	Estimated Costs	Suggested Timeline
SECTION 1 – Community & Fire Department Overview			
No recommendations			
SECTION 2 – Planning			
1	Regular meetings be scheduled with both internal staff and stakeholder groups by The Blue Mountains Fire Department to ensure the following: • Incorporate, where appropriate, updates to departmental goals and priorities, aligning service level expectations. • Maintain and enhance communications and relationships between The Blue Mountains Fire Department staff and stakeholders,	Staff time	Short-term (1-3 years) and on-going

Rec #	Recommendation	Estimated Costs	Suggested Timeline
	including businesses in the community regarding inspection and enforcement activities. • Maintain a steady and robust public education program that includes outlining of services provided and proactive activities that individuals and businesses can undertake that ensure fire and life safety behaviours.		
SECTION 3 – Risk Assessment			
2	To enhance their efforts of identifying and providing effective public education, The Blue Mountains Fire Department staff should meet with relevant local community groups to form a partnership for organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community.	Staff time	Short-term (1-3 years) and ongoing
3	The Blue Mountains to develop a comprehensive Community Risk Reduction Plan that falls in line with the CRA information.	Staff time	Short-term (1-3 years)
4	The Blue Mountains Fire Department continue to work in conjunction with residential developers in promoting the advantages of installing residential fire sprinklers. The Blue Mountains review its options of mandating residential sprinklers in all new residential occupancies including those slated to be used as an STA.	Staff time	Short-term (1-3 years) and ongoing
5	The Blue Mountains Fire Department should suspend all operational level technical rescues until such time as policies, SOGs, and procedures are developed, and the firefighters meet the required level of training. This would require that notification of this change in the level of service, to be communicated to the public.	Staff time	Immediate

Rec #	Recommendation	Estimated Costs	Suggested Timeline
6	An SOG Committee be established with representation of all Divisions of the Department. It is further recommended that the Department's SOGs be reviewed and regularly	Staff time	Short-term (1-3 years)
SECTION 4 – Department Staffing & Programs			
7	The Fire Chief should provide a business case to senior administration supporting either: • the use of CFB Borden training facility for The Blue Mountains Fire Department with a training budget ranging from $25,000-$50,000, to be developed in the short-term, or • the purchase of a mobile training unit or a fixed site unit for the purposes of Live Fire Training. This could be a joint purchase in conjunction with bordering departments or be an initiative of the Grey County Fire Chiefs. • The Blue Mountains Fire Department could review options of developing their own training ground with the use of sea containers placed in the configuration of a building. • The Training Officer's position stay focused on The Blue Mountains Fire Department training, planning, and execution of the programs.	$25,000 to $50,000 for Borden, or $300,000 to $500,000 for a mobile training unit.	Short-term (1-3 years)
8	The Fire Chief should meet with bordering fire departments to discuss the option of sharing a full-time Training Coordinator's position.	Staff time initially. If agreement is made, would depend on number of	Short-term (1-3 years)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
		departments involved. Wages for full-time Training Officer would be approx. $80,000 to $120,000	
9	The Blue Mountains Fire Department should enhance its certification programs to the NFPA Standards thus ensuring that all staff are certified/ qualified to the rank and duties held within the Department.	Staff time	Short-term (1-3 years and ongoing)
10	Enact a by-law for the operation of secondary units/suites that ensures they are compliant with provincial legislation and are registered or licensed with the Town.	Staff time	Short-term (1-3 years)
11	The Fire Prevention Division monitor inspection and public education requirements and consideration be given to the addition of more FPOs to assist with ensuring all needs of the Division are met.	Staff time	Short-term (1-3 years)
12	All Fire Prevention Division personnel who have completed the NFPA 1033 course seek certification.	Staff time	Short-term (1-3 years)
13	All firefighters be offered the opportunity to become trained and qualified to Fire Inspector I, and the PFLSE, Level I or equivalent certification.	Staff time and possible course costs	Short-term (1-3 years)
SECTION 5 – Fire Suppression and Dispatching			
14	The Blue Mountains Fire Department enter into response agreements with the surrounding fire services to provide an apparatus and staffing to any confirmed structure fires during the day, Monday to Friday.	Staff time	Immediate

Rec #	Recommendation	Estimated Costs	Suggested Timeline
15	Fire Chief to present a response time goal (based on NFPA 1720) for approval by Council. These performance measures should then be monitored	Staff time	Short-term (1-3 years)
16	Add medical kits and defibrillators to the Chiefs and FPO vehicles	$10,000	Short-term (1-3 years)
17	The Blue Mountains Fire Department review its tiered medical response agreement to identify and implement opportunities to better serve the community	Staff time	Short-term (1-3 years)
18	The Blue Mountains Fire Department dispatch agreement with Barrie Fire include references to NFPA 1221,1225 and 1061.	Staff time	Short-term (1-3 years)
19	The Blue Mountains Fire Department to monitor its radio coverage in the area of the escarpment, which may require a radio coverage audit to be completed.	Staff time	Short-term (1-3 years)
20	The Fire Chief and HR survey other fire services that have specific firefighters on-call over the weekend to see if an increase in the stipend for firefighters being on call on weekends, be raised to $125/ day is warranted	$7,800 to $8,500 in additional funds, to the amount already budgeted	Short-term (1-3 years)
21	A fitness room be incorporated into the new Station 2 in Craigleith and if renovations/additions take place at Station 1, a fitness room should be included there as well.	Cost dependant on size of room and construction costs at the time of the build.	Short-term (1-3 years)
22	The Blue Mountains Fire Department invest in decontamination equipment and develop the	$3,000	Short-term (1-3 years)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
	appropriate policies and SOGs in performing decontamination of firefighters at the scene of a fire.		
23	The Blue Mountains Fire Department to establish a committee to develop and implement a PTSD Awareness and Prevention program.	Staff time	Short-term (1-3 years)
SECTION 6 – Facilities			
24	Install tablets in all front-line apparatus including Chief and Fire Prevention vehicles, and full access be granted including internet, building files, and CAD.	$10,000 to $15,000	Mid-term (4-6 Years)
25	Discontinue storage of the bunker gear on the apparatus floor, and instead, in a negative pressure storage room specifically for bunker gear.	$400,000	Mid–term (4-6 years)
26	Consider interoperability with surrounding fire services when replacing SCBA.	$100,000 to $150,000	Short–term (1-3 years)
27	Install a permanently fixed standby generator at Station 2 Craigleith that starts up immediately upon detecting a power failure. It is further recommended that the generator be of such size and capacity to not only provide power to the present station but could be moved to the new location and used there.	$125,000	Short–term (1-3 years)
28	The Blue Mountains Fire Department review enhancements to its ancillary equipment cache with the acquisition of a drone.	$5,000 to $10,000	Mid–term (4-6 years)
29	The Blue Mountains adopt the NFPA 291 colour code for identifying fire flow capacity of fire hydrants with the consultation and support of the water department.	Staff time and cost of material	Short–term (1-3 years)
30	The Blue Mountains Fire Department to acquire their Superior Water Shuttle Accreditation in compliance with Fire Underwriters specifications.	$3,000 to $5,000	Short–term (1-3 years)
SECTION 7 – Emergency Management			

Rec #	Recommendation	Estimated Costs	Suggested Timeline
31	The Blue Mountains to review partnership opportunities in the delivery of an ASHER program to the community	$5,000 – Staff time	Short–term (1-3 years)
32	The Blue Mountains to review the feasibility of acquiring an emergency notification system, or at least gain access to messaging on the Alert Ready app.	Costs associated with the development of an app are unknown.	Short–term (1-3 years)
33	The Blue Mountains review opportunities of installing storm sirens in the built-up areas of the municipality. This should include opportunities of applying for funding in the form of grants made available by upper levels of government.	Cost per siren approx. $30,000 - $50,000 depending on model(s). Would also require the computer program.	Short-Mid–term (1-6 years)
34	Due to the importance of staff understanding their roles and responsibilities in the EOC, it is recommended that a policy be implemented that identifies IMS 200 as the minimum standard for staff required to be in the EOC with IMS 300 being the goal for all department heads. It is further recommended that the IMS be included within the Town's ERP.	Staff time. Course is completed on-line, and registration is no charge.	Short–term (1-3 years)
35	The Blue Mountains CEMC prepare a 3-year schedule to identify EOC activation orientation and annual tabletop, and operations-based exercises for The Blue Mountains Fire Department, The Blue Mountains, and external agencies.	Staff time	Short–term (1-3 years)
SECTION 8 – Mutual and Automatic Aid			

Rec #	Recommendation	Estimated Costs	Suggested Timeline
36	The Blue Mountains Fire Department should enter into response agreements with either an outside fire service or a 3rd party to provide support at technical rescues if the need arises.	Staff time plus cost of the outside agency, dependant upon the length of time the event takes	Immediate
SECTION 9 – Finance, Budgeting, and Capital Investment Plan			
37	The Blue Mountains continue to review, annually, and amend the Fees By-Law to reflect the services provided by The Blue Mountains Fire Department.	Staff time	Short–term (1-3 years)
38	The Blue Mountains Fees By-Law should identify the requirement that the individual(s) that receive an invoice for fire services provided are responsible for ensuring all charges are paid to the Town.	Staff time	Short–term (1-3 years)

APPENDICES

Appendix A: Definitions & References

Appendix B: Community Survey Example

Appendix C: Five-Step Staffing Evaluation Process

Appendix D: PSFG – Recruitment & Retention of Volunteer Firefighters

Appendix E: PFSG - Fire Station Location

Appendix F: Provincial CRA Guidelines

Appendix G: Call Types & Response Data for 2017 – 2019

Appendix H: FUS Technical Document on Elevated Devices

Section 12: Appendices

Appendix A – Definitions & References

Automatic Aid Agreements – *Fire Protection and Prevention Act*, 1997 (FPPA 1997)

4. For the purposes of this *Act*, an automatic aid agreement means any agreement under which,

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

b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and emergencies that may occur in a part of another municipality where a fire department situated in the municipality is capable of providing the quickest supplemental response to fires, rescues and emergencies occurring in the part of the other municipality. 1997, c. 4, s. 1 (4).

- *Automatic aid is generally considered in other jurisdictions as a program designed to provide and/or receive assistance from the closest available resource, irrespective of municipal boundaries, on a day-to-day basis.*

Commission of Fire Accreditation International Community Definitions:

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

National Fire Protection Association (NFPA) Documents:

- NFPA 1201 - Standard for Providing Fire and Emergency Services to the Public
- NFPA 1500 – Standard on Fire Department Occupational Safety and Health Program, 2013 editions
- NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Medical Operations, and Special Operations to the Public by Career Departments

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

Municipal Responsibilities (FPPA 1997)

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.

Mutual Aid

a) Mutual aid plans allow a participating fire department to request assistance from a neighbouring fire department authorized to participate in a plan approved by the Fire Marshal.
b) Mutual aid is not immediately available for areas that receive fire protection under an agreement. The municipality purchasing fire protection is responsible for arranging an acceptable response for back-up fire protection services. In those cases where the emergency requirements exceed those available through the purchase agreement and the backup service provider, the mutual aid plan can be activated for the agreement area.

Public Fire Safety Guidelines:

- PFSG 04-40A-12, Fire Prevention and Public Safety Education; Simplified Risk Assessment March 2001
- PFSG 04-41-12, Fire Prevention and Public Safety Education; Community Fire Safety Officer/Team, January 1998
- PFSG 04-08-13 on Fire Station Location, September 2004

Shared Responsibilities (FPPA 1997)

FPPA notes that;

1. Two or more municipalities may appoint a community fire safety officer or a community fire safety team or establish a fire department for the purpose of providing fire protection services in those municipalities

Volunteer or Paid Per-Call Firefighter (FPPA 1997)

Means a Firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance. (“pompier volontaire”) 1997, c. 4, s. 1 (1); 2001, c. 25, s. 475 (1).”

Appendix B – Community Survey Example

The Blue Mountains Fire Department dedicates their efforts to providing protection from fire, life threatening emergencies, and dangerous conditions for residents and visitors.

The Blue Mountains Fire Department is staffed by a mix full-time career firefighters and a complement of dedicated paid-on-call (volunteer) firefighters. The Blue Mountains Fire Department responds to a variety of calls that may include general assistance/information inquiries, to responding to emergency incidents such as motor vehicle collisions, technical rescues or fires.

In our ongoing efforts to ensure that we are meeting the needs of our growing community, we are creating a fire services plan to guide operational improvements and ensure the optimization of services to the community.

To accomplish this, we have engaged Emergency Management & Training Inc. (EM&T), to assist us with this initiative. EM&T is a consulting firm that has worked with many fire departments in developing their fire master plans, station assessments and fire service reviews. To supplement the fire services plan, EM&T has created this community survey to collect input from our valued residents. Please take the time to complete the survey; we need your help! Your confidential responses will assist to ensure focused action that continues to meet the diverse needs of the community.

Please complete the surveys by **September 30th, 2021,** on Survey Monkey.

Questions:

1. What is your general impression of The Blue Mountains Fire Department in relation to its level of professionalism, community safety, education and fire prevention awareness programs?

2. Have you been in contact with The Blue Mountains Fire Department staff in relation to fire safety programs, and, if so, how did you find this interaction?

3. How important are the following statements to you:

	Extremely important	Very important	Important	Not very important	Not important at all
How quickly the Fire Department gets to me if I have an emergency	☐	☐	☐	☐	☐
Whether TBMFD will visit my home to give me safety advice and/or fire smoke alarms	☐	☐	☐	☐	☐
How much the fire services costs me as a taxpayer	☐	☐	☐	☐	☐
How well the Fire Department works with other agencies to provide wider community safety services	☐	☐	☐	☐	☐
How often the Fire Department consults me about their services	☐	☐	☐	☐	☐
How often the Fire Department provides community training opportunities (e.g., fire extinguisher training; school safety programs; older and wiser program; smoke alarms; fire escape planning)	☐	☐	☐	☐	☐
How visible the Fire Department is at local community events	☐	☐	☐	☐	☐
Contacting assistance services after an emergency, as required	☐	☐	☐	☐	☐
Timeliness to any request for services or assistance from the Fire Department	☐	☐	☐	☐	☐
Purchasing and maintaining new and applicable equipment to ensure the department has reliable up to date equipment to safely deliver its services	☐	☐	☐	☐	☐
Continued and relevant training to meet the needs of the community	☐	☐	☐	☐	☐

4. Based on your knowledge/understanding of the Fire Department, what do you think are the top three issues facing our fire service today?

5. These are the core services delivered by The Blue Mountains Fire Department. Which services are most important to you? Please rank in order of priority from 1 (most important) to 7 (least important). Please use each number only once and use all seven numbers.

	Extremely important	Very important	Important	Not very important	Not important at all
Fire fighting	☐	☐	☐	☐	☐
Rescue (i.e., motor vehicle accidents)	☐	☐	☐	☐	☐
Fire/Arson investigations	☐	☐	☐	☐	☐
Code enforcement / fire investigations	☐	☐	☐	☐	☐
Community outreach / Public education	☐	☐	☐	☐	☐
Hazardous materials (i.e., gas or chemical spills) and technical rescue response (i.e., water rescues)	☐	☐	☐	☐	☐
Public assistance requests / Non-emergency responses	☐	☐	☐	☐	☐
Emergency management and planning	☐	☐	☐	☐	☐

6. Over the next 10 years, if you could implement up to three things to improve how the current services are provided by The Blue Mountains Fire Department, what would those things be?

7. Have you directly received service from The Blue Mountains Fire Department?

- ☐ Yes
- ☐ No (If no, skip to question 9)

8. Could you share some details of your experience and any recommendations for service improvements?

Thank you for completing this survey. Your feedback is greatly appreciated and will help to shape future service delivery efforts.

If you have any questions about this survey, please e-mail Lyle Quan, Consultant for Emergency Management & Training Inc. at lquan@emergencymgt.com.

Appendix C – Five-Step Staffing Evaluation Process

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

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

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

Step 2: Time Demand

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

- Local nuances
- Resources that affect personnel needs

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

Step 3: Required Personnel Hours

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

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

Step 4: Personnel Availability and Adjustment Factor

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

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

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

Step 5: Calculate Total Personnel Required

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

Correct calculations based on the following:

(1) Budgetary validation

(2) Rounding up/down

(3) Determining reserve capacity

(4) Impact of non-personnel resources (materials, equipment, vehicles) on personnel

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

Appendix D – Public Fire Safety Guideline - Recruitment and Retention of Volunteer Firefighters

Volunteer Fire Service Personnel Recruitment and Retention

Public Fire Safety Guidelines	Subject Coding **PFSG 04-84-13**
Section **Fire Administration**	Date **October 2006**
Subject **Volunteer Fire Service Personnel Recruitment and Retention**	Page

Scope and Application:
This guideline provides municipal officials and Fire Chiefs of volunteers and composite fire services with a general overview of principles to consider in the recruitment and retention of volunteers.

There are many factors that contribute to the success of a volunteer recruitment and retention program. These include implementing organized marketing, recruitment, selection, hiring, training and retention plans.

Establishing and following a formal recruitment and retention program offers fire services the opportunity to increase the likelihood of finding, and keeping, the right people, doing the right tasks, at the right time.

Definition of Volunteer:

According to the *Fire Protection and Prevention Act* 1997, a Volunteer Firefighter is defined as "a Firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance. ("pompier volontaire") 1997, c. 4, s. 1 (1); 2001, c. 25, s. 475 (1)."

The majority of fire departments in Ontario (450 out of 478) utilize the services of Volunteer fire service personnel. Recognized for their commitment and generosity, saving residents in Ontario more than an estimated one billion dollars annually, these professionals strive to provide skilled, competent and caring service

Fire services that rely on volunteers to comprise, or enhance, their staffing capability continue to face the challenge of recruiting and retaining a sufficient number of capable and

experienced personnel. This impacts on the effective, efficient, safe and timely delivery of fire protection services.

Recruitment and Retention Program:

The Benefits

A coordinated, organized program demonstrates:

- how seriously the leadership takes the services provided and the individuals who provide that service,
- sound risk management principles,
- proactive vs. reactive leadership within the department, and
- leadership's commitment to recognize volunteers, families and employers who support volunteerism.

It identifies:

- shortfalls and availability of volunteers in the community and,
- the number, type and quality of volunteers required to meet current or future needs.

It allows planning for:

- recruitment and selection,
- retention and succession, and
- training and development of volunteers.

Responsibility for Recruitment

Recruiting and retaining volunteers does take effort. Creating a committee within the municipality and assigning specific tasks can create opportunities for others besides the leadership to contribute to the growth of the fire service and allows for a more concentrated effort.

Annual Recruitment and Retention Plan

An annual recruitment and retention plan is a cyclic, ongoing process that will assist the fire service in planning and focusing its efforts. It should be a logical consideration of the time of the year, changing commitments throughout the seasons, weather, and psychological impact of seasons, milestones in the department, annual events and other trends. This will prevent the

department from coming up short in membership by not having good candidates to replace those leaving.

Policies and Guidelines

Fire service leaders benefit from having the necessary policies and procedures to ensure a safe, lawful, organized, empowering, non-discriminatory environment for their volunteers. No matter how large or small a department, policies and operating guidelines are essential management tools that set the standard for conduct and provide guidance for action. It is suggested that existing municipal policies, if available, be referenced.

Evaluation

Evaluation of the recruitment and retention program is necessary to identify strengths and areas to improve. It is an ongoing process that is built into all the components of the program.

Components in the Recruitment and Retention Cycle:

Pre-Recruitment

Prior to recruiting, it would be beneficial to conduct a needs assessment to determine the role and number of volunteers required. Completing a Community Profile will determine community members who may best fit those roles. Answering these questions prior to recruiting enables the fire services to target specific individuals for specific roles and may increase the chance of success.

Recruitment

To promote diversity and involve volunteers with different skill sets, knowledge and perspectives, more than one recruitment method is necessary. Regardless of the method and knowing the department is seeking the best possible candidates, effective marketing and communication strategies are necessary to draw the interest of potential volunteers.

Selection and Hiring

Once received and acknowledged, all applicants require screening to determine those who will move on to the next step in the hiring process.

The Fire Service takes great pride in service to communities. A screening process is essential in order demonstrate that the volunteers serve in the community's best interest. The leadership should decide which screening methods and tools are appropriate for their department and should ensure that they reflect human rights and privacy legislation and existing municipal policies.

Upon selection, a written agreement between the volunteer and the fire department will ensure that expectations and responsibilities for each side are clearly identified and agreed to.

Orientation and Probation

Fire departments and their volunteers will benefit from having an organized system to orient, train and advance recruits. One of the most successful and safe approaches for developing volunteers and establishing a commitment is to initially offer specific tasks that allow them to become involved in a limited way, followed by opportunities to grow into a role with more responsibilities.

Ongoing Recruitment Efforts

Successful recruitment efforts should be ongoing throughout the year to ensure that there is a waiting list of interested individuals to draw from.

Ongoing Retention Efforts

Recruiting and training new volunteers is just the beginning. The long-term challenge is to create an environment in which individuals continue to be motivated, interested, challenged, supported and satisfied with the work they've accomplished. Factors that contribute to this environment include leadership practices, operating guidelines, recognition initiatives, support efforts, teamwork and fellowship.

Exit Processes

When an individual leaves the fire department, it is a good opportunity to solicit input to determine the department's strengths and opportunities for improvement. Exit processes should reflect understanding that, whether leaving on a positive or negative note, the volunteer and the fire department deserve fair and respectful treatment.

Resource Book:

The Application of Recruitment and Retention Principles:

The Volunteer Recruitment and Retention Resource Book that supports this guideline, was developed by the Ontario Fire Marshal's Office, in collaboration with representatives from the Ontario Fire Service.

This resource describes effective practices and strategies for recruitment and retention of Volunteer Fire Service personnel. It also provides a compilation of tools and templates that can be used to support the best practice or strategy. These may be photocopied or edited to meet the needs of the individual Fire Service.

A CD-ROM and printed copy of this resource has been made available to all Fire Services that maintain a volunteer complement. It can also be accessed and downloaded from the Ontario Fire Marshal's public access website http://www.mcscs.jus.gov.on.ca/.

Codes, Standards & Best Practices:

Codes, standards and best practices resources are available to assist in establishing local policy. All are available at http://www.mcscs.jus.gov.on.ca/.

Volunteer Resource Management

The following resources and links describe effective practices and strategies for Volunteer Resource Management. The principles and topics can be applied to the fire service.

The Canadian Code for Volunteer Involvement http://www.Volunteer.ca

HR Council for the Voluntary and Non-profit Sector http://www.hrvs-rhsbc.ca

Knowledge Development Centre, Canada Volunteerism Initiative http://www.kdc-cdc.ca

Please feel free to copy and distribute this document. We ask that the document not be altered in any way, that the Office of the Fire Marshal be credited and that the documents be used for non-commercial purposes only.

Additional References:

See also:

Office of the Fire Marshal's Public Fire Safety Guidelines

The following guidelines can be referenced when conducting a needs assessment to determine the role, quantity and characteristics of Volunteers required by the fire service.
04-08A-03 Optimizing Rural Emergency Response
04-12-13 Core Services (Response and Support) and Associated Guidelines
04-40A-03 Simplified Risk Assessment

Appendix E – Public Fire Safety Guideline – Fire Station Location

Fire Station Location

Public Fire Safety Guidelines	**Subject Coding** PFSG 04-87-13
Section General	Date September 2004
Subject Fire Station Location	Page

Under Review

Purpose:

To assist communities in determining the best locations for their fire stations.

Introduction

Fire stations should be situated to achieve the most effective and safe emergency responses.

Fire stations represent a substantial municipal investment and should normally be located and designed to offer many years of service. As a community grows, it may become necessary to replace existing stations or add more stations to meet increasing public demands for emergency responses.

The best sites for fire stations will vary with local needs and circumstances and the fire protection services the municipality has selected to provide. Stations staffed by volunteer fire fighters may have some different considerations than those utilizing full time fire fighters.

Response Considerations

Distance and travel time are the primary influencing factors for selecting a fire station site.

Traditionally a circle was drawn around the proposed site to identify the station coverage area. Because the circle does not accommodate the normal right angle streets or roads, times will be more accurate if a diamond is used.

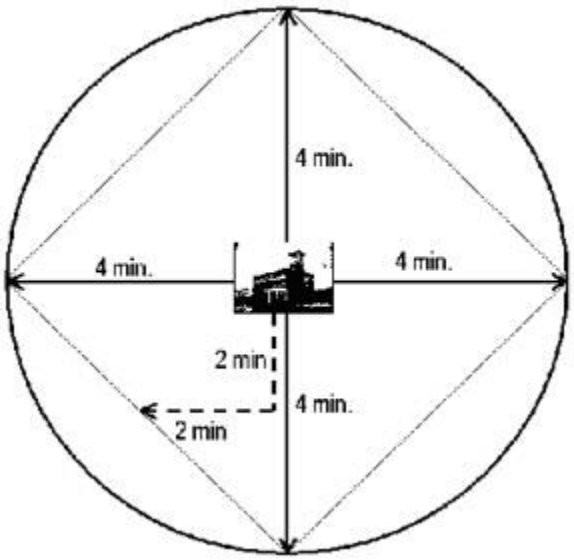
To plot the diamond, simply drive in each direction for the amount of time you have allowed for the response coverage, mark the point on a map and join the points using straight lines.

This procedure can then be repeated or modified for coverage that is beyond or less than the desired response times. This process will permit fire department managers to determine where response times are excessive, where impediments to the orderly movement of traffic exist and where specific high risks are located.

For example, the fire department reaches the downtown core in 3 minutes, the urban boundaries in 5 minutes, 75% of the rural area in 8 minutes and the remainder in 10 minutes. In the 8-to-10-minute areas specific additional fire prevention and public fire safety education programs may be warranted to help compensate for the longer response time.

The following diagram illustrates the differences between a circle and a diamond from a fire station that has used 4 minutes as the desired initial response time.

Please note that the circle will only reflect a true response of 4 minutes if the streets are straight from the fire station to the edge of the circle.



Computer Based Programs

There are several computer-based programs for identifying optimum locations for fire stations. While there are differences including data required, input and appearance, each of these programs identifies optimum fire station locations.

To determine optimum locations for fire stations using these programs, information such as the following must be entered:

- 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

A benefit of using a computer program is the ability of fire or municipal staff and council to evaluate fire station location needs (based on objective criteria).

Other Considerations

Fire stations should be located where they can serve the majority of the protection area they are assigned rather than for a specific hazard. For example, it may seem wise to place the fire station across from a nursing home. However, if the majority of responses are to the residential or commercial areas at the other side of the coverage area, the station should be situated closer to that area but still have the ability to arrive at the nursing home in the desired time.

Many volunteer stations are located in or very close to the geographic centre of the populated area of the community. This may increase response time when the volunteers have to come through the traffic to get to the station and then respond back through traffic to the emergency. Response times could be reduced by locating stations closer to the edge of the urban centre. Fire fighter response procedures could be altered to have some of the volunteers respond to the station for equipment while others go directly to the scene.

The practicability of sharing a facility should be assessed. It may be appropriate to locate the fire station with other emergency agencies or other municipal departments.

Municipalities may wish to consider the "temporary" placement of a station in a leased or rented building to address rapid growth in a specific area. An example of this could be the placement of a station in a vacant commercial or industrial unit for a period of time. At the same time, records should be kept to assess the efficiency and effectiveness of response from this location, so that Council may make an informed decision when it comes time to decide whether the location should be made "permanent".

Desirable Fire Station Site Criteria

The following is an initial check list for the selection of any fire station site:

- It may be advisable to have stations located a short distance up a side street rather than on a main street where the heaviest traffic exists. Access to and from site must have:
    - reasonable access to a major street or road
    - appropriate sight lines (no hills, physical obstacles)
    - no traffic impediments at any time of day
    - ability to have a second access to the site
    - maintained access (snow clearance, etc.)
- Assembly time for volunteers must not be negatively impacted.
- Impact on adjacent properties needs to be considered.
- Size of site must accommodate all expected activities of the fire service and allow for future expansion. (Parking, training, apparatus maintenance and equipment testing, etc.)
- Proximity to municipal services and required utilities (water, sewer hydro, telephone, gas)

- Costs.
    - acquisition of land
    - site preparation
    - building (leasing/renting may also be a consideration)

Codes, Standards, Best Practices:

Codes, Standards, and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at **www.ontario.ca/firemarshal**. Please feel free to copy and distribute this document. We ask that the document not be altered in any way, that the Office of the Fire Marshal be credited and that the documents be used for non-commercial purposes only.

See also PFSG:

04-01-12 Selecting Fire Suppression Capability
04-03-12 Service Providers
04-06-13 Codes, Standards, Acts, Regulations, Best Practices

See also **Creating and Evaluating Standards of Response Coverage for Fire Departments** CFAI **www.cfainet.org**

Appendix F – Provincial Community Risk Assessment Guideline

OFMEM-TG-02-2019

Community Risk Assessment Guideline

Office of the Fire Marshal and Emergency Management

July, 2019

OFMEM Section: Public Safety Education at 1-800-565-1842

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Abstract

The Office of the Fire Marshal and Emergency Management (OFMEM) has developed this guideline to assist municipalities and fire departments in a territory without municipal organization, to conduct community risk assessments and use its community risk assessment to inform decisions about the provision of fire protection services, in accordance with *Ontario Regulation 378/18* (*O.Reg. 378/18*), and the *Fire Protection and Prevention Act 1997 (FPPA).*

For further information or assistance contact the Public Safety Education Manager at 1-800-565-1842.

This guideline provides:

- An outline of recommended best practices to conduct a community risk assessment in order to make informed decisions about the provision of fire protection services;
- Descriptions of the nine mandatory profiles outlined in *O. Reg. 378/18* that must be addressed in the community risk assessment, including examples of where this data and information can be obtained;
- Worksheets that can be used or modified to document and analyse data/information related to the nine mandatory profiles that must be addressed in the community risk assessment in accordance with *O. Reg. 378/18*, and,

Worksheets that can be used or modified to assist in assigning risk levels and identifying preferred treatment options.

1.0 SCOPE

This document has been prepared by the Office of the Fire Marshal and Emergency Management to assist municipalities and fire departments in territories without municipal organization to conduct community risk assessments to meet the requirements of Ontario Regulation 378/18.

2.0 INTRODUCTION

Community risk assessments allow fire departments to make informed decisions about the types and levels of fire protection services they will provide based on identified risks.

Risk is defined as a measure of the probability and consequence of an adverse effect to health, property, organization, environment, or community as a result of an event, activity or operation.

By identifying all fire and life safety risks in their community and prioritizing them based on the probability of them occurring and the impact they would have if they occurred, fire departments are able to determine which risks to address and how best to address them. Risk assessments allow fire departments to ensure their levels of service, programs and activities for public fire safety education, Fire Code inspections and enforcement, and emergency response directly address the identified risks and are most effective at preventing and mitigating them.

The *Fire Protection and Prevention Act, 1997 (FPPA)* mandates that every municipality in Ontario shall establish a program which must include public education with respect to fire safety and certain components of fire prevention, and provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances. In the fire service, these elements are commonly referred to as the Three Lines of Defence:

1. Public Fire Safety Education
2. Fire Safety Standards and Enforcement
3. Emergency Response

In order to meet these obligations, municipalities need to make informed decisions with respect to the types and levels of fire protection services they provide. This requires an

understanding of the risks facing the community that can be identified through a community risk assessment. Once identified, the risks can be prioritized to assist in making informed decisions about risk treatment options and the provision of fire protection services.

Ontario Regulation 378/18: Community Risk Assessments (O. Reg. 378/18) requires that every municipality and every fire department in a territory without municipal organization complete a community risk assessment and use it to inform decisions on the provision of fire protection services. The Community Risk Assessment is an in-depth and comprehensive assessment to inform fire protection service levels and requires the identification, analysis, evaluation and prioritizing of risk, based on nine mandatory profiles.

The regulation outlines a standard set of information profiles that must be considered when conducting a community risk assessment. The information and data gathered to address each of the profiles will assist in determining and prioritizing the risks to public safety in the community, and determining the fire protection services to be provided by municipalities and fire departments in territories without municipal organization to address those risks.

The mandatory profiles identified in Schedule 1 of O. Reg. 378/18 were determined from examining various current industry models on risk assessment. Many of these models provide comprehensive coverage pertaining to identification of data and information relating to community risks. However, it should be noted that these risk assessment models may or may not include all of the nine mandatory profiles as identified in Schedule 1 of O. Reg. 378/18. Municipalities and fire departments in territories without municipal organization may use other tools, models or guidelines to conduct their community risk assessments provided that their final community risk assessment meets all the requirements outlined in O. Reg. 378/18., including consideration of each of the nine mandatory profiles identified in Schedule 1 of the regulation (see Appendix E).

The Guideline provides suggestions as to how to record and analyze the data/information using the sample worksheets that are provided in the Guideline. Municipalities and fire departments in territories without municipal organization have flexibility to include any additional information (e.g. maps, charts, diagrams) they deem appropriate to best assist them in analyzing their data and information in order to make informed decisions on fire protection services.

The Emergency Management and Civil Protection Act (EMCPA) requires every municipality to conduct an all-hazards risk assessment, which informs continuous improvement of emergency management programs and improves public safety. A completed Hazard

Identification Risk Assessment (HIRA) may provide some of the information/data required to fulfil the needs of a Community Risk Assessment under O. Reg. 378/18, although there will

be specific fire related information that is not contained in the HIRA that will be gathered as part of this process. The HIRA and the Community Risk Assessment are separate processes but should be viewed as complementary to one another.

Note: For the purposes of this guideline, the terms "fire department" and "fire departments" will be considered to include every municipality and every fire department without municipal organization.

3.0 CONDUCTING A COMMUNITY RISK ASSESSMENT

3.1 Identifying Risks – Mandatory Profiles

The first step in conducting a community risk assessment is to identify the various fire and life safety risks in the community. This can be done by gathering data about the make-up of the community and the activities occurring there.

O. Reg. 378/18 requires fire departments to consider the following profiles when completing their community risk assessment to ensure the risk assessment best considers all potential risks in the community:

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

Fire departments need to gather and review data and information about each of these profiles to identify the fire and life safety risks that could impact the community.

Worksheets 1 to 9 in Appendix A of this guideline can be used to record and organize the data and information for each profile. The worksheets can be filled in electronically. Fire and emergency risks and issues/concerns can be noted in the appropriate columns of each worksheet as they are identified. These worksheets can be modified or adapted to suit local needs based on available data or information.

A description of each profile, including potential sources of data and information for each, is provided below.

3.1.1. Geographic Profile

Geographic profile refers to the physical features of the community, including the nature and placement of features such as highways, waterways, railways, canyons, bridges, landforms, and wildland-urban interfaces.

Physical features of the community may present inherent risks that need to be taken into account when determining the type and level of fire protection services that should be provided by the fire department. Physical features may also impact emergency response access and response times.

Identifying any geographic features that might have implications with respect to risk or response allows fire departments to consider these issues when determining appropriate types and levels of fire protection services.

For example, a lake may have implications with respect to water and/or ice rescue services and the equipment and training that would be required to provide those services. The lake may also impact emergency response access and response times to certain areas within the community. Additionally, a lake may be a seasonal tourist attraction and the associated activities may present unique risks that could influence decisions on specific public fire safety education and Fire Code inspection and enforcement programs and activities.

Where to find/collect this information

Information related to the Geographic profile may be obtained from:

- Local knowledge of the area and by using maps of the municipality's natural (i.e. lakes, rivers, etc.) and human-made (i.e. highways, bridges, railways, etc.) features, and
- Local municipal departments (i.e. highways/roads, conservation authorities, etc.) who should have information about the location and uses of geographic and physical features of the community.

3.1.2. Building Stock Profile

Building Stock profile refers to the types, numbers, uses, and ages of the various buildings within the community.

Fire departments should consider the potential fire risks associated with different types/classifications or uses of buildings given their prevalence in the community and the presence of fire safety systems and equipment at the time of construction. Older buildings typically do not contain the same fire safety and fire protection systems required in newer buildings. This may impact the fire risk in older buildings. Also, how buildings are used can influence the fire risks in each building. For example, industrial chemical storage facilities are likely to present higher fire risks than buildings containing commercial retail activities. The age and type of residential buildings (e.g. high-rise vs. single family dwelling vs. town/row houses) can influence the probability and consequence of fire in those buildings.

Past inspection practices and frequencies also can be a factor when considering risk associated with any particular building occupancy classification categories. For instance, a robust inspection program in higher risk occupancies can have a positive influence on mitigating some of the inherent risks associated with that particular type of building. Conversely, a lack of historical inspection data in relation to a particular occupancy classification category also should be considered when determining risk.

These building characteristics can have significant impact on the public fire safety education, Fire Code inspection and enforcement and emergency response activities the fire department may determine are necessary to address the risks.

Where to find/collect this information

O. Reg. 378/18 does not specify which source of this information has to be referenced to complete the risk assessment. Fire departments have the flexibility to choose which source they feel will provide the optimum level of detail they are most comfortable with as an accurate reflection of the building stock in their community. Consideration should be given to consistency in terms of data sources when conducting new risk assessments and annual reviews.

Information related to the Building Stock profile may be obtained from:

- Categorizing buildings in accordance with the Standard Incident Report (SIR) property classification system which corresponds with the Ontario Building Code (OBC) occupancy classification system. As the Ontario Fire Code (OFC) requires that buildings be classified in accordance with the OBC, this approach makes it easy to consider issues like the type of construction and fire safety equipment/features that should be present in the different classifications of buildings, based on their size, age, design, and use;

- Municipal building departments that have information regarding the age, number, types, uses, etc. of buildings in the municipality;

- *Municipal Property Assessment Corporation* (MPAC – www.mpac.ca) data that assesses and classifies all properties within Ontario, and

- Fire department pre-plans that identify uses and potential risks within specific buildings or areas of the community.

3.1.3. Critical Infrastructure Profile

Critical Infrastructure profile refers to the facilities or services that contribute to the interconnected networks, services, and systems that meet vital human needs, sustain the economy, and protect public safety and security (i.e. electricity distribution, water distribution, telecommunications, hospitals, and airports).

Consideration of the presence, availability, capacity, and stability of infrastructure elements can help identify potential impacts that may result if any of these systems are compromised. Understanding how infrastructure impacts things like emergency services dispatch, communications, fire department emergency operations, overall health care or transportation can assist in determining preferred treatment options to address specific risks.

Where to find/collect this information

Information related to the Critical Infrastructure profile may be obtained from:

- Local municipal departments (i.e. public works, water and sanitation

  departments, etc.) and other local utility companies that have information about the location, uses, capacity, etc. of the critical infrastructure in the community, and

- A completed Hazard Identification Risk Assessment. **3.1.4.**

Demographic Profile

Demographic profile refers to the composition of the community's population considering such factors as population size and dispersion, age, gender, cultural background, level of education, socio-economic make-up, and transient population.

Awareness of the characteristics of the population in the community assists the fire department to determine if specific segments of the population are at high-risk of fire. This awareness allows

fire departments to best identify high-risk behaviours that need to be changed, as well as specific techniques to communicate with high-risk groups.

Fire protection services, including public fire safety education and Fire Code inspections and enforcement programs, should be tailored to high-risk groups so that fire safety programs are delivered in the most relevant and meaningful ways and can have the greatest impact. For example, delivering fire safety messages using communications techniques popular with specific high-risk segments of the population increases the likelihood the messages are received by those segments and therefore are most effective at reducing the fire risk.

Where to find/collect this information

Information related to the Demographic profile may be obtained from:

- Local municipal departments that keep information regarding the demographic make-up of their populations, including trends and projections regarding how the demographics may change in the coming years. The amount of this type of information that is available from municipal departments may vary between municipalities, and
- Statistics Canada (www.statscan.gc.ca) census profiles of every community in Ontario, including demographic information.

3.1.5. Hazard Profile

Hazard profile refers to the hazards in the community, including natural hazards, hazards caused by humans, and technological hazards. This may include but not be limited to hazardous materials spills, floods, freezing rain/ice storms, forest fires, hurricanes, tornadoes, transportation emergencies (i.e. air, rail or road), snow storms, windstorms, extreme temperature, cyber-attacks, human health emergencies, and energy supply (i.e. pipelines, storage and terminal facilities, electricity, natural gas and oil facilities, etc.).

Fire departments should consider all potential hazards that pose a significant risk to or may have a significant impact on the community, and to which fire departments may be expected to respond.

Where to find/collect this information

Information related to the Hazard profile may be obtained from:

- Local municipal or government departments (i.e. public safety, police, emergency management, etc.) with information about the natural and technological hazards within the community and the risk they pose;
- Local historical incident data related to emergency incidents, and
- A completed Hazard Identification Risk Assessment.

3.1.6. Public Safety Response Profile

Public Safety Response profile refers to the agencies and organizations in the community (i.e. police, EMS, rescue) that may respond to certain types of incidents.

The fire department should consider other public safety response agencies (i.e. police, EMS, rescue) that might be tasked with or able to assist in the response to emergencies or in mitigating the impact of emergencies. This will assist the fire department to prioritize community risks and to determine the level of fire protection services it provides. For example, the presence of a private fire and rescue service at a local industrial facility may influence decisions about the type and the level of fire protection services a municipal fire department may provide to that facility.

Where to find/collect this information

Information related to the Public Safety Response profile may be obtained from:

- Local municipal departments (i.e. police, EMS, emergency management, etc.), and
- Private companies or industrial facilities who may have information about the response capabilities of other entities within the community.

3.1.7. Community Services Profile

Community Services profile refers to community agencies, organizations or associations that can provide services that support the fire department in the delivery of public fire safety education, Fire Code inspections and enforcement, or emergency response.

Community service agencies may be able to provide services in-kind, financial support, provisions of venues for training, increased access to high-risk groups in the community, or temporary shelter for displaced residents following an incident.

Where to find/collect this information

Information related to the Community Services profile may be obtained from:

- General local knowledge;
- Local municipal departments (i.e. social services);
- Community service agencies (i.e. agencies providing English as a second language services, resettlement agencies, agencies working with older adults, the Canadian Red Cross, etc.) who have information about the various services provided by community organizations and their clients within the community.

3.1.8. Economic Profile

Economic profile refers to the economic sectors affecting the community that are critical to its financial sustainability.

When prioritizing risk in the community, the fire department should consider the impact of fire and other emergencies on the industrial or commercial sectors that provide significant economic production and jobs to the local economy. This will assist in determining the type and level of fire protection services provided in these sectors in the community.

For example, if a town has a large industrial or commercial occupancy that has a significant impact on the local economy, the fire department may consider increasing its public fire safety education and Fire Code inspection and enforcement activities to reduce the probability of a significant incident requiring a large scale emergency response.

Where to find/collect this information

Information related to the Economic profile may be obtained from:

- Local municipal departments (i.e. economic development, employment, and social services) that have information about the economic sectors that are critical to the community's economic well-being. This will help determine the economic impact (e.g. loss of business or jobs) if a fire occurs in a specific occupancy or area of the community.

3.1.9. Past Loss and Event History Profile

Past Loss and Event History profile refers to the community's past emergency response experience, including analyzing the following:

a) The number and types of emergency responses, injuries, deaths, and dollar losses.

b) A comparison of the community's fire loss statistics with provincial fire loss statistics.

Fire departments should evaluate previous response data to identify trends regarding the circumstances, behaviours, locations, and occupancy types of previous fires. This assists in determining the leading causes or behaviours resulting in fires, and high-risk locations and occupancies. Public fire safety education and Fire Code inspection and enforcement programs can then be designed to specifically target high-risk behaviours among various population groups and to focus prevention activities in high-risk neighbourhoods or locations. This targeted approach allows public fire safety education and Fire Code inspection and enforcement programs to directly address fire risks, thereby increasing their fire prevention effectiveness.

Where to find/collect this information

Information related to the Past Loss and Event History profile may be obtained from:

- Standard Incident Reports completed by the fire department. These can be obtained through fire department records or by emailing the Office of the Fire Marshal and Emergency Management (OFMEM) at OFM statistics@ontario.ca.;
- Trends and statistics about fire causes and fire and life safety issues across the province located on the OFMEM's website, and
- Information, available on request from the OFMEM, relating to fire losses in neighbouring communities.

For those communities where trends are not easily identifiable due to a lack of fire incidents, it may be helpful to look at trends across the province or in neighbouring municipalities that are similar in size and make-up.

It is suggested that a minimum of three (3) years' worth of data is analyzed in order to identify any potential patterns or trends and to avoid random events from unduly skewing the data.

4.0 PRIORITIZING RISKS

The mandatory profiles allow fire departments to identify the features and characteristics of their community that may impact fire and life safety risks. Once risks have been identified they should be prioritized. This section discusses how risks can be prioritized based on the probability of the risk happening and the consequence if the risk occurs. **Table 1: Probability Levels** and **Table 2: Consequence Levels** can be used to help determine the probability and consequence of each risk identified on the worksheets. The probability and consequence of each risk can then be noted in the appropriate columns on the relevant worksheets in Appendix A.

As noted in the introduction, risk is defined as a measure of the probability and consequence of an adverse effect to health, property, organization, environment, or community as a result of an event, activity or operation.

4.1 Probability

The probability or likelihood of a fire or emergency within a community is often estimated based on the frequency of previous experiences. A review of past events involves considering relevant historical fire loss data, learning from the experiences of other communities, and consulting members of the community with extensive historical knowledge. Professional judgment based on experience should also be exercised in combination with historical information to estimate probability levels. The probability of an event can be categorized into five levels of likelihood:

Table 1: Probability Levels

Description	Specifics
Rare	• may occur in exceptional circumstances • no incidents in the past 15 years
Unlikely	• could occur at some time, especially if circumstances change • 5 to 15 years since the last incident
Possible	• might occur under current circumstances • 1 incident in the past 5 years
Likely	• will probably occur at some time under current circumstances • multiple or recurring incidents in the past 5 years
Almost Certain	• expected to occur in most circumstances unless circumstances change • multiple or recurring incidents in the past year

Assign a probability level to each identified risk or hazard on the relevant worksheets in Appendix A.

4.2 Consequence

The consequence of a fire or emergency is the potential losses or negative outcomes associated with the event. The application of professional judgment and reviews of past occurrences are important methods used for determining consequence levels. Estimating the consequence level of an incident or event should involve an evaluation of four components:

a. **Life Safety**: Injuries or loss of life due to occupant and firefighter exposure to life threatening fire or other situations.

b. **Property Loss**: Monetary losses relating to private and public buildings, property content, irreplaceable assets, significant historic/symbolic landmarks and critical infrastructure.

c. **Economic Impact**: Monetary losses associated with property income, business closures, a downturn in tourism and/or tax assessment value, and employment layoffs.

d. **Environmental Impact**: Harm to human and non-human (i.e. wildlife, fish and vegetation) species of life and a general decline in quality of life within the community due to air/water/soil contamination as a result of the incident and response activities.

The consequence of an event can be categorized into five levels based on severity: **Table 2: Consequence Levels**

Description	Specifics
Insignificant	• no life safety issue • limited valued or no property loss • no impact to local economy, and/or • no effect on general living conditions
Minor	• potential risk to life safety of occupants • minor property loss • minimal disruption to business activity, and/or • minimal impact on general living conditions
Moderate	• threat to life safety of occupants • moderate property loss • poses threat to small local businesses, and/or • could pose a threat to the quality of the environment
Major	• potential for a large loss of life • would result in significant property damage • significant threat to large businesses, local economy and tourism, and/or • impact to the environment would result in a short term, partial evacuation of local residents and businesses
Catastrophic	• significant loss of life • multiple property damage to a significant portion of the municipality • long-term disruption of businesses, local employment, and tourism, and/or • environmental damage that would result in long-term evacuation of local residents and businesses

Assign a consequence level to each identified risk or hazard on the relevant worksheets in Appendix A.

5.0 ASSIGNING RISK LEVEL

Assigning a risk level assists fire departments in prioritizing risks, which helps to determine how to address or treat each risk. The **Risk Level Matrix** in this section can assist fire departments to determine risk levels based on the probability and consequence levels of each identified risk. Risks can be assigned as low risk, moderate risk or high risk. The risk levels for each risk can be noted in the **Assigned Risk Level** column on the relevant worksheets in Appendix A.

The matrix below can be used to determine the assigned risk level.[1] Plot the assigned probability and consequence levels on the relevant worksheets in Appendix A to assign a risk level for each identified risk.

Risk Level Matrix

Probability	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC
ALMOST CERTAIN	Moderate Risk	Moderate Risk	High Risk	High Risk	High Risk
LIKELY	Moderate Risk	Moderate Risk	Moderate Risk	High Risk	High Risk
POSSIBLE	Low Risk	Moderate Risk	Moderate Risk	Moderate Risk	High Risk
UNLIKELY	Low Risk	Low Risk	Moderate Risk	Moderate Risk	Moderate Risk
RARE	Low Risk	Low Risk	Low Risk	Moderate Risk	Moderate Risk

Consequence

6.0 RISK TREATMENT OPTIONS

Once risk levels have been assigned, fire departments can determine how best to treat each risk and the resources required to do so.

Options for treating risks include the following:

1. Avoid the Risk

2. Mitigate the Risk
3. Accept the Risk
4. Transfer the Risk

6.1 Avoid the Risk

Avoiding the risk means implementing programs and initiatives to prevent a fire or emergency from happening.

For example, public fire safety education initiatives aim to change people's behaviours so that fires may be prevented, and people react appropriately when fires do occur. Fire Code inspections and enforcement help to ensure that buildings are in compliance with the Ontario Fire Code.

6.2 Mitigate the Risk

Mitigating the risk means implementing programs and initiatives to reduce the probability and/or consequence of a fire or emergency.

For example, a routine Fire Code inspection and enforcement program to ensure Fire Code compliance helps to reduce the probability and consequence of a fire.

A pre-planning program involving fire suppression crews allows the fire department to gain knowledge about specific buildings in the community and their contents, fuel load, fire protection systems, etc. This information can be provided to the fire inspection staff who can ensure the building is compliant with the Fire Code. Also, it can assist suppression crews to plan fire suppression operations should a fire occur in a building. These activities can reduce the probability and consequence of a fire.

6.3 Accept the Risk

Accepting the risk means that after identifying and prioritizing a risk, the fire department determines that no specific programs or initiatives will be implemented to address this risk. In this treatment option, the fire department accepts that the potential risk might happen and will respond if it occurs.

For example, typically fire departments do not implement programs to prevent motor vehicle collisions. Yet it is generally accepted that collisions will happen and that the fire department will respond when they do. Similarly, environmental hazards (e.g. ice storms)

and medical calls cannot be prevented by a fire department program or initiative, yet fire departments typically respond when these emergencies occur.

When accepting risks, fire departments should consider their capacity (i.e. equipment, personnel, training, etc.) to respond.

6.4 Transfer the Risk

Transferring the risk means the fire department transfers the impact and/or management of the risk to another organization or body. Contracting public fire safety education, Fire Code inspection and enforcement, or emergency response services to a neighbouring municipality or another organization are examples of transferring the management of risks to another body.

For example, a community may enter into a fire protection agreement with a neighbouring community with respect to any or all of the three lines of defence.

7.0 SETTING THE TYPE AND LEVEL OF FIRE PROTECTION SERVICES

When setting the type and level of fire protection services, all Three Lines of Defence should be considered in terms of the impact each will have on the probability or consequence of identified risks. Once fire departments have determined the preferred treatment option for each risk, they can plan and implement activities that address those risks. Things to consider include the fire department's current resources, staffing levels, training, equipment and authority versus those that may be required to implement the preferred treatment options.

After considering these issues, the preferred treatment option (e.g. avoid the risk, mitigate the risk, accept the risk, or transfer the risk) can be noted in the **Preferred Treatment Option** column of worksheet 10 in Appendix A.

Fire departments should also ensure that operational policies and standard operating guidelines address the levels of service and activities required to address each risk. This includes setting goals and objectives, and determining resources, training, equipment, activities, and programs required across each of the Three Lines of Defence.

The process of making informed decisions about the provision of fire protection services should include careful consideration of the following:

- Implementation of public fire safety education, Fire Code inspections and enforcement, and emergency response activities that are appropriate to address the causes, behaviours or issues associated with identified risks.
- Capabilities and capacity of the fire department (e.g. financial and staffing resources, training, equipment, authority, etc.) that may be required to implement preferred treatment options.
- Strategic partners with common interests, available resources, or skill sets that could assist in addressing risks using the applicable risk assessment profiles.
- Establishing and Regulating By-laws, operational policies and standard operating guidelines that reflect the fire protection services to be provided to address the identified risks.
- Establishment of goals and objectives, strategies, timelines, and evaluation for the proposed fire protection services to be provided.
- Communication with municipal council and the public to outline the types and levels of fire protection services that will be provided.

8.0 REVIEW

O. Reg. 378/18 requires fire departments to complete a new community risk assessment at least every five years. The regulation also requires that fire departments review their community risk assessment at least once every 12 months to ensure it continues to accurately reflect the community and its fire and emergency risks. The purpose of this review is to identify any changes in the mandatory profiles that may result in a change in risk level, or a change in the type or level of fire protection services the fire department determines necessary to address the risks. This review is intended to ensure that the fire protection services provided continue to be evidence-based and linked to the identified risks.

This review process may or may not involve a close examination of all of the nine community profiles, depending on whether any changes related to the profiles have occurred since the completion of the risk assessment or the last review. For example, changing demographic profiles (e.g. an aging population or an increase in the number of immigrants) or changing geographic profiles (e.g. the planned construction of a new highway) may impact the risks identified in the community risk assessment and the fire department activities and resources required to address them. A review may or may not result in any changes to the assigned risk levels or fire protection services.

However, a review can provide evidence-based justification for decisions that may impact the delivery of fire protection services.

Fire departments should maintain documentation that the reviews required by O. Reg. 378/18 have been conducted. This documentation should include:

- Any changes to any of the mandatory profiles;
- Any changes to assigned risk levels or fire protection services that occur as a result of the review, and
- Any other information the fire department deems appropriate to the review or any resultant changes to fire protection services.

If no significant changes occur in the community within a 12 month period, and no changes are required to the profiles or fire protection services, then a review could simply consist of documentation to that effect.

Appendix A: Profile Worksheets

Worksheet 1: Geographic Profile

List the physical features of the community that impact the risk of and response to fire and other emergencies, including large bodies of water, highways/road networks, waterways, railways, canyons, bridges, landforms, and wildland-urban interfaces.

Geographic Profile Risks List the geographic features in your community and how they may influence the	
Geographic Feature	**Potential Impact on the Delivery of Fire Protection Services**
Example: Large body of water	• Impacts training, equipment for response activities Impacts response times/travel time to calls • Recreational/tourist activities impact public fire safety education and Fire Code inspections and • enforcement activities
Example: Railway tracks	• Impacts station location Impacts response protocols

Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all the information on all worksheets together in order to make decisions about the provision of fire protection services in their municipality/community.

Worksheet 2: Building Stock Profile

The building stock profile should consider the characteristics of the buildings in the community. This can include the use of the buildings, building density, building age and construction, and building height and area. This information will assist fire departments to identify the issues/concerns that will impact the delivery of fire protection services.

Building Stock Profile Risks					
Occupancy Classification		***Issues/Concerns – Suggested Treatment Options***	***Probability***	***Consequence***	***Assigned Risk Level***
Group A	***Assembly***	***Treatment Options***			
Group B	***Detention Occupancies***	***Treatment Options***			
Group B	***Care and Treatment/ Care***	***Treatment Options***			
Group C	***Single Family***	***Treatment Options***			
Group C	***Multi-unit Residential***	***Treatment Options***			
Group C	***Hotel/ Motel***				

Building Stock Profile Risks					
Occupancy Classification		***Issues/Concerns – Suggested Treatment Options***	***Probability***	***Consequence***	***Assigned Risk Level***
Group C	***Mobile Homes & Trailers***				
Group C	***Other***				
Groups D & E	***Business & Personal***				
	Service / Mercantile				
Group F	***Industrial***				
Other	***Occupancies not classified in OBC such as farm buildings***				

Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all of the information on all worksheets together in order to make decisions about the provision of fire protection services in their municipality/community.

Worksheet 3: Critical Infrastructure Profile

Consider the community's critical infrastructure including electricity distribution, water distribution, telecommunications, hospitals, and airports and how they relate to fire and other emergency risks in the community.

Critical Infrastructure Profile Risks List the critical infrastructure in your community and the fire and other emergency	
Identified Critical Infrastructure	**Issues/Concerns**
Example:	• Hydro lines go down
Example: Hospital	• Large number of immobile people at risk if a fire occurs
Example:	• Telephone lines/cell towers go down

Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all of the information on all worksheets together in order to make decisions about the provision of fire protection services in their municipality/community.

Worksheet 4a: Demographic Profile

Consider the characteristics of your community's demographic profile to identify potential fire safety issues/concerns. This will help the fire department prioritize its overall risk and decisions about the provision of fire protection services. For example, traditionally older adults, young children, recent immigrants, and people with disabilities are at the highest risk of fire. Knowing if your community has a high number of people in any of these demographic groups helps your fire department prioritize your public fire safety education and Fire Code inspection and enforcement programs.

Demographic profile characteristics to consider include: age, culture, education, socio-economics, transient populations or other unique population characteristics in your community.

The following population distribution chart can assist with identifying high-risk or vulnerable demographic groups in your community**.**

Ages of population	# of People	% of Total Population
0-4		
5-9		
10-14		
15-19		
20-24		
25-29		
30-34		
35-39		
40-44		
45-49		
50-54		
55-59		
60-64		
65-69		
70-74		
75-79		
80-84		

85 and over		
Total Population		

Consider the following questions to help identify the demographic groups within your community and the associated fire safety issues/concerns:

1. Are there specific age groups that make up a large portion of your community? If yes, who are they?

2. Are there groups whose language and/or cultural practices impact fire safety in your community? If yes, who are they?

3. Are there transient populations in your community (e.g. post-secondary school students, migrant workers, seasonal tourists, etc.)? If yes, who are they?

4. Are there specific socio-economic groups and/or circumstances that impact fire safety in your community? If yes, who/what are they?

5. Are there demographic groups within your community that have cognitive or physical disabilities served by community service agencies? If yes, who are they?

6. List any other unique demographic groups or characteristics in your community that impact fire safety.

Worksheet 4b: Demographic Profile

Use the answers to the questions above to list the identified demographic groups in the first column of the worksheet below.

Demographic Profile Risks List the demographic groups of concern in your community and the fire and other	
Identified Demographic Group	**Issues/Concerns**
Example: Large immigrant population	• Language barriers • Cultural traditions that present fire safety concerns
Example: Large seniors population	• Large number of seniors residential buildings High number of seniors receiving assistance/care from • personal support worker organizations
Example: Large population of summer tourists	• How does the fire department reach this audience with fire safety messages if they don't live in the community

Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all of the information on all worksheets together in order to make decisions about the provision of fire protection services in their municipality/community.

Worksheet 5: Hazard Profile

List potential hazards in the community including but not limited to hazardous materials spills, floods, freezing rain/ice storms, forest fires, hurricanes, tornadoes, transportation emergencies (i.e., air, rail or road), snow storms, windstorms, extreme temperature, cyber-attacks, human health emergencies, and energy supply (i.e. pipelines, storage and terminal facilities, electricity, natural gas and oil facilities).

Hazard Profile Risks List the hazards in your community and the fire or other emergency risk of each.			
Identified Hazard	**Probability** (refer to Table 1 for suggested probability levels)	**Consequence** (refer to Table 2 for suggested consequence levels)	**Assigned Risk Level** (refer to the Risk Level Matrix for suggested risk levels)
Example: Ice storm (*power interruptions/ disruptions in communications/ delayed access*)	Possible	Minor	Moderate
Example: Flood (*obstructed access/increased calls for rescue/assistance*)	Possible	Minor	Moderate

Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all of the information on all worksheets together in order to make decisions about the provision of fire protection services in their municipality/community.

Worksheet 6: Public Safety Response Profile

Consider other public safety response agencies (i.e. police, EMS, rescue) that might be tasked with or able to assist in the response to emergencies or in mitigating the impact of emergencies. Also consider the types of incidents each is able to respond to and any issues or concerns that may impact fire department response.

Public Safety Response Profile Risks List the other public safety response agencies in your community and the incidents			
Identified Public Safety Response Agency	**Types of Incidents They Respond To**	**What is Their Role at the Incident**	**Issues/Concerns**
Example: Ontario Provincial Police	• MVCs • Fire Scenes	• Scene control, traffic control	None
Example: EMS	• Medical Calls	• Take control upon arrival	What level of service will the fire department provide before and after EMS' arrival
Example: Industrial fire brigade	• Internal incidents on private property	• suppression	Fire department may not need to provide full response/may provide more of a support response

Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all of the information on all worksheets together in order to make decisions about the provision of fire protection services in their municipality/community.

Worksheet 7: Community Services Profile

Consider community service agencies, organizations or associations that provide services that support the fire department in the delivery of public fire safety education, Fire Code inspection and enforcement and emergency response. This may include services in-kind, financial support, provisions of venues for training, increased access to high-risk groups in the community, and temporary shelter for displaced residents following an incident.

Community Services Profile Risks		
Community Service Agencies	**Types of Assistance they Can Provide**	**Issues/Concerns**
Example: Canadian Red Cross	Temporary shelter, clothing, food following an incident	None
Example: Lions Club	Services in-kind (e.g. funding / physical labour / facilities)	None
Example: Meals on Wheels / Home Support Workers	Access to homebound populations	None

Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all of the information on all worksheets together in order to make decisions about the provision of fire protection services in their municipality/community.

Worksheet 8: Economic Profile

Consider the industrial or commercial sectors that provide significant economic production and jobs to the local economy and the impact to the community's economy if a fire or other emergency occurred in occupancies housing those sectors.

Economic Profile Risks List the industrial or commercial occupancies that provide significant economic production and jobs in the community. List the fire or other emergency risks in each occupancy. Assign probability, consequence, and risk levels for each risk identified.				
Identified Occupancy	**Key Risk**	**Probability** (refer to Table 1 for suggested probability levels)	**Consequence** (refer to Table 2 for suggested consequence levels)	**Assigned Risk Level** (refer to the Risk Level Matrix for suggested risk levels)
Example: Vulnerable Occupancies	Fire	Possible	Minor	Moderate
Example: Paper Mill	Fire	Possible	Major	Moderate

Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all of the information on all worksheets together in order to make decisions about the provision of fire protection services in their municipality/community.

Worksheet 9a: Past Loss and Event History Profile

Consider previous response data to identify trends regarding the deaths, injuries, dollar loss, and causes of fire in various occupancy types. This assists in determining the leading causes of fires and high-risk locations and occupancies.

In the absence of fire loss data, local knowledge may be the most reliable predictor of fire risk in your community.

Also, provincial statistics can assist in determining the types of occupancies and locations where fire losses, injuries and deaths most commonly occur.

Municipal Fire Losses, Deaths, Injuries, and Causes																
Occupancy Classification		Year:					Year:					Year:				
		# of Fires	$ Loss	# of Injuries	# of Deaths	Causes	# of Fires	$ Loss	# of Injuries	# of Deaths	Causes	# of Fires	$ Loss	# of Injuries	# of Deaths	Causes
Group A	Assembly															
Group B	Detention															
	Care & Treatment / Care															
Group C	Residential															
	Mobile Homes & Trailers															

Municipal Fire Losses, Deaths, Injuries, and Causes																
Occupancy Classification		Year:					Year:					Year:				
		# of Fires	$ Loss	# of Injuries	# of Deaths	Causes	# of Fires	$ Loss	# of Injuries	# of Deaths	Causes	# of Fires	$ Loss	# of Injuries	# of Deaths	Causes
Groups D & E	Business & Personal Service / Mercantile															
Group F	Industrial															
Other																
Totals																

Worksheet 9b: Past Loss and Event History Profile

Past Loss and Event History Profile Risks

List the causes for each occupancy type identified on the previous worksheet.
Assign probability, consequence and risk levels to each cause identified.

Occupancy Type/Location	**Causes**	**Probability** (refer to Table 1 for suggested probability levels)	**Consequence** (refer to Table 2 for suggested consequence levels)	**Assigned Risk Level** (refer to the Risk Level Matrix for suggested risk levels)
Example: Group F - Industrial	Hazardous materials spill	Possible	Major	Moderate
Example: Group C – residential high density (high-rise)	Fire	Almost Certain	Moderate	High
Example: Group C – residential low density (single	Fire	Almost Certain	Minor	Moderate

Note: The information on Worksheet 9b should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all of the information on all worksheets together in order to make decisions about the provision of fire protection services in their municipality/community.

Worksheet 10: Identifying Treatment Options for the Top Risks in the Community

The preferred treatment options identified for each risk in the last column of this worksheet can be used to assist the fire department to set its type and level of fire protection services. Refer to the **Setting the Type and Level of Fire Protection Services** section of this guideline.

Identifying Treatment Options for the Top Risks in the Community

Using Worksheets 1 to 9 identify the top risks or issues/concerns for each of the nine profiles, and identify the preferred treatment option for each.

Mandatory Profiles	**Top Risk or Issues/Concerns**	**Preferred Treatment Option** (refer to the Risk Treatment Options section for suggested treatment options and considerations)
Geographic Profile	Examples: Body of water impacts training, equipment for response	Accept Risk - Implement water/ice rescue training protocols, SOGs, and activities
	Body of water impacts response time	Accept Risk - Implement appropriate response protocols, SOGs, and activities
	Body of water – recreational/tourist activities	Avoid and Mitigate Risk – public education and hotel inspection programs required
	Railway impacts station location	Accept Risk - Implement appropriate response protocols, SOGs, and activities
	Railway impacts response protocols	Accept Risk - Implement appropriate response protocols, SOGs, and activities
Building Stock Profile		

Critical Infrastructure Profile		

Mandatory Profiles	**Top Risk or Issues/Concerns**	**Preferred Treatment Option** (refer to the Risk Treatment Options section for suggested treatment options and considerations)
Demographic Profile		
Hazard Profile		
Public Safety Response Profile		
Community Services Profile		
Economic Profile		
Past Loss and Event History Profile		

Appendix B:

How the Risk Levels in the Risk Level Matrix were Determined

The risk levels in the Risk Level Matrix on page 15 were determined using the following methodology. The probability and consequence levels outlined in Table 1: Probability Level (page 13) and Table 2: Consequence Level (pages 14-15) have different definitions, but are given the same weighted numerical values[2] (see the numerical values in red below) to reflect the fact that ***probability and consequence are equally important***. While it is human tendency to place more weight on consequence than probability, using the same weighted numerical values ensures that probability and consequence are given equal value. This approach is consistent with current risk management industry practices. The risk levels in the Risk Level Matrix were determined by multiplying the numeric values for probability and consequence.

Risk Level Matrix

Probability	INSIGNIFICANT 1	MINOR 10	MODERATE 100	MAJOR 1,000	CATASTROPHIC 10,000
ALMOST CERTAIN 10,000	Moderate Risk 10,000	Moderate Risk 100,000	High Risk 1,000,000	High Risk 10,000,000	High Risk 100,000,000
LIKELY 1,000	Moderate Risk 1,000	Moderate Risk 10,000	Moderate Risk 100,000	High Risk 1,000,000	High Risk 10,000,000
POSSIBLE 100	Low Risk 100	Moderate Risk 1,000	Moderate Risk 10,000	Moderate Risk 100,000	High Risk 1,000,000
UNLIKELY 10	Low Risk 10	Low Risk 100	Moderate Risk 1,000	Moderate Risk 10,000	Moderate Risk 100,000
RARE 1	Low Risk 1	Low Risk 10	Low Risk 100	Moderate Risk 1,000	Moderate Risk 10,000

Consequence

Low Risk:	probability x consequence = 1; 10; or 100
Moderate Risk:	probability x consequence = 1,000; 10,000; or 100,000
High Risk:	probability x consequence = 1,000,000; 10,000,000; or 100,000,000

[2] The numeric scale used here is taken from Dillon Consulting, *The Corporation of the City of Mississauga, Community Risk Identification: Introduction and Methodology,* July 2017.

Appendix C:

ONTARIO REGULATION 378/18

made under the

FIRE PROTECTION AND PREVENTION ACT, 1997
COMMUNITY RISK ASSESSMENTS

Mandatory use

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

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

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

What it is

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

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

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

When to complete (at least every five years)

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

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

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

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

When to review (at least every year)

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

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

(b) the day its previous review was completed.

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

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

(a) any significant changes in the mandatory profiles;

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

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

Commencement

5. This Regulation comes into force on the later of July 1, 2019 and the day it is filed.

Schedule 1:

Mandatory Profiles

1. Geographic profile: The physical features of the community, including the nature and placement of features such as highways, waterways, railways, canyons, bridges, landforms and wildland-urban interfaces.

2. Building stock profile: The types of buildings in the community, the uses of the buildings in the community, the number of buildings of each type, the number of buildings of each use and any building-related risks known to the fire department.

3. Critical infrastructure profile: The capabilities and limitations of critical infrastructure, including electricity distribution, water distribution, telecommunications, hospitals and airports.

4. Demographic profile: The composition of the community's population, respecting matters relevant to the community, such as population size and dispersion, age, gender, cultural background, level of education, socioeconomic make-up, and transient population.

5. Hazard profile: The hazards in the community, including natural hazards, hazards caused by humans, and technological hazards.

6. Public safety response profile: The types of incidents responded to by other entities in the community, and those entities' response capabilities.

7. Community services profile: The types of services provided by other entities in the community, and those entities' service capabilities.

8. Economic profile: The economic sectors affecting the community that are critical to its financial sustainability.

9. Past loss and event history profile: The community's past emergency response experience, including the following analysis:

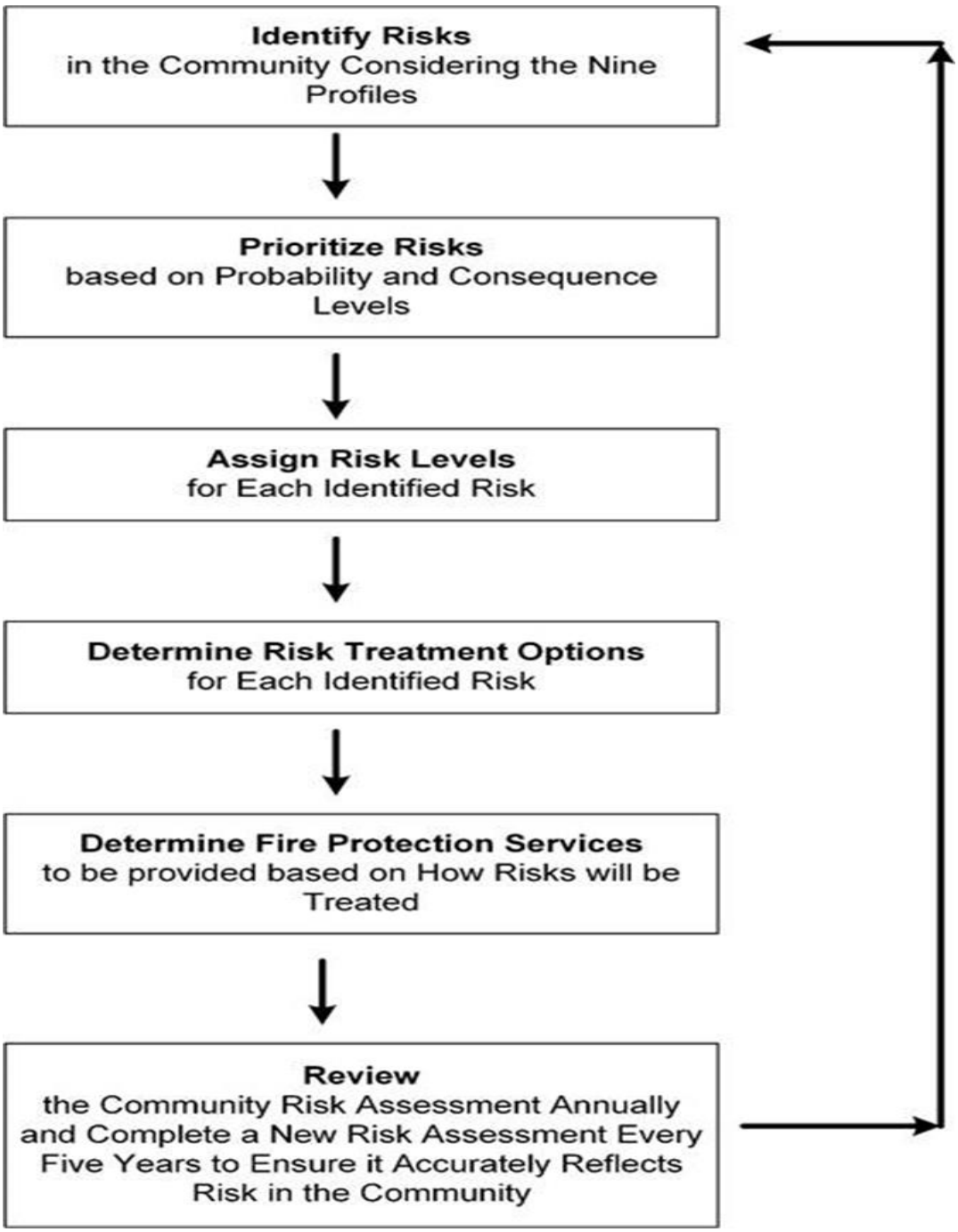
1. The number and types of emergency responses, injuries, deaths and dollar losses.

2. Comparison of the community's fire loss statistics with provincial fire loss statistics.

Note: Each profile is to be interpreted as extending only to matters relevant to fire protection services.

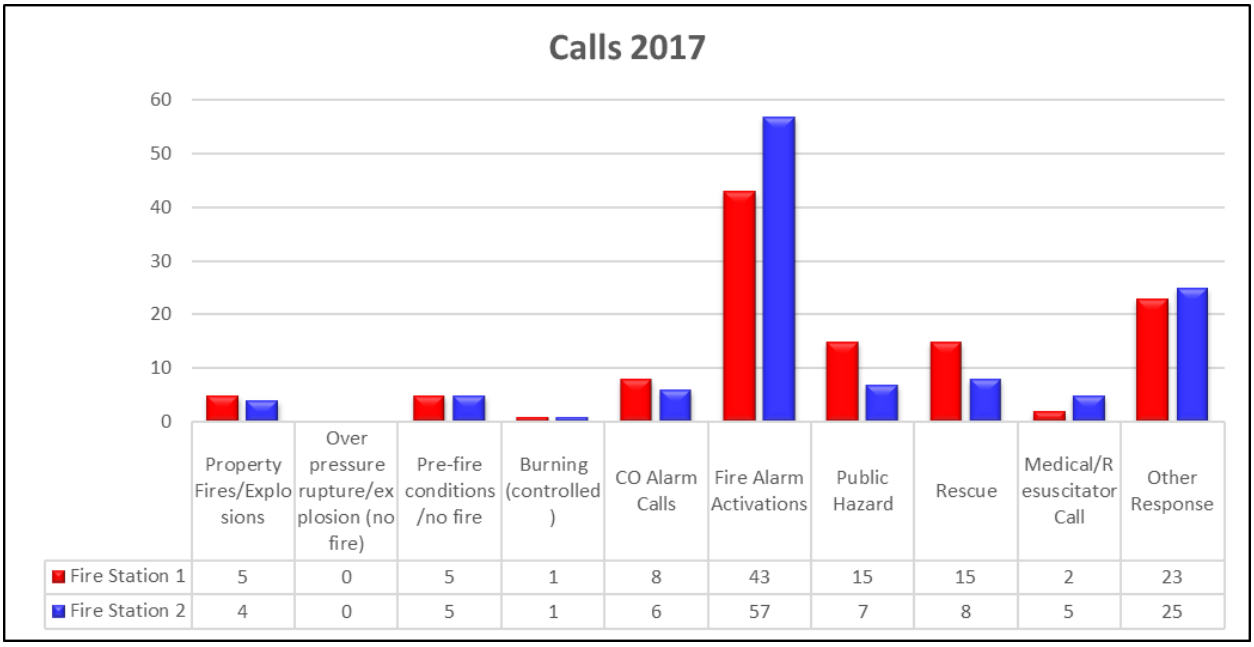
Appendix D:

Community Risk Assessment: Flow Chart

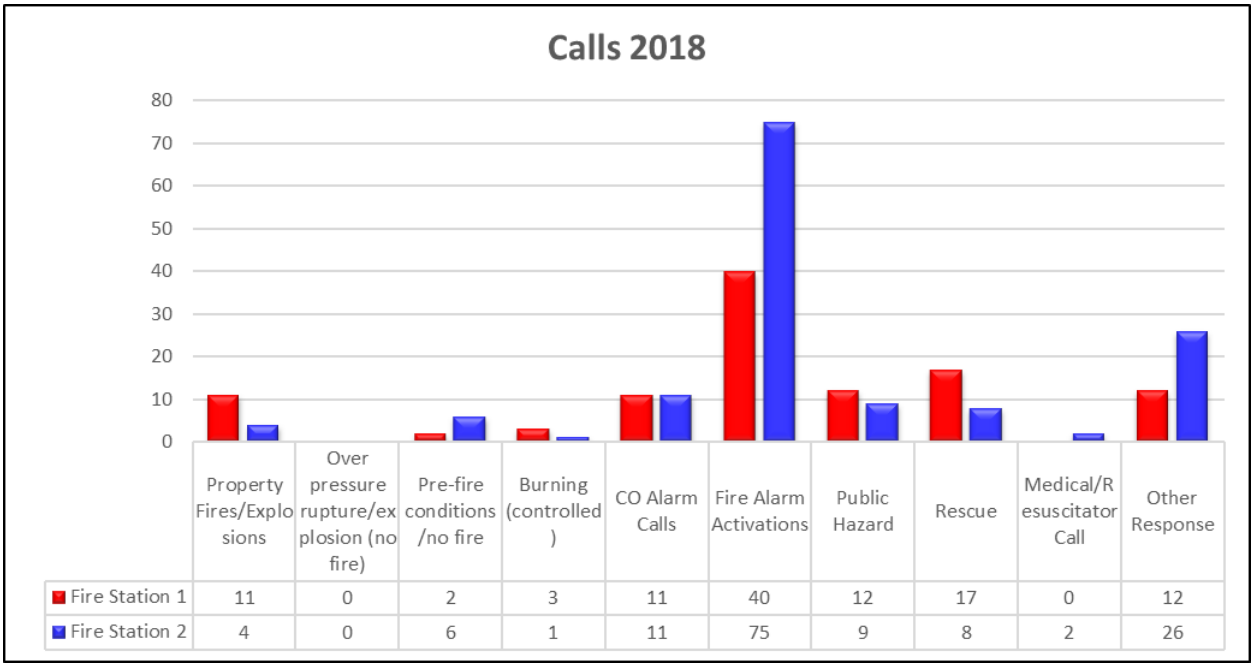


Appendix G – Call Types & Response Data for 2017 to 2019

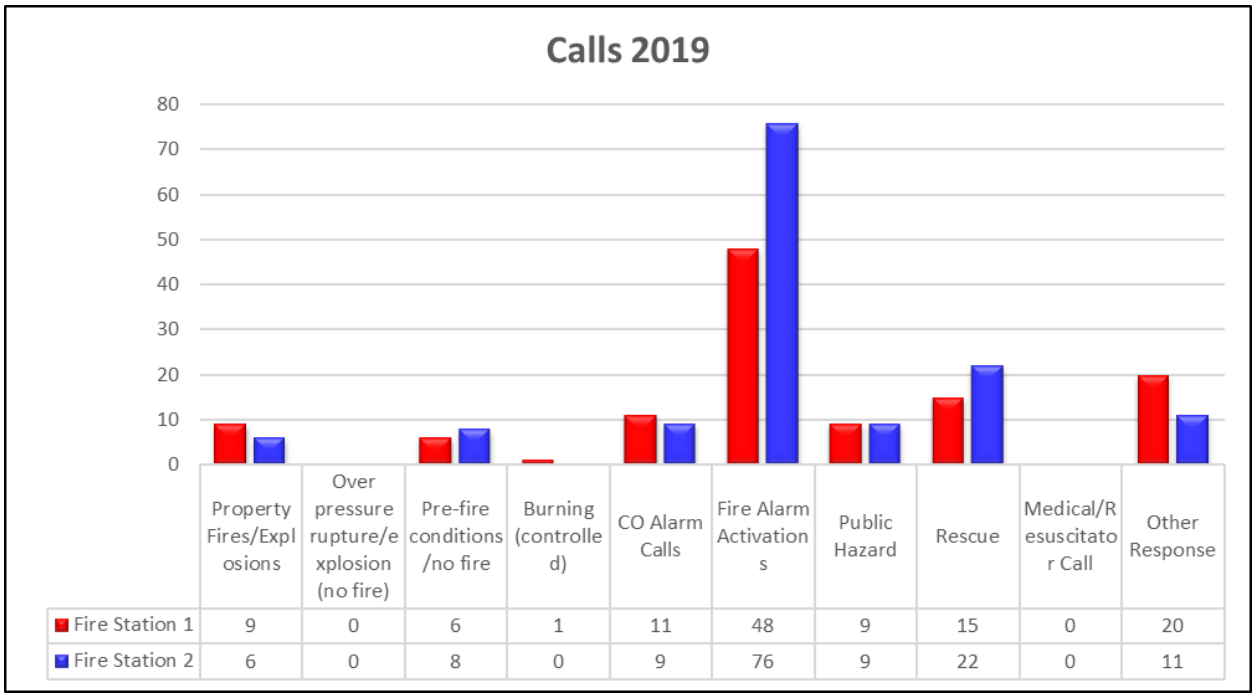
Total Calls by Type and Station



	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
Fire Station 1	5	0	5	1	8	43	15	15	2	23
Fire Station 2	4	0	5	1	6	57	7	8	5	25

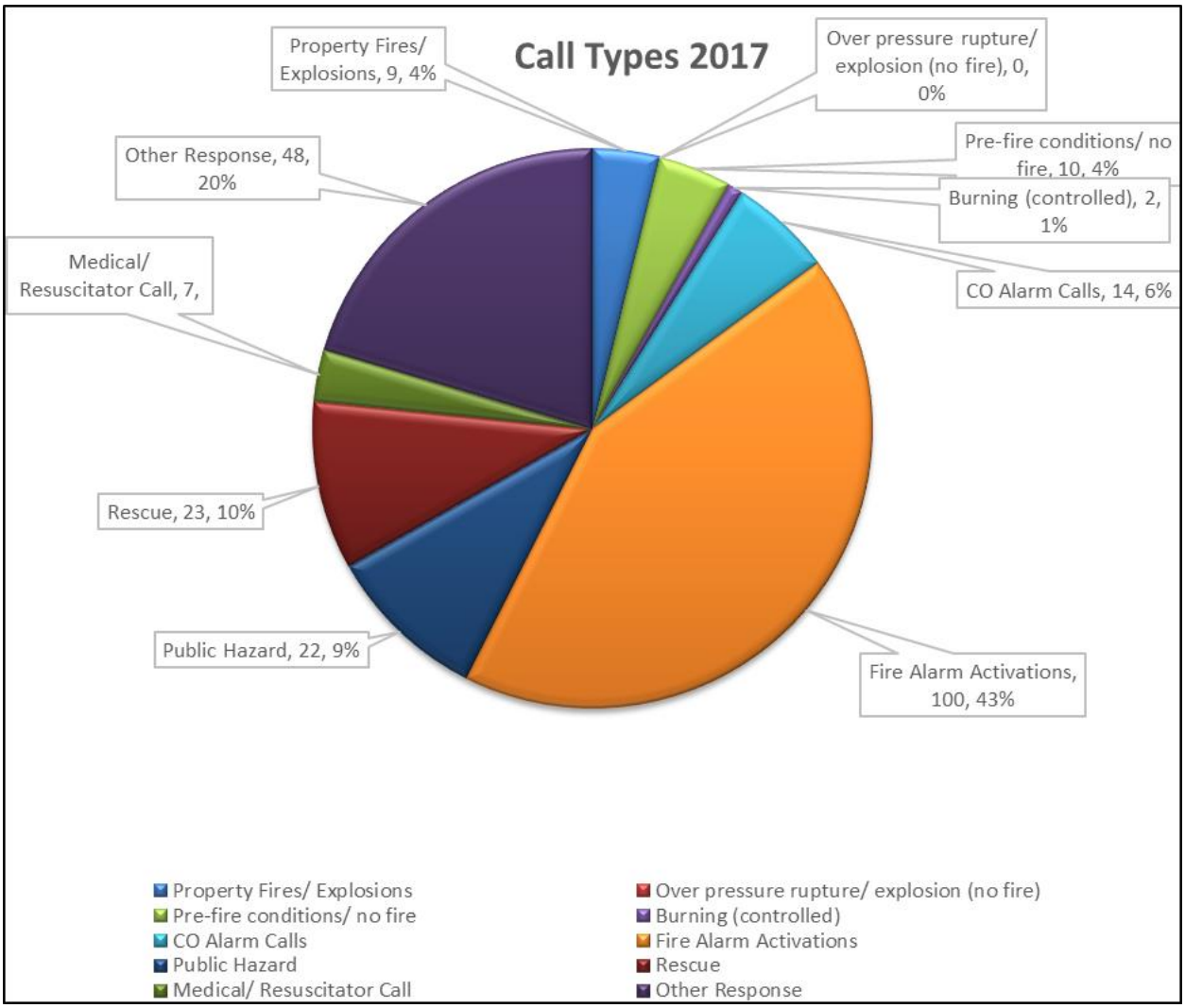


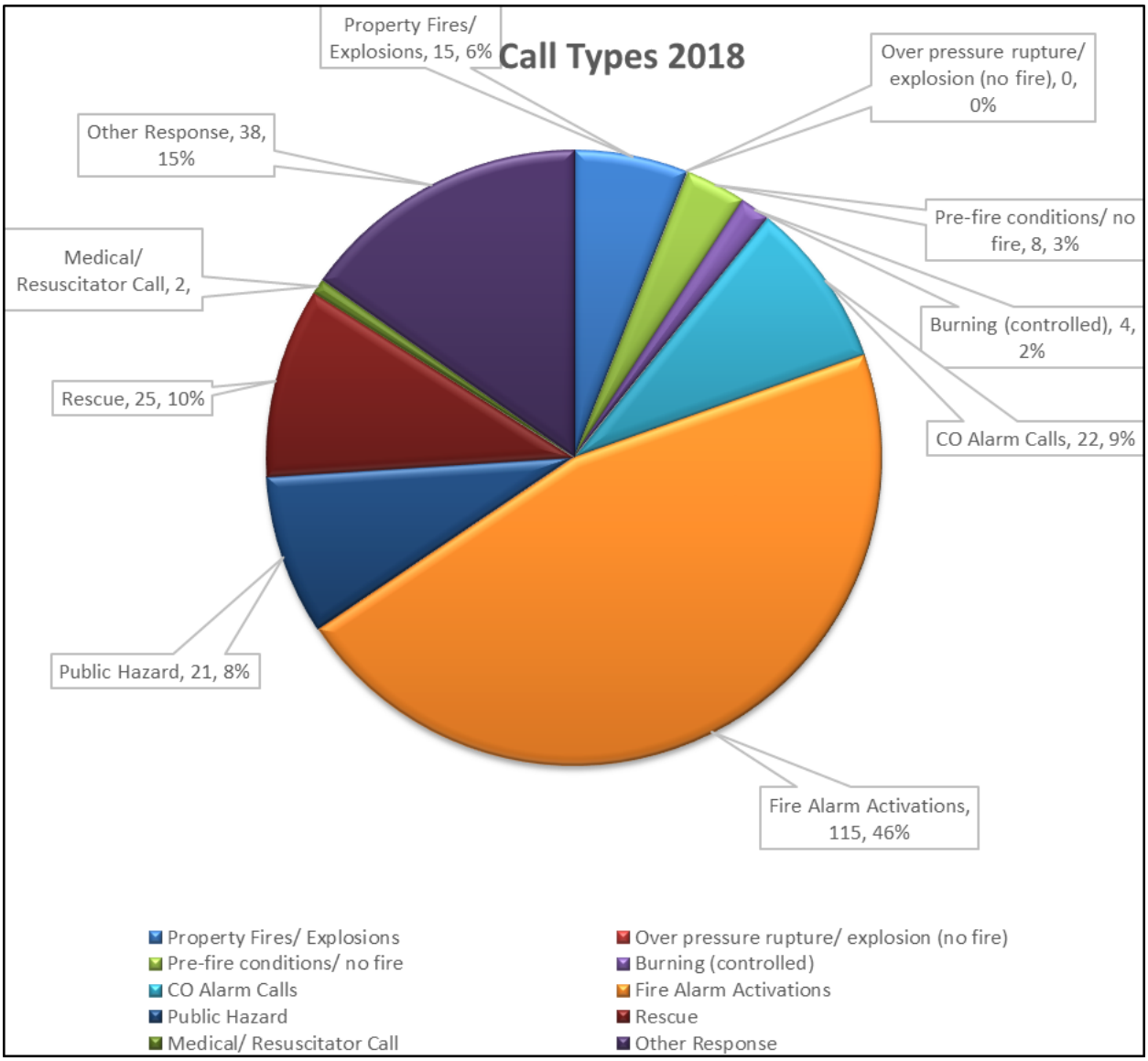
	Property Fires/Explosions	Over pressure rupture/explosion (no fire)	Pre-fire conditions /no fire	Burning (controlled)	CO Alarm Calls	Fire Alarm Activations	Public Hazard	Rescue	Medical/Resuscitator Call	Other Response
Fire Station 1	11	0	2	3	11	40	12	17	0	12
Fire Station 2	4	0	6	1	11	75	9	8	2	26

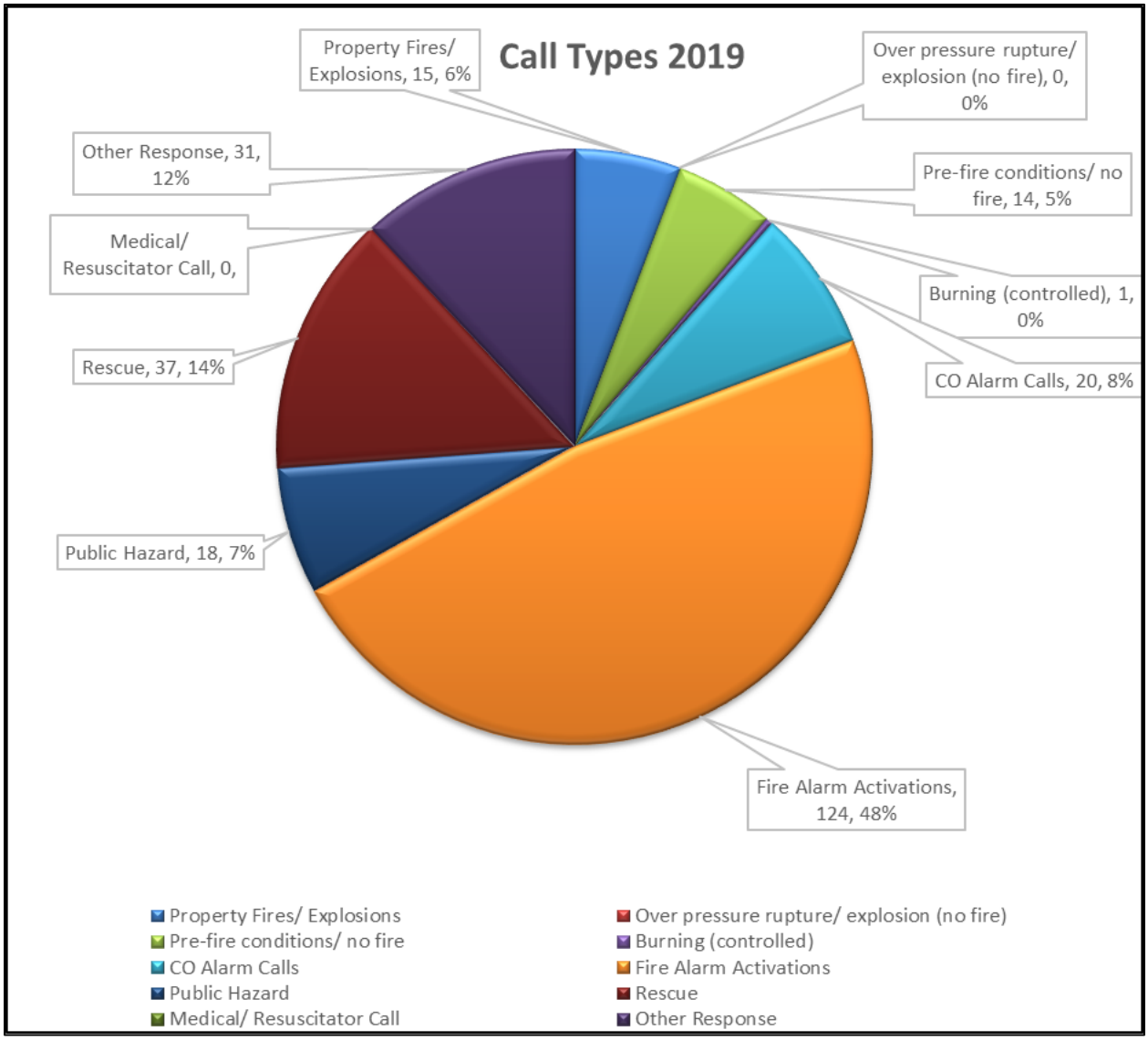


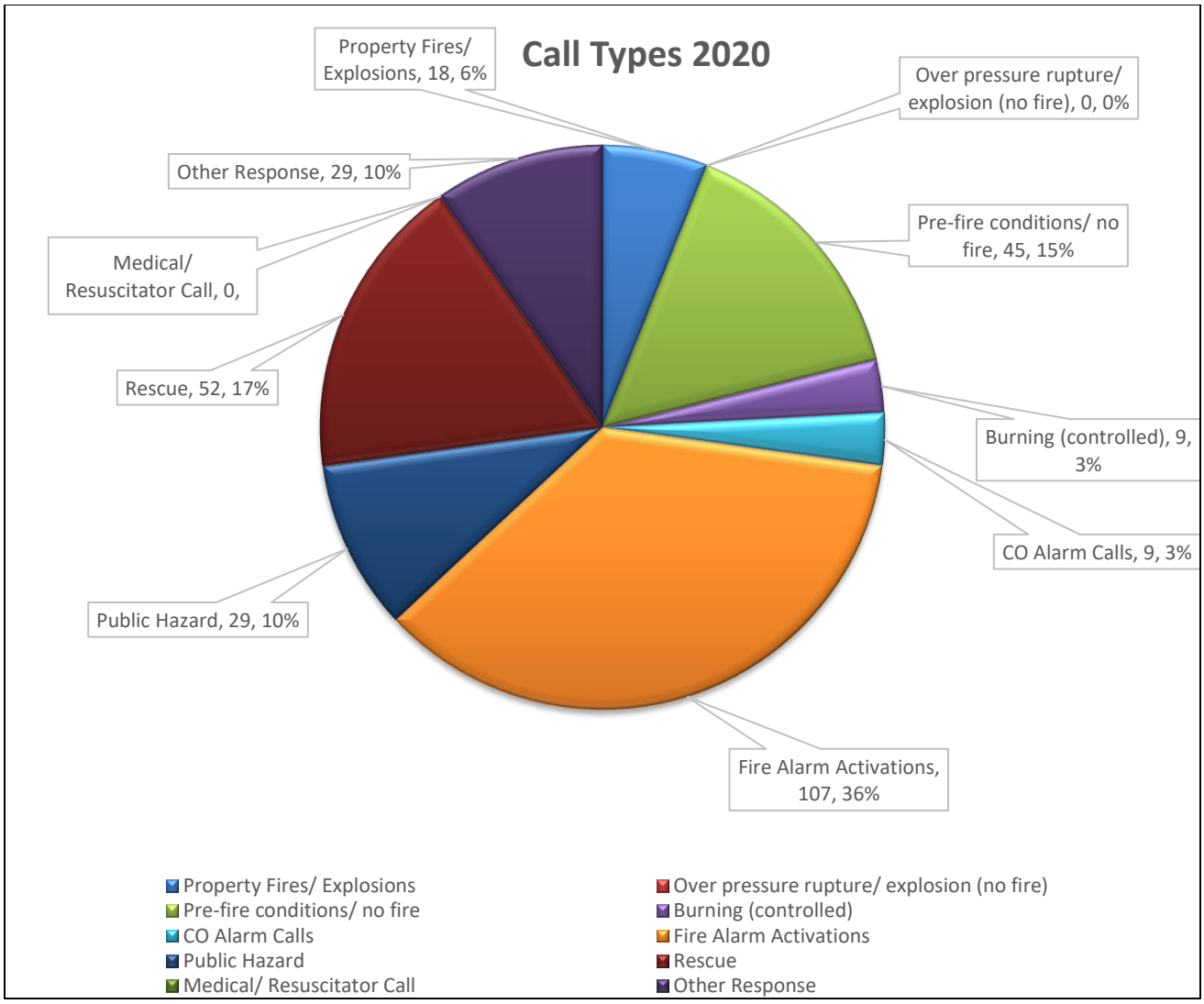
	Property Fires/Explosions	Over pressure rupture/explosion (no fire)	Pre-fire conditions/no fire	Burning (controlled)	CO Alarm Calls	Fire Alarm Activations	Public Hazard	Rescue	Medical/Resuscitator Call	Other Response
Fire Station 1	9	0	6	1	11	48	9	15	0	20
Fire Station 2	6	0	8	0	9	76	9	22	0	11

Total Calls by Call Type

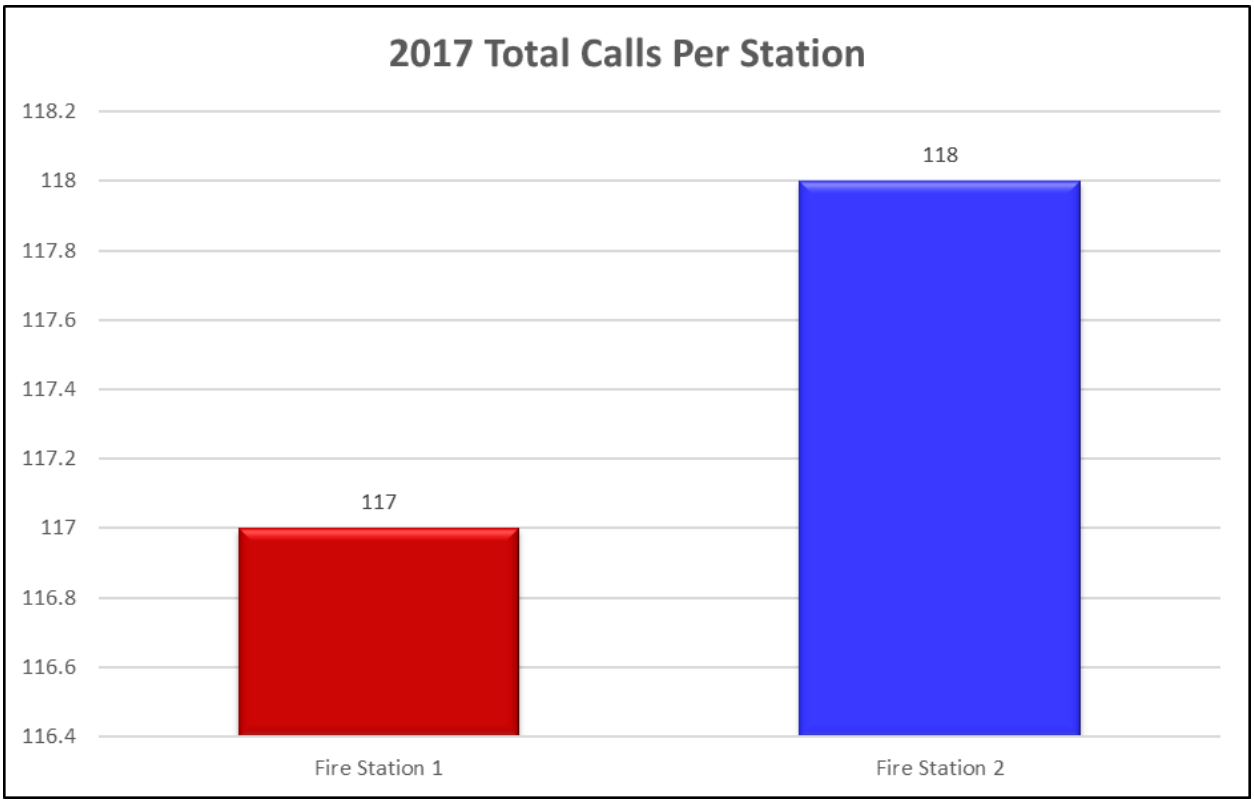


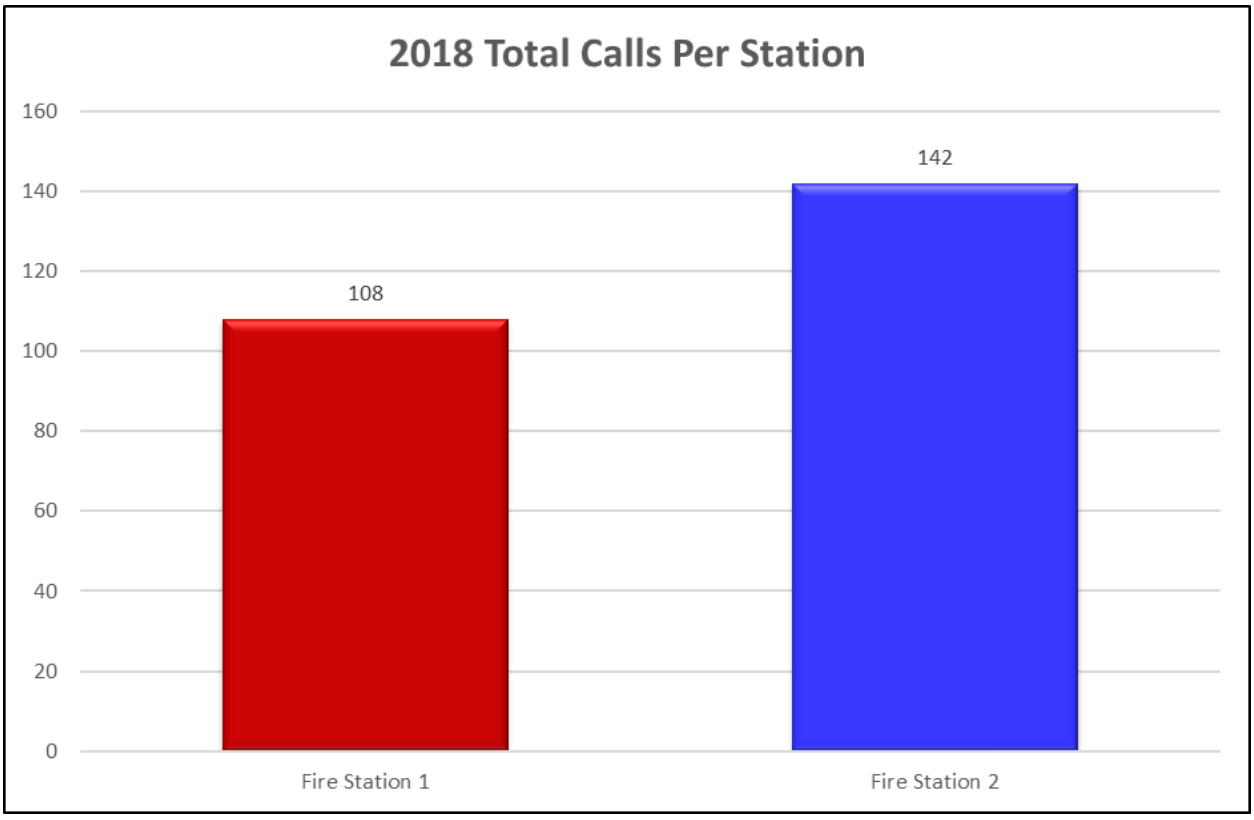

Call Types 2018
Property Fires/ Explosions, 15, 6%
Over pressure rupture/ explosion (no fire), 0, 0%
Other Response, 38, 15%
Pre-fire conditions/ no fire, 8, 3%
Medical/ Resuscitator Call, 2,
Burning (controlled), 4, 2%
Rescue, 25, 10%
CO Alarm Calls, 22, 9%
Public Hazard, 21, 8%
Fire Alarm Activations, 115, 46%
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

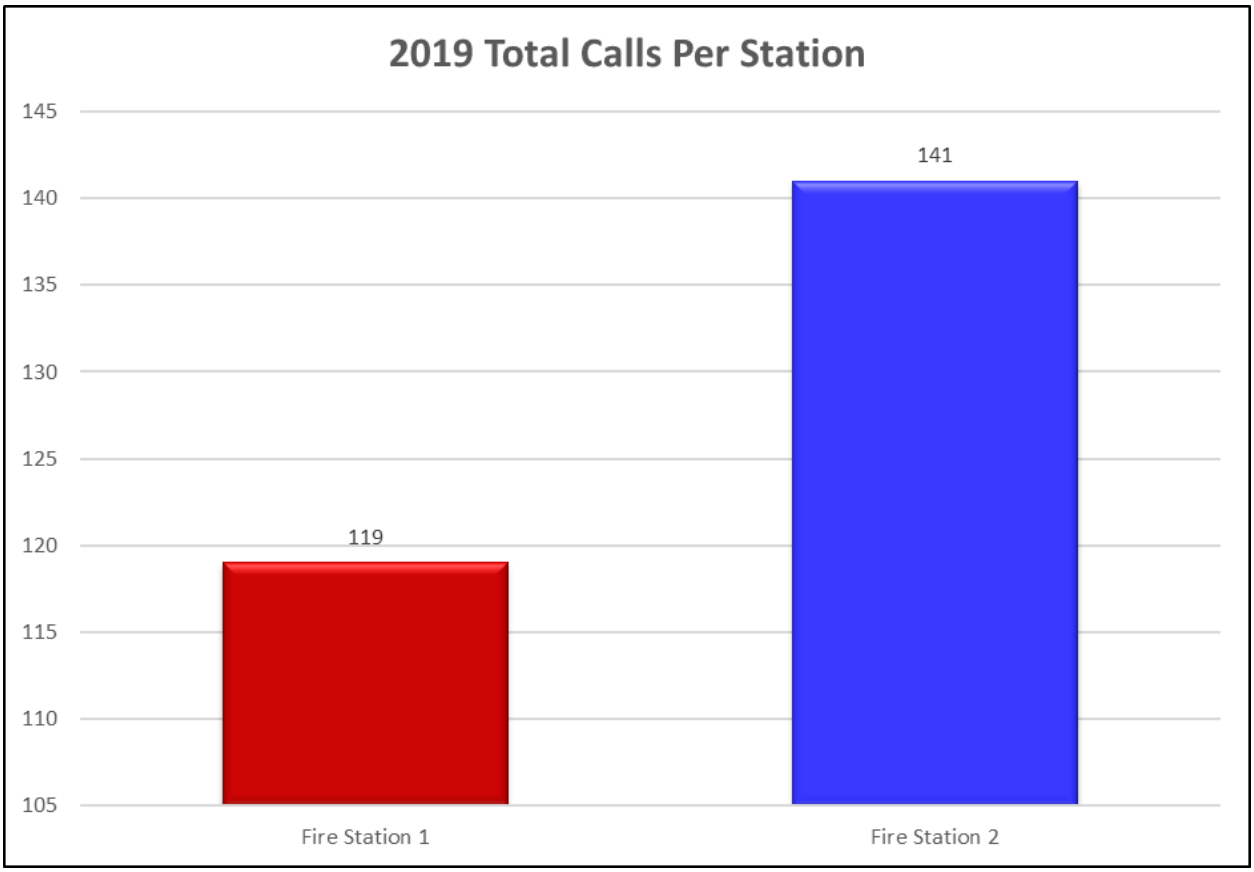

Call Types 2019
Property Fires/ Explosions, 15, 6%
Over pressure rupture/ explosion (no fire), 0, 0%
Other Response, 31, 12%
Pre-fire conditions/ no fire, 14, 5%
Medical/ Resuscitator Call, 0,
Burning (controlled), 1, 0%
Rescue, 37, 14%
CO Alarm Calls, 20, 8%
Public Hazard, 18, 7%
Fire Alarm Activations, 124, 48%
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


Call Types 2020
Property Fires/ Explosions, 18, 6%
Over pressure rupture/ explosion (no fire), 0, 0%
Other Response, 29, 10%
Pre-fire conditions/ no fire, 45, 15%
Medical/ Resuscitator Call, 0,
Rescue, 52, 17%
Burning (controlled), 9, 3%
CO Alarm Calls, 9, 3%
Public Hazard, 29, 10%
Fire Alarm Activations, 107, 36%
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

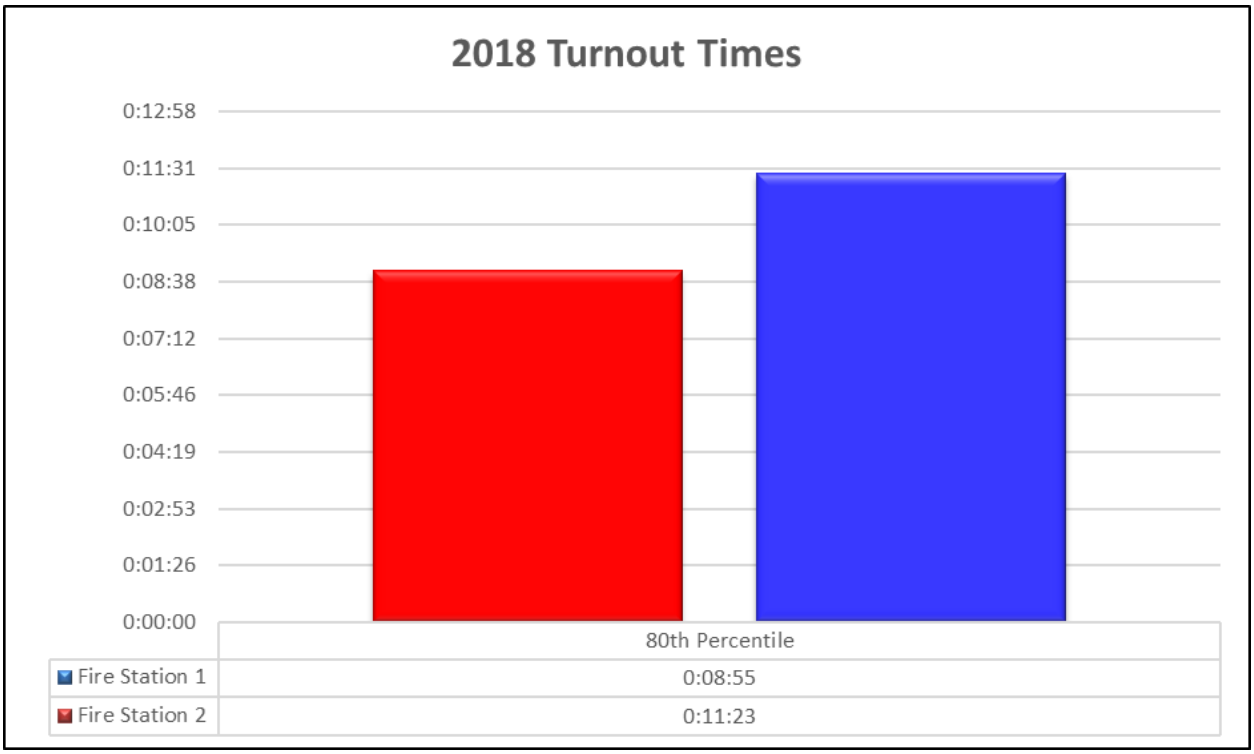
Total Calls per Station 2017 to 2019

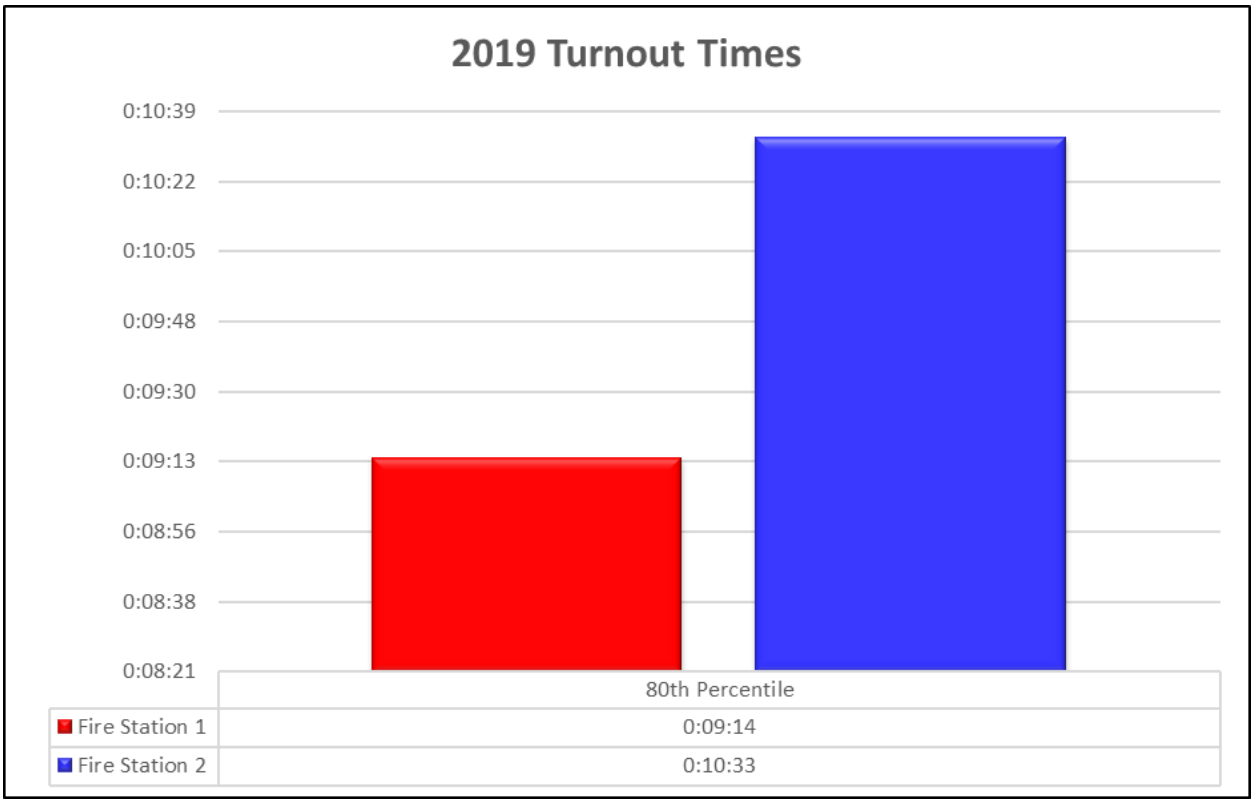




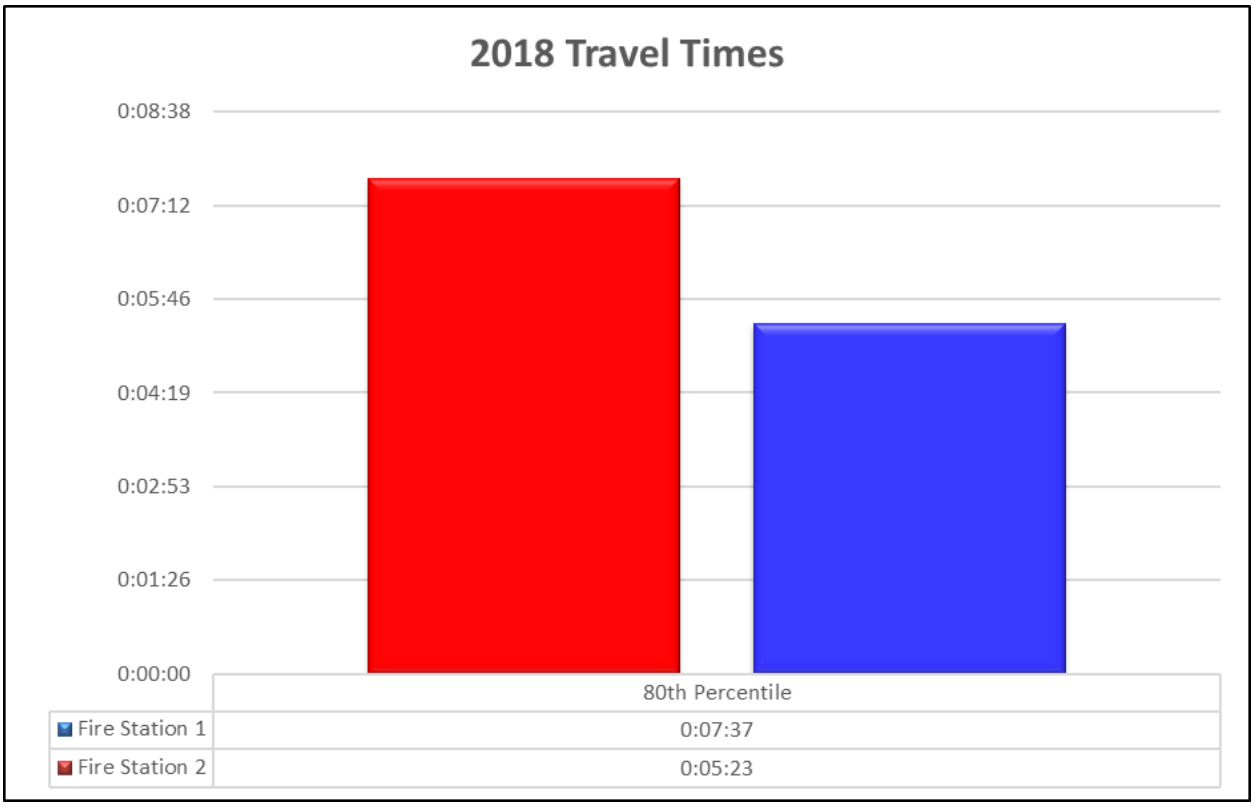

2019 Total Calls Per Station
145
140
135
130
125
120
115
110
105
119
141
Fire Station 1
Fire Station 2

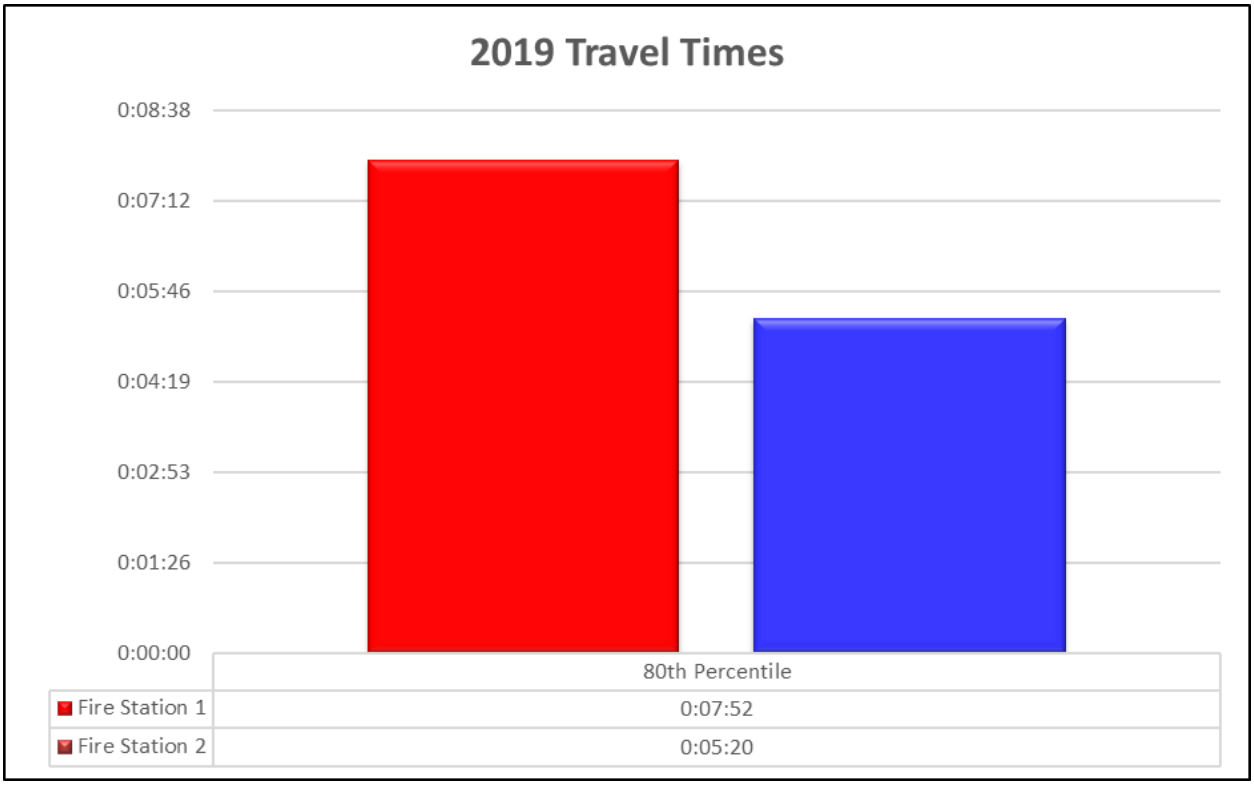
Turnout Times for 2018 and 2019



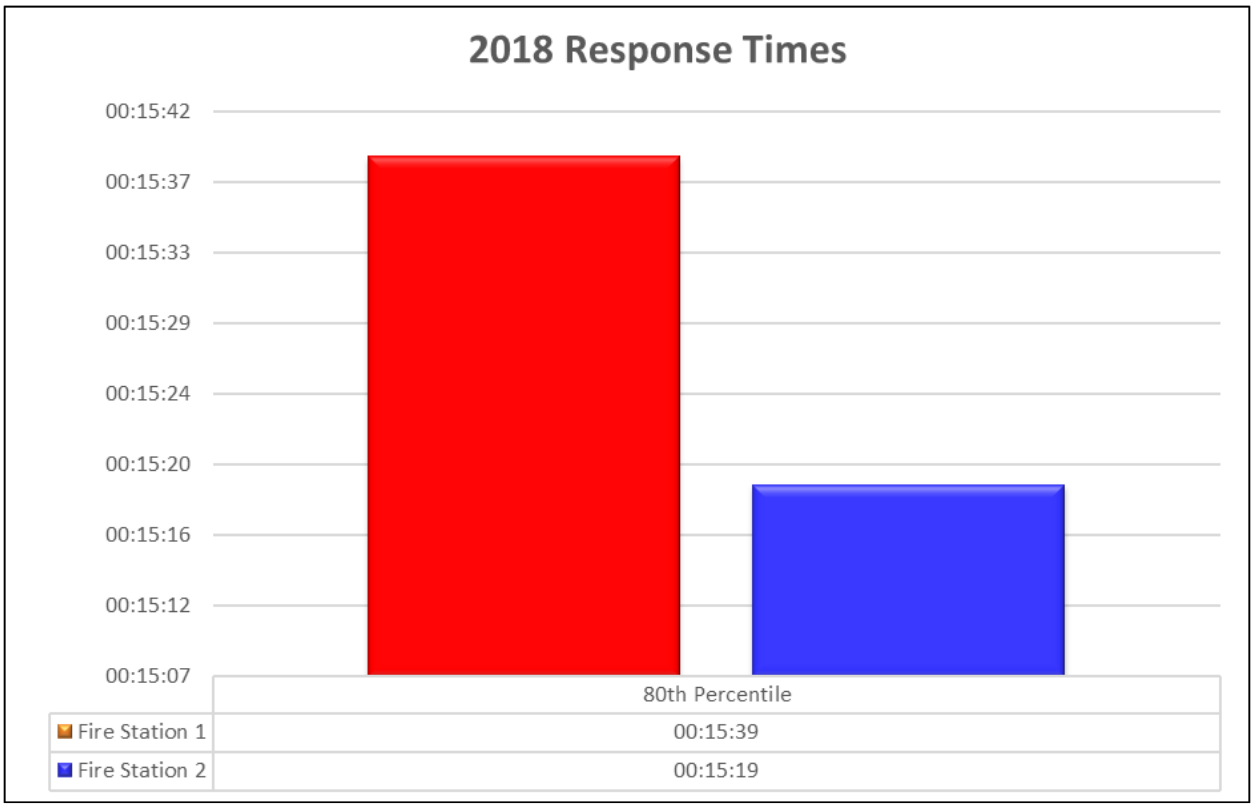


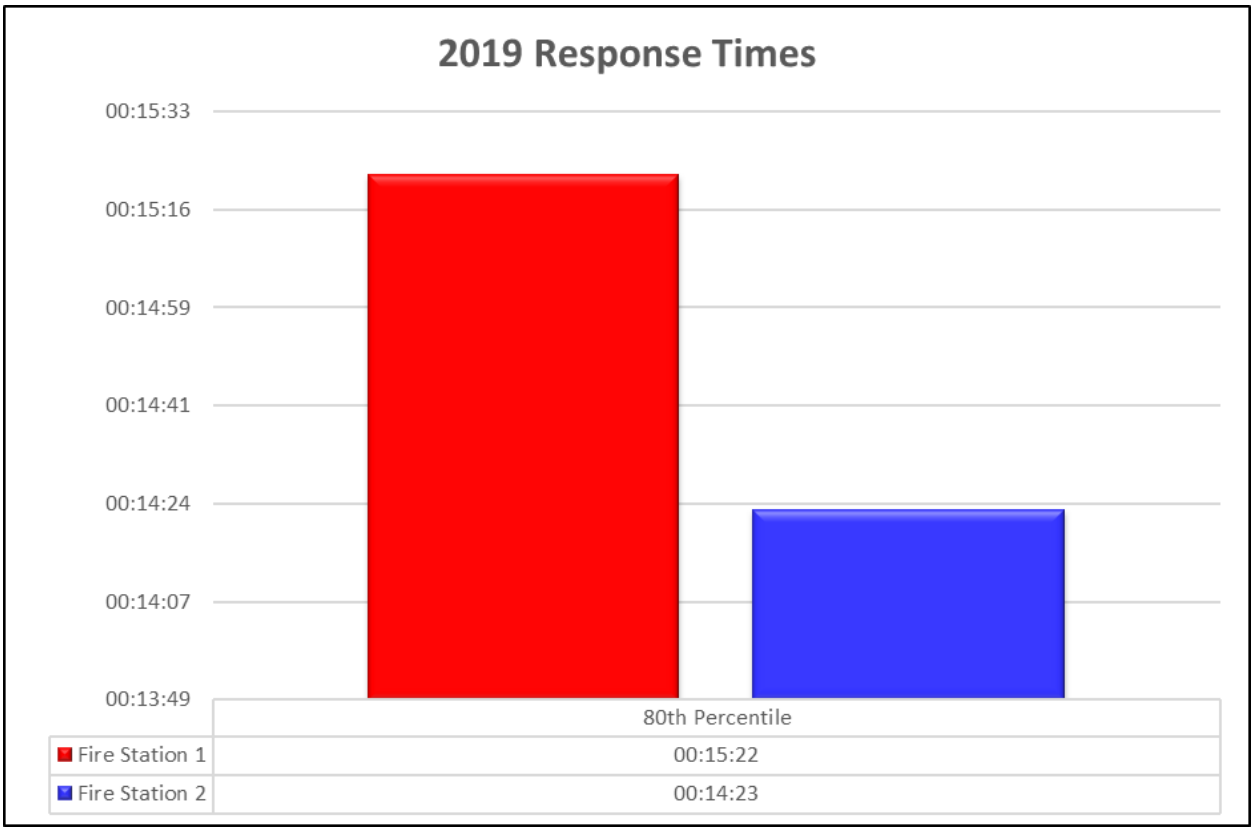
Travel Times for 2018 and 2019





Response Times for 2018 and 2019




2019 Response Times
00:15:33
00:15:16
00:14:59
00:14:41
00:14:24
00:14:07
00:13:49
80th Percentile
Fire Station 1
00:15:22
Fire Station 2
00:14:23

Appendix H – FUS 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).

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.

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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.

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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