THE CORPORATION OF THE MUNICIPALITY OF SOUTH HURON

Master Fire Plan

October 2021

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Executive Summary

A Master Fire Plan (MFP) is considered a strategic blueprint for the provision of local fire protection and rescue services that addresses legislative requirements, along with local needs and circumstances, while considering the community's ability to fund and support the level of service determined by Council. The MFP also makes significant findings and recommendations relating to fire risks and hazards, fire protection capabilities, public education, fire risk reductions and management, community preparedness and response, and funding and fiscal measures relating to fire protection.

The goal of this MFP project is to provide the Municipality of South Huron with a systematic and comprehensive approach to evaluating risk and existing capabilities within the municipality and its fire department for the next 10 years. It will also help formulate and communicate strategic direction and highlight opportunities for optimizing service delivery. This MFP will provide an objective basis to support decision-making with respect to community fire protection and prevention service needs.

Based on the information received during consultations, a review of supplied documentation, and reference to industry standards and best practices, there is a total of 47 recommendations for consideration by the SHFD. Implementation of the recommendations in this report will depend on the Municipality's resources and ability to move forward. To assist with the prioritization and implementation of the recommendations provided by EM&T, suggested timelines for implementation are as follows:

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

This timeline approach will assist the Fire Chief, Municipality Management, and Municipality Council in identifying and prioritizing budget forecasts related to each of the recommendations.

Acknowledgements

Emergency Management & Training Inc (EM&T) would like to thank the public and community stakeholders for participating in our surveys and providing valuable feedback for this MFP. In addition to the public, EM&T wishes to thank members of the South Huron Fire Department (SHFD) and staff of the Municipality of South Huron for your input and support in creating this document.

Project Consultants

Although several staff at EM&T were involved in the collaboration and completion of this MFP, the core review was conducted by:

- Darryl Culley, President, Emergency Management & Training Inc.
- Rick Monkman, Fire Service Consultant
- Gary Mosburger, Fire Service Consultant
- Lyle Quan, Project Coordinator and Quality Assurance

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 has worked on projects that range from master fire plans, strategic and operational reviews, and development of emergency response programs for clients.

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Abbreviations and Acronyms

AED	Automatic External Defibrillator
AHJ	Authority Having Jurisdiction
ASHER	Active Shooter/Hostile Event Response
CAD	Computer Aided Dispatch
CAO	Chief Administrative Officer
CARs	Canadian Aviation Regulations
CEMC	Community Emergency Management Coordinator
CFAI	Commission on Fire Accreditation International
CO	Carbon Monoxide
CRA	Community Risk Assessment
CRTC	Canadian Radio-Television and Telecommunications Commission
DFC	Deputy Fire Chief
DPG	Dwelling Protection Grade
EM&T	Emergency Management and Training Inc.
EMCPA	*Emergency Management and Civil Protection Act*
EMO	Emergency Management Ontario
EMS	Emergency Medical Services
EOC	Emergency Operations Centre
ERP	Emergency Response Plan
FESO	Fire and Emergency Services Organization
FPO	Fire Prevention Officer
FPPA	*Fire Protection and Prevention Act*
FUS	Fire Underwriter's Survey
HCPS	Huron County Paramedic Service
HR	Human Resources
IAFC	International Association of Fire Chiefs
ICMA	International Municipality/ County Management Association
ICS	Incident Command System
IDLH	Immediately Dangerous to Life and Health
IFSTA	International Fire Service Training Association
IMS	Incident Management System
IRM	Integrated Risk Management
ISO	Incident Safety Officer
IT	Information Technology
JPR	Job Performance Requirement
KPI	Key Performance Indicators
MCC	Mobile Command Centre
MFP	Master Fire Plan
NFPA	National Fire Protection Association
NIST	National Institute of Standards and Technology
OAFC	Ontario Association of Fire Chiefs

OCP	Official Community Plan
OFC	Ontario Fire Code
OFMEM	Office of the Fire Marshal and Emergency Management
OFSS	Ontario Fire Services Standards
OHS	Occupational Health & Safety
O.O.S	Out of Service
PFLSE	Public Fire and Life Safety Educator
PFPC	Public Fire Protection Classification
PPE	Personal Protective Equipment
PSAP	Public Safety Answering Point
PTSD	Post-Traumatic Stress Disorder
RFP	Request for Proposal
RMS	Records Management System
RPDM	Recognition Primed Decision Making
SCBA	Self-Contained Breathing Apparatus
SHFD	South Huron Fire Department
SOG	Standard Operating Guideline
SOP	Standard Operating Procedure
SRA	Simplified Risk Assessment
TIC	Thermal Imaging Camera
ULC	Underwriters Laboratories of Canada
VOC	Volatile Organic Compounds
WPI	Worcester Polytechnic Institute

Recommendations

The **recommendations found in this chart are listed by recommended timelines**, starting from Immediate to Long-term. A more detailed chart that is organized by section and includes estimated costs for each recommendation can be found in Appendix "A" of this document.

Rec #	Recommendations Listed by Suggested Timeline for Implementation
Immediate – 0-1 year	
18	It is recommended that the South Huron FPO participate in the examination and review process for all building stock development. Further, the Fire Prevention Division should be involved in the review and approval processes for new developments, site plans, renovations, etc., so that the fire safety/response requirements are met.
22	SHFD to develop an SOG outlining proper decontamination of firefighters and their gear, during and after emergency operations and/or live fire training evolutions.
23	It is recommended that the SHFD introduce a cancer screening program.
24	The Huron Park Rescue be outfitted to serve double duty as the firefighter rehabilitation and decontamination unit and backup rescue.
25	A formal health and wellness program should be created to identify initiatives and a create an SOP for the confidential process for treatment of a mental health injury.
27	South Huron should implement a mass notification system for the Municipality.
28	It is recommended that the Municipality of South Huron develop a comprehensive Community Risk Reduction Plan that falls in line with the CRA.
42	Immediate reviews and revisions be undertaken by the Fire Chief for all existing Fire Protection Agreements.
44	In partnership with other county departments, develop an SOG for accountability.
Short-term – 1-3 years	
1	The 2006 E&R By-law should be updated and reviewed annually to ensure that the SHFD is operating within the approved parameters as identified by Council. This does not mean that the by-law must be presented to Council annually, but that the document is current and accurate.
2	When the Establishing & Regulating By-law is updated, the SHFD organizational structure should be amended to reflect the changes and additions made.
3	It is recommended that data analytics be recorded and evaluated by the Fire Chief annually to help with assessing where any service gaps or challenges may exist. This review will also assist in determining the possible need for a larger volunteer firefighter contingent.

Rec #	Recommendations Listed by Suggested Timeline for Implementation
4	To prepare for the NG9-1-1, SHFD should work closely with Tillsonburg Dispatch to develop a business case for the acquisition of new NG9-1-1 related equipment. This CAD system should be implemented in 2024.
5	Hire a part-time Deputy Fire Chief (Training/Operations). This new position should begin by working a 21 – 24-hour work week with the possibility of transitioning to a full-time position within the next 7-10 years. An interim option, until a part-time Deputy Fire Chief position can be implemented, is to work with other local departments with the creation of a joint Training Officer position. This joint position also has the benefit of creating consistent training programs amongst the partner departments.
6	The Fire Chief provide a business case to senior administration supporting either: • a new training facility for the SHFD, or • the purchase of a mobile training unit or a fixed site unit for the purposes of Live Fire Training.
7	The SHFD work with the Planning and Development Services to determine a suitable location for a new training facility. Options to include this with the building of a new fire station should be investigated.
8	It is recommended that all firefighters receive live fire training annually.
9	SHFD adopts the educational progression plan outlined. The proposed training programs and succession path should be supported for current and proposed positions with the following suggested training: • The position of Captain, emergency management training should start with IMS-100 Introduction to the Incident Management System (IMS) for Ontario and IMS-200 Basic Incident Management System for Ontario. • All Deputy District Chiefs acquire NFPA 1521 – Fire Department Safety Officer certification. • The position of Deputy District Chief, emergency management training continues with IMS 300 – Intermediate Incident Management System. • The position of District Chief, emergency management training continues with IMS 250 – IMS in EOCs.
10	Create a formal organization development program that identifies core competencies and qualifications for Fire Chief, Deputy Fire Chief, District Chief, Captain, and firefighter and be formally implemented.
11	The SHFD facilitate the experience component required as part of the development of individuals and implement a process for individuals that are interested in Chief Officer positions.

Rec #	Recommendations Listed by Suggested Timeline for Implementation
12	Develop job descriptions with a list of the minimum core job responsibilities. Further, the education and experience required for each of those positions should be outlined to chart the path for succession. Job descriptions found in the E&R Bylaw should be removed.
13	It is recommended that a dedicated part-time Fire Administrative Assistant position be filled that could lead to a full-time position as needed.
14	EM&T recommends that an on-call Duty Officer position be created to be filled on a rotational basis by qualified individuals.
15	It is recommended that the Municipality of South Huron enact a by-law for the operation of a short-term rental, including bed & breakfasts.
16	It is recommended that South Huron enact a by-law for the operation of second units, ensuring compliance with provincial legislation and registration/ licencing with the Municipality.
17	It is recommended that the Municipality of South Huron explore opportunities to provide Fire Prevention related services to neighbouring municipalities.
19	It is recommended that SHFD conduct an annual review of the Fire Prevention Division's programs to identify any areas requiring additional activity.
20	It is recommended that all firefighters be offered the opportunity to become trained and qualified to the Fire & Life Safety Educator Level I, or equivalent certification.
21	It is recommended that the SHFD work in conjunction with residential developers in promoting the advantages of installing residential fire sprinklers.
26	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.
29	**Exeter Fire Station** If the Municipality of South Huron decides to keep the Exeter building for Fire Service needs: • Install an appropriate diesel exhaust extraction system for its apparatus. • Renovate the current bunker gear area to allow for a negative pressure room and for additional space to accommodate the officer hear relocation from the apparatus floor • And a washer/dryer for the general cleaning of clothes.
30	To effectively manage the new staffing and equipment requirements due to the closing of the Huron Park fire station, EM&T recommends that the Exeter Fire Station be relocated in the vicinity of London Road and Norwood Village Road.

Rec #	Recommendations Listed by Suggested Timeline for Implementation
31	**Huron Park Fire Station** If the Municipality of South Huron decides to keep the Huron Park building for fire service needs: • Install an appropriate diesel exhaust extraction system for its apparatus and appropriate negative pressure bunker gear storage room. • Update and expand the current showering facilities for both men and women. • Replace the current back-up power unit immediately.
32	**Dashwood Fire station** The following upgrades are recommended: • Install appropriate diesel exhaust extraction system for apparatus at each fire station. • Install an appropriate negative pressure bunker gear storage room. • Purchase an industrial washer extractor and dryer, and a separate general washer and dryer for regular washing of clothing. • Install a more powerful generator to allow for full power capacity. • Installation of a male/female shower facility
33	To better serve the community, EM&T recommends that a new Dashwood Fire Station be built and located in the vicinity of Bronson Line (County Rd 2) and Boston Street**.** This would replace the present Dashwood Station.
35	When considering procurement of new SCBA, consideration the interoperability with fire service partners when the selection process has commenced.
36	SHFD to equip new apparatus purchases with new fire hose, nozzles, and ladders.
37	If the Municipality of South Huron decides to keep the 2000 Aerial Apparatus, a comprehensive test be conducted by the ULC to approve this apparatus for use in Canada.
38	SHFD review the advantages in acquiring 5” (125 mm) supply lines with 4” (100 mm) Storz couplings to be assigned to the aerial devices.
39	SHFD inquire about obtaining their Superior Water Shuttle Accreditation.
40	Review and update the Fees By-Law 34-2018 for services provided by the SHFD.
41	The Fees By-Law to identify the requirement that the individual(s) that receive an invoice for fire services provided is responsible for ensuring all charges are paid to the Municipality.
43	Adjust the Fire Protection Agreement between the Municipality of South Huron and the Municipality of Lambton Shores related to fees for services and the general response area in Schedule “B”.
45	SHFD implement a drone program to enhance firefighter safety and be employed for

Rec #	Recommendations Listed by Suggested Timeline for Implementation
46	All frontline vehicles should be equipped with TICs, along with the development and implementation of a comprehensive training program that meets the NFPA 1408 requirements.
47	The Fire Chief should continue with completing any of the outstanding recommendations noted in the past report.

INTRODUCTION

Introduction

Review Process and Scope of the Master Fire Plan and Community Risk Assessment

Members of the public, Municipal Council, fire department personnel and staff, and other Municipal departments participate collaboratively in the development of an MFP. The MFP therefore provides an objective basis to support decision-making with respect to community fire protection and prevention service needs.

The purpose of completing a Community Risk Assessment (CRA) is to identify significant risks and hazards within a community. The data is collected, analyzed, and then distributed to community leaders who then make decisions regarding the planning and implementation of risk reduction measures.

EM&T has based its review process on the Municipality of South Huron's (the Municipality) initial Request for Proposal (RFP) and the response document submitted by EM&T. The specific scope of work identified in the RFP was reviewed. The MFP was completed by utilizing best practices, current industry standards, and applicable legislation as the foundation for all work undertaken. EM&T also used both quantitative and qualitative research methodologies to develop a strong understanding of current and future needs and circumstances of the community.

Project Scope

The scope of the project will be to conduct a comprehensive review of all Fire Department operations and develop an MFP as well as a CRA which will facilitate the provision of optimal fire protection and rescue services appropriate for the community.

Master Fire Plan

The MFP study will:

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) Include, but not be limited to, the following key areas:
    a. **Governance** — review and make recommendations regarding applicable provincial legislation and regulations, and municipal by-laws relative to the Fire Department.

b. **Service Delivery** — review and make recommendations regarding the level and range of services and programs delivered currently, and future requirements taking into account predicted growth and service delivery expectations.
c. **Fire Prevention** — review and make recommendations regarding the Fire Prevention Program including fire inspections, investigations, and code enforcement.
d. **Public Fire Safety Education** — review and make recommendations regarding Public Education program, including demographics, website, and social media opportunities.
e. **Emergency Response** — review and make recommendations regarding the emergency response call volume and trends, including types of calls, numbers of calls, apparatus deployment, response staffing, firefighter deployment and safety.
f. **Firefighter Training** — review and make recommendations regarding the Firefighter Training Program, including recruit training, firefighter training, and officer training.
g. **Administration** — review and make recommendations 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.
h. **Finance** — review and make recommendations regarding Fire Department budgeting, reserves, development charges, revenues, and potential revenues.
i. **Human Resources —** review and make recommendations regarding Fire Department staffing including full-time positions and Volunteer Firefighters, organizational structure, ratio of officers to firefighters relative to effective span of control, firefighter recruitment and retention, job descriptions, remuneration of full-time and volunteer staff, promotional policy, succession planning, and health and safety.
j. **Facilities** — examine the existing fire stations and administration facilities, making recommendations on the appropriate number, location, and configuration of Fire Department facilities relative to long-term fire protection service delivery.
k. **Apparatus and Equipment** — review and make recommendations regarding the Fire Department fleet of vehicles, fire apparatus and major pieces of equipment including the types of vehicles, age, replacement cycles, utilization, and suitability.
l. **Maintenance Program** — review and make recommendations regarding the inspection and maintenance of Fire Department vehicles, fire apparatus, and

equipment.

m. **Communications** — review and make recommendations regarding Fire Department communications systems, including dispatch, paging, telephony, and radio systems.
n. **Emergency Management Program** — review and make recommendations regarding the Emergency Management Program as managed by the Fire Chief/CEMC.

4) Include input from members of council, key municipal staff, senior 18 of 25 fire department officers, volunteer firefighters, and the community.
5) Consider the potential effects of mutual aid and/or automatic aid agreements with neighbouring municipalities.
6) Consider the projected growth in population and development over the next 10 to 20 years, and the potential impact to service delivery and operations of the Fire Department.
7) Include recommendations and estimate financial implications of each.

Community Risk Assessment

The project will include a completed CRA that meets the requirements of Ontario Regulation 378/18. This assessment will allow the Municipality of South Huron to make informed decisions about the types and levels of fire protection services provided based on the risks identified within the community.

The project will be conducted using best practices, current industry standards, and applicable legislation. The project will 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.

Performance Measures, Standards, and Reports

Performance indicators for this MFP are based upon but not limited to national standards, legislation, and regulations such as:

- *Fire Prevention Act*
- *Occupational Health & Safety Act*
- *Workers' Compensation Act*
- *Civil Emergency Measures Act*
- National Fire Protection Association (NFPA) Standards
- Fire Underwriters Survey (FUS)
- Ontario Officer of the Fire Marshal

Additionally, any past reports produced and/or received by the SHFD and Municipality of South Huron were reviewed and analyzed.

National Fire Protection Association

The National Fire Protection Association (NFPA) is a global self-funded non-profit organization, established in 1896, devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards. It delivers information and knowledge through more than 300 codes and standards in research, training, education, outreach, and advocacy by partnering with others who share an interest in their mission.[1] The NFPA standards are not lawfully mandated, but they are the industry's best practice and will be referenced in any litigation impacting the fire department.

Fire Underwriters Survey

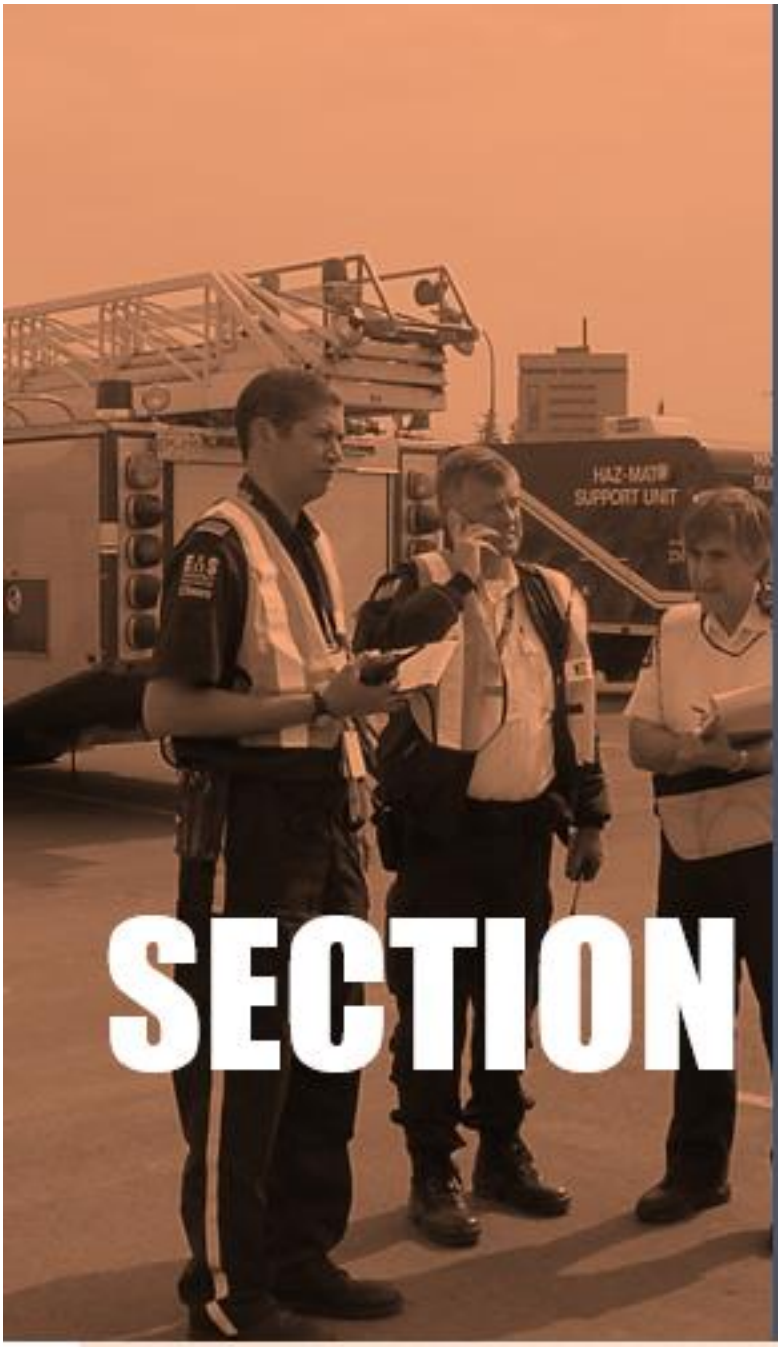
The Fire Underwriters Survey (FUS) is a national organization that provides data on fire protection for fire insurance, statistical work and underwriting the purposes of subscribing insurance companies. Subscribers of FUS represent approximately 85% of the private sector property and casualty insurers in Canada.[2]

The FUS has a grading system that was developed and implemented to set insurance rates for property owners. As part of the grading system there are two grades for each Canadian community:

1) Public Fire Protection Classification (PFPC) which ranks a community's ability to combat a major fire such as commercial, industrial, multi-family residential and institutional. This grading is ranked on a scale of 1 to 10 where Class 1 represents the highest level of protection and Class 10 represents the absence of an effective fire protection system.
2) Dwelling Protection Guide (DPG) ranks the ability to combat a single-family residential fire. This grading is ranked from Grade 1 as the best and Grade 5 as low where the community has little, if any, fire protection.

When determining the grading for the community, the FUS will review and analyze data and information on the fire department's operations, water supply systems, communications, fire safety inspection programs, fire apparatus, number of firefighters, response distances and whether the fire department is comprised of career or volunteer staffing.

[1] https://www.nfpa.org/About-NFPA
[2] https://fireunderwriters.ca



SECTION 1

Community Profile & Governance

Section 1: Community Profile and Governance

1.1 Community Profile

The Municipality of South Huron is made up of the former townships of Stephen and Usborne, and the Town of Exeter, with a population of approximately 10,000, governed by the *Municipal Act* 2001. The Municipal office is located at 322 Main Street South, Exeter, Ontario.

FIGURE #1: Municipality of South Huron (relative to the rest of the Region)

The Municipality is governed by seven council members, including a Mayor and a Deputy Mayor, who are elected at large. Senior staff consists of a CAO, along with three directors and four department managers. Employees total approximately 60 including full-time, part-time, and seasonal, and there are approximately 65 volunteer firefighters.

The activities of the Municipality include, but are not limited to, road and bridge maintenance, landfill management, water and sewer treatment and delivery and maintenance, facility management, fire services, licensing, and issuing various permits. The main servicing departments are noted below.

- CAO & Human Resources, Finance, Clerks, Planning, Building Services, Transportation Services, Environmental Services, Community & Facility Services, Fire & Emergency Services, Cemetery Services.

According to Statistics Canada the population of South Huron in 2016 was 10,095**.** There are four (4) significant residential developments in Exeter along with two more in the Grand Bend and the Huron Park areas. A combined total of approximately 800 to 1,000 housing units are planned for upon completion of all current and proposed residential developments, over the next 10 years. The municipality may realize an estimated population growth of up to approximately 4,000 residents.

TABLE # 1: Population Distribution in 2016

Total – Distribution (%) of the population by broad age groups	**100 %** 10,095	**Male** 4,880	**Female** 5,215
0 to 14 years	1,530	760	770
15 to 64 years	5,905	2,920	2,990
65 years and over	2,660	1,200	1,455
85 years and over	425	135	285
Average of the population	45.9	45.0	46.9
Median age of the population	49.6	47.9	51.0

1.2 Governance & Regulating By-Law

Under the *Fire Protection and Prevention Act*, (FPPA) municipalities are permitted under the *Act* to form a fire department. Under Article 5 (0.1) of the *Act*, the council of a municipality may establish, maintain, and operate a fire department for all or any part of the municipality. 2001, c. 25, s. 475 (2). *Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4 (ontario.ca)*

The establishment of a fire department is done by way of an Establishing & Regulating By-Law.

OFM - 01-03-12 | Ministry of the Solicitor General (gov.on.ca)

The South Huron Establishing & Regulating By-law #18-2006 establishes the Municipality's Fire Department and identifies the services the Department and the Fire Chief have the authority to provide, as cited below:

"The goal of the South Huron Fire Department is to provide fire protection services through a range of programs designated to protect the lives and property of the inhabitants from the adverse effects of Fire, and exposure to dangerous conditions created by man or nature: first, to the Municipality: and second, to those municipalities requiring assistance through authorized emergency fire service plans and programs (mutual aid, automatic aid). Other emergency services provided by the South Huron Fire Department will include, but not be limited to the following non-fire emergencies:

a) *Rescue from motor vehicle accidents, industrial accidents, confined spaces and building collapse:*
b) *Rescue involving water and ice (land based only)"*

While the By-law identifies a host of services provided by SHFD, clarification should be more precise in the description of services the SHFD is authorized to provide. For example, NFPA 1006 Standard for Technical Rescue Personnel Professional Qualifications identifies 19 technical rescue specialties. It would assist the Fire Chief in meeting the needs and expectations of Council if the services presented were detailed, in terms of the exact services provided and the qualifications the firefighters needed to perform those tasks.

Technical rescue services can be interpreted differently by Council or members of the public and defining the service levels provides a clear direction for the Fire Chief in terms of the provision of training, equipment, and budget requests.

Without the by-law specifically identifying the level of service of the SHFD, a moving target may exist where past practices may have dictated the services provided over the years. This does not ensure that the SHFD is correctly prioritizing their services. Therefore, to reduce and/or remove this moving target or past practices behaviour, and to reduce the frustration amongst staff, Council, and the public, the implementation of a by-law that clearly identifies services to be offered will provide clearer direction for the Fire Chief.

As an example, NFPA 1006 identifies awareness, operational and technical qualifications for the rescue specialities; it will be in the best interest of the SHFD to identify which minimum qualifications it desires for each rescue specialty.

Best practice implies the by-Law be reviewed annually, and revisions be completed that reflect any changes in the needs and circumstances of the community. The by-Law should reference applicable NFPA Standards, the Vision, Mission, and Values Statements, along with any goals that may be set forth, and the expectations of a comprehensive fire prevention program. It should also reflect the expected outcomes of the smoke and CO alarm programs.

The latest E&R By-Law for the SHFD came into effect in May of 2006, which means that it is more than 15 years old, without a signed update.

Recommendation:
The E&R Bylaw document needs to be reviewed and updated.

Rec #	Recommendation	Estimated Cost	Suggested Timeline
1	The 2006 E&R By-law should be updated and reviewed annually to ensure that the SHFD is operating within the approved parameters as identified by Council. This does not mean that the by-law must be presented to Council annually, but that the document is current and accurate.	No cost associated with document updating. Costs could be incurred with implementation of new services.	Short-term (1-3 years) with annual reviews

SECTION 2 Planning

Section 2: Planning

2.1 Three Lines of Defence

The Office of the Fire Marshal and Emergency Management (OFMEM) in Ontario identifies the "Three Lines of Defence" to be utilized by all fire departments in Ontario when planning to meet the needs of the community. EM&T utilizes this model because of its foundation based upon education, enforcement, and response.

I. **Public Education** - educating residents has proven to be the most effective means in reducing and preventing the incidences of fire and property damage. Reducing the number of fires before they start and identifying how the municipality will continue to meet the fire education needs while the municipality grows.

II. **Safety Standards and Enforcement** - ensuring that the inspection and enforcement of fire codes occur so buildings meet the required safety standards.

III. **Emergency Response** - the availability of well trained and well-equipped firefighters to respond and effectively mitigate the incident is the last defence. The staff, equipment and fire station locations impact how the emergency is mitigated.

In conjunction with the Three Lines of Defence, a key industry standard that outlines goals and expectations for a fire department is the NFPA. These standards are not lawfully mandated but form the foundation of the fire services recommended best practices. These NFPA standards are also utilized by organizations such as the 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.

The Fire Chief's Handbook, 6th Edition (2003) p. 1031

2.1.1 National Fire Protection Association Standard 1201

NFPA 1201 Standard for Providing Fire and Emergency Services to the Public, section 4.3.5 sets out criteria as stated below:

> *"The Fire and Emergency Services Organization shall provide customer service-oriented programs and procedures to accomplish the following:*
>
> - *Prevent fire, injuries and deaths from emergencies and disasters.*
> - *Mitigate fire, injuries, deaths, property damage, and environmental damage from emergencies and disasters.*
> - *Recover from fires, emergencies, and disasters.*
> - *Protect critical infrastructure.*
> - *Sustain economic viability.*
> - *Protect cultural resources."*

To accomplish this, the Fire Chief must ensure open and timely communications with the municipal Manager and Council and keep them fully informed of the department's achievements, operations, and challenges.

2.2 Consultations

Surveys were completed by Council and members of the SHFD. One of the questions in the survey was used to gauge how members of Council and the Department perceive how the community values the services provided by the SHFD.

2.2.1 Municipal Council/ CAO/ Firefighter Responses

SHFD staff and Council were asked what they perceive as the top three issues facing the SHFD. Overall, the top three concerns relate to:

- Staffing levels and recruitment
- Condition/ age of the fire stations
- Increased training requirements for the volunteer firefighters

In relation to the top core services, they were identified as:

- Fire Prevention and Public Education
- Firefighting and Rescue
- Medical assist/response and community outreach/assistance programs

2.2.2 Public Community Survey Results

For the purpose of this MFP, the community survey was divided into three parts for analysis.

1. Prioritize core service delivered by the SHFD
2. Group department components from extremely important to not important at all
3. Provide feedback on service levels, gaps in service levels and engagement with the fire department

Overall, the prioritization of core services by SHFD staff, Council and the public are similar but there was a notable difference in the prioritization of fire prevention and safety inspections. A summary of results from the external survey regarding the Department's components are provided below.

Response Time

Response times are a concern as the Municipality continues to grow with the large geographical area for the Department to cover in a timely manner. Survey participants consistently identified the need for one or more additional fire stations and more firefighters.

Municipality Budget Implication

In general, most survey participants indicated that they were not overly concerned with the cost of the Department to them as a taxpayer.

Fire Department Community Training

Most participants want to have the Department more involved in providing training in fire extinguishers, school safety programs, and public education. There was significant feedback on what is viewed as an existing gap in public engagement, fire safety and public safety education.

Fire Department Visibility

Participants identified having the Department visible at public events is important to the community. Many comments were made regarding how fire department visibility develops public relations and how children can engage with firefighters.

Timeliness on Non-Emergency Requests

Quickly dealing with non-emergency requests was clearly identified as something that the participants expected from the Department. Several examples were provided on how promptly issues were dealt with by Department staff when a concern was brought forward.

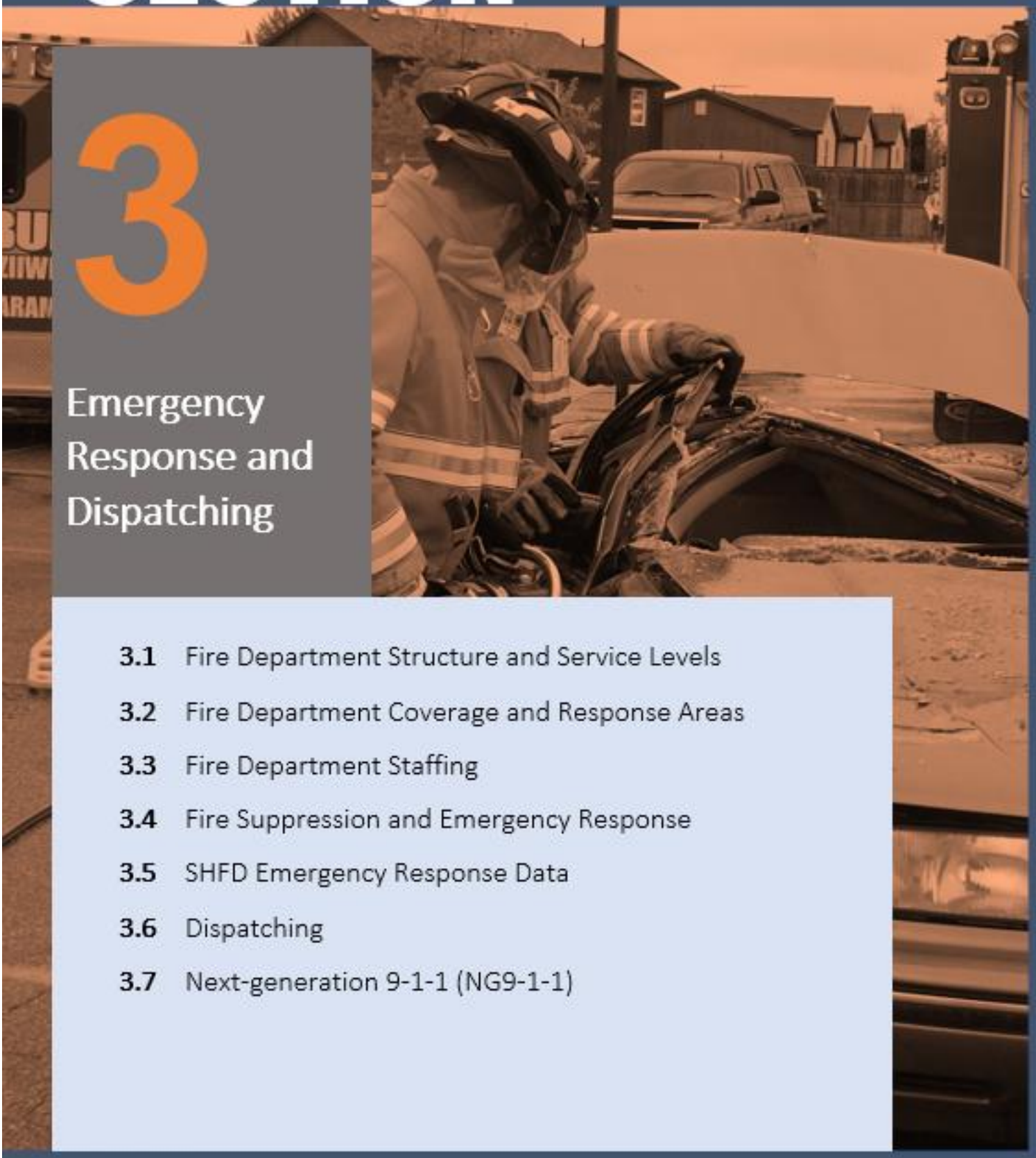
EM&T wants to thank members of the SHFD, Council, and the public for taking the time to contribute to the survey process. The surveys were confidential with the option for an individual to leave their name in the public community survey if they wanted to participate in a follow-up virtual/ phone stakeholder consultation.

Recommendations:

There are no recommendations pertaining to this section.

SECTION 3

Emergency Response and Dispatching



Section 3: Emergency Response & Dispatching

3.1 Fire Department Structure and Service Levels

NOTE: At the time of the writing of this document, the Huron Park fire station was closed (July 2021) due to health-related concerns for the firefighters.

The Municipality of South Huron is served by a volunteer fire department. The SHFD is dedicated to public education and prevention while ensuring the safety of people and property. Sixty-five (65) highly trained volunteer firefighters presently respond from two fire stations in the communities of Exeter and Dashwood. The department serves a total area of 425 km^2 and receives an average of 150 calls per year. The fire department's apparatus fleet is comprised of three pumper/tankers, two tankers, one aerial, one ladder, and three rescue units.

As noted in the NFPA 1720 Standard for Volunteer Fire Departments, a volunteer fire department can include an all-volunteer force or a combination of where the full-time staff account for less than 15% of the overall force. The SHFD consists of:

- One full-time Fire Chief
- One full-time Fire Prevention Officer/Public Fire and Life Safety Educator /Training Officer
- Volunteer firefighter personnel

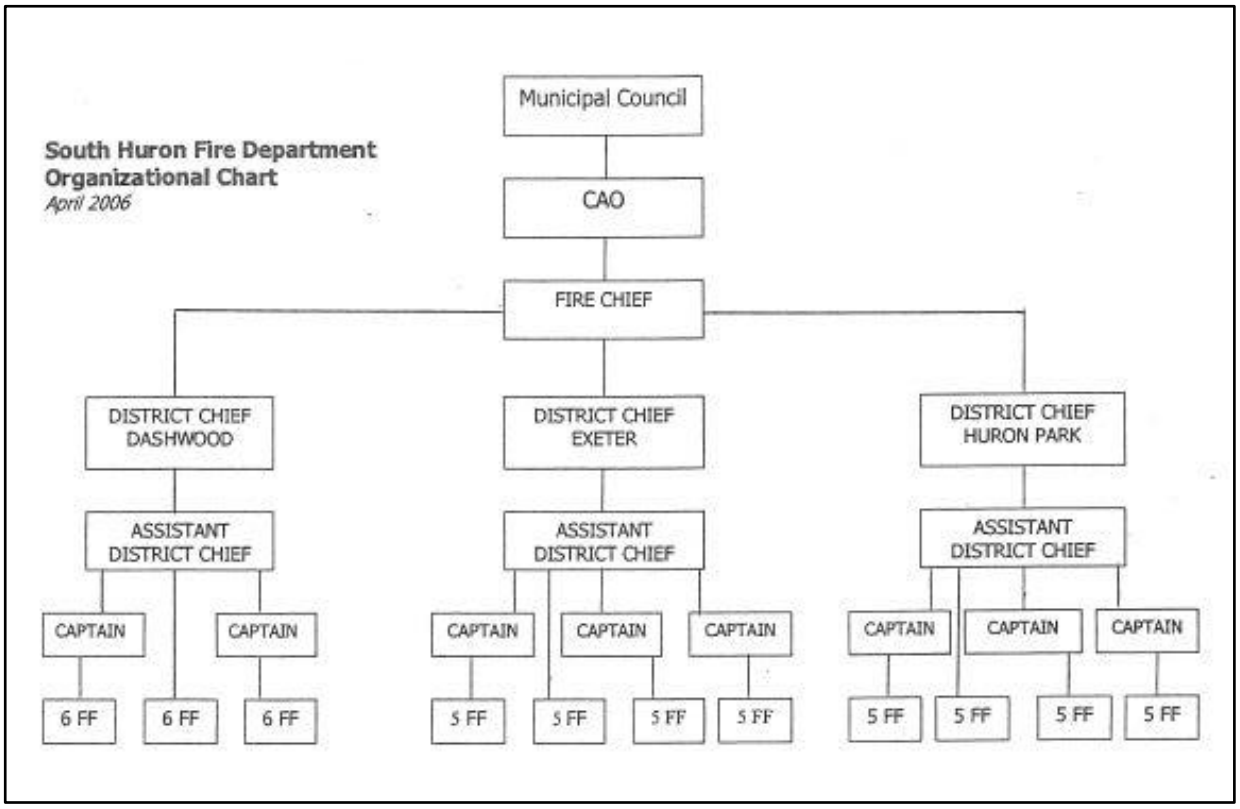
The organizational chart for the SHFD is provided in Figure #2.

The Department's E&R By-law authorizes the SHFD to provide services for the following:

- Fire Suppression from the adverse effects of fires and exposure to dangerous conditions created by man or nature.
- Motor vehicle accidents, industrial accidents, confined spaces and building collapse.
- Rescues involving water and ice (land based only)
- Medical assist emergencies

Outlined in the Establishing & Regulating Bylaw 18-2006, the fire department has full-time and volunteer firefighters and were deployed from the three fire stations located in Dashwood, Exeter, and Huron Park. As of July 2021, the SHFD operates out of two fire stations. The future of the Huron Park station is to be determined due to present health and safety concerns.

FIGURE #2: SHFD Organizational Chart – as outlined in E&R bylaw 18-2006



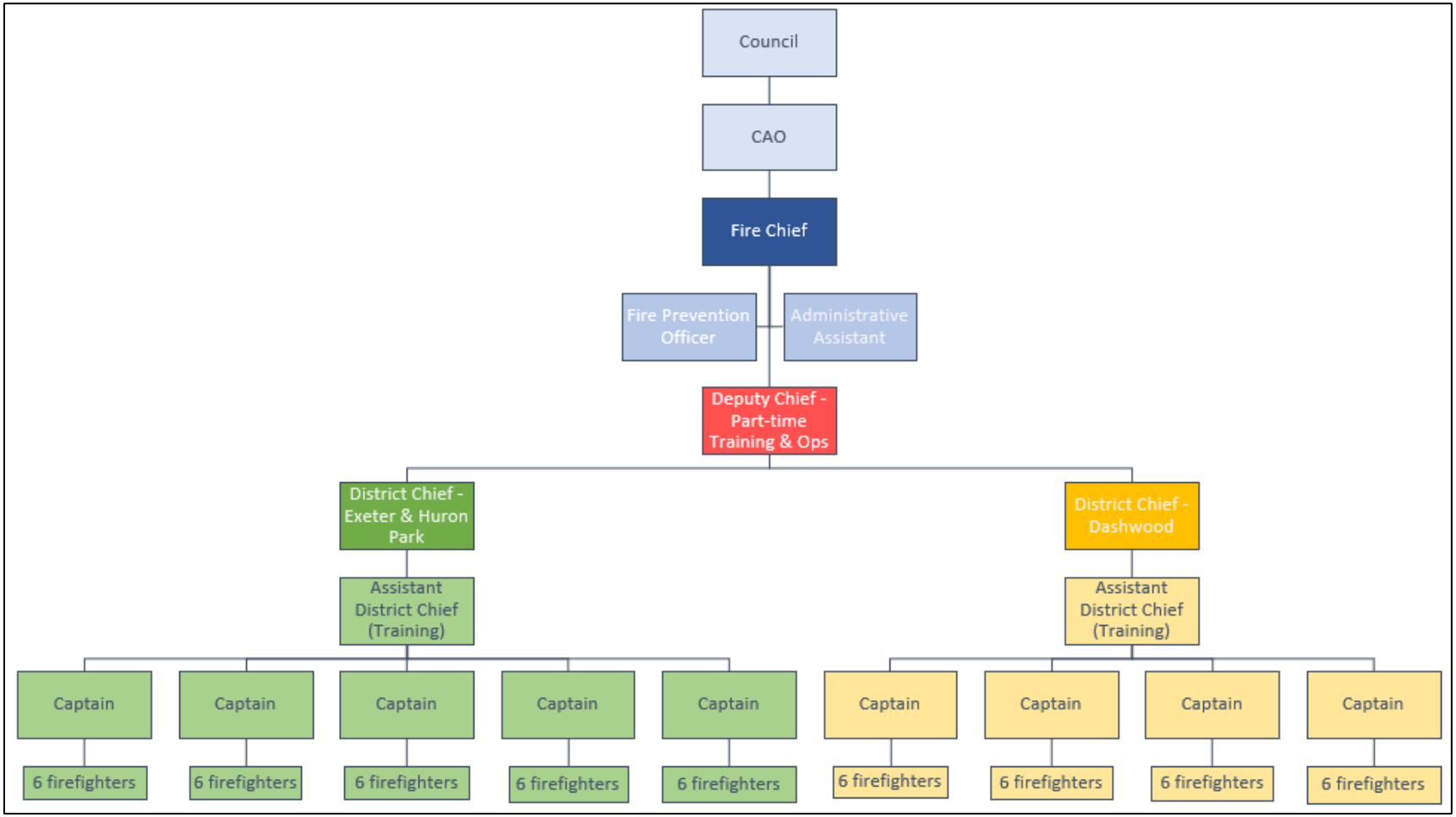
This organizational chart does not reflect the current structure in place for SHFD, with the addition of the Fire Prevention Officer along with the utilization of a Municipal staff member that has taken on a shared Administrative Assistant position for the Fire Department in the last couple of years. The Fire Prevention Officer has oversight of the Fire Prevention Division, and the shared Administrative Assistant is now included within the Administrative Division.

3.1.1 Proposed SHFD Organizational Chart

The proposed SHFD organizational chart in Figure #3 was developed to understand the present hierarchy of the organization with the recent closing of the Huron Park station () as well as the addition of future positions within the organization.

This concept will provide the necessary leadership positions and span of control for each station. Span of control refers to the number of subordinates one supervisor can effectively manage. The ideal number is five firefighters answering to one officer, up to a maximum of seven. Along with this adjustment to the organizational chart should come changes to the Establishing & Regulating By-law and the roles and responsibilities of each position by way of Human Resources Job Descriptions.

FIGURE # 3: Proposed SHFD Organizational Chart



Recommendation:

When the Establishing & Regulating By-law is updated, the SHFD organizational structure should be amended to reflect the changes and additions made.

3.1.2 Fire Department Service Levels

From 2016-2020, the SHFD responded to an average of 160 calls for service a year which include but are not limited to structural and wildland fire suppression, motor vehicle collisions, land-based water and ice rescue, medical assist emergencies, fire inspections and fire investigations.

The SHFD provides a high-quality of fire service to the residents and businesses of the community. With the creation of a MFP, the Municipality of South Huron will evaluate all aspects of its service including the operational costs and capital budgets required to maintain and enhance these service levels.

To ensure a comprehensive review was conducted, EM&T has examined and researched all aspects of the SHFD operations including, suppression, planning, fire prevention, training and education, apparatus and equipment, human resources, and response time zones.

3.2 Fire Department Coverage and Response Areas

The response area for the SHFD is expansive as South Huron has a land area of 425.36 km^2 resulting in 24 people per square kilometer. The municipality was separated into three districts covered by three stations but will now need to be distributed into two response zones. There is a Fire Service Agreement with the Municipality of Lambton Shores covering the western area of the municipality by the Grand Bend Fire Station.

FIGURE #4: Dashwood Station Response Area

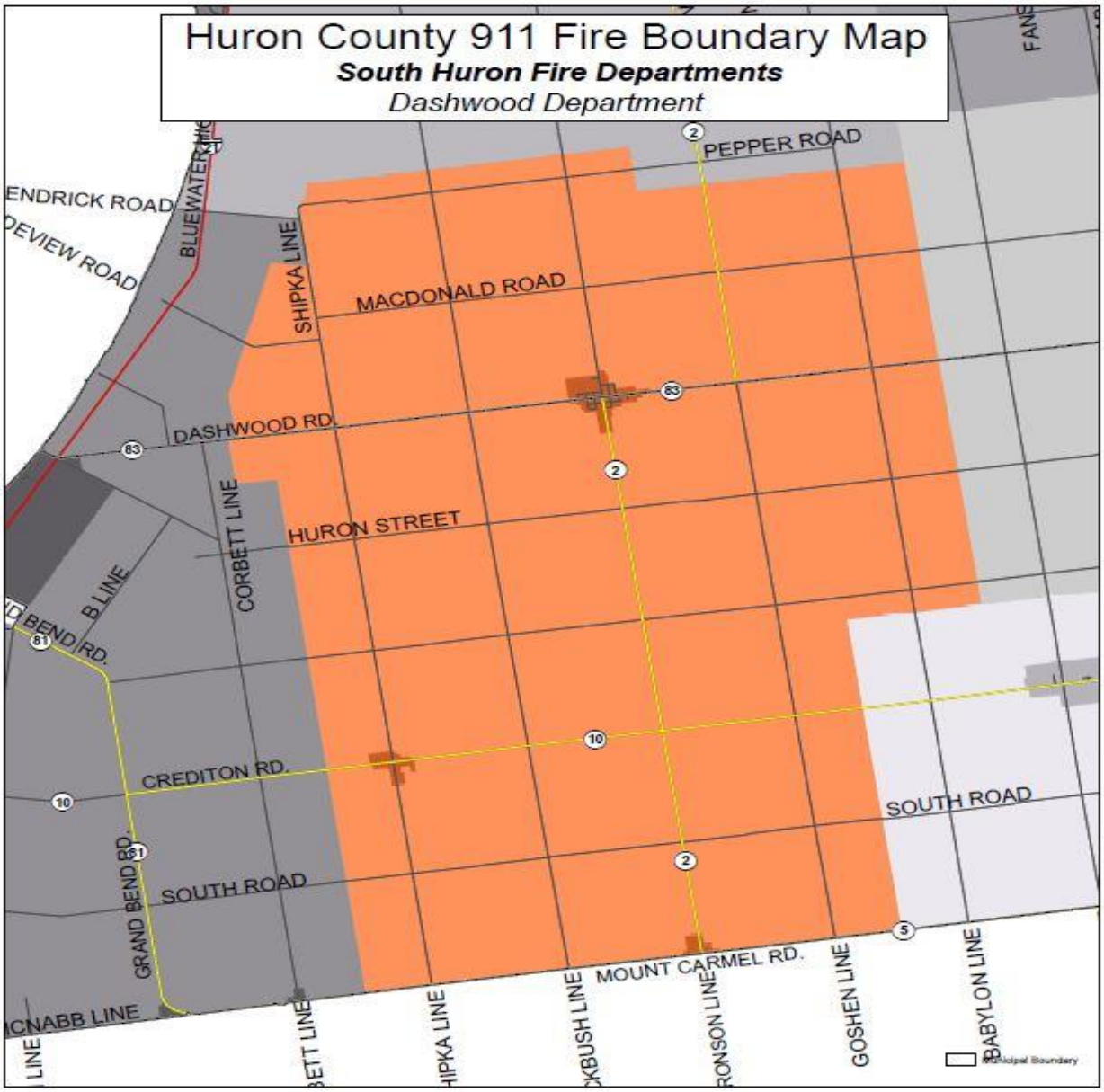
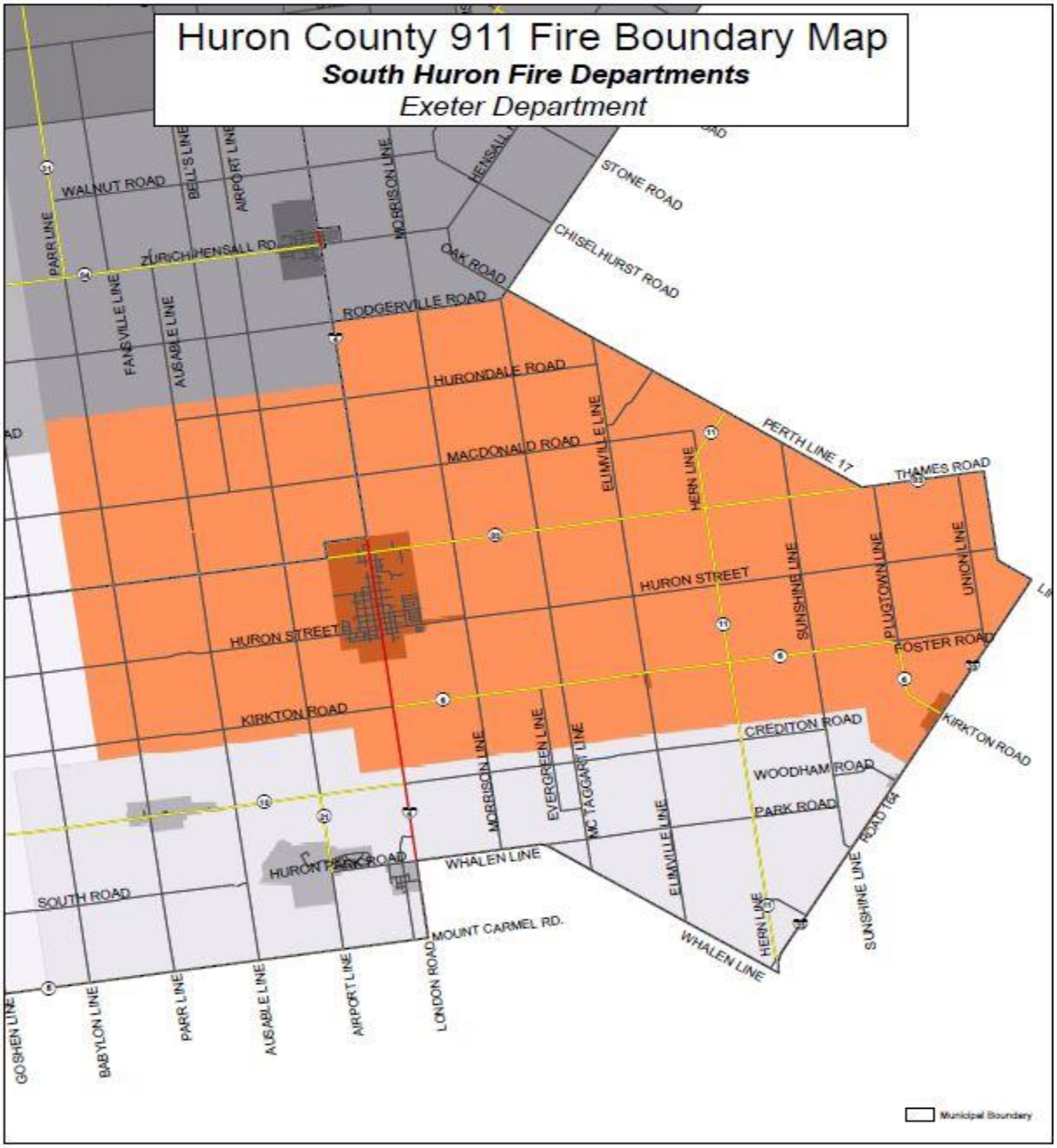


FIGURE # 5: Exeter Station Response Area



NOTE: The Huron Park fire station was closed in July 2021 due to health and safety concerns. As such, the response area for this station was not included.

3.2.1 Response Location Map

It is useful to pinpoint where the bulk of the emergency responses are occurring. This 'clustering' of responses will help to identify where many calls are occurring, which will indicate if the present

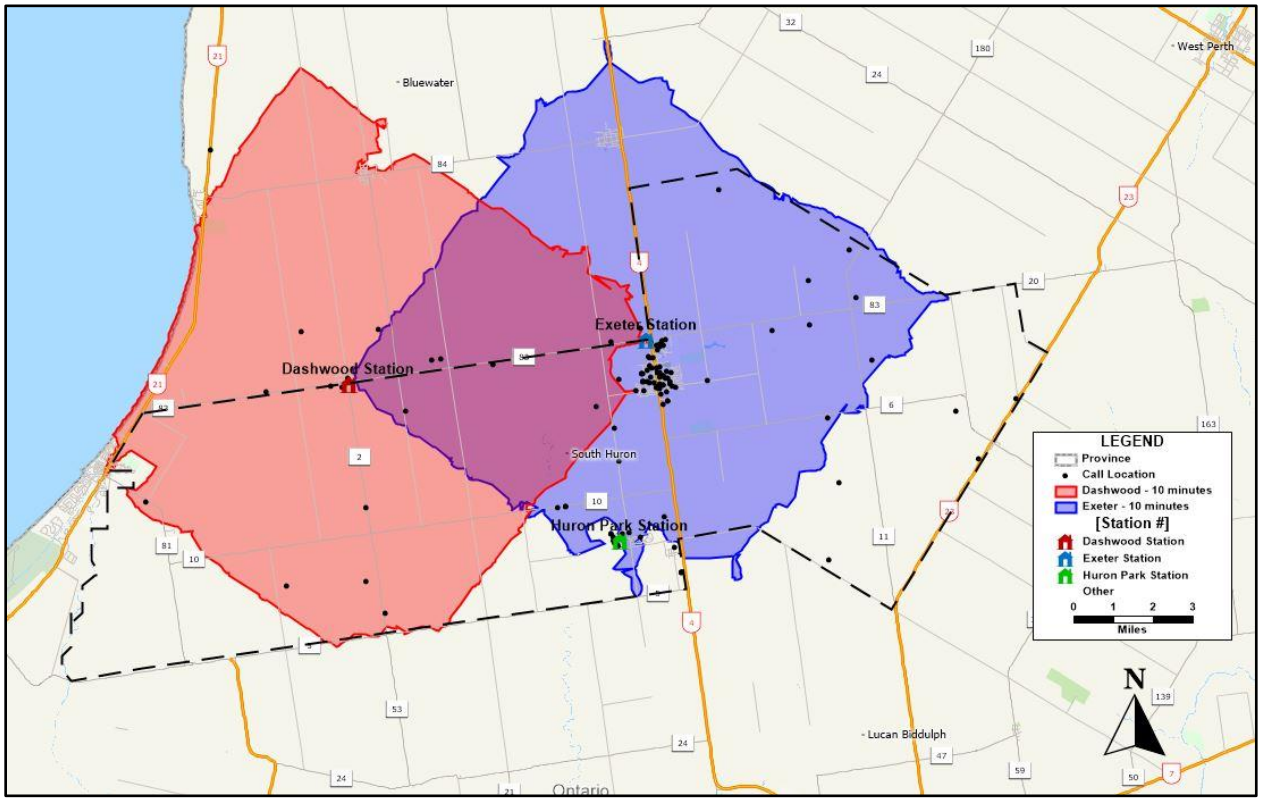
fire station locations are properly positioned, or if there was a shift in call locations that would suggest the possible need for reconfiguration.

3.2.2 Fire Department Coverage Area

Fire stations for a community must be located to provide the most efficient and effective response of fire department resources. The NFPA 1720 standard identifies an 80th percentile with a 10-minute response time for a single-family dwelling. In 2020, call data tells us that all three stations were able to meet this standard.

FIGURE #6: Station Locations and 2020 Call Locations with 10-Minute Drive Time

Figure #6 indicates the current fire station coverage (10-minute drive time) for each station along with the call locations. As illustrated, approximately 97% of the calls fall within the 10-minute drive time of the two stations, which leaves only 3% of the call volume falling outside a 10-minute drive time from either station.



This style of call clustering should become a regular review of data analytics by the Fire Chief to ensure that the fire stations are effective in meeting the growing needs of the community. This will also help to identify if there is a shift in the major call locations due to growth.

3.3 Fire Department Staffing

There is a variance in terms of population and fire department staffing levels within fire services throughout the province. Therefore, when a community considers the need for the number of fire service personnel, there is no actual standard that dictates how many personnel are required within a population or whether the fire service needs to be full-time, composite, or volunteer in its service delivery format. Every community is unique in its geographical composition, population fluctuations, demographics, size of residential, commercial, and industrial sectors.

South Huron is a growing municipality and based upon trends and statistical data the municipality will continue to grow steadily to an estimated population reaching between 13,000 to 14,000 by 2031. Over the next ten years, the population of South Huron can potentially increase by approximately 1,187 and will place more demands upon the SHFD in terms of staffing, equipment, and budget. If the growth trend rises as expected with the increase of approximately 11.7 % in population, it will directly impact the Department's call volume and service expectations. As such, annual increases in call volume and types of calls need to be closely monitored by the Fire Chief to ensure that the fire department can meet the response needs of the community, while not over burdening the volunteer firefighters.

3.4 Fire Suppression and Emergency Response

Presently, the SHFD has a complement of 65 staff, which includes the full-time Fire Chief and Fire Prevention Officer/PFLSE/Training Officer, along with a part-time (shared) Administrative Assistant person.

While the Huron Park fire station was closed in July, this station was experiencing challenges in adequate staffing. If Council and senior management decide to reopen this station, this must be addressed; having a minimum of two firefighters responding to an emergency is problematic. With only two firefighters arriving on the scene of a structural fire implies an inability to engage in interior suppression activities prior to the arrival of firefighters from Exeter or Dashwood stations and is a concern. It poses significant risk for the firefighters conducting these operations due to limited options.

If this station is reopened in the future, the Fire Chief should consider reducing or eliminating this risk by either upstaffing this station with more volunteer firefighters or implementing a response protocol to ensure that no less than four firefighters arrive on the scene to begin emergency operations.

Points to consider:
While completing the review, and prior to the closing of the Huron Park station, EM&T had identified the opportunity to amalgamate the Huron Park and Exeter stations and their staffing

to create a more wholesome response component. With the closing of the Huron Park station in July 2021, the consideration is now two-fold:

- Does Council have a review of the condition of the Huron Park fire station as to the cost to repair, and
- Based on the repair estimates should Council consider this as an opportunity to build a new fire station located at the south edge of Exeter which will allow for improved coverage for both current station areas (Exeter and Huron Park)?

3.4.1 NFPA 1720 Volunteer Fire Departments

When a fire department has a level of volunteer emergency personnel comprising 85% or greater, it is considered a volunteer fire department. Presently, the ratio of volunteer to full-time staffing of SHFD is just above the 97% mark. As such, based on the NFPA standard, SHFD is a volunteer fire department. Conversely, the OFMEM considers a department 'composite' if it has at least one full-time staff member. For this purpose, since SHFD has a fully volunteer suppression division, it should be evaluating its response services based on the 1720 standard (volunteer firefighter component). The key consideration is the initial response component and how that initial response team is meeting the goals and expectations of the department.

NFPA 1720 for volunteer fire departments, chapter 4, notes the following for the deployment of volunteer firefighters:

- *"the Fire Department shall identify minimum staffing requirements to ensure that a sufficient number of members are available to operate safely and effectively.*
    - *In Urban areas (population greater than 1,000 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."*

To accomplish this, as noted in the NFPA standards, the fire department should endeavour to meet the stated minimum 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 South Huron, however, have basements and are built close enough to each other to create an exposure for potential fire spread, which must be considered by the fire department in its response efforts.

Presently, the SHFD is diligently working towards meeting the related NFPA standards regarding population verses staff/response times. Based on a response data review and discussions with the Fire Chief, the SHFD is witnessing a varying level of success in meeting the response criteria.

A matter often posed in relation to volunteer fire departments is when the department should consider moving to a composite model (which would include a limited number of full-time firefighters). There is no document that specifically identifies the tipping point for this move. It is based on the level of service set by the community's council, coupled with regular reports by the Fire Chief on how the department is meeting service level expectations. There are many factors including the number of volunteers arriving when paged out, how quickly they respond to the page, minimum staffing for apparatus turnout, the time of the day, and day of the week (e.g., volunteer availability during day shift vs. night shift), etc.

Some volunteer fire departments must determine where to focus additional firefighters by identifying call volume, growth of the community, and, more specifically, the times of the day that are most challenging for volunteer firefighter responses. As with most volunteer fire departments, the daytime hours from Monday to Friday are the greatest challenge.

Another indicator is tracking the number of firefighters that arrive at the fire station to respond. If, for example, the standard set for the department is that three or more volunteer firefighters must arrive at the station before the fire truck can respond (or in the case of SHFD, that a volunteer officer must also be part of that response), then this should be monitored along with how many times a station is unable to muster up the needed personnel to effectively respond.

Currently, there is no data being tracked by the SHFD to identify when an adequate number of firefighters are on scene, based on the type of call.

Recommendation:
That data analytics be recorded and evaluated by the Fire Chief annually to help with assessing where any service gaps or challenges may exist in relation to staffing response and on-scene numbers.

This review will also assist in determining the possible need for a larger volunteer firefighter contingent.

The SHFD model of a volunteer fire department is a very cost-effective form of fire protection for a community of its size. It must be emphasized, however, that the anticipated growth of the community will create new response pressures. This evolving response capacity must be strategically reinforced based on former call data and future increase in responses.

The criticalness of immediate initiation of fire suppression activities is illustrated in the fire propagation diagram (Figure #6). The curve illustrates the following time variables,

demonstrating the importance of having trained personnel on scene within an acceptable timeframe and initiating fire suppression/rescue operations.

- DETECTION OF FIRE – when the occupant discovers that there is a fire. The fire may be in an early stage or could have been burning for quite some time before being detected.
- REPORT OF FIRE – when someone has identified the fire and is calling 9-1-1 for help.
- DISPATCH TIME – the time it takes the dispatcher to receive the information and dispatch the appropriate resources.
- RESPONSE TIME – response time is a combination of the following:
    - Turnout time –how long it takes the volunteer firefighters to get to the fire truck and respond.
    - Travel time – the time from when the crew advises dispatch that they are responding, until the time that they report on scene.
- SETUP – the time it takes for the fire crews to get ready to fight the fire. *NFPA 1410 Standard on Training for Emergency Scene Operations* identifies the minimum requirements for fire suppression and rescue procedures used by fire department personnel engaged in emergency operations as well as timed evolutions as a performance benchmark.
- FIGHTING FIRE – actual time on scene extinguishing the fire.

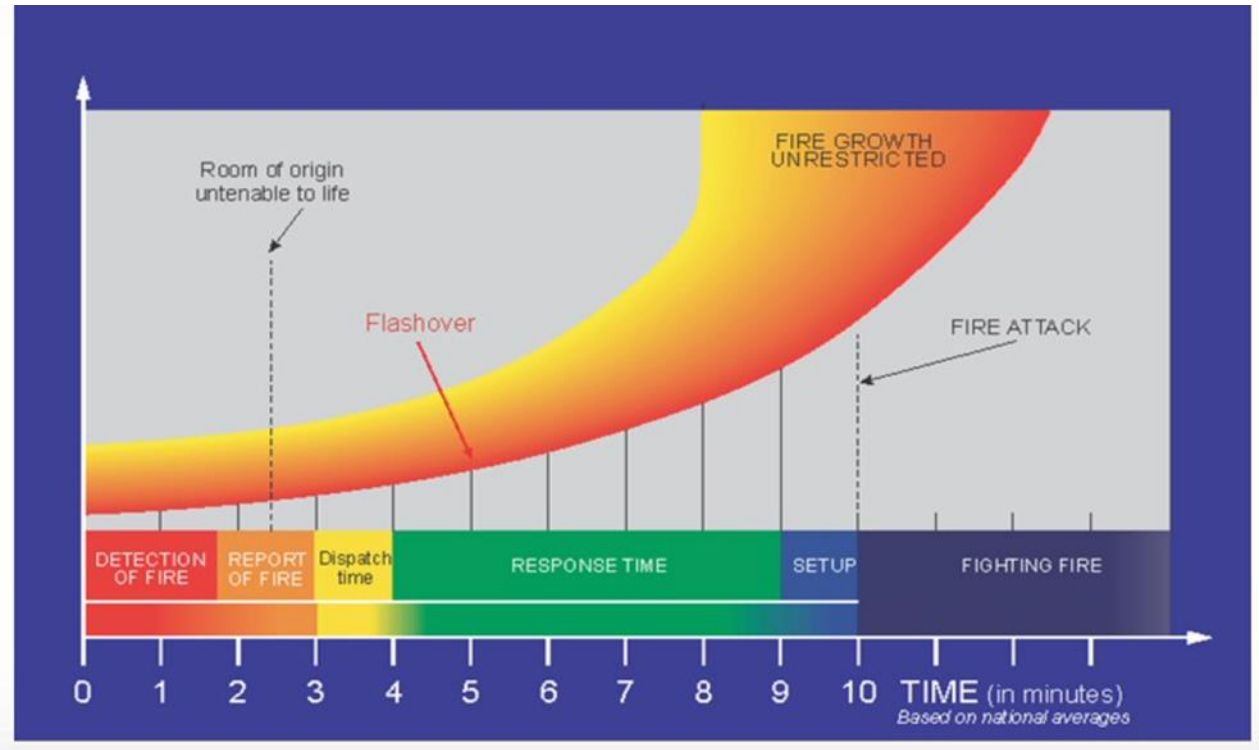
When considering the response times and related needs for a community, the fire response curve presents the reader with a general understanding of how quickly a fire can grow within a furnished residential structure over a short period of time. Flashover occurs when the combustible contents in the room and gases ignite simultaneously creating a full room involvement of fire. When flashover is reached, conditions are not survivable, even for a fully protected firefighter.

In 2020 the UL Firefighter Safety Research Institute (MFPI) conducted research and collected data on the difference of natural and synthetic furnishings in a typical living room fire. The natural and synthetic rooms were identical in size, containing similar amounts of furnishings, and both ignited by small open flames.

The room with synthetic furnishings (e.g., engineered wood, polyester fabrics, plastic décor, etc.) transitioned to flashover in 4 minutes and 50 seconds, while the room with natural furnishings (e.g., hardwood, cotton, wicker, ceramic, cement, etc.) took over 30 minutes. The results of the synthetic room fire and the rapid-fire growth identify the importance of a quick dispatch, response and coordinated fire suppression operations. The detection and report of a fire are key factors in having fire department resources on scene and beginning firefighting operations.

FIGURE #7: Fire Growth Chart

As noted, the fire growth increases substantially post flashover which creates a fire burning hotter, faster, and generally causing the fire to spread beyond the room of origin. A post flashover fire requires more firefighters, more attack lines to mitigate the fire and complicates and search and rescue efforts.



The level of service determined by a community should establish performance objectives based upon industry best practices.

3.4.2 Staffing Effectiveness

Some key points that need to be discussed and understood about staffing levels are:

- First and foremost, the Authority Having Jurisdiction (AHJ) sets the level of fire protection services for the community.
- Staffing levels arriving at an emergency scene, such as a structure fire, will dictate the level of effectiveness during a structure fire operation.
- The more duties required of firefighters to perform on the fireground, the increased probability something will not be accomplished properly or safely if sufficient on-scene staffing is not available.
- Work related injuries can at times be related to low staffing levels during an emergency incident as firefighters will take shortcuts in lifting and moving equipment.

- Based upon the existing SHFD staffing levels, the Incident Commander must make decisions on what critical fire ground functions can be accomplished and what task(s) may be delayed. The fewer firefighters on scene, the fewer options the Incident Commander may have in relation to suppressing the fire or performing search and rescue operations.
- Fewer firefighters on scene tend to push the envelope on their "airtime" – this is the time that a firefighter is using their breathing apparatus. Too few personnel on scene often equates to those working the incident consuming multiple cylinders of oxygen without any rehabilitation. This is a dangerous practice as the firefighter's physical limits are being pushed to the maximum which physically and mentally exhausts the individual.
- It is not uncommon for the Incident Commander to move handlines or assist when changing their self-contained breathing apparatus (SCBA) cylinders. Incident Commanders should instead be focused on their command functions without losing situational awareness because of other tasks that need to be performed. This is another dangerous practice as the Incident Commander is responsible for the overall scene and safety of the firefighters.

In 2010, the National Institute of Standards and Technology (NIST) conducted a study based upon more than 60 laboratory and residential fireground experiments designed to quantify the effects of various fire department deployment configurations to a low hazard 2,000 ft^2, two-storey residential structure fire. The research identified and consisted of 22 operational tasks that were timed while the thermal and toxic environment inside the structure was measured.

The NIST study in 2019 was a partnership between the Commission of Fire Accreditation International (CFAI), International Association of Fire Chiefs (IAFC), IAFF, NIST and Worcester Polytechnic Institute (WPI) to conduct and record the deployment of resources and how they affect firefighter and occupant safety.

Information from the deployment study was to assist fire departments and their respective communities to design an acceptable level of resource deployment based upon community risks and the commitment to provide services. The research concluded[3];

Overall Scene Time

- The four-person crews operating on a low-hazard structure fire completed all the tasks on the fireground (on average) seven minutes faster - nearly 30% - than the two-person

[3] NIST Report on Residential Fireground Field Experiments, (April, 2010). https://tsapps.nist.gov/publication/get_pdf.cfm?pub_id=904607

crews.

- The four-person crews completed the same number of fireground tasks (on average) 5.1 times faster - nearly 25% - than the three-person crews.

Time to Water on Fire

- There is a 10% difference in the "water on fire" time between the two- and three-person crews.
- There was an additional 6% difference on "water on fire" time between the three- and four-person crews (i.e., four person crews put water on the fire 16% faster than two person crews).
- There was an additional 6% difference in "water on fire" time between the four- and five-person crews (i.e., five-person crews put water on the fire 22% faster than two-person crews).

Ground Ladders and Ventilation

- The four-person crews operating on a low hazard structure fire completed laddering and ventilation (for life safety and rescue) 30% faster than the two-person crews and 25% faster than the three-person crews.

Primary Search

- The three-person crews started and completed a primary search and rescue 25% faster than the two-person crews. The four- and five-person crews started and completed a primary search 6% faster than the three-person crews and 30% faster than the two-person crew. A 10% difference was equivalent to just over one minute.

3.4.3 Ontario Office of the Fire Marshal Fire-Ground Effectiveness Sub-Model

The Ontario Office of the Fire Marshal has a Fire Ground Effectiveness Sub-Model for three, four, five and six-person fire attack teams (see Appendix D for more information).

It is recommended that a three-person crew should not attempt interior rescue or suppression operations, except in limited circumstances, such as where a victim has collapsed near a window or exterior doorway, or where the fire is confined to a small and readily accessible area.

The crew can establish fire ground command, size-up, followed by the sequential single tasks that can be safely accomplished such as:[4]

- Establishment of a water supply from a hydrant (if available)
- Establishment of pumper operations
- Laying of one hose line to the point of entry into the involved structure
- Limited exterior firefighting including the raising of a ladder beyond the first floor of the structure.
- Limited exposure protection of surrounding structures
- Setting up a ground monitor
- External rescue using a ladder extended to the point of exit for those persons in the building capable of self-help.
- Rendering first aid to persons who have exited the involved structure.
- Forcible entry operations
- Shutting off utilities to the structure
- Limited ventilation functions
- Extremely limited salvage capability

Operations which cannot be accomplished safely until additional assistance has arrived on-site include:

- Deployment of back-up protection lines
- Conducting interior suppression or rescue operations
- Ventilation operations requiring access to the roof of the involved structure.
- The use of large (65 mm/2.5”) hand-held hose lines
- Establishment of a water supply from a static source within reasonable time limits

It is also recognized by the Ontario Fire Marshal that limited staffing creates challenges to provide firefighters with rest breaks to help them cope with the build-up of metabolic heat. The Incident Command and pump operations will be compromised as the situation evolves.

3.4.4 Initial Findings Relating to Emergency Scene Turnout

Based upon feedback from SHFD staff, there are times when a two- to three-person firefighter crew are required to conduct interior structural firefighter operations due to low firefighter turnout at the scene. Conversely, however, the response and turnout data provided to EM&T

[4] Ontario Office of the Fire Marshal, Fire Ground Effectiveness Sub Model, downloaded at http://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/ComprehensiveFireSafetyEffectivenessModel/FireGroundEffectivenessSub-Model/FireAttackTeams/fire_attack_teams.html

notes that the Department has on average had 11.5 firefighters arriving during the initial response to structure fires. The data and input from some staff would seem to contradict each other. As such, it would be beneficial for the Fire Chief to confirm these numbers and share them with the firefighters to confirm that turnout numbers are either meeting or falling short of expectations.

When low staffing turnout occurs, a decision based upon professional judgement to not enter the structure without appropriate staffing is an incident commander's responsibility. The misconception by many is that an arriving fire truck can provide immediate search, rescue, and suppression activities. It is, in fact, rare that the SHFD is arriving on scene with a fire truck staffed with more than three firefighters, and therefore is limited in the interior operations they can perform until arrival of more firefighters.

Because of the limited staffing on the first arriving fire truck, some high-risk operations cannot be accomplished until the arrival of the second truck and crew, which can delay critical fire/ emergency scene operations.

3.4.5 SHFD Single-Family Dwelling - Initial Full Alarm Response

EM&T has reviewed the last four years of structure fire events and has found that SHFD is striving to meet the 1720 standard by maintaining an arrival time on average of 9 minutes and 30 seconds. With volunteer firefighter staffing now at two fire stations, the SHFD response for a residential structure fire remains steady with the NFPA 1720 standard.

A review was conducted of the NFPA 1720 standard, existing strategic and tactical practices of the SHFD and Standard Operating Procedures (SOP)s which included but was not limited to structural fire attack, vehicle fires, appointment of an ISO, Mayday Situations and Mid-Rise Responses. Based upon the findings it is evident that the SHFD is doing the best job they can given the staffing and availability for emergency incidents and there are several factors that the Fire Chief has implemented or should monitor to assist in these responses.

With apparatus deployed from multiple stations, the availability of personnel for another emergency is non-existent unless they are released from the incident they are attending.

Due to existing staffing levels, the first arriving Pumper is limited to what tactical objectives they can perform until the second Pumper arrives.

3.4.6 Firefighter Injuries

The NFPA (2020) conducted research from 2014-2018 identifying the two leading causes of fireground injuries as exposure to hazards (exposure to fire products such as heat or smoke) and overexertion. With 84% of firefighter injuries occurring at structure fires, exposure to hazards was the leading cause of fireground injuries and made up 26% of the injuries.

Overexertion was the second leading cause and made up 25% of the fireground injuries.[5] Injuries resulting in lost work time made up 30% of the overall injuries recorded.

The NFPA 2020 report also identified that 40% of the injuries occurred outside at grade and 37% occurred in the structure, but not the attic space. The importance is that 26% of the injuries occurred during unclassified extinguishing fire or neutralizing the incident and 22% occurred while handling charged hose lines.

3.5 SHFD Emergency Response Data

NFPA 1720 recommends that *"the fire department shall evaluate its level of service, deployment delivery, and response time objectives on an annual basis."* To help clarify the difference between response time, travel time and turnout times, the NFPA defines them as:

3.3.64.6 ***Total Response Time.*** The time interval from the receipt of the alarm at the primary Public Safety Answering Point (PSAP) to when the first emergency response unit is initiating action or intervening to control the incident.

3.3.64.7 ***Travel Time.*** The time interval that begins when a unit is enroute to the emergency incident and ends when the unit arrives at the scene.

3.3.64.8 ***Turnout Time.*** The time interval that begins when the emergency response facilities (ERFs) and emergency response units (ERUs) notification process begins by either an audible alarm or visual annunciation or both and ends at the beginning point of travel time.

- *Paraphrased – the time that it takes the volunteer firefighters to respond from their homes or places of work (when paged out) to the time they are enroute (from the fire station) to the call.*

Not every incident is an emergency, however, it is crucial for the SHFD to annually review response and call type data as it will help to identify the use of resources and equipment for specific call types, along with training requirements to keep the firefighters proficient in their skills. From this analysis the Department can determine if it is meeting its objectives in a cost effective and efficient manner.

The Call Types 2020 chart noted in Figure #7 illustrates the 2020 annual responses broken down into types and related percentages.

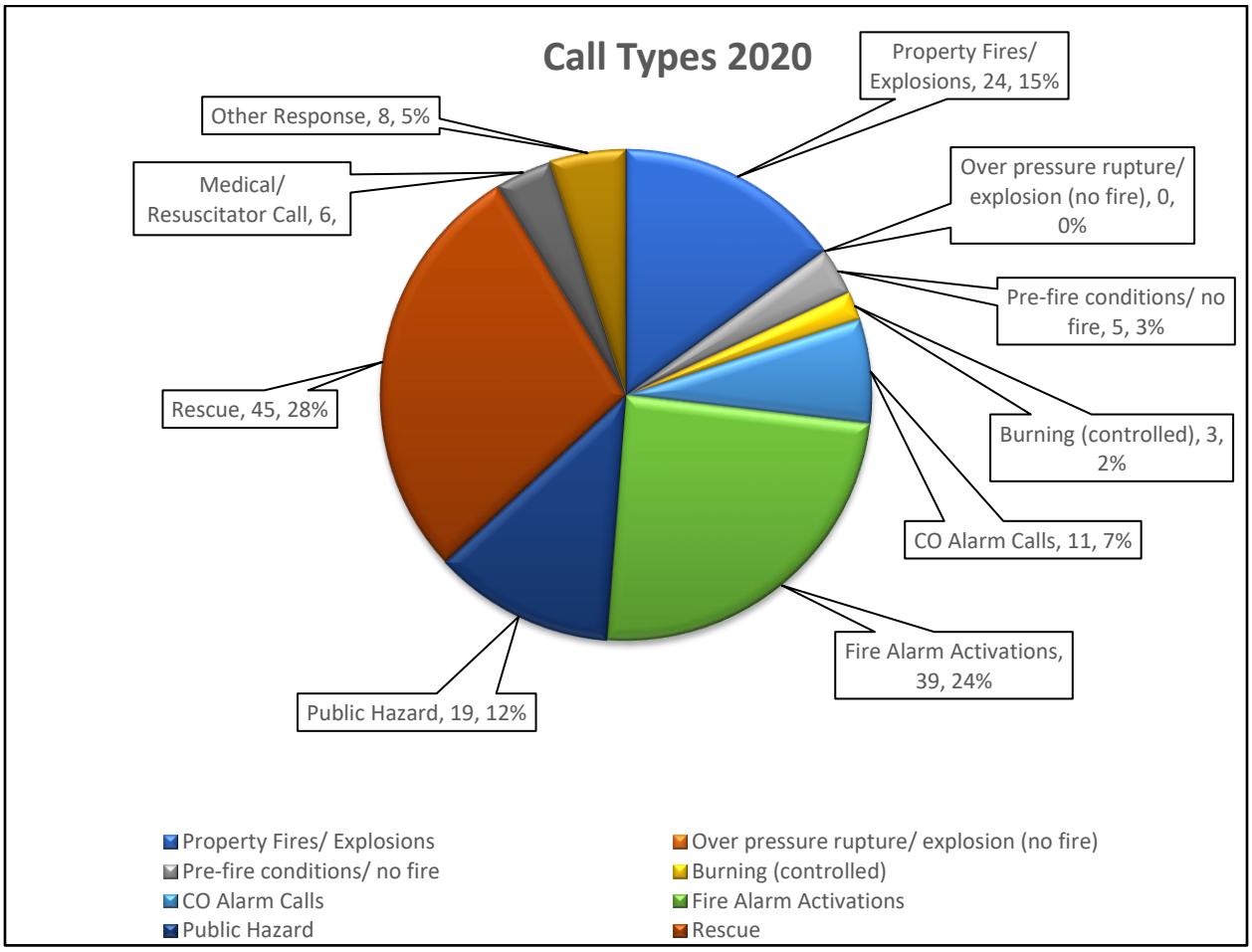
The Response Times and Drive Times charts help to identify the following information:

- Overall response times for each fire station

[5] Campbell, R. & Molis, L (2020) NFPA Research, Firefighter Injuries on the Fireground, November 2020.

- The actual drive times from the fire station to the location of the call
- The Turn Out Time
    - This final point is worth reviewing because it can assist the Fire Chief in identifying which station(s) is/are having slow turn out times, that could be reflective of time of day or lack of volunteer firefighters to respond.
    - Many volunteer fire departments experience daytime response issues simply because most people are a work and either cannot respond (because of work commitments), or they are out of town because of their jobs.

FIGURE(s) #8: Call Volume and Types for 2020



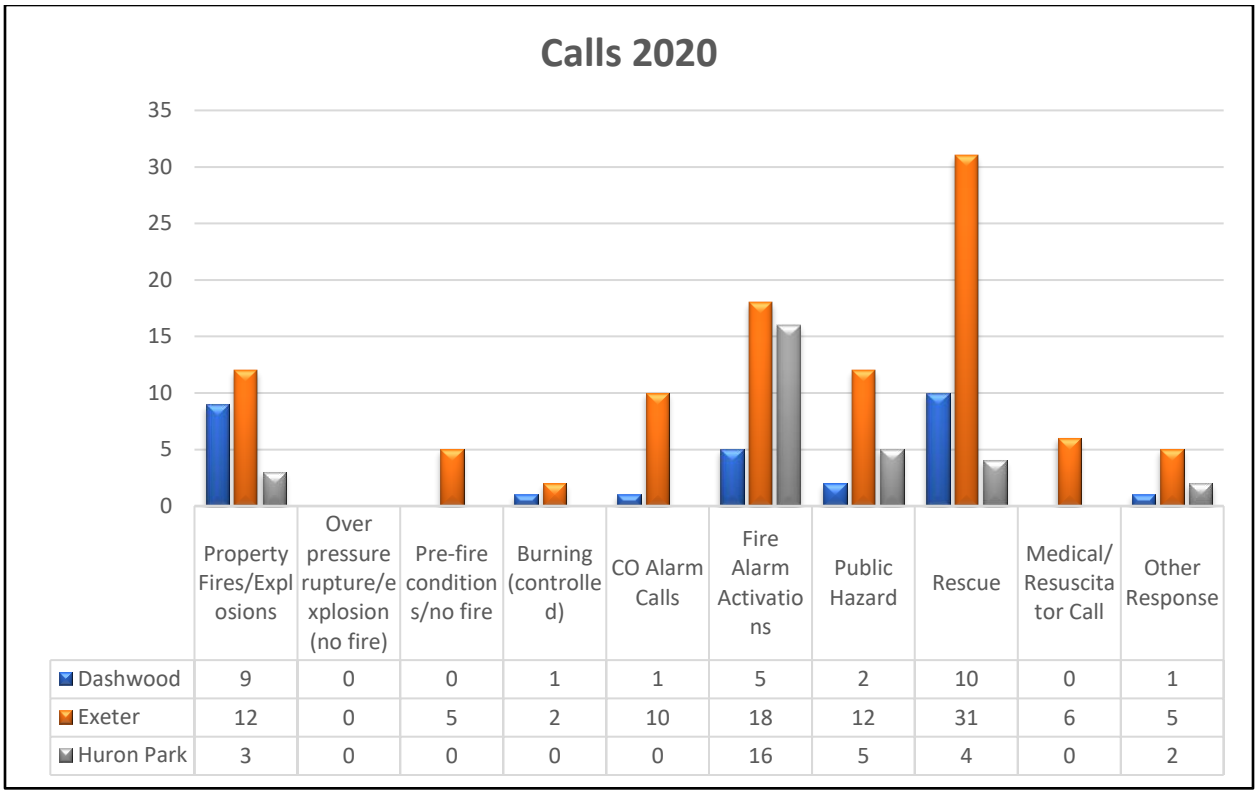
As illustrated in the above chart, the top four call types the SHFD responds to include:

1) Rescues at 28%
2) Fire Alarm Activations at 24%
3) Property Fires/ Explosions at 15%, and

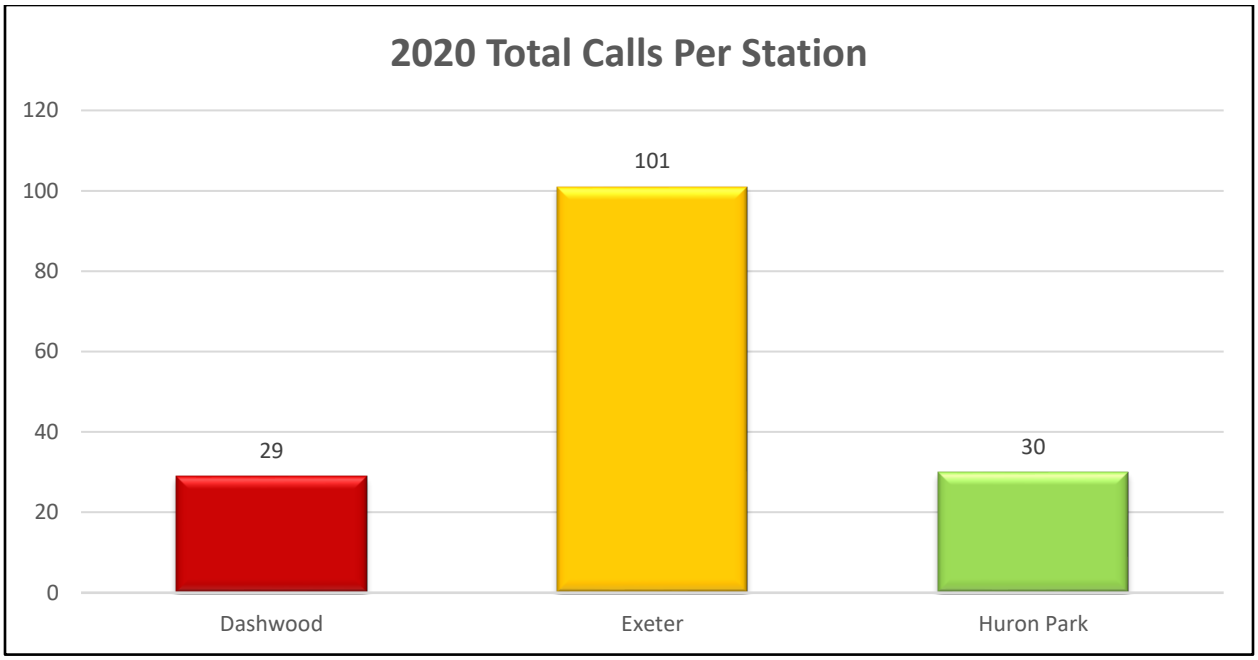
4) Public Hazards at 12%

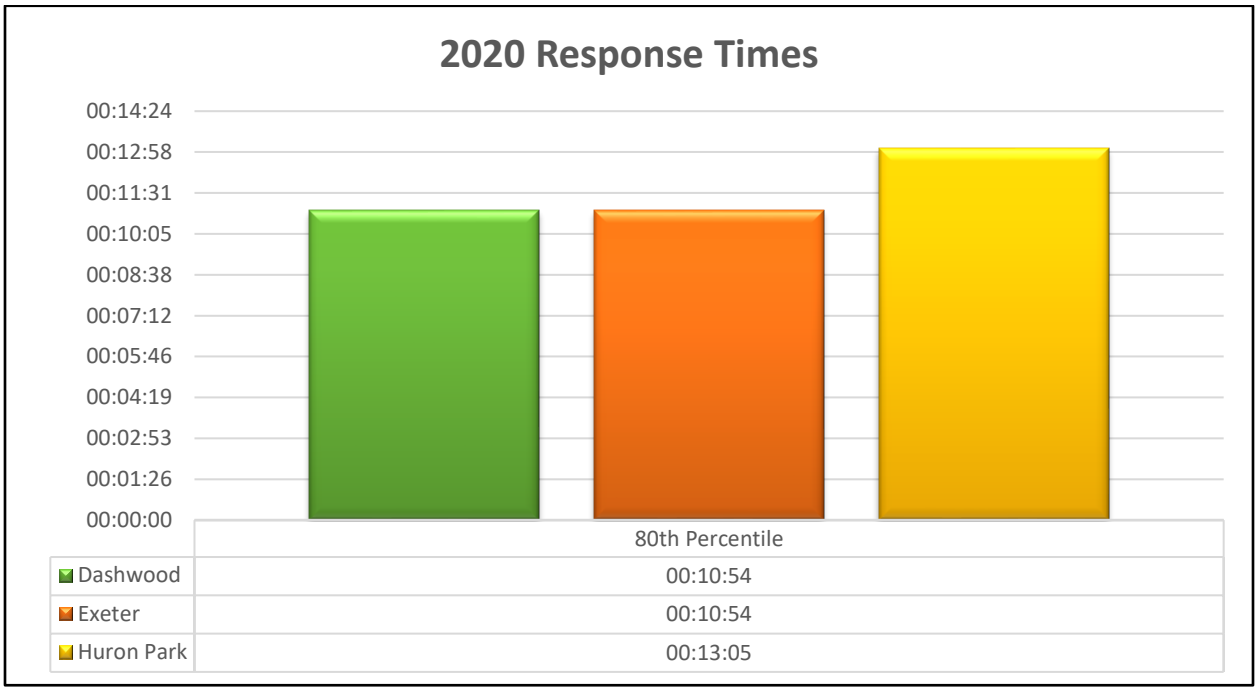
In 2020 the SHFD responded to a total of 160 incidents which is down from 165 incidents in 2019 and 162 incidents in 2018. This represents a minor variation over the years in which no conclusion can be drawn.

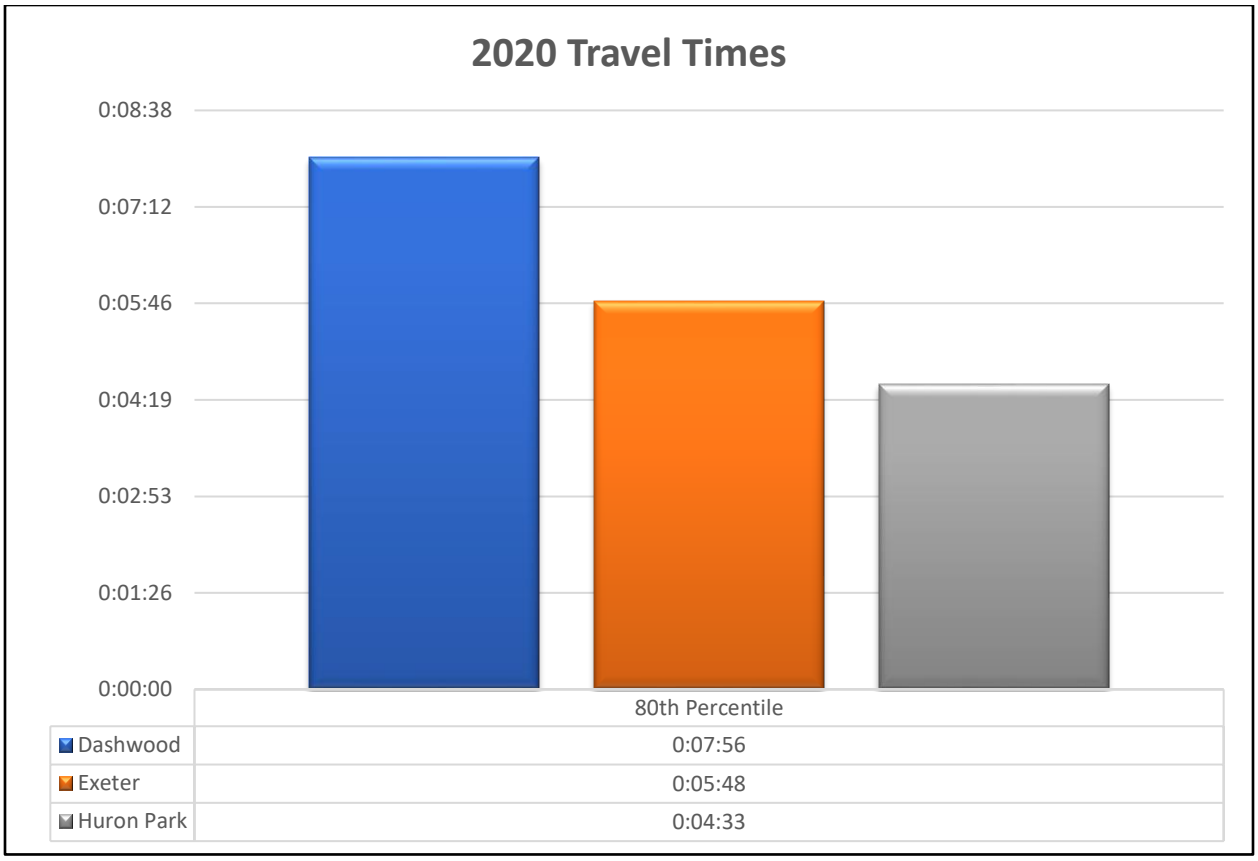
NOTE: During the collection of these response statistics, the Huron Park fire station responses were included because the station was still in operation at the time the 2020 statistics were being collected.



	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
Dashwood	9	0	0	1	1	5	2	10	0	1
Exeter	12	0	5	2	10	18	12	31	6	5
Huron Park	3	0	0	0	0	16	5	4	0	2


2020 Total Calls Per Station
120
100
80
60
40
20
0
29
101
30
Dashwood
Exeter
Huron Park


2020 Response Times
00:14:24
00:12:58
00:11:31
00:10:05
00:08:38
00:07:12
00:05:46
00:04:19
00:02:53
00:01:26
00:00:00
80th Percentile
Dashwood 00:10:54
Exeter 00:10:54
Huron Park 00:13:05



As can be seen in the response and travel charts, the actual turnout times for each station are:

TABLE #2: Turnout Time Chart

Station	Overall Response Time	Travel Time	Approximate Turnout Times
Dashwood	10:54 min/sec	7:56 min/sec	3 minutes
Exeter	10:54 min/sec	5:48 min/sec	5 minutes
*Huron Park	13:05 min/sec	4:33 min/sec	8 ½ minutes

**Presently closed but information included in case this station is reopened at a future date.*

As can be seen in the above table, the Dashwood station my have the longest travel time, but the turnout time of the volunteer firefighters is the lowest time of the three stations. On the other hand, the Huron Park station has the shortest travel time but the worst turnout times of all three stations. This is valuable information for the Fire Chief to monitor in relation to future recruitment and or station location related recommendations.

Based on the NFPA 1720 recommended overall response expectation of 10 minutes, for 2020, both the Dashwood and Exeter stations were very close to this time, with the Huron Park station being approximately three minutes over the recommended national response standard.

Data and related response times for 2019 and 2018 can be found in Appendix "C".

3.6 Dispatching

Dispatching services are provided by the Tillsonburg Fire Department, who also dispatches numerous other fire services in the province. While this agreement appears to be working well for the SHFD, the Fire Chief should communicate any concerns to Tillsonburg Fire regarding their ability to meet the standards established in NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, and NFPA 1061, *Standard for Public Safety Telecommunications Personnel Professional Standards*. These standards are in fact referenced in the current dispatching services agreement, which is reviewed annually.

The transmission towers are located at two elevated water towers for the radios and another at the rear of the Dashwood Station for paging and radio transmission. The radio tower behind the Dashwood Station is located on private property. The present radio system appears to be meeting the general needs of the Department. However, with the implementation of the Next Generation 9-1-1 program (NG9-1-1), future updates and new equipment will be required.

3.7 Next-generation 9-1-1 (NG9-1-1)

In June of 2017, the Canadian Radio-television and Telecommunications Commission (CRTC) created regulations regarding the Next Generation Communications for 9-1-1 centers. The following is an excerpt from the CRTC website regarding the program and its benefits for enhancement to public safety communications.

> Canadians depend on the provision of reliable and effective 9-1-1 services to seek help in an emergency. As technology and consumers' needs evolve so do consumers' expectations related to 9-1-1 services. In the coming years, telecommunications networks across Canada, including the networks used to make 9-1-1 calls, will continue to transition to Internet Protocol (IP) technology. This 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.

The CRTC has identified the full rollout of NG9-1-1 to March 30, 2024, where all PSAP must decommission their old networks. Since the Northern 911 is Sudbury, they are the PSAP that

would play a key role in the overall budget and implementation along with the Tillsonburg dispatch centre. The SHFD would be required, however, to have a Computer Aided Dispatch (CAD) system that is capable of interfacing with the NG9-1-1.

In 2016 the Public Safety Group of Bell Canada provided an estimate regarding the fire department's interest in their capabilities to deliver the Bell CAD for the SHFD and Bylaw services. In addition to this, the Bell Public Safety Group also provided a Discovery and Business Analysis report for dispatch services. EM&T has not been able to confirm exactly why the acquisition of the CAD system was not pursued but will recommend that this issue be revisited.

Recommendation:

To prepare for the NG9-1-1, SHFD should work closely with Tillsonburg Dispatch to develop a business case for the acquisition of new NG9-1-1 related equipment. This CAD system should be implemented in 2024.

Rec #	Recommendation	Estimated Cost	Suggested Timeline
2	When the Establishing & Regulating By-law is updated, the SHFD organizational structure should be amended to reflect the changes and additions made.	No cost associated	Short-term (1-3 years)
3	It is recommended that data analytics be recorded and evaluated by the Fire Chief annually to help with assessing where any service gaps or challenges may exist in relation to staffing response and on-scene numbers.	Staff time	Short-term (1-3 years) and ongoing
4	To prepare for the NG9-1-1, SHFD should work closely with Tillsonburg Dispatch to develop a business case for the acquisition of new NG9-1-1 related equipment. This CAD system should be implemented in 2024.	$250,000 to $500,000	Short-term (1-3 years)

SECTION 4

Training and Career Development

Section 4: Training and Career Development

4.1 Training and Education

A fire department is only able to provide effective service levels for the community if firefighters are professionally trained and equipped to deliver those services. The broader the scope of services provided to the community, the more coordination, administration, and finances required for the fire department training program. The SHFD provides a wide range of services that require training and education for staff to be proficient and competent in. As services expand, the need to identify and prioritize training and education will be paramount for the Department. Conversely, Council will need to be aware of the level of services plan and the financial support required to move forward to meet the obligations as identified by the SHFD service levels.

The industry standards and legislation are intended to improve the health and safety of firefighters. The SHFD strives to meet the standards and industry best practices for its training program. Volunteer firefighters must be provided with the same minimum training certifications and equipment as any full-time firefighters are offered.

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

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

In the SHFD, the responsibility for department training development falls under the scope of the Training Officer. As this position is currently vacant, the station District Chiefs and Fire Prevention Officer are currently responsible for planning and tracking the training of all fire department staff. Currently the FPO creates an annual training calendar that addresses regular maintenance training along with new skills training. The District Chiefs ensure that the training program is delivered while ensuring that it also follows all occupational health and safety requirements.

One concern noted by EM&T is that the FPO (who is acting as the interim Training Officer) does not respond to calls. Therefore, the FPO does not have firsthand awareness of training needs based on observed skills utilized by the volunteer firefighters at the scene of an incident. The District Chiefs can, however, assist the FPO by making training recommendations based on what they witness.

The SHFD still utilizes the former Ontario Fire Services Standards (OFSS) but have started to transition to the NFPA standards for its training program. Adoption of the NFPA standards that will compliment and support the training program are as follows:

- *NFPA 472 Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*.
- *NFPA 1001 Standard for Fire Fighter Professional Standard Qualifications*.
- *NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications.*
- *NFPA 1006 Standard for Technical Rescue Personnel Professional Qualifications.*
- *NFPA 1021 Standard for Fire officer Professional Qualifications*
- *NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner.*
- *NFPA 1033 Standard for Professional Qualifications for Fire Investigator.*
- *NFPA 1035 Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist and Youth Firesetter Program Manager Professional Qualifications.*
- *NFPA 1041 Standard for Fire and Emergency Services Instructor Professional Qualifications.*

There are three factors to consider when delivering training to firefighters:

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

To verify, in a more formal manner, that the Training Division is meeting the related NFPA program recommendations, the Training Division must identify the following:

- What training programs are required in relation to the services that the SHFD 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 into to achieve the training requirements identified by the Training Division.
- An annual program outline, at the start of each year, to be presented by the Deputy Fire Chief to the Fire Chief, with noted goals and expectations, which are measured and reported on regarding completion success rate at the end of each year.

With all the previously noted information in mind, and the fact that the position of Training Officer is not currently occupied, it would be beneficial to have a part-time Deputy Fire Chief (Training/Operations) to ensure that the SHFD will be able to meet the current and future demands that will come in the form of new regulations and certification standards, community growth, and increase in call volumes. This new position should begin by working a 21–24-hour work week with the possibility of transitioning to a full-time position of 35 to 40-hours per week within the next four to six years. This new position will also be able to assist the Fire Chief with other duties such as being on-call when the Fire Chief is on vacation or not available and to also fill the position of Acting Fire Chief and CEMC when required.

For this part-time position, consideration would have to be given to hours of work and payment in relation to such things as:

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

Another consideration to be put into effect until a part-time Deputy Fire Chief position can be implemented is to create a shared Training Officer position amongst neighbouring fire departments. This could in fact be a full-time position with a cost sharing agreement. This would reduce the cost of a paid Training Officer (for all the partner departments) and at the same time create a more consistent training program for the firefighters throughout the County.

Recommendations:
Hire a part-time Deputy Fire Chief (Training/Operations) to ensure that the SHFD will be able to meet the current and future demands that will come in the form of new regulations and certification standards. This new position should begin by working a 21–24-hour work week with the possibility of transitioning to a full-time position within the next 7 to 10 years.

An interim option, until a part-time Deputy Fire Chief can be implemented, is to work with other local departments with the creation of a joint Training Officer position to work with partner departments. This joint position also has the benefit of creating consistent training programs amongst the partner departments.

4.1.1 Training Records

It is the responsibility of the SHFD to maintain detailed training records and to have them readily available upon request by the Ministry of Labour and the Workplace Safety and Insurance Board. The Department presently utilizes FirePro2 – Fire Department Management Software to record training data for all firefighter staff.

A review of the data supplied to EM&T indicates that this program is meeting the general needs of the SHFD. As such, no recommendations are being made for any replacement program.

4.1.2 Training Facilities

Firefighting is a high-risk profession and statistics indicate that fires are declining, but the dangers of these events are increasing due to changes in building construction and fuel.

The National Building and Fire Codes have improved residential construction making it safer for homeowners, but the fire service has regularly identified that today's residential fires burn hotter and faster due to the modern furnishings and synthetic materials and research. The rate and heat of today's fires pose challenges for arriving firefighters as time is a critical element for suppression and rescue operations. A well-trained fire department is the key element in addressing today's low frequency high risk events.

The Department lacks a proper training facility to conduct regular hands-on programs, such as live fire training and other specialized programs that require more training props outside of those available at the fire station. Fire props that were noticed at the Huron Park station appeared to be self made. Any props made by SHFD should meet the NFPA 1402 Standard that relates to training facilities and props.

The fire stations have an area at the back of the building where some auto extrication and other general training can take place, but since these areas are part of the facilities' parking lots and are not secured within a fenced off area, there is a safety concern for the public.

While the SHFD does not have a training centre within its municipal boundaries, alternative options include the Lambton College Regional Training Centre (RTC), approximately 1 hour and 15 minutes away, or the City of London Fire Department Training Facility, approximately an hour away.

These facilities offer the SHFD the ability to train and practice on a wide range of training programs. There is a concern when travelling outside the community to conduct training, however; this is that fire department resources are consequently delayed or unavailable if a large-scale situation, such as a house fire, were to occur.

The cost of designing, developing, and maintaining a training centre can be cost prohibitive for a community like the Municipality of South Huron. Many smaller and mid-size departments have opted to purchase a mobile training unit that has multi-training capabilities. The advantage of having access to such a unit is that it can be parked at a fire station and does not require a full site-specific yard/compound to use. Another advantage of such a unit is that it can be moved between fire stations or even rented out to other communities on a scheduled basis as a method of revenue generation.

The SHFD should be mindful of environmental impacts such a mobile unit may have; location of use should be carefully selected.

4.1.3 Small-Scale Training Facility

As an alternate solution to the RTC or mobile training unit, there is also the possibility of a "public-private" partnership that may be possible where funding is secured between the Municipality of South Huron and third-party agencies that have a vested interested in fire suppression training.

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

A two or three-storey structure for ladder training and firefighter emergency exiting such as bail out procedures from a second storey window can easily be accommodated with a shipping

container training structure. A propane fed system can provide environmentally friendly fires for suppression and advanced training in fire flow behaviours. The designs are limitless in terms of what a department wants to incorporate into the facility and an analysis of what the SHFD requires must occur to ensure that taxpayers' dollars are spent in the most efficient and cost-effective manner. While considering the possibility of new fire station locations, it may be cost-effective to build a small-scale training facility at the same time while ensuring the necessary space is considered for this new facility.

The SHFD responds to multi-storey structures and a training facility must at the very least be a two-storey structure with preference being at least three or more storeys. A two-storey structure can be designed to replicate a modern apartment floor plan for ladder, search and rescue and emergency bail out training. A new training facility must have concrete pads for auto extrication, HazMat training, and a car fire prop.

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

The benefits of the hands-on practical component of a small-scale training facility are numerous as firefighters can develop new skills, maintain existing skill sets and gain confidence in equipment and tactical strategies. The practical training improves firefighter safety and reduces work related injuries. Live fire burn training is an invaluable training tool to improve a firefighter's skills and confidence when facing heat, smoke and understanding the science of fire flow paths.

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

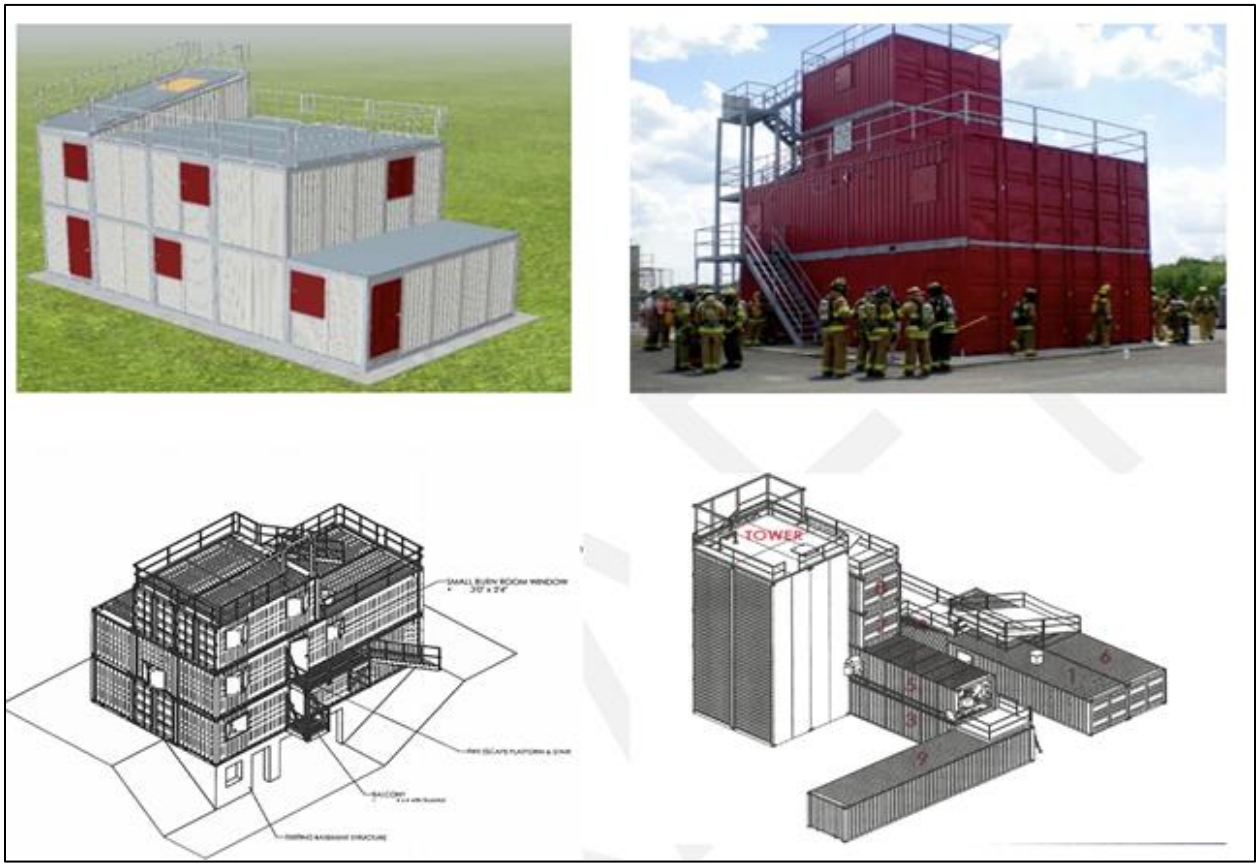
The key points for supporting a new training facility for the SHFD include the benefits to firefighters as they develop and maintain skills, and to officers as they gain new situational awareness through continuous exposure to real life scenarios.

A new small-scale training facility will vary in price from $200,000-$700,000 depending upon the options that meet the needs of the SHFD. There are some municipal partnership possibilities that the SHFD could pursue in terms of revenue and certified training where the

SHFD could be a satellite centre to offer full NFPA 1001 firefighter training, extrication, and other related training.

One of the common issues raised during this MFP is that the training for the volunteer firefighters is considerably basic and in the last five years live fire training has declined significantly.

FIGURE #9: Training Facility Examples



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

- A satellite centre that can offer certified NFPA 1001 firefighter related training as well as specialty rescue skills in NFPA 1006 and Driver/Operator as per NFPA 1002.
- A significant cost savings for the SHFD as they can provide improved training for all volunteer firefighters without them having to travel.
- An opportunity for revenue generation.

4.1.4 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 conditions. This training must comply with NFPA 1403, *Standard on Live Fire Training Evolutions*. SHFD personnel have attended the Blyth Fire School and the Ontario Fire College to obtain Live Fire Training in the past but with the closing of both facilities in recent years, options have been limited for SHFD firefighters to obtain such critical training.

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 need for knowledge and skills proficiency has been expressed in various ways in the NFPA Professional Qualifications and Training standards for at least a decade. 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."[6]

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 SHFD's comprehensive training program.

It is recommended that all firefighters receive live fire training on an annual basis at a minimum.

Recommendations:

The Fire Chief provide a business case to senior administration supporting either:

- **a new training facility for the SHFD with a capital budget ranging from $200,000-$700,000, 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.**

[6] https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/RFFEMSProficiency.pdf

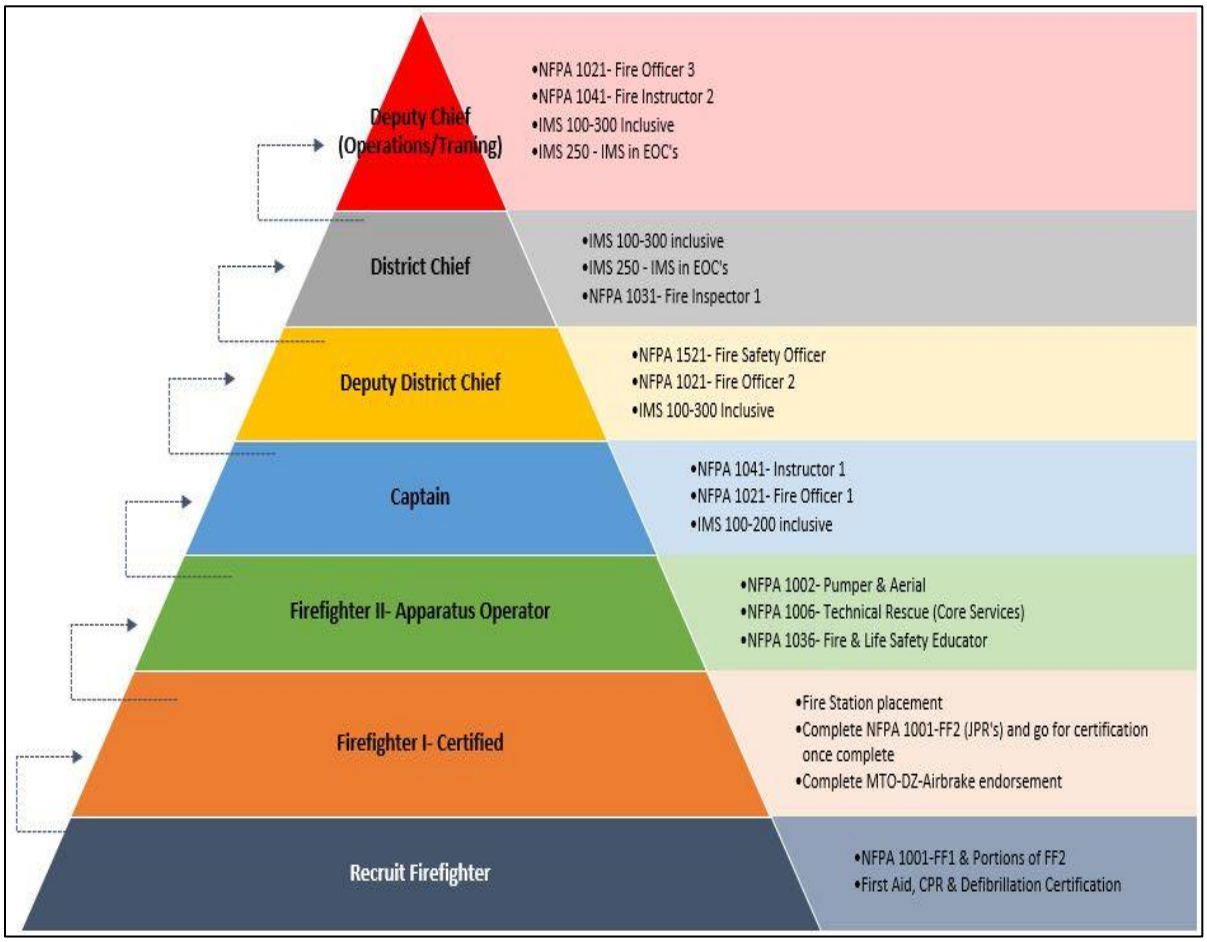
The SHFD work with the Planning and Development Services to determine a suitable location for a new training facility. Look at options to include this with the building of a new fire station.

It is also recommended that all firefighters receive live fire training annually as a minimum standard.

4.2 Training Program

EM&T has reviewed the training program from recruit firefighter through to district chief. For staff to obtain the necessary knowledge, skills, and experience it is recommended that a clear understanding of how the progression through the ranks should occur. With the adoption of the NFPA standards in 2013 (Communique 2013-04), the training program and succession path should be clearly outlined by the organization for current and proposed positions. It is the sole responsibility of the AHJ to determine the level of training, qualification and or certification of its firefighters and officers at each of those positions.

FIGURE #10: Proposed Training Standards to Current and Proposed Positions



The following positions and suggested level of training should be implemented by the SHFD to ensure that all fire personnel are being training and certified to the following levels.

4.2.1 Recruit Firefighters

New firefighters are hired by the SHFD and are required to complete a 12-week theoretical and practical program covering all elements of the NFPA 1001 – Firefighter I, as well as some elements of NFPA 1001 – Firefighter II, (Auto Extrication) – specifically, along with First Aid, CPR and Defibrillator Certification. Unfortunately, with the absence of a Live Fire Training facility, the new firefighters do not always have opportunity to complete Live Fire Training in the recruit program. These recruit firefighters will be registered and complete certification to NFPA 1001 FF I. Firefighters will now be assigned to the fire station and over a period of time will complete Job Performance Requirements (JPRs) from NFPA 1001 – FF II.

4.2.2 Firefighters to NFPA 1001 – FF II

Newly certified Firefighters are now given station assignments and are answering alarms according to SHFD operating guidelines and procedures. Over the next while, the firefighters complete remaining JPR's from the NFPA 1001 – FF II standard, will be registered and complete certification to NFPA 1001 FF II. Individuals who have been hired require the acquisition of a MTO – DZ – Airbrake Endorsement if the firefighter did not already have the license. Experience in driving a firetruck to non-emergent alarms should be encouraged to gain apparatus knowledge and familiarity.

4.2.3 Firefighter II to NFPA 1002 – Fire Apparatus Driver/Operator, Specialized Services Training & NFPA 1035 - Fire & Life Safety Educator

Emergency response personnel who drive and operate fire apparatus shall obtain the general knowledge, skills, and JPRs addressed for each level or position of qualification. It is industry's best practice for emergency response personnel who drive and operate fire apparatus to remain current with practices and applicable standards and shall demonstrate competency on an annual basis. All firefighters who drive and operate SHFD apparatus need to complete certification of the NFPA 1002 – Fire Apparatus Driver/Operator Standard.

Additional core services provided by firefighters include specialized services such as water and ice rescues, hazardous materials responses, as well as some technical rescues. It is imperative that the training programs properly prepare SHFD firefighters to safely respond to the level of service identified by the AHJ. The firefighting program should also incorporate the NFPA 1072 – Hazardous Materials/ Weapons of Mass Destruction Emergency Response Professional Qualifications (Chapter 4) & NFPA 1006 – Technical Rescue Qualifications (Chapters 5-12, 16 & 22) into the lesson plans, drilling plans and operational guidelines. Firefighters shall demonstrate competency of these skills determined by the AHJ on an annual basis.

Educating the public about fire safety is a responsibility of SHFD staff and it is important that firefighters receive a general understanding of how to deliver educational programs to the residents of South Huron by using the NFPA 1035 - Fire and Life Safety Educator Standard. The recommended training program shall provide a theory component to firefighters so they can demonstrate the ability to coordinate and deliver existing educational programs and information.

4.2.4 Captain

The position of Captain for the SHFD is one that represents the first level as a supervisory position within the organization. With this position comes great responsibility, tactical leadership, and proven ability to meet and exceed expectations. A superior level of knowledge and experience in fireground operations, delivery of training programs and ability to supervise a platoon of firefighters is all encompassing. There may be times where a captain may need to assume command of an incident in the absence of the District Chief or Assistant District Chief.

The SHFD has historically used different third-party agencies for certification in Fire Officer training and EM&T suggests that this practice continue as it provides more options in terms of costs and program delivery. For qualification at NFPA 1021 - Fire Officer Level I, the candidate shall meet the requirements of Fire Fighter II as defined in NFPA 1001, Fire Instructor I as defined in NFPA 1041, and complete the job performance requirements of the NFPA 1021 standard.

As a pre-requisite for certification to NFPA 1021 – Fire Officer Level I require the completion of the NFPA 1041 – Fire Instructor Level I. A fire and emergency services instructor who has demonstrated the knowledge and ability to deliver instruction effectively from a prepared lesson plan, including instructional aids and evaluation instruments; adapt lesson plans to the unique requirements of the students and AHJ; organize the learning environment so that learning, and safety are maximized; and meet the record-keeping requirements of the AHJ.

<u>Suggested Training Opportunity for Consideration:</u>

For the position of Captain, emergency management training should start with IMS-100 Introduction to the Incident Management System (IMS) for Ontario and IMS-200 Basic Incident Management System for Ontario.

4.2.5 Deputy District Chief

The position of Deputy District Chief for the SHFD is one that represents the second level as a supervisory position within the organization. With this position comes a greater responsibility, a need for strategic leadership and proven ability to meet and exceed expectations. A superior level of knowledge and experience in fireground operations, delivery of training programs and ability to supervise all captains is all encompassing. There may be times where the Deputy

District Chief may need to assume command of an incident in the absence of the District Chief. This role would also be ideally suited as the Incident Safety Officer, ensuring all necessary precautions are taken and establishing supports to protect the health and safety of the workers is part of that role.

As a pre-requisite for certification to NFPA 1021 – Fire Officer Level II requires the completion of the NFPA 1021 – Fire Officer Level I.

Suggested Training Opportunity for Consideration:

That all Deputy District Chiefs acquire NFPA 1521 – Fire Department Safety Officer certification. And that the position of Deputy District Chief, Emergency Management training continues with IMS 300 – Intermediate Incident Management System.

4.2.6 District Chief

The position of District Chief for the SHFD is one that represents the third level as a supervisory position within the organization. With this position comes the greatest responsibility at the District Chief level. Working with the Deputy District Chief with strategic leadership in mind he/she provides oversight, status updates, repair needs and recommendations to improve operations, training, apparatus and equipment and station needs. While this position historically has not been overly involved in fire department decision making, EM&T believes that there is great opportunity with the establishment of a Fire Leadership Team and the inclusion of the District Chief on that team.

Suggested Training Opportunity for Consideration:

The position of District Chief, emergency management training, continue with IMS 250 – IMS in EOCs and that all District Chiefs acquire NFPA 1031 – Fire Inspector I certification.

4.2.7 Proposed Position of (Part-time) Deputy Fire Chief (Operations/Training)

The proposed position of (part-time) Deputy Fire Chief (Operations/Training) for the SHFD is one that would represent the fourth level as a supervisory position within the organization with having oversight of two divisions and representation on the Fire Leadership Team. This new strategic leadership role would focus on department training development and delivery, District operational support while reviewing department data analysis, and operational guideline development and maintenance.

NFPA 1021 – Fire Officer III is focussed on Human Resources Management, Community and Government Relations, Administration, Inspection and Investigation, Emergency Services Delivery, Health and Safety and Emergency Management. EM&T believes this level of education is a perfect fit for this level within the organization.

As a pre-requisite for certification to NFPA 1041 – Fire Instructor Level II requires the completion of the NFPA 1041 – Fire Instructor Level I. A Fire Instructor II develops the training program, assigns the program elements to those who are delivering the material, provides the necessary resources, staff, facilities, and tools while providing a timeline for this delivery. The Deputy Fire Chief would also develop and recommend a training budget that clearly states the training goals for the SHFD. This level of training is essential for this new proposed position.

Recommendations:

SHFD adopt the educational progression plan outlined. The proposed training programs and succession path should be supported for current and proposed positions with the following suggested training:

- **The position of Captain, emergency management training should start with IMS-100 Introduction to the Incident Management System (IMS) for Ontario and IMS-200 Basic Incident Management System for Ontario.**
- **All Deputy District Chiefs acquire NFPA 1521 – Fire Department Safety Officer certification.**
- **The position of Deputy District Chief, emergency management training continues with IMS 300 – Intermediate Incident Management System.**
- **The position of District Chief, emergency management training continues with IMS 250 – IMS in EOCs.**

4.3 Succession Planning

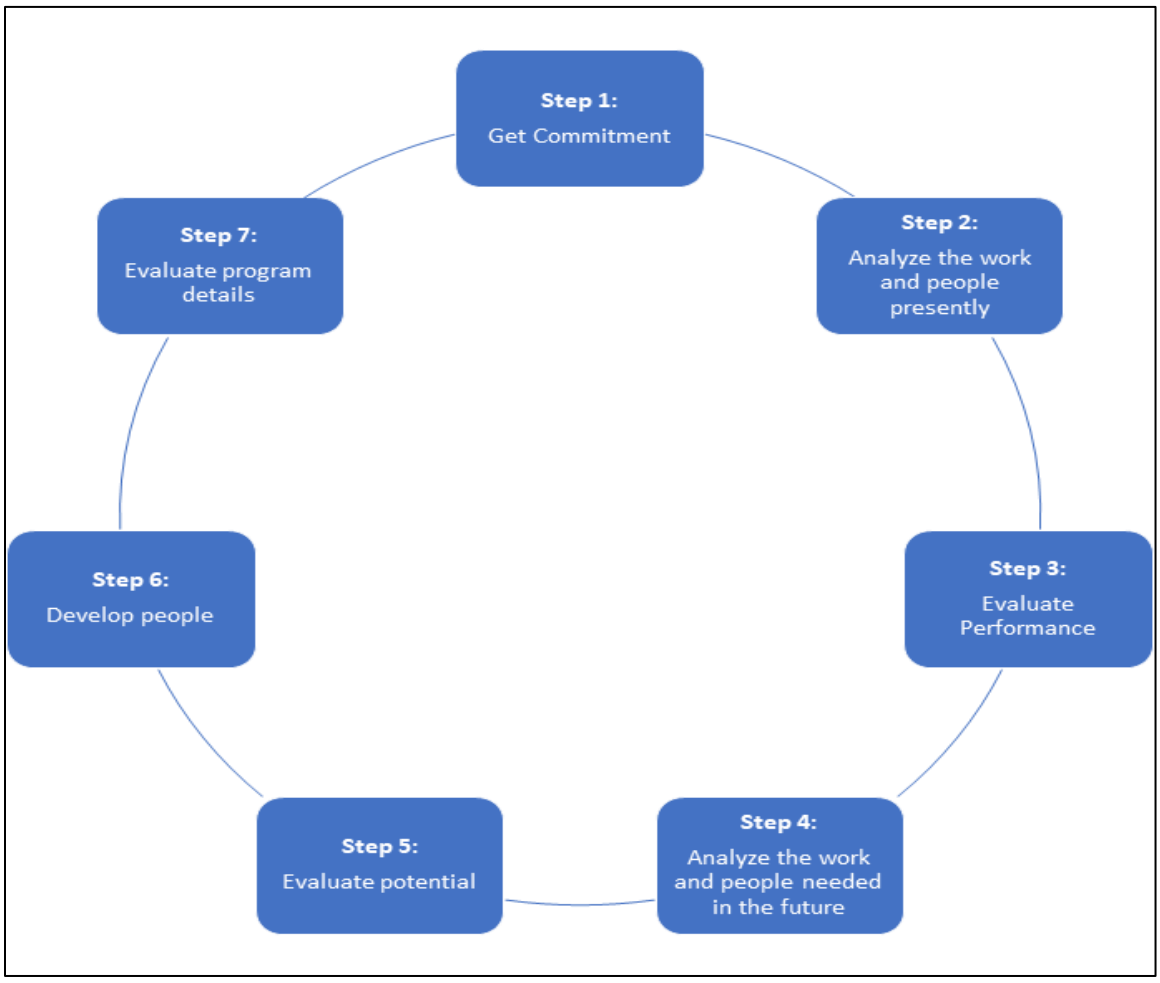
Succession planning is the process of identifying key roles in a fire department and determining the level of readiness that potential members possess to fill these roles. Rarely will a fire department prepare a single individual for a particular role, but instead will prepare several in the spirit of building a talent rich pool in the fire department and promoting the best candidate for the department.

Succession planning creates employee involvement as training, mentoring, education, and coaching are utilized to prepare the employee. A succession plan takes time and resources and creates the foundation for members to possess the knowledge, skills, and abilities to be promoted and take on formal management and leadership roles in the fire department. The SHFD does not have a formal or informal succession plan and EM&T recommends that succession planning become a priority for the Department.

The existing training program within the SHFD does not address nor prepare personnel for future promotional opportunities.

Not every member in a fire department has the desire to advance to a higher rank; these individuals are generally very competent and efficient at their existing rank and are a very valuable asset to the department. However, a key component of succession planning is recognizing and providing the necessary education, training, mentoring, and coaching to those that do want to be promoted to a higher-ranking chief officer position.

FIGURE #11: Effective Succession Planning Steps[7]



The following steps outline Rothwell's roadmap to successful succession planning.

Step 1: Get Commitment

SHFD management and the Municipality of South Huron Human Resources (HR) staff must agree upon why succession planning is necessary for the fire department and how to implement training components to prepare personnel for future Chief Officer promotional

[7] Effective Succession Planning (fourth edition) Author: William J. Rothwell https://hcmindonesia.files.wordpress.com/2012/12/9b-successionplanhandbook.pdf, Page 83-85

opportunities in the Department. A commitment must be made by the Department in terms of budget allocation and a commitment must be made by individuals that they are willing to put in the time and energy into their education and training.

Step 2: Analyze the work and people

Ensuring that job descriptions identify the required competencies and qualifications for Chief Officer positions.

Step 3: Evaluate performance

The ongoing evaluation of the individuals, what the results are that they are expected to achieve, and the competencies and behaviours they are expected to demonstrate.

Step 4: Analyze the work and people needed in the future

SHFD management and the Municipality of South Huron HR staff must anticipate the future qualifications and needs of the Department based upon its strategic objectives and the competencies required to meet those objectives. This will require regularly scheduled reviews of the qualifications and competencies required for the Chief Officer positions.

Step 5: Evaluate potential

The assumption cannot be made that successful performance in the past guarantees successful performance in the future. The Department must look at objective ways to evaluate individuals to determine how well they will function at a higher level of responsibility.

Step 6: Develop people

This step is carried out by a formal career development plan that identifies what individuals must do in terms of education and training to increase their chances of success for promotion in the future.

Step 7: Evaluate program results

The success of the program is indicated by the support and positive results in terms of budgetary program support, participation, and successful promotions.

A well thought out and implemented succession planning process takes time and resources to develop, but the result is the development of a fire department's talent pool with members actively participating in their own career development.

Recommendation:

A formal organization development program be created that identifies core competencies and qualifications for Fire Chief, Deputy Fire Chief, District Chief, Captain, and Firefighter and be formally implemented in the short-term.

As noted in the following excerpts, three international organizations are in full support of succession planning and career development. This is for both volunteer and career personnel.

- The International Fire Service Training Association (IFSTA) stated, *"Successful chief officers depend upon their experience and their experiences to guide them. Their experience can be defined as the positions they have held while their experiences are the things they have done and the situations to which they have been exposed. Experience and exposure are not the same thing. Seniority does not necessarily equate to experience."*[8]

- The International Municipality/ County Management Association (ICMA) notes that the work experience is often conflated with tenure or "time on the job." While seniority generally offers more opportunities for exposure to different challenges, perhaps a better focus is on the experiences accumulated by a firefighter during his or her tenure in the department.[9]

- The IAFC recognizes that the fire services training budget is generally focused on front line-level personnel and far less effort is focused on the development of potential officers. As such, officers rarely get the development they need.[10] The IAFC identifies what works well in getting the right experience to individuals that have the ability to learn from experience and identified a new way to look at officer development. Below is the model identified by the IAFC on what works best for the development of employees according to organizational development data.

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

Based upon the review of the training program and absence of a formal document for successful completion of the Fire Officer qualifications, it appears that the technical skills have been a focus for the Department and unfortunately a gap was created in developing a formal career development plan. This regularly occurs in the fire service as the focus tends to be on

[8] IFSTA (2014) Chief Officer, Third Edition, p. 29
[9] ICMA (2012) Managing Fire and Emergency Services, p. 266
[10] International Association of Fire Chiefs (2010) Officer Development Handbook

prioritizing technical training due to budget limits which results in officer training and career development gaps.

Suggested Training Succession Opportunity:

The SHFD should facilitate the experience component required as part of the development of personnel and implement a process for individuals that are interested in Chief Officer positions within the SHFD.

4.3.1 Chief Officer Education

Career, combination, and volunteer departments in Canada are regularly using NFPA 1021 as the standard benchmark for their officers. This has been the general trend for career fire departments for years, but today more volunteer fire departments across Canada are also using NFPA 1021 as their benchmark for officer positions.

The *NFPA 1021 Standard for Fire Officer Professional Qualifications* identifies the distinction of each fire officer as the following:

> **3.3.4 Fire Officer I**-The Fire Officer, at the supervisory level, who has met the job performance requirements specified in this standard for Level I.
>
> **3.3.5 Fire Officer II-**The Fire Officer, at the supervisory/managerial level, who has met the job performance requirements specified in this standard as Level II.
>
> **3.3.6 Fire Officer III**-The Fire Officer, at the managerial/administrative level, who has met the job performance requirements specified in this standard for Level III.
>
> **3.3.7-Fire Officer IV**-The Fire Officer, at the administrative level, who has met the job performance requirements specified in this standard for Level IV.

Currently job descriptions for the Fire Chief, District Chief, Captain and Fire Prevention Officer are not available but descriptions of roles and responsibilities are identified within the Establishing & Regulating Bylaw #18-2006 (Schedule B) – General Statement of Duties. Most updated E&R Bylaws are removing any job descriptions found within the document, so they can be updated by the Fire Chief and Human Resources as needed without having to bring the Bylaw back to Council for approval.

Recommendation:

Develop job descriptions with a list of the minimum core job responsibilities. Further, the education and experience required for each of those positions should be outlined to chart the path for succession. Job descriptions found in the E&R Bylaw should be removed.

Each AHJ determines the best level of education, skills, abilities, and knowledge required for officers up to the Fire Chief. There are numerous avenues to pursue in terms of formal education for Administrative Chief Officers and it ranges from fire service certificates, Fire Officer III-IV, or a degree. Provisions can be implemented to have these Administrative Chief Officers require Fire Officer III certification as this is based upon NFPA 1021 standard and the SHFD is in transition to follow the NFPA standards. However, there is validity to a fire service certificate, or a degree based upon the needs of the Department. With the addition of a part-time Deputy Fire Chief of Training and Operations, the NFPA 1021 - Fire Officer III certification is most applicable for the position and includes the following areas:

- Human Resource Management
- Community Government Relations
- Administration
- Inspection and Investigation
- Emergency Service Delivery
- Health and Safety
- Emergency Management

The Fire Officer IV qualifications include the same topics as FO-III, but the FO-IV program builds upon what is taught in FO-III to obtain the higher certification. This type of training and certification (FO-III and IV) should be considered as minimal training and qualifications of the new position of part-time Deputy Chief of Training and Operations.

Rec #	Recommendation	Estimated Cost	Suggested Timeline
5	Hire a part-time Deputy Fire Chief (Training/Operations). This new position should begin by working a 21 – 24-hour work week with the possibility of transitioning to a full-time position within the next 7-10 years. An interim option, until a part-time Deputy Fire Chief position can be implemented, is to work with other local departments with the creation of a joint Training Officer position. This joint position also has the benefit of creating consistent training programs amongst the partner departments.	$35,000 - $40,000	Short-term (1-3 years)
6	The Fire Chief provide a business case to senior administration supporting either: • a new training facility for the SHFD, or • the purchase of a mobile training unit or a fixed site unit for the purposes of Live Fire Training.	$200,000 - $700,000	Short-term (1-3 years)
7	The SHFD work with the Planning and Development Services to determine a suitable location for a new training facility. Options to include this with the building of a new fire station should be investigated.	Staff time	Short-term (1-3 years)
8	It is recommended that all firefighters receive live fire training annually.	Dependent on facility costs and/or the purchase of a live fire training unit.	Short-term (1-3 years) and ongoing
9	SHFD adopts the educational progression plan outlined. The proposed training programs and succession path should be supported for current and proposed positions with the following suggested training: • The position of Captain, emergency management training should start with IMS-	Staff time	Short-term (1-3 years) and ongoing

Rec #	Recommendation	Estimated Cost	Suggested Timeline
	100 Introduction to the Incident Management System (IMS) for Ontario and IMS-200 Basic Incident Management System for Ontario. • All Deputy District Chiefs acquire NFPA 1521 – Fire Department Safety Officer certification. • The position of Deputy District Chief, emergency management training continues with IMS 300 – Intermediate Incident Management System. • The position of District Chief, emergency management training continues with IMS 250 – IMS in EOCs.		
10	Create a formal organization development program that identifies core competencies and qualifications for Fire Chief, Deputy Fire Chief, District Chief, Captain, and firefighter and be formally implemented.	Staff time	Short-term (1-3 years)
11	The SHFD facilitate the experience component required as part of the development of individuals and implement a process for individuals that are interested in Chief Officer positions.	Staff time	Short-term (1-3 years)
12	Develop job descriptions with a list of the minimum core job responsibilities. Further, the education and experience required for each of those positions should be outlined to chart the path for succession. Job descriptions found in the E&R Bylaw should be removed.	Staff time	Short-term (1-3 years)

SECTION 5

Fire Department Services

5.0 Fire Department Services

5.1 Administration Division

The Administrative Division currently consists of the Fire Chief only, however there is a part-time Administrative Assistant and a full-time FPO that support each other with records management and other administrative duties as best as possible based on current resources.

5.1.1 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 is noted:

> ***Category 9C: Administrative Support and Office Systems***
>
> Administrative support services and general office systems are in place with adequate staff to modestly 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.

The Fire Chief position wears many hats and the responsibility in areas such as call data entry and general administrative functions is a challenge to balance. During interviews with the Fire Chief, it became apparent that the administrative workload cannot be maintained by the Fire Chief, even with the utilization of a shared Administrative Assistant. Therefore, it is recommended that a dedicated part-time Administrative Assistant position for the Fire Department be created to share the workload with a focus on data entry, asset management, and equipment life cycle planning. As demand increases, this position could evolve into a full-time position.

Recommendation:

It is recommended that a dedicated part-time Administrative Assistant position for the Fire Department be filled, potentially leading to a full-time position as needed.

Another area that requires support is in the management ranks. The Fire Chief carries the brunt of an on-call system. As such, the Fire Chief is expected to work his normal 35-hour work week, attend any evening related work meetings, and be available to respond to calls after hours. EM&T has already noted the recommendation of having a part-time Deputy Chief position (perhaps 21-24 hrs/week) to help spread out the on-call workload responding to calls after hours and allow for a better work/life balance. This new part-time Deputy Chief position would have the responsibility of Training Development and Operations.

Along with this new part-time Deputy Chief position, it is recommended that a Duty Officer position be created to be filled on a rotational basis by qualified individuals, with the Fire Chief having the flexibility of modifying this assignment at any time. There would not be a determined number of hours for this acting position but rather it would be determined by the Fire Chief based on special projects and management priorities. The Fire Chief will also determine the minimum qualifications to fill this position.

Having qualified personnel fill the Duty Officer role also provides them additional leadership experience and assists in succession planning.

Recommendations:

Create an on-call Duty Officer position to be filled on a rotational basis by qualified individuals.

To recognize the extra time and responsibility required for the "on-call" rotation, some communities provide a stipend for the Fire Chief, Deputy Chief, and Duty Officers. Presently, the Fire Chief does not receive a stipend for this extra duty time.

5.2 Fire Prevention and Education

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

Safety Standards and Enforcement is the second line of the 'Three Lines of Defence', in preventing fires before they begin. Public education, combined with 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 SHFD, it was confirmed that there is an annual inspection and public education program in place. The Fire Chief oversees all facets of the program to ensure that the Fire Prevention Division is meeting their goals. The SHFD Fire Prevention Division is staffed with one full-time FPO/PFLSE that reports to the Fire Chief. The FPO/PFLSE oversees all prevention and education activities and sets overall program goals. The Fire Prevention Division

manages all community outreach, data analytics, and is the primary investigator for fire origin and cause investigations. Currently all building development plans are examined and reviewed by the Building Department of South Huron. The SHFD FPO should also be involved in this process so that they may be reviewed from a fire protection/response perspective as well.

In the Huron Park area is a decommissioned air force base in which many of the large structures that were previously hangers and support buildings, have been converted to house industries and commercial enterprises. The businesses range from aircraft maintenance to recycling/garbage and die casting. The structures were retro fitted with fire alarm systems and sprinklers to aid in maximizing fire protection systems. SHFD maintains an inspection schedule to ensure compliance and have not incurred any issues to date.

The school program includes public education with both elementary and high school children. Topics discussed include smoke and CO alarms, escape planning, fire safety in the home, and playground safety along with the required fire drills. The SHFD has a great working relationship with the many businesses in the Municipality. It is possible some of those stakeholders would be interested in sponsoring some contests that the school-aged children could participate in such as fire safety poster contests or video 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 FPO in getting the fire messaging out. They have made presentations to the public at club meetings, community breakfasts and events such as the rodeo. When making a presentation to a senior's group, many topics are discussed 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, South Huron is finding an increase in short-term rentals becoming more prevalent. Some owners may not be very fire safety conscious of what is required and their responsibilities as an operator of these dwellings. It is unknown how many are currently operating in South Huron as there is no by-law that regulates their operation, including licensing.

Recommendation:

The Municipality of South Huron enact a by-law for the operation of a short-term rental, including bed & breakfasts.

Another area of concern is dual occupancies in one residential structure which are also known as second units. Many involve basement apartments that may not meet Ontario Fire Code (OFC) Standards. It is unknown how many are in operation in South Huron. 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.

Recommendation:

It is recommended that South Huron enact a by-law for the operation of second units, that the units must be compliant with provincial legislation and be registered or licenced with the Municipality.

Some municipalities have resorted to establishing a "reporting line" for citizens to report possible illegal second units.

The Municipality of South Huron has eight vulnerable occupancies that are considered a high-risk structure that require constant monitoring by the FPO. These include Exeter Villa, South Huron Hospital, and South Huron Community Living to name just a few.

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 occupancies in South Huron, 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.

South Huron has a very successful Fire Prevention and Public Education program, and other municipalities would like to draw from these successes into their municipality. Some currently do not have a fully functional program in place and would like to reach out to South Huron to hire the FPO/PFLSE to conduct inspections and provide public education in their municipalities.

In 2019 a draft agreement with Lambton Shores was to see South Huron provide Fire Prevention and Public Education to the Municipality of Lambton Shores. For unknown reasons, this agreement did not come to fruition. Entering into such an agreement would be an excellent means of revenue generation to offset the operating expenses of the SHFD. Selling fire services to another municipality is becoming the norm in many areas of the province. Some have joint training officers, fire prevention officers, provide technical rescue services, provide aerial devices during a fire under contract, and automatic aid agreements in place, all of which saves funds for one municipality while being a source of revenue for another.

Recommendation:

The Municipality of South Huron to explore opportunities to provide Fire Prevention services to neighbouring municipalities.

During EM&T's review of the Outdoor Burning By-Law and the Fireworks By-Law, it was found that both are outdated and should be reviewed and updated to meet current requirements. Suggestions include discontinuing the permittance of leaf burning 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 outdoor burning appliances that stores now sell such as chimineas.

5.3 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 FPO address Fire Code violations and fire safety hazards within the authority of the *Fire Protection and Prevention Act* (FPPA) and applicable regulations and Fire Marshall directives.

The Fire Inspector oversees community life safety issues concerning fire code inspections and enforcement of the Fire Code. 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.

The FPO is currently not responsible for the review of development applications (site plans, residential subdivisions, building plan amendments, minor variances) and building permit review for the fire protection features related to mainly tenant applications and large buildings (no houses). The FPO/PFLSE has achieved their plans examination certification.

Recommendation:

The South Huron Fire Prevention Officer participate in the examination and review process for all building stock development, and that the Fire Prevention Division be involved in the review and approval processes for new developments, site plans, renovations, etc., so the fire safety/response requirements are met.

Through the utilization of the FUS Inspection Frequency Chart (TABLE #3), the Fire Chief can measure requirements to meet inspection benchmarks, developing a plan with what can be accomplished with its present staffing complement, along with presenting options for

increasing inspection frequencies. Currently the FPO conducts fire inspections in accordance with the recommended FUS inspection frequency.

TABLE #3 FUS Suggested Inspection Frequency Chart

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

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

The Fire Chief would be well served by tracking the time spent on each of the fire prevention activities (ranging from site plan reviews, routine inspections, licensing, complaints, requests, etc.). By identifying the time spent on each project and collating this into approximate baseline times, the Fire Chief can then use the hours spent as a model figure in applying future initiatives.

The Fire Chief is encouraged to review the number of inspections and associated orders/fines issued on the concept of recidivism; that by which businesses are requiring more inspections, more follow-up, and therefore more time of the FPO, versus those which require minimal assistance or interaction of the FPO. A business or owner with tendencies to ignore the primary concepts of fire prevention may tend to preoccupy the FPO unnecessarily. It is recommended that the Fire Prevention Division report annually on activities being conducted to reset baselines and indicate successes or challenges with achieving benchmarks.

Recommendation:

SHFD conduct an annual review of the Fire Prevention Division's programs to identify areas requiring additional activity.

5.4 Fire 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 SHFD to investigate and determine the origin and cause of all fires. The FPO has successfully completed NFPA 1033, the Standard for Fire Investigation, and is a certified fire investigator. 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). Any future training opportunities in fire investigation should be achieved all in the efforts of identifying trends and addressing them through public education or enhanced fire investigations, involving outside resources.

5.5 Public Education

The Fire Prevention Division has a successful program that teaches fire safety to all ages and in a variety of formats and settings. The FPO is also the PFLSE and is responsible for running education activities and creating and/or delivering education programs. SHFD 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, have been established that aid in the delivery of this public education programming. The SHFD continues to be proactive in this regard, identifying and implementing opportunities for increased effort in promoting public education. It is recommended that increased efforts to leverage social media platforms and the development of partnerships with internal and external stakeholders would support advancement of public safety messaging campaigns.

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 in Category 2 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 SHFD utilizes firefighters to support the smoke alarm program, the school program, fire station tours, community event appearances, and with distributing public safety material. Opportunities exist to enhance these programs and to implement innovative approaches with support from within SHFD directed towards the Fire Prevention Division. It is recommended that consideration be given to training Suppression personnel to Public Fire & Life Safety Educator I.

Recommendation:

All firefighters be offered the opportunity to become trained and qualified to the Public Fire & Life Safety Educator Level I, or equivalent certification.

Any time SHFD personnel are involved in conducting station tours or assisting in public education, be it at the schools or at community functions, an OFMEM Standard Incident Report should be completed for statistical purposes. Within the report it should identify the type of event they attended and the number of the public in attendance. This will provide valuable statistic data for future events or identify a demographic they may need to reach out to more often.

5.6 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 off the local needs and circumstances of the community.

Note: Annex 'C' is not part of the requirements of this NFPA document but is included for informational purposes only.

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

1. Identifying the scope of desired services, duties, and desired outputs.
2. Review of the Fire Prevention Division's overall time demands in its efforts to offer services.
3. Review of hours presently documented, coupled with the hours required to meet annual goals of the Division.
4. Actual availability of Division personnel, factoring in vacation and other absences.
5. Estimating total number of personnel required based on the previous four steps.

By completing this process, it will assist the SHFD in identifying what services it not only wants to offer, but what can be delivered based on present staffing levels. More information on this staffing equation can be found in the NFPA 1730 Standard.

Based on general recommendations by the FUS group, the fire prevention officer per population ratio should be approximately one fire prevention officer per 15- to 20,000 population minimum. With the anticipated growth within the municipality over the next eight to ten years, this could put population rates beyond the FUS recommendations.

5.7 Residential Fire Sprinklers and Monitored Fire Alarm Systems

The NFPA, along with the Ontario Association of Fire Chiefs, are strong supporters of residential sprinkler systems to reduce the risk to life and property from fire.

In a recent NFPA on-line article, it was noted that because fire sprinklers react so quickly, they can dramatically reduce the heat, flames, and smoke produced in a fire. Properly installed and maintained fire sprinklers help save lives, reduce damage, and make it safer for firefighters.

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.

Facts about home fire sprinklers

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

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

Source: U.S. Experience with Sprinklers[11]

- 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.

[11] https://www.nfpa.org/News-and-Research/Data-research-and-tools/Suppression/US-Experience-with-Sprinklers

- The average firefighter injury rate of 13 per 1,000 reported home fires was 79% lower where sprinklers were present.
- Where sprinklers were present, flame damage was confined to the room of origin in 97% of the fires compared to 74% of fires without sprinklers.

In 2021 some fire safety statistics[12] were released which includes:

- Fire sprinklers reduce the risk of death in a home fire by 80%.
- The risk of property loss is reduced by 70% in homes with sprinklers.
- A sprinkler installation typically costs 1-2% of a home's total construction cost. In Canada it has been found that due to the high costs of building materials due to the pandemic and pushback from some trades, the estimated costs vary from $5 to $10 / sq. ft.
- Fire sprinkles activate on an individual basis.
- Fire sprinklers release less water than fire hoses.

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

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

Recommendation:

It is recommended that the SHFD work in conjunction with residential developers in promoting the advantages of installing residential fire sprinklers.

Presenting a demonstration at community events by the SHFD would assist in driving the safety factor of having sprinklers in the home. There are demonstration trailers available for sprinkler presentations for the SHFD to 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

[12] The Latest Fire Safety Statistics - Stay Safe in 2021 (safeatlast.co)

will ensure constant surveillance of alarm 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.

5.8 Volunteer Firefighters

Typically, as volunteer fire departments get busier and the scope of practice is expanded, it becomes harder to recruit and retain volunteers. Busy fire departments, in terms of call volume and service delivery, tend to hire more full-time firefighters to meet the demands placed upon the department.

The SHFD, as with many other fire departments, faces challenges when it comes to retention of volunteer firefighters. This is not a reflection of the fire department, but simply a result of the need for many firefighters to move to other communities for work, education, or family needs. This puts a strain on the Department in the areas of recruitment, training, and staffing of the fire stations.

Some of the challenges that volunteer fire departments encounter in retaining its volunteers are:

- The complexities of society today create challenges as demographics change and it becomes harder for a member to volunteer and be available for an emergency response during the work week.
- A formal training program must be developed where volunteer firefighters can achieve NFPA 1001 certification or at the very least, specific skills within the standard. This creates a greater demand on the volunteer's time.
    - One advantage to this enhanced training is that it can open opportunities to the volunteers that are hoping to get into a career fire department.
- Financial support must exist for the department to train and fully remunerate the volunteers.
- Health and safety concerns have changed the dynamics of the volunteer as the transportation of turnout gear in personal vehicles is not permitted due to off gassing which could result in an inhalation exposure. Research has confirmed that volatile organic compounds (VOCs) generate during structure fires and will off-gas from a firefighter's turnout gear and expose the firefighter to carcinogens. Transportation of contaminated turn out gear in vehicles is unsafe. This is a real concern for the volunteer who has a full-time career and family to worry about.

5.8.1 Recruitment and Retention of Volunteer Firefighters

The Office of the Fire Marshal and Emergency Management has put out a document on recruitment and retention to offer some criteria and/or guidelines that departments can utilize. Refer to Appendix "C" for the document.

Some of these points relate to enhancing training and special projects for the staff to become more involved in, such as:

- Long service awards in the form of remuneration or a stipend
- Education assistance programs to support them in their professional development
- Increased training opportunities

All these concepts are great but have limited effect if the community is not offering the desired employment, education, or affordable housing needs of the volunteer firefighters. There is no one size fits all model for the recruitment and retention of members as communities differ in their demographics and dynamics. Some factors to consider for the recruitment of members include:

- Communication Strategy: Social media platforms such as Facebook and Twitter are a great platform to create meaningful relationships with the community, boost the profile of the fire department, and elevate the prestige of being a member of the fire department.
- Recruitment Campaign: A recruitment campaign identifies the need for firefighters.
- Diversity: A recruitment strategy must be diverse in nature and target visible minorities including Aboriginals and females.
- Public Relations: Every volunteer member of the SHFD engage in public relation activities daily with their interactions with community stakeholders, business owners and the other civic departments. When members have positive feedback about the fire department it raises awareness of the Department and can motivate others to join.
- Political Leadership: The civic leadership must understand what the Department gives to the community as a pillar of public safety, why it needs to be financially supported and how the community is safer because of the fire department.
- SHFD Leadership: The leadership team welcomes new members, fosters teamwork, encourages and supports others as they learn the necessary skills and competencies to be a firefighter.

The retention of casual and volunteer members is critical as a great deal of time and effort goes into their training. There are three factors that will help retain volunteer members.

- **Strong Leadership**: Retention problems can be traced back, directly or indirectly, to inadequate or misguided efforts from department managers. Strong leadership ensures that volunteer members are treated fairly and equally and favoritism of one group of firefighters over others does not exist.
- **Psychological Support Services:** Mental health support is a priority for the emergency services today and the fire service has learned the hard way that psychological support for its members and families is of paramount importance. All members need to know that psychological support services are available when needed. Volunteer members of the SHFD must feel comfortable to ask for help when they are struggling.
- **Diversity:** A diverse fire department is a healthy and progressive fire department where Aboriginal, visible minorities, females and LGBTQ members are welcomed.

The Fire Chief has noted that the Department is doing what it can to retain its volunteers, and by reviewing and further implementing more of the recommendations noted in the OFMEM document, the SHFD may witness a higher retention level of its volunteers.

5.9 Health and Wellness

Fire services all over Canada are required to develop department policy and procedures related to firefighter safety and health. Standards commonly used to assist in this development are the NFPA 1500 Standards. Below is a short list of standards that the SHFD may use for the development and implementation of such policies and procedures.

- NFPA 1500 standard on Fire Department Occupational Safety, Health, and Wellness
- NFPA 1521 Standard for Fire Department Safety Officer Professional Qualifications
- NFPA 1581 Standard on Fire Department Infection Control Program
- NFPA 1582 Standard on Comprehensive Occupational Medical Program for Fire Departments
- NFPA 1583 Standard on Health-Related Fitness Programs for Fire Department Members
- NFPA 1584 Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises

Some topics that the SHFD should focus on to generate the largest impact to firefighter safety, health and wellness are as follows:

- Firefighter training
- Use of protective clothing and equipment
- Vehicles, tools, and equipment
- Emergency Operations

- Medical and physical requirements
- Exposure to fireground toxic contaminants
- Incident Stress
- Incident Safety Officer
- Firefighter Rehabilitation

5.9.1 Firefighter Presumptive Cancer

SHFD firefighters are regularly and repeatedly exposed to carcinogens throughout their duties and are inhaled, inadvertently swallowed, or absorbed in significant concentrations through the skin.[13] It must be noted that some areas of skin are more permeable than others, specifically the face, the angle of the jaw, the neck and throat, and the groin. Skin's permeability increases with temperature and for every 5 degrees increase in skin temperature, absorption increases 400%.[14]

Numerous studies have concluded that there are elevated incidents and mortality rates from specific cancers in firefighters when compared to the public. Overall, the research concluded that firefighters developed 9% more cancers and were 14% more likely to die from cancer than their age-matched comparable[15].

The SHFD does not have a cancer screening program where members are regularly tested for certain cancers. The SHFD should be increasing their awareness of industry best practices to ensure that the long-term health and safety of members is maintained by ensuring that staff are minimized to carcinogens throughout their career.

With the known risk of exposure to carcinogens the SHFD has not taken steps to minimize exposure to carcinogens by having diesel fume extraction systems in any of the fire stations. There is only one industrial washer extractor located for turnout gear and all stations have regular washer and dryers for station wear. In addition, there is no SOG identifying a protocol for washing and reassembling of turnout gear and other personal protective equipment (PPE) where contamination of the gear occurred. SHFD should follow the manufacturers recommendations for the cleaning and assembly of PPE.

[13] Dow, M. & Kunz, K. & Garis, L. and Thomas, L. (2015) *Firefighters and Cancer: Understanding Risk Factors in an Environment of Change*. University on the Fraser Valley, Center for Social Research and Centre for Public Safety & Criminal Justice Research.
[14] Firefighter Cancer Support Network (2013) *Taking Action Against Cancer in the Fire Service.*
[15] Dow, M. & Kunz, K. & Garis, L. and Thomas, L. (2015) *Firefighters and Cancer: Understanding Risk Factors in an Environment of Change*. University on the Fraser Valley, Center for Social Research and Centre for Public Safety & Criminal Justice Research.

The recommendations relating to diesel exhaust systems, industrial washer/dryer and a separate washer/dryer for the cleaning of regular clothes are captured in Section 5 which addresses fire department facilities.

Recommendations:

SHFD to develop an SOG outlining proper decontamination of firefighters and their gear, during and after emergency operations and/or live fire training evolutions.

It is recommended that the SHFD introduce a cancer screening program.

5.9.2 Firefighter Rehabilitation

Firefighter rehabilitation is a vital firefighting function, providing firefighters and other emergency personnel with immediate medical attention including rehydration, treatment for smoke inhalation, and the prevention of life-threatening conditions such as heatstroke and heart attack after working at the scene of an incident. Firefighter rehabilitation can include a variety of things from a simple check up to deciding whether the firefighter needs to seek higher medical attention. The rehabilitation area is set up in a safe location near the incident so that it can be accessible to any emergency responders who may need it. The area provided is usually shaded or may be inside a fire apparatus due to extreme temperatures. With the possible consolidation of fire stations and the redeployment of fire apparatus, the current Huron Park Rescue vehicle could be outfitted to serve double duty as the SHFD Rehabilitation and Decontamination unit and backup rescue.

Recommendation:

The Huron Park rescue be outfitted to serve double duty as the firefighter rehabilitation and decontamination unit and backup rescue.

5.9.3 Mental Health Wellness

Firefighters are like law enforcement, paramedics, EM&Ts, 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 SHFD 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 loss of a patient after a rescue attempt.
- The death or a critical incident involving a child.
- A prolonged rescue or incident with excessive media coverage.

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

Mental health takes on 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.[16]

Cities generally have employee assistance programs, 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 staff, and their families be enrolled in the Municipal Employee Assistance Program.

Recommendation:

A formal health and wellness program should be created to identify initiatives and create an SOP for the confidential process for treatment of a mental health injury.

[16] National Volunteer Fire Council, Firefighter Behaviour Health Alliance, American Psychological Association (n.d.) Psychologically Healthy Fire Departments, Implementation Toolkit.

5.10 Emergency Management Program

As mandated by the *Emergency Management and Civil Protection Act* (EMCPA), all municipalities in Ontario must have an emergency response plan and an emergency planning program. The *Act* also stipulates that municipalities are to conduct a training exercise on an annual basis. For every community in Ontario there must also be an identified Community Emergency Management Co-ordinator (CEMC). Currently this duty falls to the full-time CEMC of Huron County. The South Huron Chief Administrative Officer (CAO) and the Fire Chief have been designated as alternates.

The latest version of the Emergency Response Plan (ERP) was completed in 2017; it is a legislative requirement for emergency response plans to be reviewed and updated each year. Changes could be minor, not requiring a complete document update. To catalog such changes, the department could insert 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.

Both the primary and secondary Emergency Operations Centres (EOC) have automatic standby generators. Even though the EOC may not be placed in operation frequently, they should be maintained in a state of readiness including updates to the information technology (IT) system.

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

Huron County has an excellent document available online that addresses severe summer weather. It speaks to being prepared in advance and having supplies readily available to take in an emergency, the differences between a weather watch and a warning, and supplies required to be self sufficient for up to 72 hours. The Municipality's website does have a link to the OFMEM's webpage on emergency planning and should also include a link to Huron County's severe summer weather document.

Each spring there is always the threat of flooding in South Huron from the Ausable River watershed in the Exeter area. Flooding events are controlled and mitigated through the Ausable Bayfield Conservation Authority, by way of their Flood Emergency Plan which was last updated in 2021. 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.

While there have been very few emergencies in Canada relating to nuclear power facilities, the community can never be over prepared. In Bruce County is situation the Bruce Nuclear Power Generation facility. To be proactive, in a joint effort, the Counties of Bruce, Huron and Grey have produced a document that is available online that includes a link to an educational document on emergency preparedness known as the "2019 Community Guide". When tax bills are circulated, this would be a good opportunity to distribute information on nuclear emergencies and what to do in the event an evacuation order is declared or post this information on the Municipality's website.

5.10.1 Incident Management System

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. The Incident Command System (ICS) is based upon best practices in Canada and the United States and is used for both small or large emergency and non-emergency planned events. It identifies roles and responsibilities to improve resource and interagency communications for a common purpose. In the Province of Ontario, the ICS is known as the Incident Management System (IMS).

During some emergencies there is a likelihood of the IMS being expanded into a Unified Command. The type of incident, complexity and location of an incident may require a Unified Command structure. The Unified Command "is a management structure that brings together the 'Incident Commanders' of all major agencies and organizations involved in the incident to coordinate an effective response while at the same time carrying out their own jurisdictional or functional responsibilities."[17]

The EOC for the Municipality of South Huron is where municipal management will operate during the emergency. The Primary EOC is located at the Municipal Office (Old Town Hall in Exeter) with the secondary location at the Dashwood Fire Station. Fire stations are not always

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

the best location for an EOC due to the traffic of firefighters and apparatus, parking adequacy, lack of security, amenities, etc.

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

- OFMEM
- EMS
- OPP
- Red Cross and/or Salvation Army

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

There are four different types of Incident Command 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 identified in the Municipality of South Huron Emergency Response Plan. 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*:*

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.

5.10.2 Emergency Planning Training and Exercises

Emergency planning and IMS are skills that need to be used regularly. Several training options will be identified to assist the Municipality of South Huron 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, bylaws, and any policies that could impact an emergency. The discussion sessions are low key, low pressure and a great tool for familiarization of plans, procedures, bylaws, and policies. 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, bylaws, 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 municipality. 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 pos-exercise discussions. To complete the exercise, an After-Action Report is completed to identify any shortcomings or deficiencies that need to be addressed.

Operations-Based Exercise: 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 SHFD and the Huron County Paramedic Service (HCPS) may conduct a drill of a 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 in the training scenario which is at a single site. These exercises are used by agencies to test their capabilities of performing multiple functions.
- 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.

Communication is essential for any large-scale incident and a mass notification system sends messages via personal cell phones to communicate to the public during an emergency. 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 SHFD is exploring the feasibility of a proprietary warning system to alert citizens in the event of a catastrophic event like a dam failure.

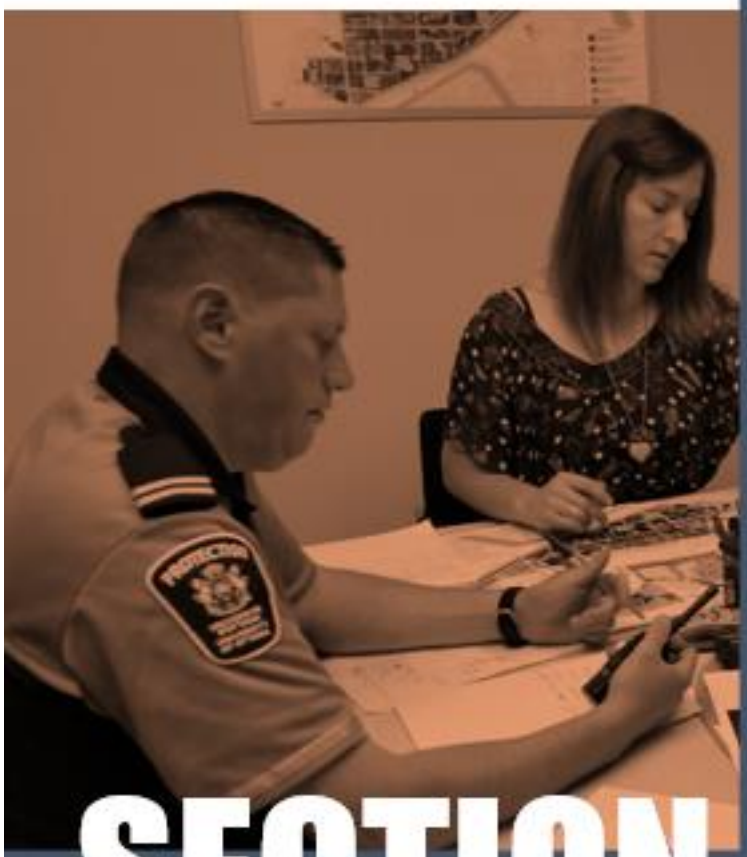
Recommendation:

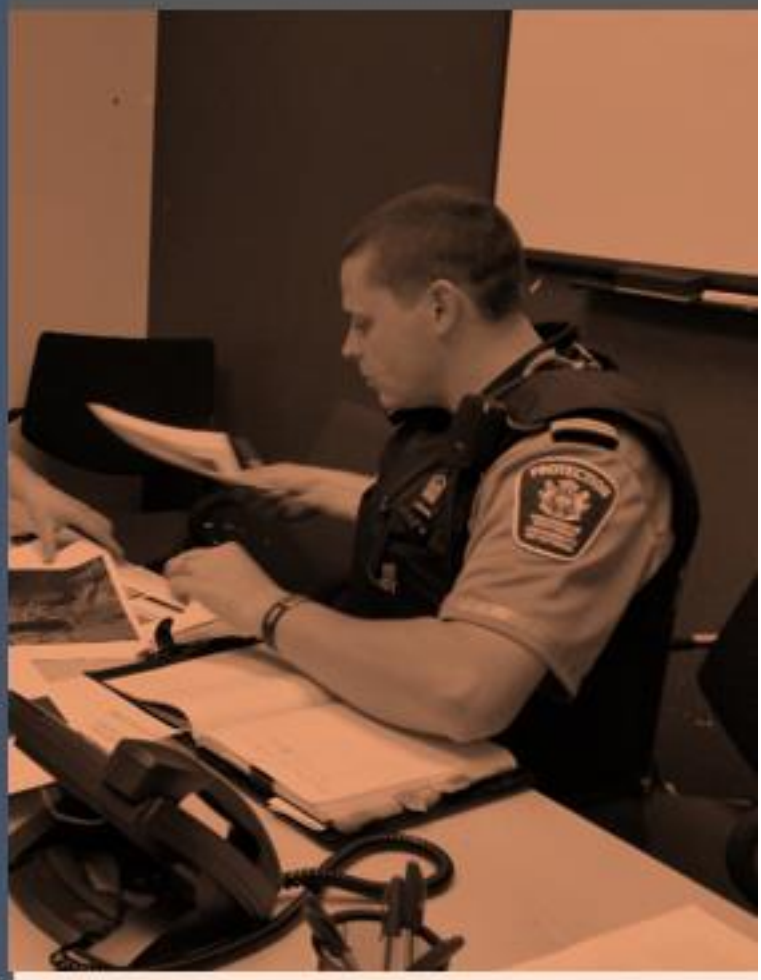
South Huron should implement a mass notification system for the Municipality. This may be more encompassing if Huron County were to take on this initiative for all the residents of the County to have both emergent and non-emergent notifications.

The SHFD does not have a Mobile Command Centre (MCC). An MCC is essential during emergencies and non-emergencies as it serves as a single staging location where agencies can coordinate and communicate during the incident or event. It is deployed during large incidents for extended periods of time or for complex incidents. Based upon the incident type, location, and complexity, an MCC serves as a single location for a Unified Command. A partnership with the Fire Marshal's Office, regional police, or other bordering communities may be possible as the MCC could be utilized for multi-agency deployment.

Rec #	Recommendation	Estimated Cost	Suggested Timeline
13	It is recommended that a dedicated part-time Fire Administrative Assistant position be filled that could lead to a full-time position as needed.	$15,000 - $35,000	Short-term (1-3 years)
14	EM&T recommends that an on-call Duty Officer position be created to be filled on a rotational basis by qualified individuals.	Staff related costs	Short-term (1-3 years)
15	It is recommended that the Municipality of South Huron enact a by-law for the operation of a short-term rental, including bed & breakfasts.	Staff time	Short-term (1-3 years)
16	It is recommended that South Huron enact a by-law for the operation of second units, ensuring compliance with provincial legislation and are registered or licenced with the Municipality.	Staff time	Short-term (1-3 years)
17	It is recommended that the Municipality of South Huron explore opportunities to provide Fire Prevention related services to neighbouring municipalities.	Staff time (revenue generation initiative)	Short-term (1-3 years)
18	It is recommended that the South Huron FPO participate in the examination and review process for all building stock development. Further, the Fire Prevention Division should be involved in the review and approval processes for new developments, site plans, renovations, etc., so that the fire safety/response requirements are met.	Staff time	Immediate (0-1 year)
19	It is recommended that SHFD conduct an annual review of the Fire Prevention Division's programs to identify any areas requiring additional activity.	Staff time	Short-term and ongoing (1-3 years)
20	It is recommended that all firefighters be offered the opportunity to become trained and qualified to the Fire & Life Safety Educator Level I, or equivalent certification.	$65.00 registration fee per student based on Ontario Fire College fee.	Short-term (1-3 years) and ongoing
21	It is recommended that the SHFD work in conjunction with residential developers in promoting the advantages of installing residential fire sprinklers.	Staff time	Short-term (1-3 years) and ongoing

Rec #	Recommendation	Estimated Cost	Suggested Timeline
22	SHFD to develop an SOG outlining proper decontamination of firefighters and their gear, during and after emergency operations and/or live fire training evolutions	$4,000 for two decon kits plus staff time	Immediate (0-1 years) and ongoing
23	It is recommended that the SHFD introduce a cancer screening program.	Staff time	Immediate (0-1 year)
24	The Huron Park Rescue be outfitted to serve double duty as the firefighter rehabilitation and decontamination unit and backup rescue.	Staff time, along with possible expenses for reconfiguration of unit and inclusion of equipment. Approx. $5,000 to $20,000	Immediate (0-1 year)
25	A formal health and wellness program should be created to identify initiatives and a create an SOP for the confidential process for treatment of a mental health injury.	Staff time	Immediate (0-1 year) and ongoing
26	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.	Staff time (courses are offered at no charge)	Short-term (1-3 years) and ongoing
27	South Huron should implement a mass notification system for the Municipality.	$15,000 to $20,000	Immediate to Short-term (0-3 years)





SECTION 6

Risk Assessment Profile

Section 6: Risk Assessment Profile

The most effective ways to reduce injuries, death, and property damage due to fire are through public education, inspections, and enforcement. As part of the project scope, EM&T was to conduct a fire/ hazard risk assessment of the service area (Municipality of South Huron) and report on the Municipality's ability to respond to the incident types which it is mandated to provide both now and in the future.

6.1 Community Risk Assessment Profile

Risk assessment is the process used 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 all risks existing within South Huron. It is based on this information that Council can make an informed decision on the level of service to be achieved.

The Province of Ontario Regulation 378/18 Community Risk Assessment (CRA) states, “a community risk assessment is a process of identifying, analyzing, evaluating and prioritizing risk to public safety to inform decisions about the provision of fire protection.”

Effective July 1st, 2019, the regulation states that every municipality shall complete a CRA by 2024 with renewal to occur every 5 years, thereafter. The municipality is required to review the document annually.

The accumulation and analyzation of these factors will assist in applying this information to identify 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 assist in answering 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?

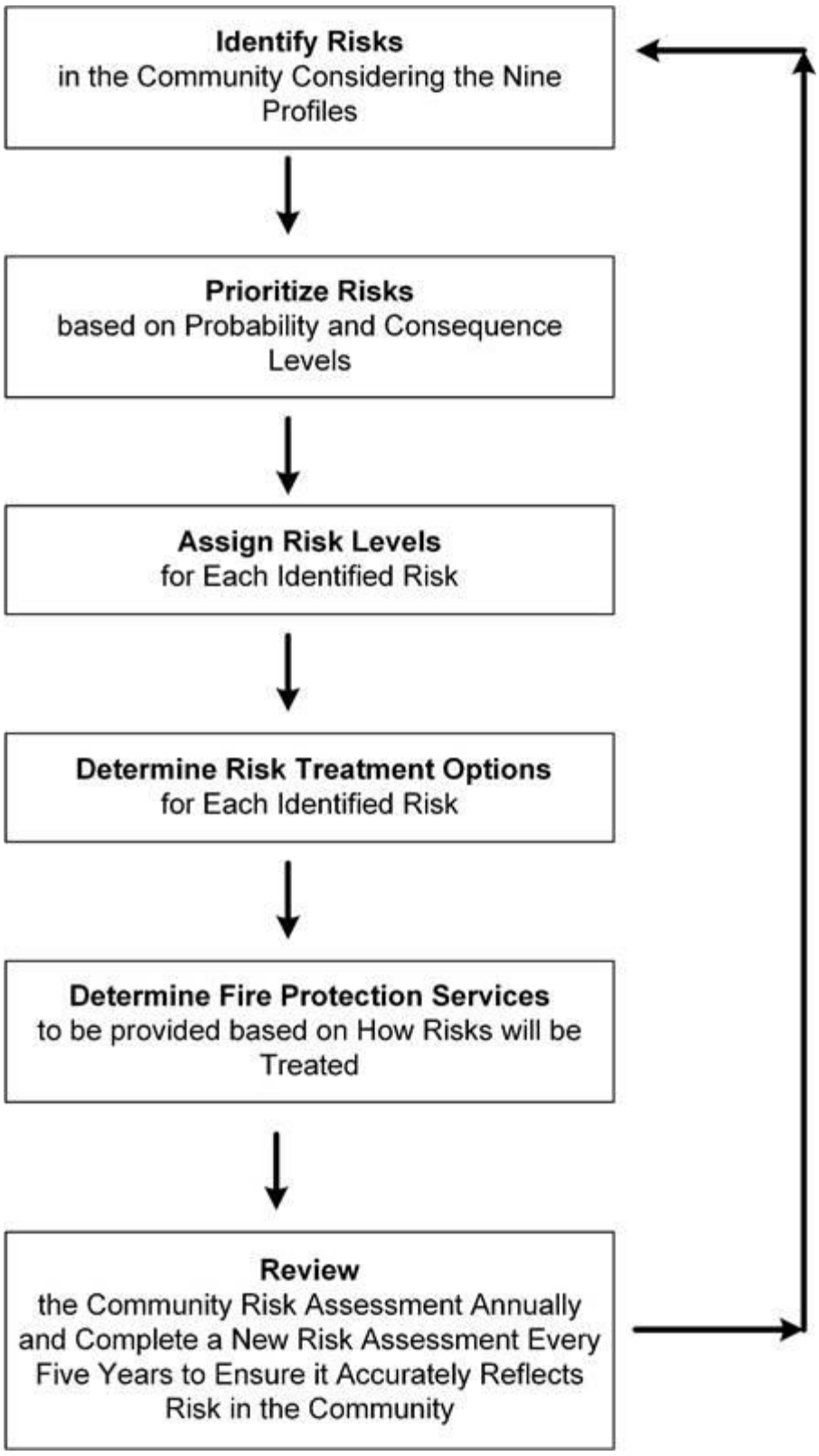
Once these questions are answered, they will frame the basis for formulating and prioritizing risk management decisions to reduce the likelihood of these incidents from occurring and to mitigate the impact of these incidents when they occur.

The completed CRA 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 – 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 #12: 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. Reviewing 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, will assist is laying 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

The South Huron CRA has been completed under a separate document to the MFP. Once the Fire Chief has reviewed its contents, and in discussion with Council and the CAO, a sound Community Risk Reduction Plan may be formulated and implemented.

6.1.1 Provincial Community Risk Statistics

While no recent Simplified Risk Assessment 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 Officer of the Fire Marshal and Emergency Management website, which can be compared with the most recent SHFD statistics.

Provincial - Loss fires by Property class

From 2010 to 2019, there were 110,811 fires with loss reported to the OFMEM.

- 47% of these fires occurred in Residential occupancies.
- 27% occurred in vehicles.
- 13% 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.
- 5% of loss fires occurred in Industrial occupancies.
- 3% in Assembly occupancies.
- 2% in Mercantile occupancies
- 2% in Business and personal services occupancies.
- 1% 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 2010 to 2019, there were 72,104 structure fires with loss reported to the OFMEM.

- Fires in residential occupancies – 73%
- Properties not classified by the Ontario Building code – 8%
- Industrial occupancies – 8%
- 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

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

Between 2010 and 2019 the ignition sources in other (not intentionally set) structure loss fires were:

- 17% cooking
- 9% electrical distribution equipment – wiring
- 8% heating/cooling
- 8% miscellaneous (which includes fires - natural causes and chemical reactions)
- 7% cigarettes
- 5% appliances
- 4% other electrical, mechanical
- 4% Exposure fires
- 3% other open flame tools (excluding matches, lighters)
- 2% lighting - excluding candles
- 2% candles
- 1% matches or lighters (excluding arson fires)
- 1% processing equipment
- 20% reported as undetermined

NOTE: These statistics total 91% of the fires. The ignition source for the other 9% is not identified within these statistics.

6.1.2 Municipality of South Huron 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 South Huron. 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 2019 approximately 60% of the fires reporting a loss occurred in Group C - residential occupancies.

Municipality of South Huron 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
- Group F - Industrial occupancies
- Classified under National Farm Building Code
- Other occupancies not classified within the Ontario Building Code (i.e., farm buildings)
- Group A – Assembly occupancies
- Group B – Institutional Care or Detention occupancies

Municipality of South Huron 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
- Arson
- Mechanical/ electrical in nature
- Maintenance deficiencies
- Other unintentional

Municipality of South Huron Ignition Source Class

The leading causes for ignition sources were:

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

To assist the fire department in its fire safety goals, it is recommended that the Fire Department staff meet with relevant local community groups to form a partnership for organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community. These events can be based on the previous fire cause and information supplied. An example of community groups would be a local group that wish to promote fire safety in the community or any local service club that want to support fire safety initiatives.

In 2016 the "Targeted Residential Fire Risk Reduction"[18] 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:

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), South Huron is below 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. South Huron has a ratio of 1 in 10. Within the percentages of At-Risk Private Single Detached Dwellings and At-Risk Population, provincial and

[18] https://www.researchgate.net/publication/307599464_Targeted_Residential_Fire_Risk_Reduction_A_Summary_of_At_Risk_Areas_in_Canada

federal levels sit just three points above South Huron. TABLE #4 details the data as sorted within the report.

TABLE #4: South Huron At-Risk Comparison

Garis et al Report Criteria	South Huron	Ontario	Canada
Number of At-Risk Dissemination Areas	2	2,630	7,198
Total Dissemination Areas	20	19,964	56,154
Percent of At-Risk Dissemination Areas	**10.00%**	**13.17%**	**12.82%**
Number of Private Single Detached Dwellings in At-Rik Dissemination Areas	520	501,990	1,320,785
Total of Private Single Detached Dwellings	3,350	2,712,000	7,301,825
Percent of At-Risk Private Single Detached Dwellings	**15.52%**	**18.51%**	**18.09%**
Population of At-Risk Dissemination Areas	915	1,420,807	3,585,822
Total Population	7,903	7,488,061	19,325,962
Percent of At-Risk Population	**11.58%**	**18.97%**	**18.55%**

Based on this data, it would benefit South Huron to focus its limited resources on targeting its public education campaigns. The FPO/PFLSE, 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 South Huron as it pertains to its at-risk populations. All target audience public education programs should be fluent and adaptive to the changing needs of the community. By including identification of at-risk groups, the 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).

6.2 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 Ontario Association of Fire Chiefs (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 (Three Lines of Defence):

- Line one: Public Fire safety education

- Line two: Fire safety standards and enforcement
- Line three: Emergency response

The Integrated Risk Management Web Tool is built around the Three Lines of Defence and 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, 1997*.

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 relative to:

- Fire prevention and education initiatives, which includes updated community reviews, through the use of the OFMEM Simplified Risk Assessment
- 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 a combination of all facets of the fire service that 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.

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).

Conducting a review of every building within the Municipality of South Huron may not be practical. Utilizing NFPA 1730 definitions of risk categories may guide Council in deciding the

focus and service level within the community. Council should determine, with input from the Fire Chief, an acceptable level of risk to manage within the community based on its needs and balanced with the circumstances to deliver the services.

In both NFPA Standards, Public Education is a key component of having a successful Community Risk Reduction Plan.

The following table lists the Top Risks or Issues/Concerns found within South Huron as taken from the CRA, 2021 Edition.

TABLE #5: Top Risks or Concerns for South Huron

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

Issues/Concerns	Risks / Treatment Option(s)
Bodies of water	**Streams and rivers within the municipality flow into Lake Huron.** **Water level of streams, lakes, and rivers within the municipality tend to fluctuate year-round. Spring is prone to flooding.** **SHFD provides shore-based only water/ice rescue responses.** **SHFD does not have the means to mitigate marine vessel fires, offshore. A plan to be put into place to mitigate this through fire service agreements or through public education.** **Morrison Dam Conservation Area Trail includes a 30-acre lake. This makes shore-based water rescue a challenge when a person is beyond reach of shore rescuers.** ***Proposed 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 Huron County Paramedic Services (HCPS).

Issues/Concerns	Risks / Treatment Option(s)
	• Fire service to develop response protocols, Standard Operating Guidelines, and enhanced level of service provision if more than shore-based operations. • 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. • SHFD does not have the means to mitigate marine vessel fires, offshore. A plan to be put into place to mitigate this through fire service agreements or through public education.
South Huron Fire Department *New developments will bring an increase in populous and building stock.*	**The Municipality of South Huron will see considerable growth in the coming years.** **There are two significant residential developments proposed in the Grand Bend and the Huron Park areas.** **A combined total of approximately 500 to 800 housing units upon completion of all current and proposed residential developments, over the next 10 years.** **Estimated population growth of approximately 4,000 residents.** **Municipality moving towards larger and higher residential structures from the current three-storey limit to six storeys.** **Six-storey construction may be made using ordinary construction materials as per the OBC.** ***Proposed Treatment Options:*** • May require additional staffing, possibly additional stations and apparatus, as additional developments are brought forward. • Will require training for firefighters on techniques of fighting fires in higher structures.

Issues/Concerns	Risks / Treatment Option(s)
	• With higher structures the SHFD should review the mechanical condition of its aerial devices as both are a 2,000 model and experiencing mechanical issues resulting in extended down time. • The Municipality should replace both units with a single 30 m (100') aerial device to ensure reliability of its equipment and ensure the apparatus are in a state of readiness. • Due to the high costs of a new aerial device which could be as high as $1.5 M, consideration should be given to looking into acquiring a good used unit that is less than 10 years old and in good mechanical condition. • The municipality should avoid an aerial that originated in a city where it may have been used quite often and in deteriorating condition. • For the health & safety of the Municipality's firefighters, an aerial platform is recommended.
Technical Rescues – Trench/ Confined Space/ High & Low Angle/ Ice Water/ Vehicle Entrapment	**SHFD does not perform technical rescues such as confined space, trench, or low and high angle. SHFD does provide shore-based ice/water rescues. The Department attends motor vehicle collisions (MVCs) and performs auto extrications.** ***Proposed Treatment Options:*** • Complete technical rescue training to the Awareness Level for technical rescues. • Have procedures in place to call in resources to mitigate such incidents. • Increased risk of someone falling through the ice as more individuals have been observed on the ice. • The SHFD should review opportunities to enhance their level of response and training to include offshore ice and water rescue. • The SHFD should acquire marine vessels for both ice and water rescue. • This may include the acquisition of a small vessel with a motor. • Lambton Shore Fire Department does perform ice / water rescue but due to the time for them to muster and respond, their arrival could take up to an hour.
Weather Event	**Tornado Events – early warning devices**

Issues/Concerns	Risks / Treatment Option(s)
Tornadoes	**The Municipality is situated in an area known as Tornado Alley.** **Historical tornadic events in this region of the province each year.** **Environment Canada issues warning via media.** **Messages sent out via Alert Ready – Canada.** ***Proposed Treatment Options:*** • Some municipalities are using apps developed and operated by a third party as means of notifying community of important messaging. • Municipality should consider the installation of storm sirens like other municipalities have begun doing so in Southern Ontario. Not everyone carries a cell phone and may not be aware of a pending weather event. • Sirens should be placed in built-up areas such as Exeter, Dashwood, Huron Park, and Crediton. • The City of Toronto has recently installed storm sirens throughout the city.
Structure Fires	**Focus on programs to help reduce the number of structure fires within the community.** ***Proposed Treatment Options:*** • 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 programs to bring to the public's attention the dangers of careless smoking using available statistical data. • 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.

Issues/Concerns	Risks / 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. • 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. • Enforcement of Fire Code Violations. • Monitor both undetermined and miscellaneous fires to see if there is a trend. • 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 may do so by assisting the fire department at community functions/public education/fire prevention related engagements. • Educate children on dangers of playing with smoker's articles and what to do if their clothing catches fire. • Option to provide cooking fire public education to high school students in cooking classes, etc. • Ensuring Fire Safety Plans are current for occupancies legislated to have them on site and readily available for firefighters to acquire. • SHFD should implement a program of developing Pre-Incident Plans in accordance with NFPA 1620 – *Standard for Pre-Incident Planning.*
South Huron Fire Department	**In 2016 there was $476,600 in property loss and this amount is steadily increasing.**

Issues/Concerns	Risks / Treatment Option(s)
	In 2017, property loss was set at $1,264,200. In 2018, there was property loss of $4,105,700. In 2019, loss was estimated to be at $3,359,121. **In 2020 the loss was estimated at $4,208,002. These include structure and vehicle fires.** ***Proposed 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. • Consider training officers on fire investigations in accordance with NFPA 1033, *Standard for Professional Qualifications for Fire Investigator* • Include fire investigation in officer training curriculum • Having additional staff trained in fire investigation may aid in reducing the number of undetermined fires if they identify something out of the ordinary during fire fighting operations that may be of significance during the determination of origin and cause. **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	**With many students and new residents living in the municipality, there could be illegal second units and apartments.** **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.[19]**

[19] https://www.ontario.ca/laws/statute/s11006

Issues/Concerns	Risks / Treatment Option(s)
	Units are enforced under OFC Div. B., 9.8.[20] Inspections are taking place for those second units that have been identified. **May lack basic fire safety measures.** **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.** **Some residences may not meet OFC requirements.** **Language barriers are possible.** ***Proposed Treatment Options:*** • Municipality should establish a means for people to notify the authorities of locations that may be illegally operating. • Conduct a public education awareness program through media outlets publicizing the risks. • The Municipality's Zoning By-Law which permits second units but should also identify local requirements to meet specific needs in the municipality. • Municipality could investigate a reporting system of notifying authorities of the location(s) of a possible illegal unit.
South Huron Fire Department	**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 within rural areas, which have less than 500 people/ mi^2 (2.6 km^2). • Monitor the turnout 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

[20] https://www.ontario.ca/laws/regulation/070213

Issues/Concerns	Risks / Treatment Option(s)
	miles within a predetermined travel time, as directed by the AHJ. Travel time is directly affected by the travel distance.

6.3 Future Needs

Understanding the community and its needs allows the Fire Chief and staff to be proactive with education and enforcement programs to the community. When fires occur within the community, the firefighters can be ready to battle the fires because they are trained, not only in the basics of firefighting, but in understanding any unique and/or special hazards that are found within the community. These hazards must be identified in a risk assessment so the Fire Chief can ensure preventative and mitigative programs are in place. As the community grows, the frequency of and the need for service will grow.

According to the new provincial legislation and continued growth within the Municipality, there will be a continuing need for additional staff time spent in fire prevention and public education activities. These activities are not just related to public education; there should also be emphasis placed on assessing building stock within the community to identify types and number of hazards that may exist.

6.3.1 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 SRA 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 an SRA is a practical information gathering and analyzing 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 is 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.

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 (5) years or after significant change. This standard also establishes a process to identify and analyze community fire risks. This standard refers to the process as a CRA.

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

6.3.2 Current Condition

An SRA has not been completed by the SHFD since the Ontario Fire Marshal's Public Fire Safety Guideline was first issued. 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 needs of the community and the internal training and equipment needs of its firefighters to do their jobs in an efficient and effective manner.

In relation to its Fire Prevention and Public Education initiatives, SHFD'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.

The SHFD has been working with other regional fire departments through ensuring mutual aid agreements are in place. These agreements are designed to allow for a seamless response by each community's fire department in support of each other when SHFD's resources are exhausted due to a large-scale incident. The SHFD has also been actively initiating automatic aid and response agreements with numerous area fire services to better protect areas furthest from the South Huron fire stations. Doing so has ensured fire protection response in a timely manner to those areas.

As for a large-scale hazardous material incident or other technical rescue response issues that are outside of the Department's capability, the SHFD has identified what the fire department can be called upon to assist. As such, the SHFD should be better preparing for such large-scale incidents in a pro-active partnership with its bordering communities and their fire departments. This may include entering into response agreements with other fire services that do provide hazardous material and technical rescue response capabilities. All SHFD members require training to at least the awareness level for all technical rescues and hazardous material incidents to comply 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 South Huron.

6.3.3 Future Needs

Understanding the community and its needs allows the SHFD 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 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 MFP.

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 Office, 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 MFP document.

On July 1, 2019, the provincial government has recently introduced updates to the *Fire Protection and Prevention Act*, which outlines the responsibilities of a community and its fire department in relation to service expectations. The updates to the *Act* are:

- Certification for firefighters, fire service instructors (training officers) and fire service inspectors (fire prevention inspectors)
- Mandatory Reporting requirements
- Mandatory community risk assessments to be completed every five-years

These three additions will put an even greater strain on fire departments to ensure proper training, reporting and completion of CRAs. Currently, the training needs of the SHFD have been assigned to the FPO/PFLSE to address. This may be particularly difficult for that individual to properly complete, as they do not respond to emergency calls in South Huron. The FPO/PFLSE is currently working towards their certification in NFPA 1041, Standard for Fire and Emergency Services Instructor Professional Qualifications. It would be in the best interest of SHFD that the FPO/PFLSE be permitted to respond to fire emergency calls not necessarily as a firefighter, but

as a great resource on structural construction, building safety systems, and to monitor fire ground activities to identify areas requiring supplemental training.

Recommendation:

It is recommended that the Municipality of South Huron develop a comprehensive Community Risk Reduction Plan that falls in line with the CRA.

6.4 Fire Underwriters Survey

The 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.

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 setting rates, 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 each community or section of a community.

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

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

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

extremely useful to insurers in determining the level of insurable risk present within a community.

In the first quarter of 2021, the South Huron Fire Chief made an application to Fire Underwriters for a new review of SHFD's fire protection. At the time of this writing, a response from Fire Underwriters regarding a new grading had not been received.

A service Fire Underwriters provides is an opportunity for a fire department to apply for it to receive its Superior Tanker Shuttle Accreditation. This is discussed further in section 7.5 of this document.

Rec #	Recommendation	Estimated Cost	Suggested Timeline
28	It is recommended that the Municipality of South Huron develop a comprehensive Community Risk Reduction Plan that falls in line with the CRA.	Staff time	Immediate (0-1 year)

SECTION 7 Facilities, Vehicles and Equipment

Section 7: Facilities, Vehicles, and Equipment

During the site visits conducted by EM&T, it was noted that the Huron Park Station was in a state that necessitated the closing of it for the time being until a decision can be made by the Fire Chief and Council on the best option(s) relating to station restoration or the construction and possible relocation of a new fire station.

On July 13, the municipality decided to temporarily close the Huron Park fire station due to the presence of hazardous substances present in the facility.

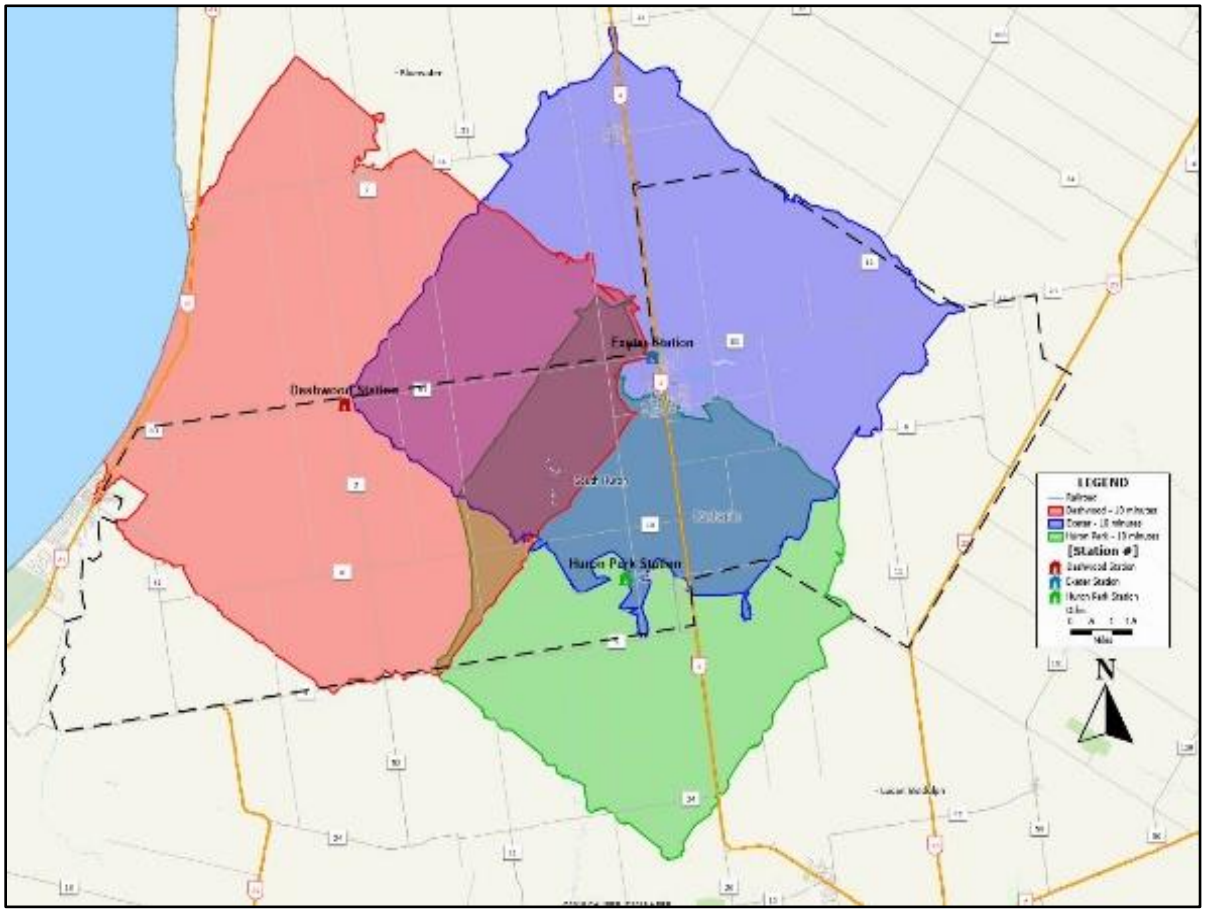
7.1 Fire Stations

Fire stations should be situated to offer the most efficient and effective response to the community they serve. Centering them within a determined response zone simply based on "timed" responses is not always the best option to implement. Fire station location depends on factors such as key risks within the response zone, future growth of the community, and the geographical layout of the community. This can include natural barriers or divides, such as water, that makes it necessary to have some stations located within proximity of each other.

Public Fire Safety Guideline – PFSG 04-08-13 on Fire Station Location notes fire stations should be positioned to achieve the most effective and safe emergency responses. Distance and travel time may be a primary consideration, however, if a basic expectation is set by the community's decision makers, then a more realistic level of service and fire station location criteria can be identified.

As already noted, there are presently two active fire stations located within South Huron. Figure #13 identifies the location of the three stations, along with the NFPA recommended 10-minute drive time polygons around each fire station.

FIGURE #13: SHFD Fire Station Locations and 10-Minute Drive Times



7.2 Fire Station Condition Assessment

EM&T conducted a general assessment of each fire station based on location, ability to house equipment, and overall condition. No structural or destructive testing was conducted during the assessments.

7.2.1 Fire Station – Exeter

The Exeter Fire Station is located at 55 William Street, Exeter. This station is the SHFD Headquarters providing front line response from volunteer fire staff and houses the Fire Administration and Fire Prevention staff.

On the property sits a shipping container that provides space for mobile fire training props and suppression inventory. An SCBA cylinder refilling station resides within the fire stations apparatus bay area as well as a mechanical repair room and community foam storage area.

During the walk-through, it is EM&T's opinion that the building is in "good" condition with some major facility updates required in the short-term. This building is 31 years old and was built in 1990 and is meeting its estimated life cycle. With this building being used for Administration, Fire Prevention, Training, and Operations, there is not enough capacity for much needed and expected growth.

Presently, the office space for the Fire Chief, FPO and station chiefs does not meet their space needs; vehicle bays were found to be moderately orchestrated and maintained. However, one concern noted revolves around the absence of an appropriate diesel exhaust extraction system for its apparatus. This health and safety concern should be addressed immediately.

A back-up power generator is installed for power outages. The absence of an appropriate bunker gear storage area will require moderate renovation to accommodate this health and safety need. It was noticed during the facility walkthrough that officer gear hangs within the apparatus bay area.

This station is built in the core area of Exeter while much of the growth in Exeter has been on the northwest and southeast sides of the community. Further, responding to calls in much of the community requires the crossing of a bridge and travelling through the downtown core which is often congested.

With the recent closing of the Huron Park station, consideration should be given to relocating the Exeter station to the southern edge of the municipality. This does not affect the ability to respond to current and newly developing areas of the community. This new station would consolidate the staff currently from the Huron Park Fire Station as well as additional volunteers recommended.

In addition to reducing the number of corporate assets and liabilities, this new station would better handle the current and future call demand for these response areas and positively impact current response times.

Recommendations:

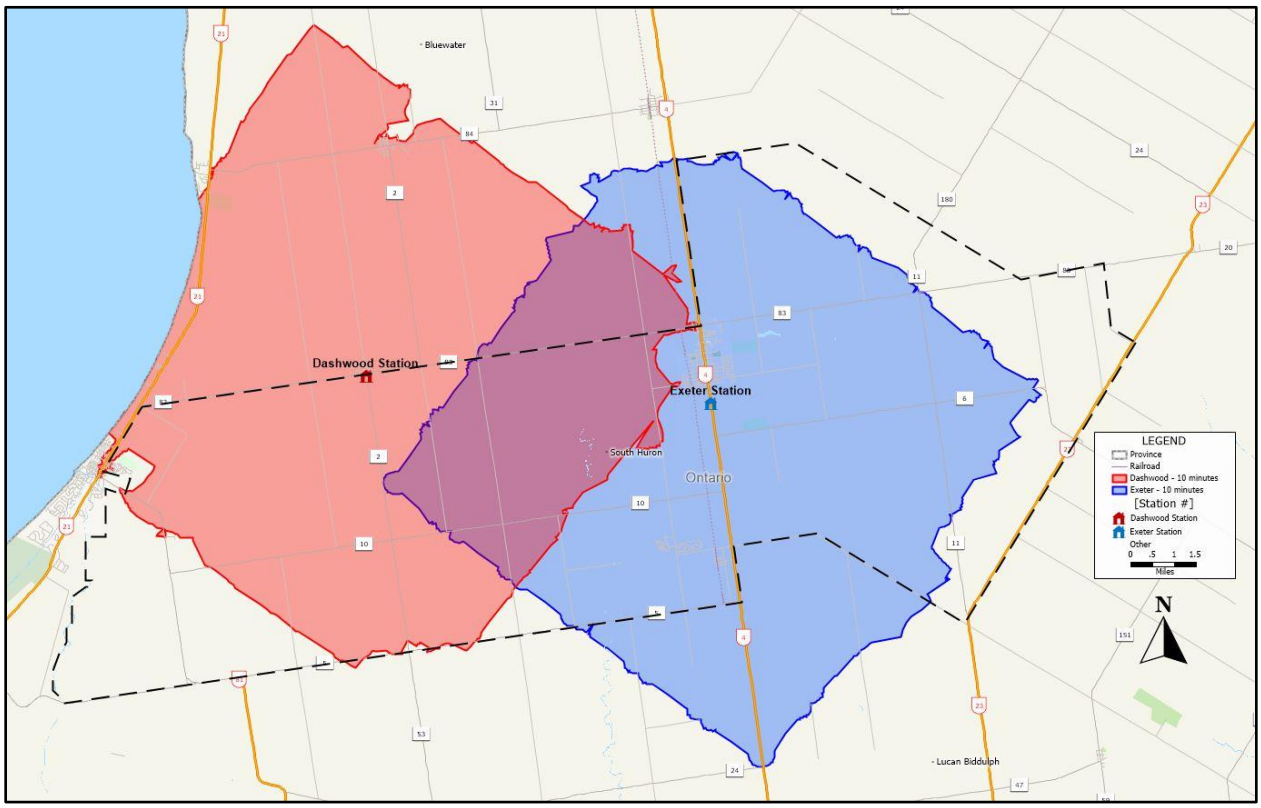
If the Municipality of South Huron decides to keep the Exeter fire station for fire service needs, the following items should be addressed:

- **Install an appropriate diesel exhaust extraction system for its apparatus.**
- **Renovate the current bunker gear area to allow for a negative pressure room along with additional space to accommodate the officers gear relocation from the apparatus floor.**

- **and a general washer/dryer for the cleaning of regular clothes.**

- **To effectively manage the new staffing and equipment requirements due to the closing of the Huron Park fire station, EM&T recommends that a new fire station be built and be located in the vicinity of London Road and Norwood Village Road.**

FIGURE #14: Exeter Station Moved with No Huron Park Station and Coverage Based on 2020 Calls

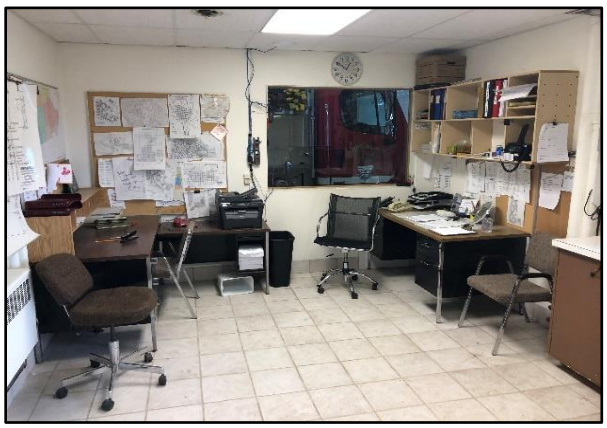


As illustrated, this two-station model offers a good level of coverage for the municipality.

7.2.2 Huron Park Fire Station

The Huron Park Fire Station is approximately 57 years old and is located at 421 Canada Avenue and was constructed in 1964. This station provides front line response from volunteer fire staff.

During the walk-through and review of the Huron Park Fire Station it is EM&T's opinion that the building is in "poor" condition with major upgrades needed in the short-term. There does not appear to be enough capacity for its current purpose. While office space for the Officers meets the need, vehicle bays were found to be poorly maintained.



There is an absence of an appropriate diesel exhaust extraction system for its apparatus and the bunker gear storage is open to the main apparatus floor allowing for diesel contaminants to migrate within.

NOTE: EM&T was also made aware of asbestos within the interior. The concrete roof is leaking creating mold in the ceiling area of the living quarters. There is significant spalling and cracking of the brick exterior. These health and safety concerns were brought forward by EM&T during the site visits and were addressed by the Fire Chief and Council immediately, which was supported by Council.

EM&T did notice a back-up power capability for hydro outages, but it is very dated and should be life cycled. There is a male decontamination shower, but it is poorly maintained. Generally, the station is reaching the end of its life span but if future use of this facility continues, it is recommended that an updated structural review be completed in the short-term.

NOTE: based on previous engineering and asbestos reviews, renovations could exceed $700,000.

At the rear of the property sits a mobile forcible entry door and a fixed sloped roof ventilation prop. SHFD is to be commended for developing in-house training props for their firefighters to train with. However, for the safety of those utilizing these home-made props, the Fire Chief should ensure that all training props developed in-house meet recommended industry standards.

Examining the entire area and the fire service as a whole, if the recommendation for a new Exeter station in the south of Exeter moves forward, there is opportunity to integrate the Exeter and Huron Park stations into a new headquarters located in the vicinity of London Road and Norwood Village Road. This location would provide good coverage to the areas of high development in the immediate Exeter area and in addition to the south encompassing Huron Park and the current fire response area.

The current Huron Park and Exeter stations could be sold as valuable commercial and future residential development property or repurposed for other municipal needs.

Recommendations:

If the Municipality of South Huron decides to keep the Huron Park building for Fire Service needs, it is EM&T's recommendation that:

- **An appropriate diesel exhaust extraction system for its apparatus and appropriate negative pressure bunker gear storage room be installed.**
- **The current showering facilities be updated and expanded for both women and men.**
- **The current back-up power unit be replaced immediately.**

Note: based on current building condition, considerable repairs and renovations would be required to continue using this facility as a fire station. Repairs are required for the roof, windows, heating system, plumbing, along with the previous noted recommendations.

To effectively manage the new staffing and equipment requirements due to the closing of the Huron Park fire station, EM&T recommends that the Exeter Fire Station be relocated in the vicinity of London Road and Norwood Village Road.

7.2.3 Dashwood Fire Station

The third fire station is located at 145 Roland Street in Dashwood. This station was constructed in 1954 and is approximately 67 years old, providing front line response from volunteer fire staff.

During the walk-through and review of the Dashwood Fire Station it is EM&T's opinion that the building is in "good" condition with a few major upgrades needed. Office space for the District Chief and officers is limited. Vehicle bays were found to be well orchestrated and maintained but lacked the space needed for essential maintenance indoors.

Two concerns noted are of the absence of an appropriate diesel exhaust extraction system for its apparatus and appropriate bunker gear storage. These health and safety concerns should be addressed immediately

It was noticed that the fire station sits directly on the property lines with its neighbours eliminating the possibility of needed expansion. At the rear of the fire station on the neighbour's private property sits the erected communications tower used for station alerting and radio communications.

There is a mobile back-up power capable of supplying power during hydro outages, but it has limited capacity for the need of a long-term power outage. To ensure uninterrupted operation of the station during a power outage a more powerful unit should be installed to meet full capacity needs of the station.

While there was a general space used as a unisex washroom and decontamination sink, there was no decontamination shower observed. The sewage system is of a holding tank style which is currently located directly under the building with the access lid opening within the kitchen area (see red arrow in picture).

Generally, the station is reaching the end of its life span.

Examining the fire station needs and considering its significant limitations, it would be recommended that a new Dashwood Fire Station be built. With this new station there would be the opportunity to accommodate adequate space for training grounds that would support training programs related to the core services provided by the SHFD.

It is recommended that a new fire station be built and located in the vicinity of Bronson Line (County Road 2) and Boston Street. This location would provide solid coverage to the areas of high development in the immediate Dashwood and in addition to the north side of Exeter. It should also be noted that the new Pumper/tanker that is designated for the Dashwood Station will not fit unless there are major renovations to the apparatus bay area.

Recommendations:

Install an appropriate diesel exhaust extraction system for apparatus at each fire station.

Install an appropriate negative pressure bunker gear storage room.

Install a more powerful generator to allow for full power capacity for the fire station.
The washroom also needs to be upgraded to accommodate a proper male/female shower facility.

Purchase an industrial washer/dryer for bunker gear cleaning and a general washer/dryer for the cleaning of regular clothes.

To better service the community, EM&T recommends that a new Dashwood fire station be built and located in the vicinity of Bronson Line (County Road 2) and Boston Street.

The current Dashwood Fire Station could be sold as valuable commercial or residential land use or repurposed for other municipal needs.

7.3 Fire Station Options

The Municipality of South Huron is developing in many areas and competing department priorities are recognized as essential infrastructure. Municipalities are exploring department and private partnerships to decrease costs of building a new fire station, which is in the vested interest of the taxpayer.

Stand-alone fire stations remain the primary model, but partnerships are gaining traction as communities are challenged to be innovative and financially responsible while continuing to provide a high level of service to its community. A partnership in terms of financial support or

leasing provides a decreased cost on the overall capital costs in building the station. Numerous cities across Canada have moved in this direction.

FIGURE #15: Vancouver Station #5

In 2019 the Municipality of Vancouver partnered with the YWCA Metro Vancouver to build Station #5 that houses the fire department on two floors with the upper four floors being allocated for affordable housing for single mothers and children.

FIGURE #16: Estevan Fire Department

The Municipality of Estevan was able to utilize a former car dealership and retrofit the building for the fire department.

FIGURE #17: Sydney Fire & EMS Station

Sidney, British Columbia has a community safety building which houses the Fire Department and EMS.

FIGURE #18: Municipality of Leduc Fire, EMS & Police Facility

The fire station for the Leduc Fire Department houses fire apparatus, ambulance, and police. This multi-use building exemplifies a partnership between the municipality and the Federal government.

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

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

FIGURE #19: Extreme Fire Station Assembly (On-Site)

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

In 2020 the Municipality of Calgary placed into service Walden Fire Station 43 to serve in a temporary location.

FIGURE #20: Extreme Fire Station (Multi-Bay Example)

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

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

FIGURE #21: Calgary Fire Department Waldon Station

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

7.4 Apparatus

The reallocation of vehicles from one station to another is not a simple matter. When assessing a fire department's ability to respond and meet the needs of the community, the FUS uses the age of a fire truck as one of its guidelines. In the following chart, the highlighted areas define what the Municipality of South Huron should be considering when forecasting its fire truck replacements.

The FUS has developed an insurance grading for fire apparatus, which states:

> "To help establish appropriate fire insurance rates for residential and commercial properties, insurance companies need reliable, up-to-date information about a community's fire-protection services. Fire Underwriters Survey provides that information through the Public Fire Protection Classification (PFPC) and DPG insurance grading systems."[23]

Forty percent of the overall PFPC Grade is a review of the fire department which includes apparatus-pumping capacity, staffing, training, management of emergency services, maintenance, pre-incident planning, etc. The SHFD has a modern and well-maintained fleet which positively impacts the insurance grading for the Municipality.

[23] Fire Underwriters Survey, Grading and Recognition; downloaded https://fireunderwriters.ca/Grading/Grading--Recognition.

TABLE #6: FUS Apparatus Insurance Grading

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	Reserve	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 recognized testing agency on an annual basis to be eligible for grading recognition. (NFPA 1071)

[2] Exceptions to age status may be considered in a small to medium sized communities and rural centres 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/OR
- 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.

There is enough wear and tear on the chassis and drivetrain of frontline apparatus after 15 years to justify moving it into a secondary unit or as a reserve unit. After 15 years, all the apparatus should have an evaluation conducted on a cost/benefit analysis to determine whether the truck should be kept as a secondary unit or sold. Light duty vehicles such as Bush 1 and the Command Vehicle typically have a 7 to 10-year service life. The Canada Revenue Agency uses a 7-year depreciation on these types of vehicles and many larger fire departments will sell the light duty vehicles to other smaller fire departments with smaller call volumes or sell them in a public auction to get a reasonable price for the vehicle.

Due to the significant costs involved in replacing fire apparatus, most municipalities strive to ensure that a capital reserve fund exists with annual contributions for future apparatus

replacement. A general rule is that fire apparatus increases 5-10 percent annually which makes the acquisition of a ladder truck or pumper one of the bigger vehicle costs faced by a community. To put this into perspective, a ladder truck purchased in 2005 for $1 million would be expected to cost $2 million in 2025. The Municipality of South Huron has demonstrated that they strive to replace apparatus in accordance with the FUS guidelines.

The following chart identifies the existing fleet and the replacement year according to the FUS schedule.

TABLE #7: SHFD Apparatus (service life)

Apparatus Unit	Station	Year & Manufacturer	Tank/Gal	Pump	Replacement Year	Current Service Life
Pumper/Tanker	Exeter	2021	1000 I.Gal	1050	2041	New
Pumper/Tanker	Exeter	2002	1200 I.Gal	1050	2022	19 yrs
Aerial/Ladder	Exeter	2000	250 I.Gal	1500	2020	21 yrs
Rescue	Exeter	2019	**	N/A	2039	3 yrs
Pumper/Tanker	Dashwood	2002	1200 I.Gal	1050	2022	19 yrs
Tanker	Dashwood	1995	1500 I.Gal	**	2015	26 yrs
Rescue	Dashwood	2015	**	N/A	2039	7 yrs
Pumper/Tanker	Huron Park	2006	1200 I.Gal	1050	2026	15 yrs
Tanker	Huron Park	1992	1500 I.Gal	**	2012	29 yrs
Rescue	Huron Park	2015	**	N/A	2039	7 yrs
Tele-squirt	N/A	2000	1000 I.Gal	1050	2020	O.O.S
Pickup truck 1	Admin	2008	**	N/A	2018	13 yrs
Pickup truck 2	Admin	2009	**	N/A	2019	12 yrs

EM&T recommends that the frontline apparatus continue to be replaced after 20 years and in the year identified in Table #7. Also, vehicles that have exceeded the 20-year replacement cycle either be replaced or (as noted by the FUS document on page 192) receive a full inspection by a certified facility to verify that the vehicle continues to meet industry standards.

A sound maintenance program for the apparatus should follow *NFPA 1911, Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Automotive Fire Apparatus.* Prior to the recommended 20-year replacement, the department should conduct a cost/benefit analysis and make a recommendation to Council that a business case be made to support a replacement before the 20-year life cycle due to excessive wear and tear on the chassis and drivetrain.

Both the Fire Chief and FPO Pickup trucks are considered light duty vehicles and should be evaluated to determine when they are to be replaced. The general practice is to assign a 10-year service life cycle for light duty vehicles. The maintenance costs and kilometres on light duty vehicles are key factors in determining when the vehicle should be replaced, which is before significant maintenance costs occur.

Recommendations:

EM&T recommends that the frontline apparatus continue to be replaced after 20 years and light duty vehicles be evaluated when they should be replaced but should not exceed 10 years.

- Vehicles that have exceeded the 20-year replacement cycle either be replaced or (as noted by the FUS document on page 192) receive a full inspection by a certified facility to verify that the vehicle continues to meet industry standards.

TABLE #8: Proposed Apparatus Relocation & Repurposing

NEW – CONSOLIDATED EXETER/ HURON PARK STATION – APPARATUS		
2021	Pumper/Tanker	
2019	Rescue	
2015	Rescue – Huron Park	Repurposed: This vehicle will become the Rehabilitation and Decontamination vehicle for the SHFD. It can be the backup Rescue vehicle when the primary unit is out for service or is on another alarm.
2002	Pumper/Tanker – Exeter	
2000	Aerial Ladder	Replacement vehicle is required.
2008	GMC pickup truck (FPO vehicle)	Required replacement due to condition of vehicle
2009	GMC pickup truck (Chief/Command vehicle)	Is nearing end of useful life and should be replaced in the short-term

DASHWOOD STATION - APPARATUS		
2002	Pumper/Tanker - Dashwood	
2006	Pumper/Tanker – Huron Park	
2015	Rescue	
1995	Chevrolet Tanker	This vehicle would remain as a front line until a new fire station was built and a replacement Pumper/Tanker is received in 2022.

SURPLUS APPARATUS		
2000	Tele-Squirt - Exeter	Sell – (Trade in)
1992	Ford Tanker – Huron Park	Decommission immediately
2000	Aerial Ladder - Exeter	Sell – (Trade in)

7.4.1 Aerial Apparatus Replacement

In July 2021, EM&T was made aware that the Fire Chief and staff are considering the trade in and replacement of two apparatus for a Platform Aerial Apparatus. If this purchase is accepted this would replace the current 21-year-old Aerial ladder and 21-year-old Tele-Squirt at the Exeter Station. While the details of this new apparatus are limited, the new vehicle would provide needed reliability and many years of future use. While EM&T conducted its field visit it was noticed that the current 2000 Aerial ladder purchased from the United States did not have

a visible ULC certification plate; it is therefore assumed that it does not conform to standards developed by the Underwriters Laboratories of Canada (ULC).

7.4.2 Apparatus Maintenance

The SHFD does not have its own mechanical division to complete repairs and testing to its vehicles and equipment. They can conduct some minor repairs and upgrades due to some of the volunteer firefighter's qualifications. If a major repair is required, a decision is made on whether the repair can be handled in-house or if it is a specialized repair that needs to be contracted out to a third-party.

7.4.3 Fire Department Equipment & PPE

Tracking the completion of annual testing should be an organization's priority to ensure the functionality of equipment for the front lines. This tracking capability will allow the fire department to confirm that apparatus and equipment testing can be scheduled accordingly to minimize unavailability of front-line apparatus.

The SHFD CSA Z94 Respiratory Protection Program is overseen by a third-party company. The state of the SCBA is in good condition. When considering procurement of new SCBA, interoperability with fire service partners should be considered when the selection process has commenced.

Fire administration should take immediate action to establish a more wholesome asset management program that includes an equipment life-cycle plan to ensure that equipment replacement is occurring where applicable. It is a common practice to tie this equipment to the parent apparatus. Purchasing a new apparatus with new fire hose, nozzles and ladders will help in the long-term financial planning of equipment replacement while ensuring the equipment's reliability and longevity.

While some minor equipment repair is completed by the volunteer firefighters, a majority of maintenance on the stationary equipment such as standby generators, breathing air compressors, fill stations, and portable equipment such as smaller pumps, chainsaws, Jaws of Life, lawn mowers, and snow blowers, are primarily serviced by third-party companies. Annual service testing on fire apparatus pumps, ground ladders and aerial apparatus is currently serviced and tested by a third-party company. Annual service testing for fire hose is being conducted in-house by firefighters.

Recommendations:

When considering procurement of new SCBA, interoperability with fire service partners should be considered when the selection process has commenced.

New apparatus purchases should come outfitted with required equipment such as new hoses and ladders.

If the Municipality of South Huron decides to keep the 2000 Aerial Apparatus, a comprehensive test should be conducted by the ULC to approve this apparatus for use in Canada.

7.5 Personal Protective Equipment

The Municipality of South Huron Capital Expenditures have shown yearly investment for a 10-year replacement plan for turnout gear in the fire department. The replacement cycle has been spread out evenly to minimize budget impact and allocated approximately $29,000 each year from 2019-2021.

7.6 Self Contained Breathing Apparatus

The fire department continues to maintain and update SCBA to the CSA Z94 standard for an annual capital budget cost of $30,000. The department has one firefighter trained to complete the bench testing so they can maintain specific components of the SCBA. The testing equipment should be annually tested to ensure accuracy of the tests.

7.7 Water Supply, Hydrants, and Dry Hydrants

The Municipality draws its water supply from Lake Huron via the Lake Huron Primary Water Supply System, which also supplies water to other municipalities. The primary water supply main from Lake Huron to Exeter is 600 mm (24”) in diameter. South Huron supplies water to the populated areas as well as some rural areas and as such has installed approximately 350 hydrants. The fire service relies on the use of these hydrants to draw water from in an emergency.

Water mains have a minimum size of 150 mm (6”) and there are four water reservoirs in service, which contain up to fives days worth of water. The Municipality has a proactive replacement program of older, poor quality water mains that are found primarily in the Stephen Ward. This reduces the number of water leaks and water main failures, thereby saving funds on repair costs.

All the fire hydrants are 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 Practises of Fire Flow Testing and Marking of Hydrants. Any hydrants installed on private property should be completed in compliance with NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances. The failure of proper operation of a hydrant may present

catastrophic results and expose the municipality to risk of litigation. For this reason, every hydrant is serviced annually to ensure proper operation when required.

South Huron has ensured each hydrant is coloured coded in compliance with NFPA Standards for fire flow. They also have coloured reflectors affixed to the 65 mm ports that indicate the fire flow of that hydrant. Having the reflector aids firefighters in locating hydrants at night.

When a fire hydrant is out of service, repairs should be completed in an expedited manner, notifying the fire department of such breakages and the anticipated time to complete the required repairs.

There are numerous farms and industries throughout the municipality that have water supplied by South Huron, including the installation of private wet hydrants, which the municipality maintains. Other private landowners have dry hydrants at their locations which is another source of water for the fire departments usage. There are six dry hydrants in service that are primarily to the east of Exeter where there are no water mains. These too should be maintained in accordance with industry regulations and standards.

Future challenges include:

- Continuance of upgrading the water infrastructure in the Stephen Ward
- Working towards reducing the number of failures within the infrastructure
- The financial challenge associated with repairs
- Some areas still have 50 mm (2”) water mains which will not supply adequate water supply through the hydrants for fire fighting purposes.
- There remains some 100 mm (4”) water mains yet to be upgraded to 150 mm (6”) mains.
- There are nine “black” hydrants (ones that are considered permanently out of service) and five “red” hydrants (the flow rate is less than 2275 L/min or 500 gpm) and still in service that will not supply adequate flow for fire fighting purposes in Exeter.

To the municipality’s credit, the water system has been designed in such a manner that it can sustain long-term developments and continued growth for many years to come.

7.7.1 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 in which to attach

the hoses together. To attach a hose with these coupling to a hydrant requires the fire service to use an adaptor.

Many municipalities 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 for use on the hydrants, the firefighters are unable to attach the hose to the steamer port and may have to resort to finding a smaller adaptor and attach it to the 65 mm port.

It is the policy of South Huron that any new hydrant installations are the Canada Valve Century model which includes steamer ports that have the Storz connection on them. Unique to South Huron is the threads on their hydrants that are opposite to most other hydrants in that the stem is turned right to open it and left to close it. This has been found to reduce the number of times hydrants are used by unauthorized individuals not familiar with the thread configuration as most are left turn to open it, and right turn to close it.

The SHFD currently uses 4” (100 mm) 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 South Huron 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 devices in use by the SHFD have large capacity pumps 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.

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.

TABLE #9: Water Capacity and Weight Based on 30 m (100') Length Hose

Hose Size	Volume	Gallonage (Litres)	Weight
4" (100 mm)	15,080 Cu. In.	54.36 Imp. Gal. (247.33 L)	544.76 lbs. (247.61 kg)
5" (125 mm)	23,562 Cu. In.	84.93 Imp. Gal. (386.43 L)	851.19 lbs (386.90 kg)

Recommendation:

It is recommended that the SHFD review the advantages in acquiring 5" (125 mm) supply lines with 4" (100 mm) Storz couplings to be assigned to the aerial devices.

7.8 Superior Tanker Shuttle Accreditation

Many fire services have attained their Superior Tanker Shuttle Accreditation. In doing so, FUS reduces insurance rates within that community, 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 Municipality 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 SHFD should reference NFPA 1231, Standard on Water Supplies for Suburban and Rural Fire Fighting to see what enhancements could be achieved in their operations.

The SHFD has not attained this accreditation in several years.

Recommendation:

SHFD contact Fire Underwriters to acquire their Superior Water Shuttle Accreditation.

Rec #	Recommendation	Estimated Cost	Suggested Timeline
29	To effectively manage the new staffing and equipment requirements due to the closing of the Huron Park fire station, EM&T recommends that the Exeter Fire Station be relocated in the vicinity of London Road and Norwood Village Road.	$2-4 million depending on design and land acquisition costs.	Short-term (1-3 years)
30	**Exeter Fire Station** If the Municipality of South Huron decides to keep the Exeter building for Fire Service needs: • Install an appropriate diesel exhaust extraction system for its apparatus.	$50,000 – 100,00 (for exhaust)	Short to Mid-term (1-6 years)
	• Renovate the current bunker gear area to allow for a negative pressure room and for additional space to accommodate the officer gear relocation from the apparatus floor. • And a washer/dryer for cleaning of general clothes	Bunker gear room and washer dryer approx. $50,000 -to $75,000	
31	**Huron Park Fire Station** If the Municipality of South Huron decides to keep the Huron Park building for Fire Service needs: • Install an appropriate diesel exhaust extraction system for its apparatus and appropriate negative pressure bunker gear storage room.	$50,000 - $100,000	Short to Mid-term (1-6 years)
	• Update and expand the current showering facilities for both women and men.	$30,000 - $70,000	
	• Replace the current back-up power unit immediately.	$50,000 - $100,000	
32	**Dashwood Fire Station** The following upgrades are recommended: • Install an appropriate diesel exhaust	$50,000 - $100,000	Short to Mid-term (1-6 years)

Rec #	Recommendation	Estimated Cost	Suggested Timeline
	extraction system at each fire station.		
	• Install an appropriate negative pressure bunker gear storage room.	Renovation of present bunker gear room approx. $50,000 - $75,000	
	• Purchase an industrial washer extractor and dryer, and a separate general washer and dryer for regular washing of clothing.	$5,000 - $10,000	
	• Install a more powerful generator to allow for full power capacity.	$50,000 - $100,000	
	• Installation of a male/female shower facility	$30,000 - $50,000	
33	To better serve the community, EM&T recommends that a new Dashwood Fire Station be built and located in the vicinity of Bronson Line (County Road 2) and Boston Street**.** This would replace the present Dashwood Station.	$2-4 million depending on design and land acquisition costs.	Short-term (1-3 Years)
34	EM&T recommends that the frontline apparatus continue to be replaced after 20 years and light duty vehicles be evaluated when they should be replaced but should not exceed 10 years. Further, vehicles that have exceeded the 20-year replacement cycle either be replaced or (as noted by the FUS document on page 192) receive a full inspection by a certified facility to verify that the vehicle continues to meet industry standards.	Dependent on vehicle being replaced.	Follow Capital replacement schedule
35	When considering procurement of new SCBA, consideration the interoperability with fire service partners when the selection process has commenced.	Staff time	Short-term (1-3 years) and ongoing

Rec #	Recommendation	Estimated Cost	Suggested Timeline
36	SHFD to equip new apparatus purchases with new fire hose, nozzles, and ladders.	$100,000 added to overall capital purchase	Adjust capital in short-term (1-3 years)
37	If the Municipality of South Huron decides to keep the 2000 Aerial Apparatus, a comprehensive test be conducted by the ULC to approve this apparatus for use in Canada.	Costing is dependent on level of repairs required.	Short-term (1-3 years)
38	SHFD review the advantages in acquiring 5" (125 mm) supply lines with 4" (100 mm) Storz couplings to be assigned to the aerial devices.	$10,000 – $15,000 / aerial device	Short-term (1-3 years)
39	SHFD inquire about obtaining their Superior Water Shuttle Accreditation.	Staff time	Short-term (1-3 years)

SECTION 8

Finance

Section 8: Finance

The costs associated with operating a fire department can make up for a large part of the Municipality's overall budget. Presently, the fire department's budget accounts for 15% of the Municipality's annual operating budget.

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

8.1 Operating Budget

During a review of the operating budget, it was found that key account operating sections are identified and tracked. Budget items include:

- Staffing costs (salaries & benefits)
- Training
- Uniforms & Safety Supplies
- Station maintenance & office supplies
- Other materials and supplies
- Equipment
- Garage charges
- Prevention/Education

8.2 Capital Budget

The Municipality of South Huron's 2019-2024 Capital Expenditure Program identified a capital funding plan for fire vehicles, SCBA, and turnout gear replacement as required by the Department.

Each year the Municipality of South Huron approves an updated spending plan for the Municipality's capital budget. The capital budget generally consists of large investments into the community and the Municipality is to be commended for their efforts.

During the budget process the Fire Chief prepares a capital budget report and forwards it to the Capital Budget Committee for review. The request is evaluated on whether it is a forced growth request that is a need based upon the ability to provide a level of service. The recommended projects are then consolidated into a report for Council to deliberate and approve or deny.

8.3 Development Charges Program

The Municipality of South Huron has enacted a Development Charges By-Law (17-2020) and the current by-law became effective on March 17th, 2020. Fees are charged to those that wish to develop land and these funds are dedicated to specific services the Municipality 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 "B" 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.

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 #10: Comparators of Funding for Fire Protection from Development Charges

Municipality	Residential				
	Total Amount of Development Charges, a Municipality Invoices for Single/ Semi Detached	Single/ Semi Detached – amount to FD	Apartments 2-bedroom – amount to FD	Apartments 1-bedroom – amount to FD	Other Multiples – amount to FD
South Huron	$2,801	$207	$143	$787	$403
Innisifil	$36,752	$1,554	$1,120	$856	$1,347
The Blue Mountains	$28,042*	$416	$416	$332	$332
Lucan Biddulph	$6,400	$310	$179	$131	$251
Meaford	$11,440	$636	--	--	$427
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

**The Town of The Blue Mountain'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.*

8.4 Fees By-Law

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

The Municipality of South Huron has a by-Law in place for the charging of fees for several municipal services provided. Fee By-Law 34-2018 allows for the invoicing of services provided by the SHFD, under Schedule "F". During a review of Schedule "F", 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.

Many fire services in the province have implemented such means 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 1 Captain & 3 Fire Fighters, minimum of 3 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 1 Captain & 3 Fire Fighters, minimum of 3 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).

Recommendation:

Review and update Fees By-Law 34-2018 for services provided by the SHFD.

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

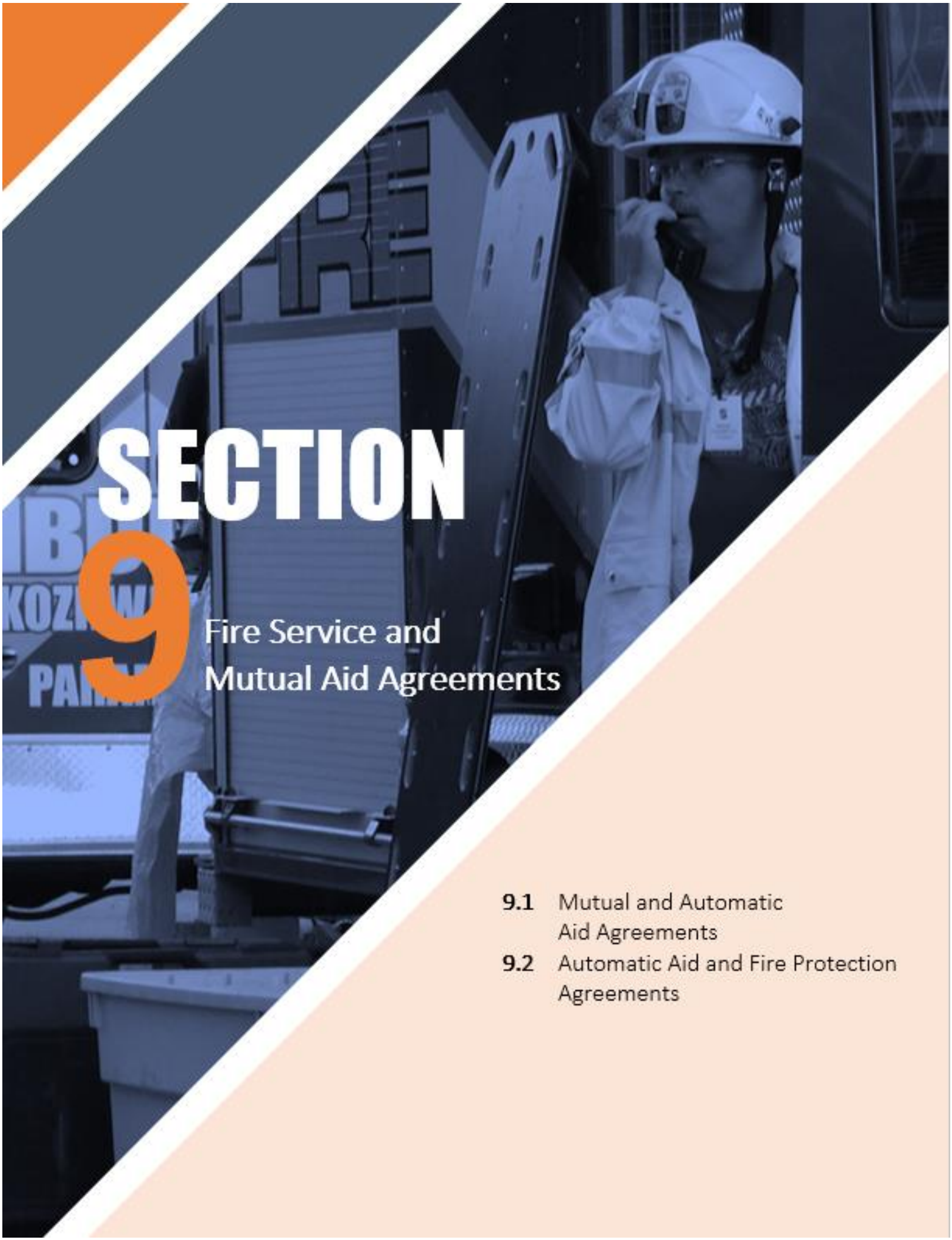
the funds to the municipality which meant all parties became involved in a court case. The judge in the case ruled in favour of the insurance company and the policy holder due to the municipality failing to have a by-law in place that ordered the policy holder to pay the fire department.

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:

It is recommended that the Municipality of South Huron Fees By-Law 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 Municipality.

Rec #	Recommendation	Estimated Cost	Suggested Timeline
40	Review and update the Fees By-Law 34-2018 for services provided by the SHFD.	Staff time	Short-term (1-3 years)
41	The Fees By-Law to identify the requirement that the individual(s) that receive an invoice for fire services provided is responsible for ensuring all charges are paid to the Municipality.	Staff time	Short-term (1-3 years)



SECTION 9

Fire Service and Mutual Aid Agreements

Section 9: Fire Service Agreements and Mutual Aid Plan

A focus identified in the RFP is to distinguish response coverage areas and recommend potential opportunities for rationalizing coverage areas. Based on this focus, EM&T has reviewed the existing mutual aid agreements and is providing information for opportunities to improve efficiencies in the SHFD.

9.1 Mutual Aid Plan & Automatic Aid Agreements

Mutual aid plans are essential for communities as they allow fire departments to provide aid to each other when existing resources are overwhelmed and unable to mitigate the emergency.

A mutual aid plan is a formal agreement with other fire departments to respond when requested and identifies the expectations, rights, and obligations of the parties to minimize confusion during emergency requests. An automatic aid agreement identifies the parameters for a fire department to automatically respond to an emergency incident to provide resources to assist another fire department.

Consideration should be given to the following when formalizing a mutual aid plan and automatic agreements:

- The plan and agreement should identify the resources that each fire department can provide.
- The plan and agreement should identify and authorize the fire departments to leave their jurisdiction for mutual/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.

The Mutual Aid Plan and Fire Protection Agreements are essential for the community as fire protection services enhance the safety and welfare of that community and are created through cooperation and negotiation between parties.

SHFD has several fire protection and automatic aid agreements that date from 2011 to 2016. As these documents are several years old the Fire Chief of SHFD should clarify if criteria existing in the agreements are still valid and meet the needs of the Municipality.

It is important to regularly review existing fire service agreements and the Mutual Aid Plan as staffing and equipment levels in a fire department can change over time and thereby change the dynamics of available resources to fulfill expected roles and responsibilities of a party. A mutual aid plan can be revised at any time when all parties agree to the revision.

9.1.1 Mutual Aid Partners

Huron County has a mutual aid plan with the following partners:

- The Corporation of the Municipality of Central Huron
- The Corporation of the Municipality of North Huron
- Town of Goderich Fire Department
- Howick Township Fire Department
- The Corporation of the Municipality of Huron East
- The Corporation of the Municipality of Blue Water

A Mutual Aid Plan provides the framework by which assistance can legally be provided by all parties identified within the plan. The existing Huron County Mutual Aid Plan does not specify the following:

- The identification of the resources each party can send when requested. The OFMEM does require fire departments to update their equipment lists as to what apparatus they have and could be available for mutual aid purposes. However, each department should also have a clear understanding of what is available from its neighbouring department.
- Do all departments follow the same personnel accountability system?

9.2 Automatic Aid and Fire Protection Agreements

Automatic aid and fire protection agreements generally exist between fire departments when time and resources are a factor in responding to an emergency. Many times, these agreements identify the personnel and equipment that will be dispatched automatically in certain conditions.

The SHFD has Fire Protection agreements with the following partners:

- Bylaw No. 30-2010 - Municipality of Lambton Shores (May 21, 2013)
- Bylaw No. 40-2011 - Municipality of North Middlesex (June 6, 2011)
- Bylaw No. 27-2011 - Township of Lucan Biddulph (April 18, 2011)
- Bylaw No. 47-2003 - Municipality of Blue Water (2013)

EM&T has reviewed the noted Fire Protection Agreements and noticed that they are very dated and a review of all fire related bylaws and agreements is needed to ensure that they are current, approved, and remain in effect. Identified in the OFMEM – Report of Fire Protection Services in the Municipality of South Huron it identifies the same considerations for improvements that support and strengthen the provision of fire protection services. EM&T believes these considerations are accurate and we reiterate the urgency to address them.

Adjustments should be made to the Fire Protection Agreement between the Municipality of South Huron and the Municipality of Lambton Shores related to fees for services and the general response area in Schedule "B". While there still is a need to provide rescue and suppression services by the Grand Bend Fire Station, public fire safety education, fire prevention including inspections, investigations and enforcement should be the sole responsibility of the SHFD.

The benefits of an automatic aid agreement means that the necessary equipment and resources will automatically be dispatched for suppression services, rescue and other identified emergencies that fall within the parameters of the automatic agreement, thereby saving critical time.

It is in the best interest that fire departments in a fire protection agreement, automatic aid agreement or mutual aid plan identify annual training sessions where firefighters get acquainted with the equipment of other departments. These combined training sessions also build the working relationship and morale between fire departments. Essentially automatic aid agreements bring fire departments together to work as a team for the benefit of the public, but without combined training sessions to practice as a team, the team cannot effectively function, and breakdowns occur.

Another benefit of the mutual training session is the identification of gaps in equipment, communications, or training prior to a real emergency. These mutual aid meetings also allow fire chiefs and chief officers from the participating departments to discuss issues or gaps in response protocols.

Recommendations:

Immediate reviews and revisions be undertaken by the Fire Chief for all existing Fire Protection Agreements.

Adjust the Fire Protection Agreement between the Municipality of South Huron and the Municipality of Lambton Shores related to fees for services and the general response area in Schedule "B".

In partnership with other county departments, develop an SOG for accountability.

Rec #	Recommendation	Estimated Cost	Suggested Timeline
42	Immediate reviews and revisions be undertaken by the Fire Chief for all existing Fire Protection Agreements.	Staff time	Immediately (Reviewed annually)
43	Adjust the Fire Protection Agreement between the Municipality of South Huron and the Municipality of Lambton Shores related to fees for services and the general response area in Schedule “B”.	Staff time	Short-term (1-3 years)
44	In partnership with other county departments, develop an SOG for accountability.	Staff time	Immediately (Reviewed annually)

SECTION 10

Technology and Other Enhancements

Section 10: Technology and other Enhancements

10.1 Drones

The fire service in North America is 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 hazardous material incidents, enhance search and rescue functions, and be used in pre-incident planning.

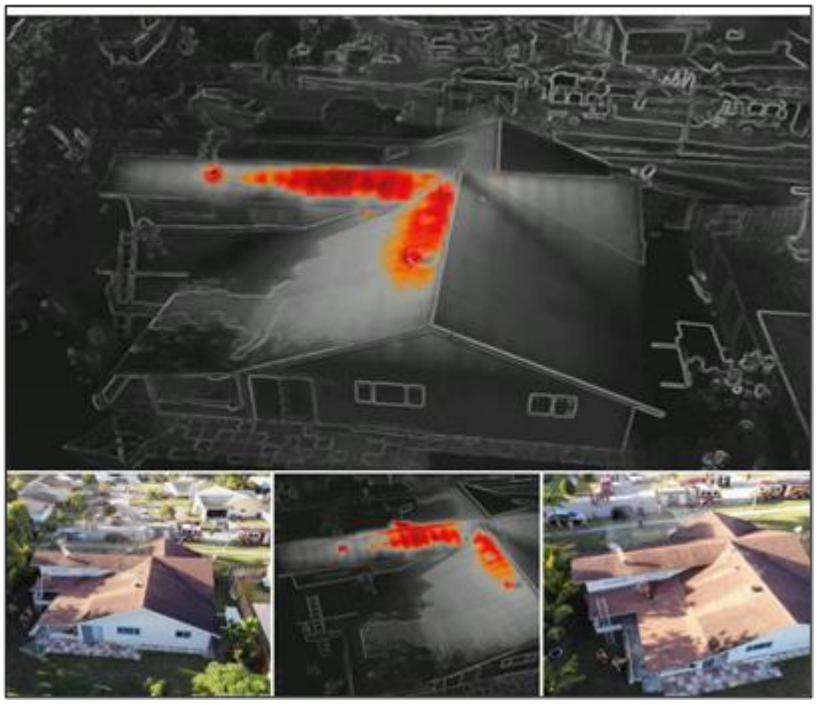
Drones can cover a lot of ground thus allowing valuable fire services personnel to be utilized elsewhere. They have proven beneficial for hazardous materials incidents and large-scale emergencies as the drone can be quickly deployed and give the Incident Commander a live view of the incident. The reduction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

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 the Humboldt Fire Department in Saskatchewan. In 2019 and 2020 the Humboldt Fire Department deployed their drone at two significant train derailments where numerous cars derailed causing massive blazes and spill of crude oil. The drone added a critical component in the early stages, giving live time information for both the on-scene firefighters and Canadian Pacific Rail emergency response crews.

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.

FIGURE #22: Drone Thermo Imaging (Structure Fire Heat Source)

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]



The SHFD has utilized a drone in the past and it will benefit from the ability to attain critical information for suppression, rescue, preplanning, and special events planning.

Recommendation:

SHFD implement a drone program to enhance firefighter safety and be employed for emergency operations, pre-incident planning and emergency management planning.

10.2 Personal Thermal Imaging Camera

Thermal imaging cameras (TICs) have been readily available for the fire service since the late 90s. This technology has saved lives, prevented firefighter injuries, and found hot spots in a structure during size up procedures by the Incident Commander.

As technology advances, TICs are now available for situational awareness and decision-making and have critical roles in the fire service. A situational awareness TIC is used by the firefighter to locate the fire, find their way out and to prevent disorientation, while a decision-making TIC is used for size up, search and rescue, and directing hose streams to suppress the fire.

[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.

As technology advances and demand increases, the cost of TICs has decreased and are now reasonably priced compared to when they first entered the fire service in the late 90s. Today, most career and volunteer fire departments have a decision-making TIC as part of their equipment inventory and there is a growing trend for personal situational awareness TICs for firefighters.

To get the most benefits from TIC technology, the NFPA 1408, *Standard for Training Fire Service Personnel in the Operation, Care, Use, and Maintenance of Thermal Imagers*, Sections 4.1 and 4.2, should be followed, as stated:

- A thermal imaging training program shall be implemented.
- Risks to participants during training shall be kept to a minimum.
- The authority having jurisdiction (AHJ) shall establish written policies for TIC training that meet the requirements of this standard.
- The policy shall address the training requirements for types of incidents where TICs may be used.
- The training policy shall include an annual review of member competence in TIC technology, operation, application, use and limitations, care, and maintenance.
- TIC training shall include practical evolutions using TICs.
- Training and evaluation documentation shall be maintained by the AHJ.
- The training program shall include both individual and crew training.
- Members shall be provided with TIC training and education before being permitted to operate TICs per the AHJ.
- Before new or unfamiliar TICs are placed into service, training and education relating to those imagers shall be provided for all affected members.
- Members shall be provided with classroom education and hands-on familiarization in TIC functions before being permitted to operate TICs in IDLH atmospheres.

A training program must exist where members use live fire scenarios to gain confidence and competence in the use of TIC technology.

To enhance firefighter safety, the SHFD should have personal situational TICs available for the frontline apparatus at both fire halls. A minimum of two per apparatus is required plus a spare for each station, which will require the acquisition of six TICs. A formal TIC training program should be developed within the next 12-36 months to meet the competencies as identified in NFPA 1408.

Recommendation:

All frontline vehicles should be equipped with TICs, along with the development and implementation of a comprehensive training program that meets the NFPA 1408 requirements (presently, there are 4 TICs and therefore the SHFD requires 2 more).

Rec #	Recommendation	Estimated Cost	Suggested Timeline
45	SHFD implement a drone program to enhance firefighter safety and be employed for emergency operations, preplanning, and emergency management planning.	Dependent on unit purchased - $3,000 to $8,000 per unit	Short-term (1-3 years)
46	All frontline vehicles should be equipped with TICs, along with the development and implementation of a comprehensive training program that meets the NFPA 1408 requirements.	$3,000-5,000 per TIC unit	Short-term (1-3 years)

SECTION 11

Review of 2012 Fire Service Strategic Direction Recommendations

Section 11: Review of 2012 Fire Service Strategic Direction Recommendations

EM&T reviewed the 2012 Fire Service Strategic Direction Recommendations. It was crucial to review the document as it provides a measurement of what recommendations have been acted on and what changes the SHFD has undergone since 2012.

Some of the recommendations have been or are in the process of being actioned on by the Fire Chief, as appropriate. Other recommendations are no longer applicable or are part of regular capital planning (e.g., replacement of apparatus), while some have been included or are covered by recommendations in this MFP.

11.1 Training

Recommendation 1: That a training analysis be conducted to determine a quantitative measurement of the current level of training in each District.

Update: Not Complete

Recommendation 2: That all South Huron firefighters achieve a minimum of completion of Module A and Module B of the OFM curriculum within two years of joining the force.

Update: 75% complete

Recommendation 3: That all company officers and action officers in the department complete the Company Officer training within one year of assuming their role.

Update: Current Captains grandfathered or have taken NFPA 1021 – Fire Officer 1.

Recommendation 4: That the Chief acquire at least the minimum level of training for a Fire Prevention Officer in order to meet the requirements of the OFM, FPO certification.

Update: Not applicable – Full time Fire Prevention Officer/PLSE hired.

Recommendation 5: That a training program be introduced to increase the number of Training Facilitators at each District Station where required and proved additional training skills for current and future Trainer Facilitators.

Update: Each Station has at least 1 Instructor grandfathered or has received NFPA 1041 Instructor 1.

Recommendation 6: That an Inter-District training program be established and overseen by the Chief as part of the ongoing practical training program of the Fire Department.

Update: Notation made in this 2021 MFP to conduct mutual training programs amongst the districts.

11.2 Communications

Recommendation 1: That the implementation of the new communication system be expedited as soon as possible.

Update: Notation made in this 2021 MFP in relation to the 911 program being implemented in 2024.

11.3 Apparatus

Recommendation 1: That a review be undertaken to re-evaluate future apparatus requirements of each District.

Update: Fire Chief and District Chiefs review apparatus requirements.

Recommendation 2: That the vehicle replacement program be continued, and the proposed purchasing for the next four years continues to be given priority in the budgeting process.

Update: Complete with future apparatus identified in capital replacement schedule.

Recommendation 3: That a decision be made with respect to the renovation and/or relocation of stations prior to the delivery of new vehicles for that District.

Update: Notation and recommendations noted in this 2021 MFP.

11.4 Hydrants

Recommendation 1: That an expedited implementation schedule be established for the installation of fire hydrants where deemed appropriate.

Update: Complete.

Recommendation 2: That all hydrants attached to water systems in the municipality be identified for main size and water flow in accordance with the Ontario Fire Code and NFPA 291.

Update: Complete.

11.5 Station Locations

Recommendation 1: That the Municipality consider the purchase of an appropriate computer program in order to analyze deployment and response times from existing and potential station locations and that no decision on repairs or replacement of existing stations occur until a full analysis of station locations and response times be completed.

Update: Municipality has decided to use EM&T to provide an analysis of station locations and response times through the MFP.

Recommendation 2: That in conjunction with the analysis of station locations, station coverage areas should be reviewed with respect to the areas covered by the South Huron Fire Department and the area covered by the Bluewater Fire Department.

Update: Fire Service Agreements to be updated and coverage areas will be a component to the updated agreement.

11.6 Human Resources

Recommendation 1: That a hiring protocol be established for the future recruitment of volunteer firefighters and a formal residency and a response to calls policy be established and implemented immediately.

Update: Hiring protocol has been established. A formal residency clause has not been developed and no response to calls policy is in effect.

Recommendation 2: That physical capacity testing for all firefighters be phased in over time and that mandatory retirement for suppression firefighters be implemented.

Update: No policy has been implemented for physical testing or mandatory retirement.

Recommendation 3: That on call compensation be reviewed to become more equitable with other on-call municipal employees.

Update: Recommendation noted in this 2021 MFP.

Recommendation 4: That training time compensation be considered for the preparation time firefighters are required to incur prior to taking courses mandated by the department.

Update: Training compensation has been implemented.

The Fire Chief and staff should be commended for completing as much as they have from the 2012 recommendations.

Recommendation:

The Fire Chief should continue with completing any of the outstanding recommendations noted in the 2012 FMP Report.

	Section 10: Technology and Other Enhancements		
47	The Fire Chief should continue with completing any of the outstanding recommendations noted in the past report.	Dependent on individual recommendation	Short-term (1-3 years)

APPENDICES

Appendix A: Recommendations Chart

Appendix B: NFPA Standards

Appendix C: Annual Call Data for 2019 and 2018

Appendix D: OFM Documents

Appendix E: Extreme Fire Station Options

Appendix A: Recommendations Chart

Rec #	Recommendation	Estimated Cost	Suggested Timeline
Section 1: Community Profile and Governance			
1	The 2006 E&R By-law should be updated and reviewed annually to ensure that the SHFD is operating within the approved parameters as identified by Council. This does not mean that the by-law must be presented to Council annually, but that the document is current and accurate.	No cost associated with document updating. Costs could be incurred with implementation of new services.	Short-term (1-3 years) with annual reviews
Section 2: Planning			
No recommendations for this section.			
Section 3: Emergency Response and Dispatching			
2	When the Establishing & Regulating By-law is updated, the SHFD organizational structure should be amended to reflect the changes and additions made.	No cost associated	Short-term (1-3 years)
3	It is recommended that data analytics be recorded and evaluated by the Fire Chief annually to help with assessing where any service gaps or challenges may exist. This review will also assist in determining the possible need for a larger volunteer firefighter contingent.	Staff time	Short-term (1-3 years) and ongoing
4	To prepare for the NG9-1-1, SHFD should work closely with Tillsonburg Dispatch to develop a business case for the acquisition of new NG9-1-1 related equipment. This CAD system should be implemented in 2024.	$250,000 to $500,000	Short-term (1-3 years)
Section 4: Training and Career Development			
5	Hire a part-time Deputy Fire Chief (Training/Operations). This new position should begin by working a 21 – 24-hour work	$35,000 - $40,000	Short-term (1-3 years)

Rec #	Recommendation	Estimated Cost	Suggested Timeline
	week with the possibility of transitioning to a full-time position of 42-hours per week within the next 7-10 years. An interim option, until a part-time Deputy Fire Chief position can be implemented, is to work with other local departments with the creation of a joint Training Officer position. This joint position also has the benefit of creating consistent training programs amongst the partner departments.		
6	The Fire Chief provide a business case to senior administration supporting either: • a new training facility for the SHFD, or • the purchase of a mobile training unit or a fixed site unit for the purposes of Live Fire Training.	$200,000 - $700,000	Short-term (1-3 years)
7	The SHFD work with the Planning and Development Services to determine a suitable location for a new training facility. Options to include this with the building of a new fire station should be investigated.	Staff time	Short-term (1-3 years)
8	It is recommended that all firefighters receive live fire training annually.	Dependent on facility costs and/or the purchase of a live fire training unit.	Short-term (1-3 years) and ongoing
9	SHFD adopts the educational progression plan outlined. The proposed training programs and succession path should be supported for current and proposed positions with the following suggested training: • The position of Captain, emergency management training should start with IMS-100 Introduction to the Incident Management System (IMS) for Ontario	Staff time	Short-term (1-3 years) and ongoing

Rec #	Recommendation	Estimated Cost	Suggested Timeline
	and IMS-200 Basic Incident Management System for Ontario. • All Deputy District Chiefs acquire NFPA 1521 – Fire Department Safety Officer certification. • The position of Deputy District Chief, emergency management training continues with IMS 300 – Intermediate Incident Management System. • The position of District Chief, emergency management training continues with IMS 250 – IMS in EOCs.		
10	Create a formal organization development program that identifies core competencies and qualifications for Fire Chief, Deputy Fire Chief, District Chief, Captain, and firefighter and be formally implemented.	Staff time	Short-term (1-3 years)
11	The SHFD facilitate the experience component required as part of the development of individuals and implement a process for individuals that are interested in Chief Officer positions.	Staff time	Short-term (1-3 years)
12	Develop job descriptions with a list of the minimum core job responsibilities. Further, the education and experience required for each of those positions should be outlined to chart the path for succession. Job descriptions found in the E&R Bylaw should be removed.	Staff time	Short-term (1-3 years)
Section 5: Fire Department Services			
13	It is recommended that a dedicated part-time Fire Administrative Assistant position be filled that could lead to a full-time position as needed.	$15,000 - $35,000	Short-term (1-3 years)

Rec #	Recommendation	Estimated Cost	Suggested Timeline
14	EM&T recommends that an on-call Duty Officer position be created to be filled on a rotational basis by qualified individuals.	Staff related costs	Short-term (1-3 years)
15	It is recommended that the Municipality of South Huron enact a by-law for the operation of a short-term rental, including bed & breakfasts.	Staff time	Short-term (1-3 years)
16	It is recommended that South Huron enact a by-law for the operation of second units, ensuring compliance with provincial legislation and registration/ licencing with the Municipality.	Staff time	Short-term (1-3 years)
17	It is recommended that the Municipality of South Huron explore opportunities to provide Fire Prevention related services to neighbouring municipalities.	Staff time (revenue generation initiative)	Short-term (1-3 years)
18	It is recommended that the South Huron FPO participate in the examination and review process for all building stock development. Further, the Fire Prevention Division should be involved in the review and approval processes for new developments, site plans, renovations, etc., so that the fire safety/response requirements are met.	Staff time	Immediate (0-1 year)
19	It is recommended that SHFD conduct an annual review of the Fire Prevention Division's programs to identify any areas requiring additional activity.	Staff time	Short-term and ongoing (1-3 years)
20	It is recommended that all firefighters be offered the opportunity to become trained and qualified to the Fire & Life Safety Educator Level I, or equivalent certification.	$65.00 registration fee per student based on Ontario Fire College fee.	Short-term and ongoing (1-3 years)

Rec #	Recommendation	Estimated Cost	Suggested Timeline
21	It is recommended that the SHFD work in conjunction with residential developers in promoting the advantages of installing residential fire sprinklers.	Staff time	Short-term (1-3 years)
22	SHFD to develop an SOG outlining proper decontamination of firefighters and their gear, during and after emergency operations and/or live fire training evolutions.	$4,000 for two decon kits plus staff time	Immediate (0-1 years) and ongoing
23	It is recommended that the SHFD introduce a cancer screening program.	Staff time	Immediate (0-1 year)
24	The Huron Park Rescue be outfitted to serve double duty as the firefighter rehabilitation and decontamination unit and backup rescue.	Staff time, along with possible expenses for reconfiguration of unit and inclusion of equipment. Approx. $5,000 to $20,000	Immediate (0-1 year)
25	A formal health and wellness program should be created to identify initiatives and a create an SOP for the confidential process for treatment of a mental health injury.	Staff time	Immediate (0-1 years) and ongoing
26	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.	Staff time (courses are offered at no charge)	Short-term (1-3 years) and ongoing
27	South Huron should implement a mass notification system for the Municipality.	$15,000 to $20,000	Immediate to Short-term (0-3 years)

Rec #	Recommendation	Estimated Cost	Suggested Timeline
Section 6: Risk Assessment Profile			
28	It is recommended that the Municipality of South Huron develop a comprehensive Community Risk Reduction Plan that falls in line with the CRA.	Staff time	Immediate (0-1 year)
Section 7: Facilities, Vehicles, and Equipment			
29	To effectively manage the new staffing and equipment requirements due to the closing of the Huron Park fire station, EM&T recommends that a new fire station be built and located in the vicinity of London Road and Norwood Village Road.	$2-4 million depending on design and land acquisition costs.	Short-term (1-3 years)
30	**Exeter Fire Station** If the Municipality of South Huron decides to keep the Exeter building for Fire Service needs: • Install an appropriate diesel exhaust extraction system for its apparatus. • Renovate the current bunker gear area to allow for a negative pressure room and for additional space to accommodate the officer gear relocation from the apparatus floor. • And a washer/dryer for cleaning of general clothes	$50,000 - $100,000 (for exhaust) Bunker gear room and washer dryer, approx. $50,000 - to $75,000	Short to Mid-term (1-6 years)
31	**Huron Park Fire Station** If the Municipality of South Huron decides to keep the Huron Park building for Fire Service needs: • Install an appropriate diesel exhaust extraction system for its apparatus and appropriate negative pressure bunker gear storage room. • Update and expand the current showering facilities for both women	$50,000 - $100,000 $30,000 -$70,000	Short to Mid-term (1-6 years)

Rec #	Recommendation	Estimated Cost	Suggested Timeline
	and men.		
	• Replace the current back-up power unit immediately.	$50,000 - $100,000	
32	**Dashwood Fire Station** The following upgrades are recommended: • Install an appropriate diesel exhaust extraction system at each fire station.	$50,000 - $100,000	Short to Mid-term (1-6 years)
	• Install an appropriate negative pressure bunker gear storage room.	Renovation of present bunker gear room approx. $50,000 - $75,000	
	• Purchase a second industrial washer extractor and dryer, and a separate general washer and dryer for regular washing of clothing.	$5,000 - $10,000	
	• Install a more powerful generator to allow for full power capacity.	$50,000 - $100,000	
	• Install a male/female shower facility	$30,000 - $50,000	
33	To better serve the community, EM&T recommends that a new Dashwood Fire Station be built and located in the vicinity of Bronson Line (County Road 2) and Boston Street**.** This would replace the present Dashwood Station.	$2-4 million depending on design and land acquisition costs.	Short-term (1-3 years)
34	EM&T recommends that the frontline apparatus continue to be replaced after 20 years and light duty vehicles be evaluated when they should be replaced but should not exceed 10 years. Further, vehicles that have exceeded the 20-year replacement cycle either be replaced or (as noted by the FUS document on page 192) receive a full inspection by a certified facility to	Dependent on vehicle being replaced.	Follow Capital replacement schedule

Rec #	Recommendation	Estimated Cost	Suggested Timeline
	verify that the vehicle continues to meet industry standards.		
35	When considering procurement of new SCBA, consideration the interoperability with fire service partners when the selection process has commenced.	Staff time	Short-term (1-3 years) and ongoing
36	SHFD to equip new apparatus purchases with new fire hose, nozzles, and ladders.	$100,000 added to overall capital purchase	Adjust capital in short-term (1-3 years)
37	If the Municipality of South Huron decides to keep the 2000 Aerial Apparatus, a comprehensive test be conducted by the ULC to approve this apparatus for use in Canada.	Costing is dependent on level of repairs required.	Short-term (1-3 years)
38	SHFD review the advantages in acquiring 5" (125 mm) supply lines with 4" (100 mm) Storz couplings to be assigned to the aerial devices.	$10,000 – $15,000 / aerial device	Short-term (1-3 years)
39	SHFD inquire about obtaining their Superior Water Shuttle Accreditation.	Staff time	Short-term (1-3 years)
Section 8: Finance			
40	Review and update the Fees By-Law 34-2018 for services provided by the SHFD.	Staff time	Short-term (1-3 years)
41	The Fees By-Law to identify the requirement that the individual(s) that receive an invoice for fire services provided is responsible for ensuring all charges are paid to the Municipality.	Staff time	Short-term (1-3 years)
Section 9: Fire Service Agreements and Mutual Aid Plan			
42	Immediate reviews and revisions be undertaken by the Fire Chief for all existing Fire Protection Agreements.	Staff time	Immediately (Reviewed annually)

Rec #	Recommendation	Estimated Cost	Suggested Timeline
43	Adjust the Fire Protection Agreement between the Municipality of South Huron and the Municipality of Lambton Shores related to fees for services and the general response area in Schedule "B".	Staff time	Short-term (1-3 years)
44	In partnership with other county departments, develop an SOG for accountability.	Staff time	Immediately (Reviewed annually)
Section 10: Technology and Other Advancements			
45	SHFD implement a drone program to enhance firefighter safety and be employed for emergency operations, preplanning, and emergency management planning.	Dependent on unit purchased - $3,000 to $8,000 per unit	Short-term (1-3 years)
46	All frontline vehicles should be equipped with TICs, along with the development and implementation of a comprehensive training program that meets the NFPA 1408 requirements.	$3,000-5,000 per TIC unit	Short-term (1-3 years)
Section 11: Review of 2012 Fire Service Strategic Direction Recommendations			
47	The Fire Chief should continue with completing any of the outstanding recommendations noted in the past report.	Dependent on individual recommendation	Short-term (1-3 years)

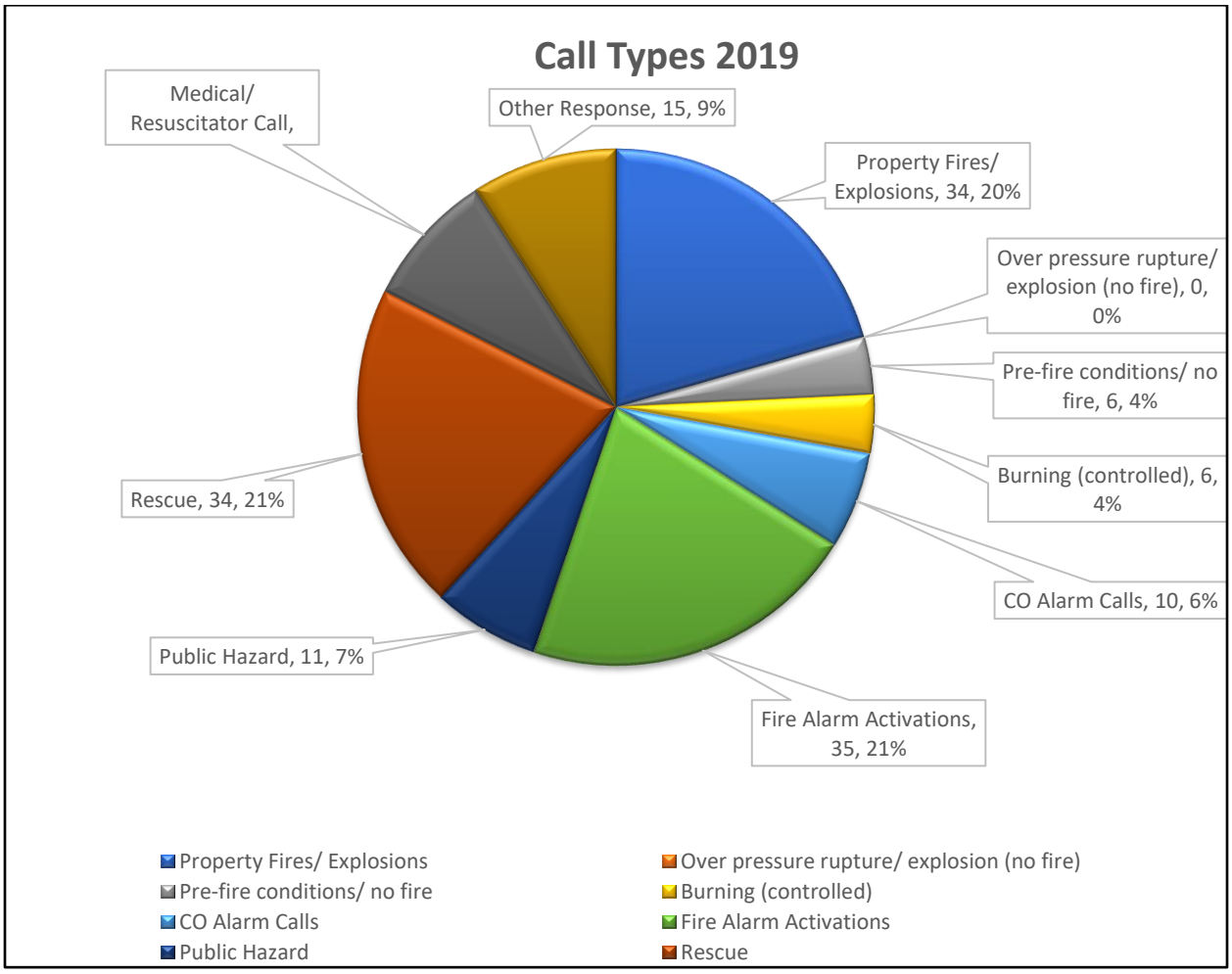
Appendix B: NFPA Standards

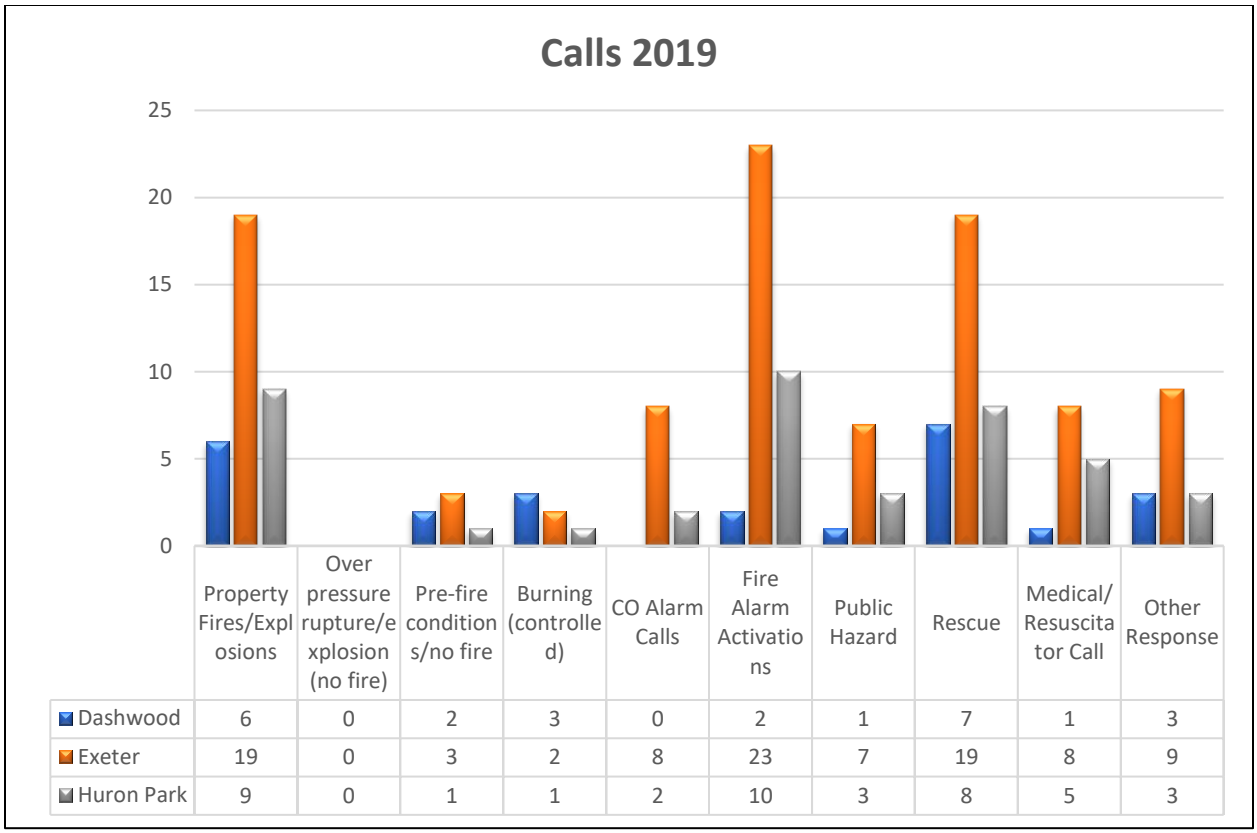
- NFPA 1001 Standard for Fire Fighter Professional Qualifications, 2019
- NFPA 1006 Standard for Technical Rescue Personnel Professional Qualifications, 2017
- NFPA 1021 Standard for Fire Officer Professional Qualifications, 2020
- NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner, 2014
- NFPA 1033 Standard for Professional Qualifications for Fire Investigator, 2014
- NFPA 1041 Standard for Fire and Emergency Services Instructor Professional Qualifications, 2019
- NFPA 1201 Standard for Providing Fire and Emergency Services to the Public, 2020
- NFPA 1221 Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems, 2019
- NFPA 1300 Standard on Community Risk Assessment and Community Risk Reduction Plan Development, 2020
- NFPA 1061 Standard for Public Safety Telecommunications Personnel Professional Qualifications, 2018
- NFPA 1071 Standard for Emergency Vehicle Technician Professional Qualifications, 2016
- NFPA 1402 Standards on Facilities for Fire Training and Associated Props, 2019
- NFPA 1404 Standard for Fire Service Respiratory Protection Training, 2018
- NFPA 1407 Standard for Training Fire Service Rapid Intervention Crews, 2020
- NFPA 1408 Standard for Training Fire Service Personnel in the Operation, Care, Use and Maintenance of Thermal Imagers, 2015
- NFPA 1410 Standard on Training for Emergency Scene Operations, 2020
- NFPA 1500 Standard on Fire Department Occupational Safety, Health and Wellness Program, 2018
- NFPA 1521 Standard for Fire Department Safety Officer Professional Qualifications, 2020
- NFPA 1582 Standard on Comprehensive Occupation Medical Program for Fire Departments, 2013
- NFPA 1584 Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises, 2015
- NFPA 1620 Standard for Pre-Incident Planning, 2020
- NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, 2020
- NFPA 1730 Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations, 2019

- NFPA 1851 Standard on Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2014
- NFPA 1901 Standard for Automotive Fire Apparatus, 2016
- NFPA 1914 Standard for Testing Fire Department Aerial Devices, 2002
- NFPA 1961 Standard on Fire Hose, 2020
- NFPA 1971 Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2018

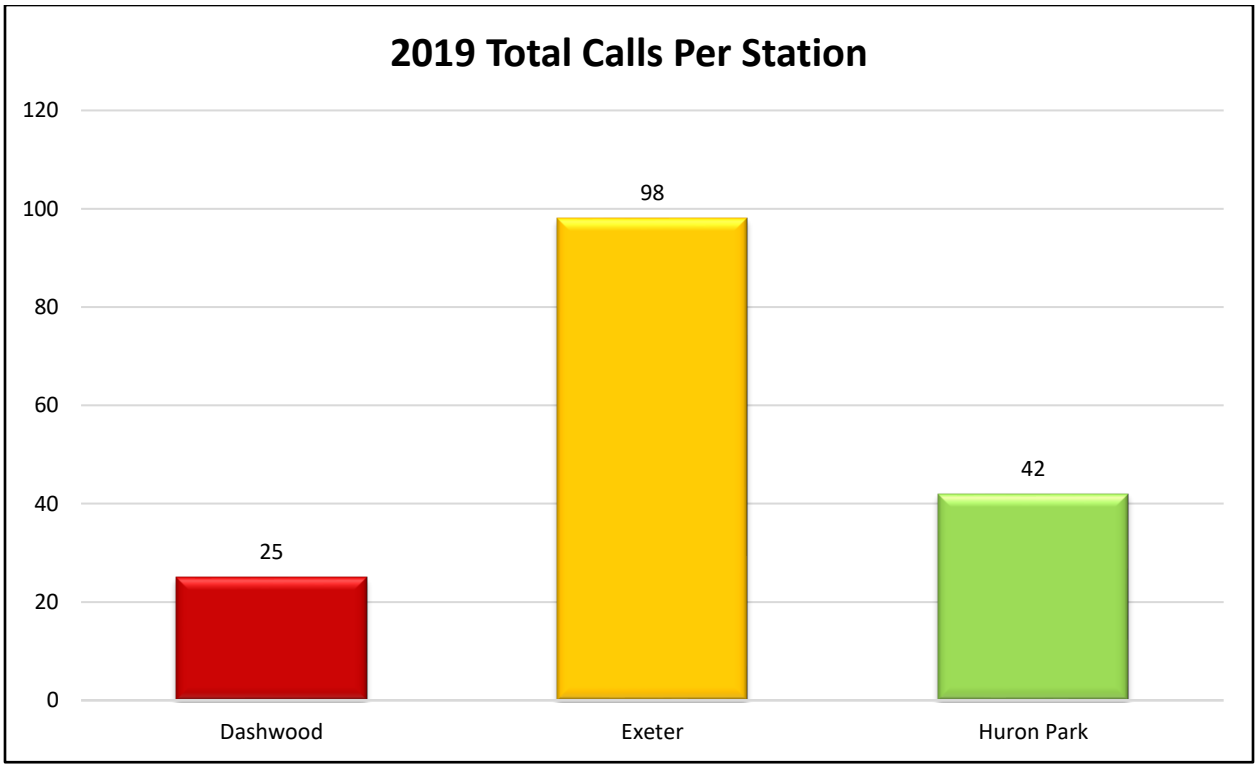
Appendix C: Annual Call Data for 2019 and 2018

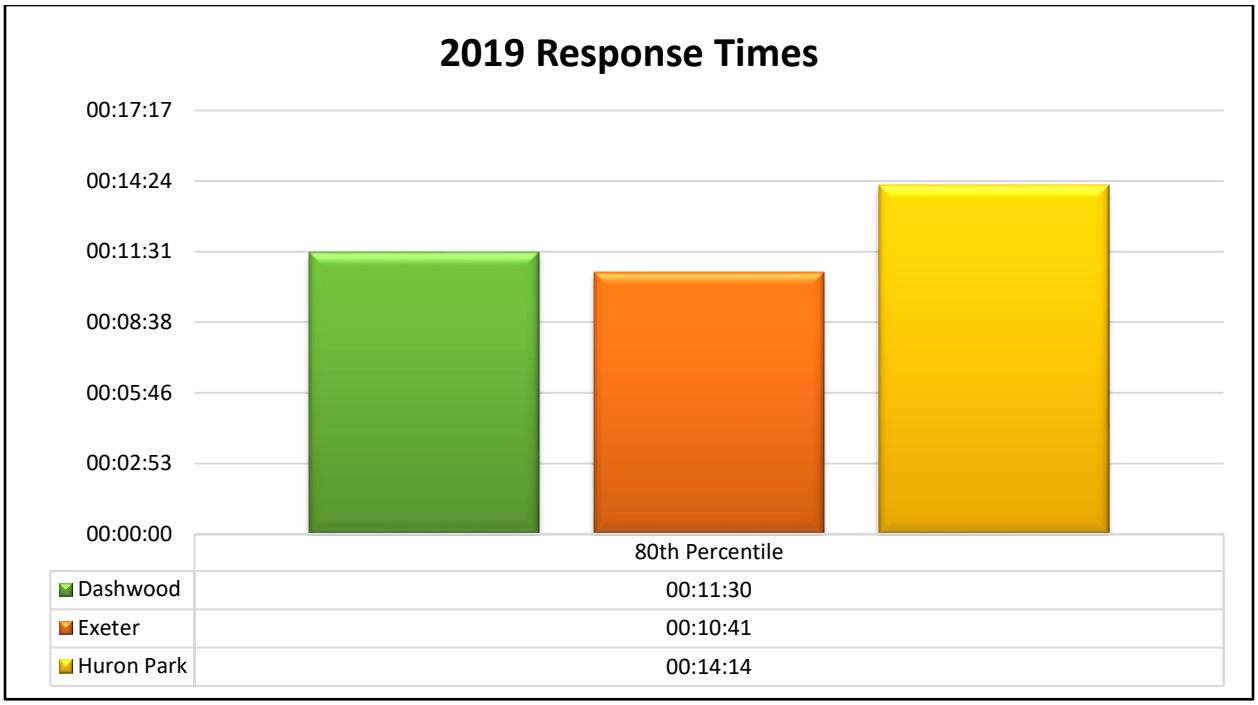
2019 Data



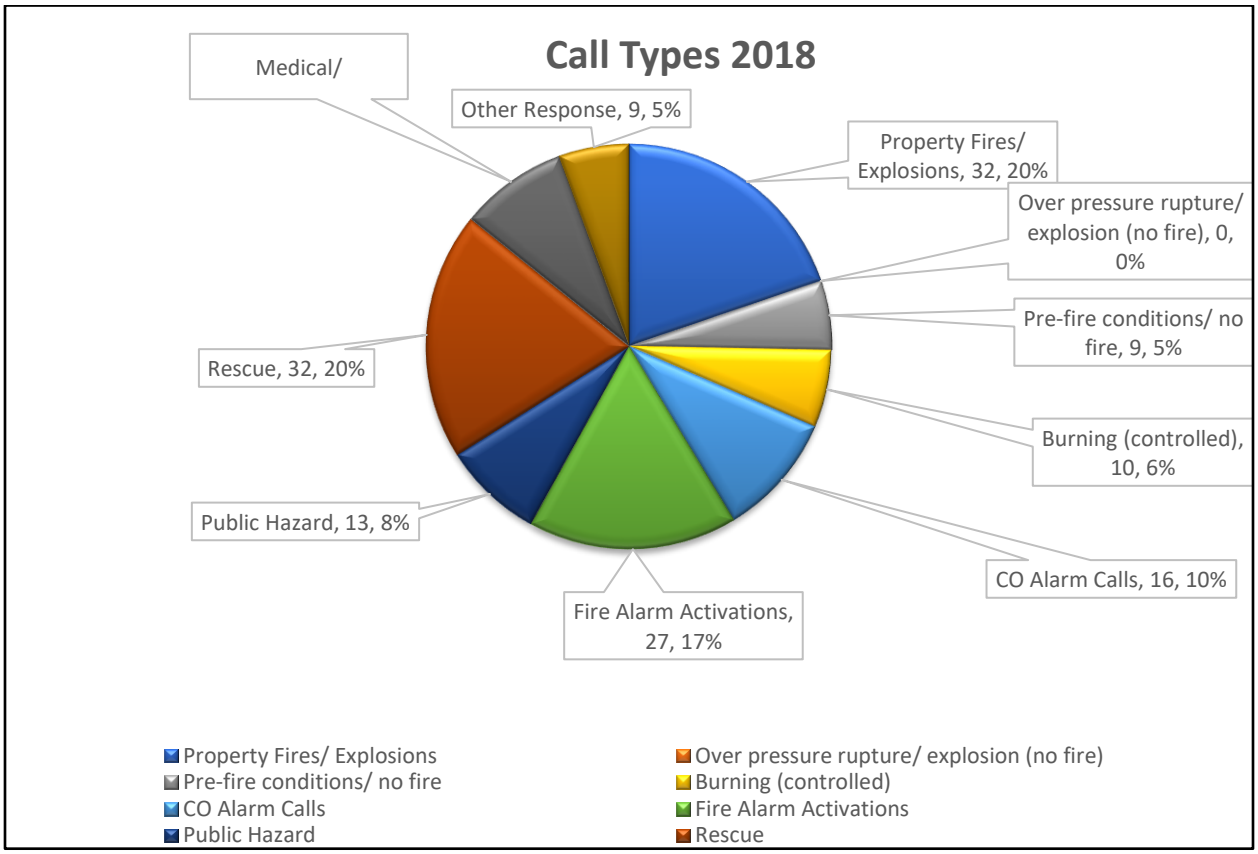


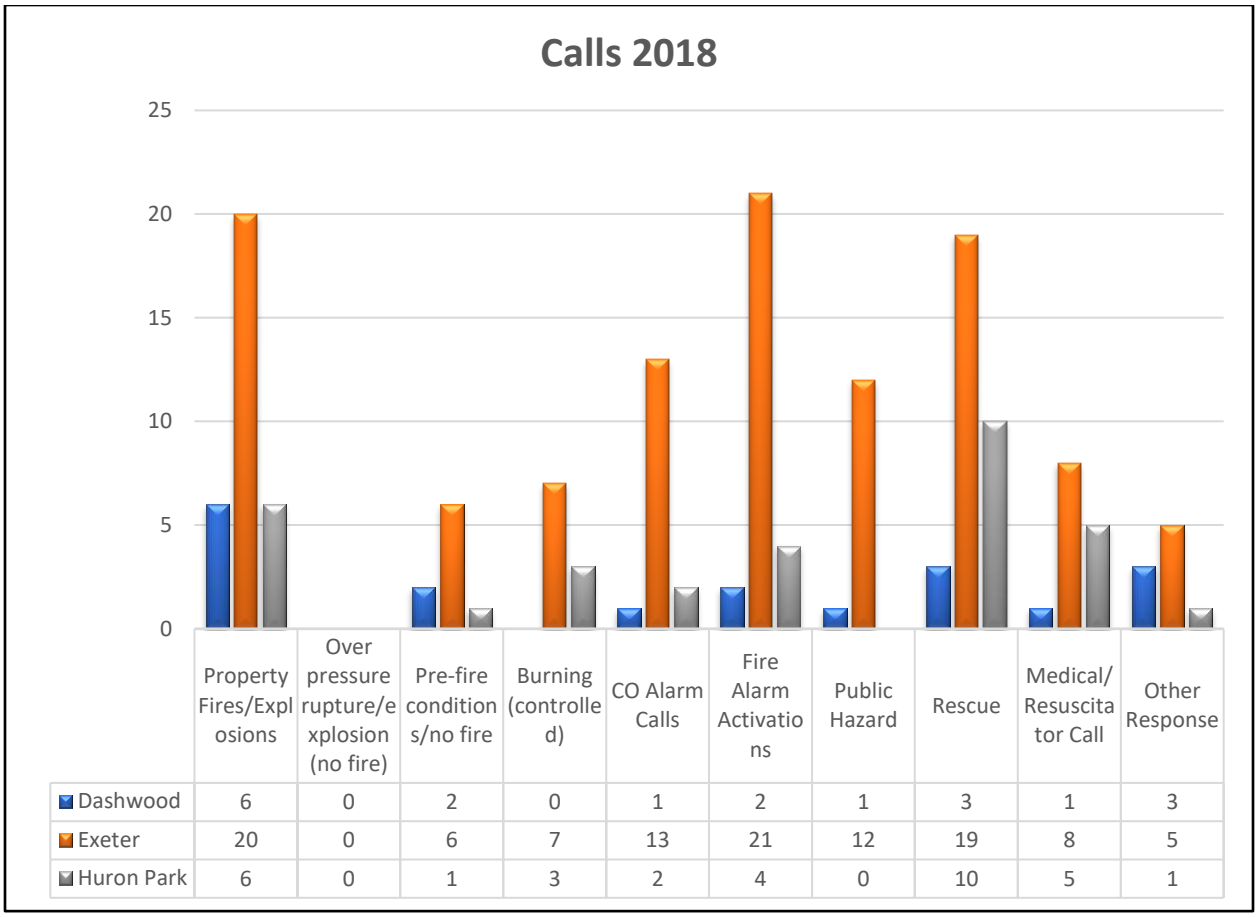
	Property Fires/Explosions	Over pressure rupture/explosion (no fire)	Pre-fire conditions/no fire	Burning (controlled)	CO Alarm Calls	Fire Alarm Activations	Public Hazard	Rescue	Medical/ Resuscitator Call	Other Response
Dashwood	6	0	2	3	0	2	1	7	1	3
Exeter	19	0	3	2	8	23	7	19	8	9
Huron Park	9	0	1	1	2	10	3	8	5	3



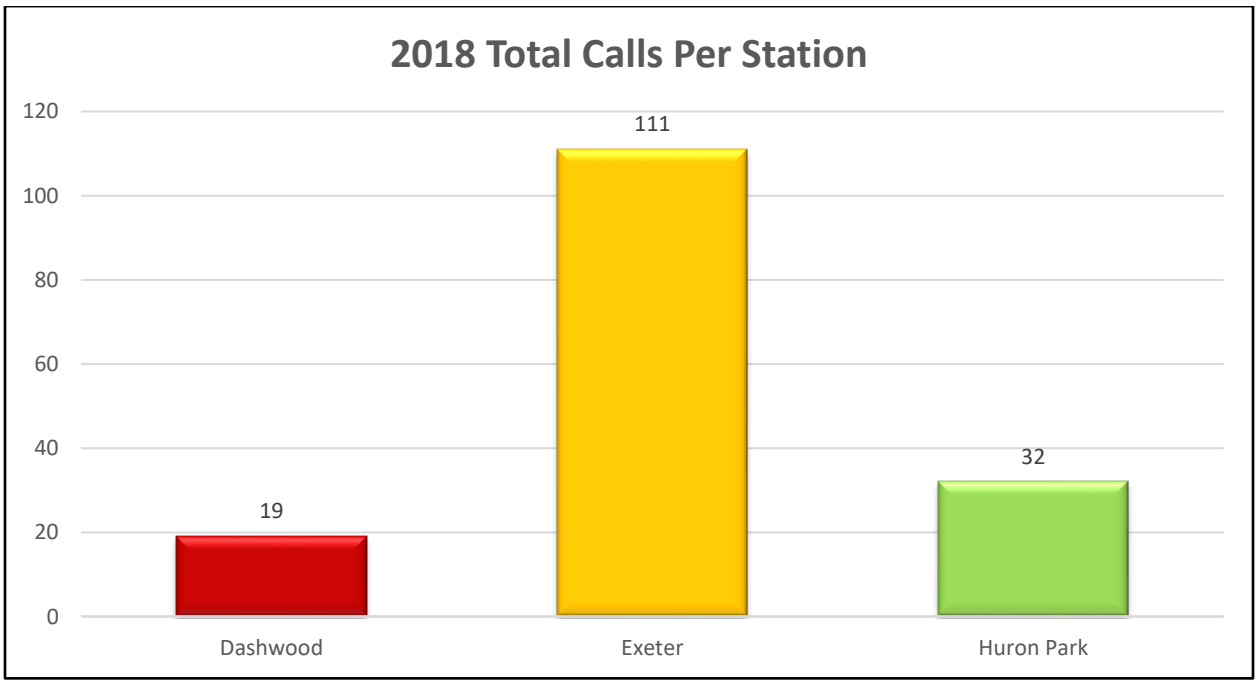

2019 Response Times
00:17:17
00:14:24
00:11:31
00:08:38
00:05:46
00:02:53
00:00:00
80th Percentile
Dashwood
00:11:30
Exeter
00:10:41
Huron Park
00:14:14

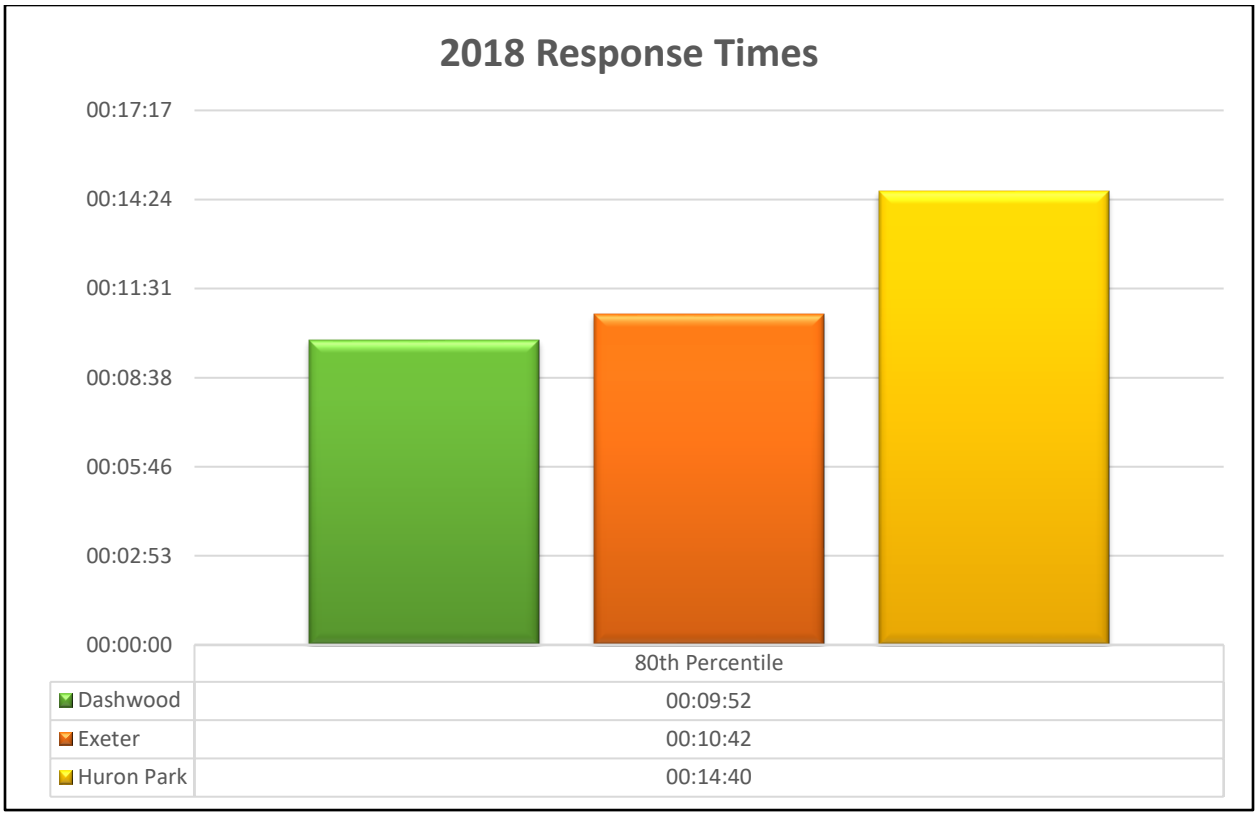
2018 Data


Call Types 2018
Medical/
Other Response, 9, 5%
Property Fires/ Explosions, 32, 20%
Over pressure rupture/ explosion (no fire), 0, 0%
Pre-fire conditions/ no fire, 9, 5%
Burning (controlled), 10, 6%
CO Alarm Calls, 16, 10%
Fire Alarm Activations, 27, 17%
Public Hazard, 13, 8%
Rescue, 32, 20%
Property Fires/ Explosions
Pre-fire conditions/ no fire
CO Alarm Calls
Public Hazard
Over pressure rupture/ explosion (no fire)
Burning (controlled)
Fire Alarm Activations
Rescue



	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
Dashwood	6	0	2	0	1	2	1	3	1	3
Exeter	20	0	6	7	13	21	12	19	8	5
Huron Park	6	0	1	3	2	4	0	10	5	1




2018 Response Times
00:17:17
00:14:24
00:11:31
00:08:38
00:05:46
00:02:53
00:00:00
80th Percentile
Dashwood 00:09:52
Exeter 00:10:42
Huron Park 00:14:40

Appendix D: OFM Documents

PFSG 04-84-13: 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 volunteer 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.

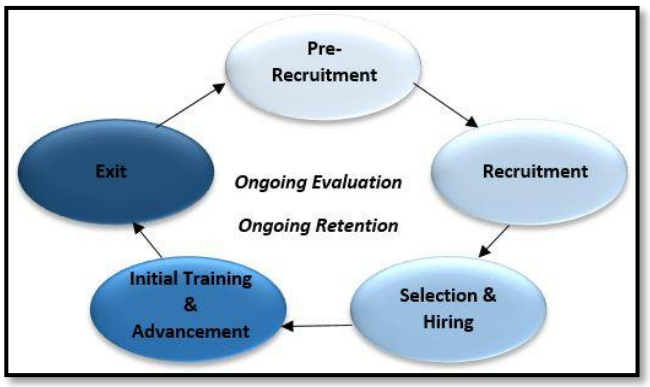
It allows planning for:

- 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

In order 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 will have to 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

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

Public Fire Safety Guidelines	Subject Coding PFSG 04-08-10
Section Emergency Response	Date January 2011
Operational Planning: An Official Guide to Matching Resource Deployment and Risk	

Under Review

1.0 Purpose

1.1 Municipalities are responsible for the funding and delivery of fire protection services in accordance with Section 2 of the *Fire Protection and Prevention Act, 1997* (FPPA).
In order to meet the intent of Section 2 of the FPPA, municipalities are expected to implement a risk management program.

The evaluation tool ***Operational Planning: An Official Guide to Matching Resource Deployment and Risk***, found in the Appendix, is to be used as part of a risk management program. The purpose of this guideline is to encourage municipalities and fire departments to use this tool so that they can make informed decisions regarding the delivery of fire suppression services.

2.0 Scope

2.1 This g**u**ideline applies to all municipalities.

3.0 Risk Management

3.1 In order to be in compliance with clause 2.(1)(a) of the FPPA, a fire department must have completed a simplified risk assessment, one of the four key minimum requirements for fire protection services. It is expected that this assessment be reviewed and updated periodically to support informed decision making and evaluation of program delivery.

4.0 Legislation

4.1 This guideline is issued under the authority of clause 9.(1)(d) of the FPPA.

4.2 Municipal Council, obligated by the FPPA to provide fire protection services, must

• establish levels of service commensurate with needs and circumstances; and

• provide fiscal resources for staffing, apparatus and equipment to support the established level of service.

4.3 Fire Chief
Person appointed by the council of a municipality, responsible for the delivery of fire protection services, and accountable to the council.

4.4 Fire Department
The fire department delivers the services as approved by municipal council and at the direction of the fire chief.
Operational Planning: An Official Guide to Matching Resource Deployment and Risk can help fire departments to

- assess and analyze fire risk;
- determine current capabilities: staffing, apparatus, equipment, etc.;
- find gaps; and
- work out options, develop recommendations and present them to municipal council using a standardized format.

4.5 Clause 2.(1)(b)
Every municipality shall provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances

4.6 Subsection 2.(7)
The Fire Marshal may monitor and review the fire protection services provided by municipalities to ensure that municipalities have met their responsibilities under this section and, if the Fire Marshal is of the opinion that, as a result of a municipality failing to comply with its responsibilities under subsection (1), a serious threat to public safety exists in the municipality, he or she may make recommendations to the council of the municipality with respect to possible measures the municipality may take to remedy or reduce the threat to public safety

4.7 Subsection 5.(1)
A fire department shall provide fire suppression services and may provide other fire protection services in a municipality, group of municipalities or in territory without municipal organization.

4.8 Clause 9.(1)(a)
The Fire Marshal has the power to monitor, review and advise municipalities respecting the provision of fire protection services and to make recommendations to municipal councils for improving the efficiency and effectiveness of those services.

4.9 Clause 9.(2)(b)
It is the duty of the Fire Marshal to advise municipalities in the interpretation and enforcement of this Act and the regulations.

4.10 Clause 9.(2)(d)
It is the duty of the Fire Marshal to develop training programs and evaluation systems for persons involved in the provision of fire protection services and to provide programs to improve practices relating to fire protection services.

5.0 References

OFM documents, programs and courses

- Comprehensive Fire Safety Effectiveness Model
- Public Fire Safety Guidelines
- Shaping Fire Safe Communities – Phases 1 and 2
- Essentials for Municipal Decision Makers [course]
- Essentials for Fire Service Leaders [course]

National Fire Protection Association standards

- NFPA 1710 and NFPA 1720

6.0 Appendix

Evaluation tool:
Operational Planning: An Official Guide to Matching Resource Deployment and Risk.

Workbook
(Guidelines PDF version available on request at **AskOFM**)
HTML version

PFSG 01-03-12: Sample Establishing and Regulating By-law

Public Fire Safety Guidelines	Subject Coding PFSG 01-03-12
Section General	Date March 2000
Subject Sample Establishing and Regulating By-law	Page

Under Review

Purpose: To assist in the preparation of a by-law, which will provide clear and accurate policy direction reflecting how council wants their fire department services to function and operate.

Introduction: A municipality has responsibility to determine the types and extent of fire protection services necessary to meet their specific needs and circumstances. It is not practical to produce a sample that identifies the needs of every municipality..

Development: An analysis must be made to determine if each clause is appropriate for the particular municipality. Unless otherwise noted in the margin, the OFM regards each clause as a necessary component for a complete by-law.
In preparing by-laws, consideration must be given to the provisions of any collective agreement formulated under the Fire Protection and Prevention Act that supersedes establishing and regulating by-laws.
The municipal solicitor, prior to enactment, should review any draft by-laws prepared by council.

Related Functions: The primary issues addressed in an establishing and regulating by-law may include policy direction in these areas:

- general functions and services to be provided
- the goals and objectives of the department
- general responsibilities of members
- method of appointment to the department
- method of regulating the conduct of members
- procedures for termination from the department
- authority to proceed beyond established response areas

• authority to effect necessary department operations

Codes, Standards and 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
02-02-12 Fire Risk Assessment
02-03-01 Economic Circumstances
04-01-12 Selecting a Fire Suppression Capability
04-02-01 Service Delivery Considerations

fire department
SAMPLE ESTABLISHING AND REGULATING BY-LAW
corporation of the Town of Anywhere
By-Law No.

Whereas the Municipal Act, R.S.O. 1990 c., as amended, and the Fire Protection and Prevention Act, 1997, S.O. 1997, c.4 as amended, permits the council to enact a by-law to establish and regulate a *fire department*;
BE IT THEREFORE ENACTED by the Municipal council of the corporation of the Town of Anywhere, as follows:

1. In this by-law, unless the context otherwise requires,

Definitions: define any terms or positions which may be of concern to users of the by law

   a. **approved**
   means approved by the council

   b. **chief administrative officer**
   means the person appointed by council to act as chief administrative officer for the corporation

   c. **corporation**
   means the Corporation of the Town of Anywhere

   d. **council**
   means the council of the Town of Anywhere

   e. **deputy chief**
   means the person appointed by council to act on behalf of the fire chief of the fire

department in the case of an absence or a vacancy in the office of fire chief

f. **fire chief**
means the person appointed by council to act as fire chief for the corporation and is ultimately responsible to council as defined in the Fire Protection and Prevention Act

g. **fire department**
means the Town of Anywhere fire department

h. **fire protection services**
includes fire suppression, fire prevention, fire safety education, communication, training of persons involved in the provision of fire protection services, rescue and emergency services and the delivery of all those services

i. **member**
means any persons employed in, or appointed to, a fire department and assigned to undertake fire protection services, and includes officers, full time, part time and volunteer firefighters

j. **volunteer firefighter**
means a firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance

2. A fire department for the Town of Anywhere to be known as the Town of Anywhere Fire Department is hereby established and the head of the fire department shall be known as the fire chief.

3. The *fire department* shall be structured in conformance with the *approved* Organizational Chart, **Appendix A**, forming part of this by law.

Approved Organizational Chart

4. In addition to the fire chief, the council shall appoint a deputy chief and such number of other officers and members as may be deemed necessary by the council

Identifies appointment of other officers and members without listing all specifically

5. The *fire chief* may recommend to the *council* the appointment of any qualified person as a *member* of the *fire department*, subject to the *approved* hiring policies of the Town of Anywhere — ***Appointment via approved Hiring Policy***

6. Persons appointed as *members* of the *fire department* to provide *fire protection services* shall be on probation for a period of 12 months, during which period they shall take such special training and examination as may be required by the *fire chief*. — ***Probationary Members***

7. If a probationary member appointed to provide *fire protection services* fails any such examinations, the *fire chief* may recommend to the *council* that he/she be dismissed.

8. The remuneration of the volunteer members shall be as determined by the *council*. — ***Remuneration and working conditions***

9. Working conditions and remuneration for all firefighters defined in Part IX of the Fire Protection and Prevention Act shall be determined by *council* in accordance with the provisions of Part IX of the Fire Protection and Prevention Act.

10. If a medical examiner finds a member is physically unfit to perform assigned duties and such condition is attributed to, and a result of employment in the *fire department*, *council* may assign the member to another position in the *fire department* or may retire him/her. *council* may provide retirement allowances to members, subject to the Municipal Act. — ***Other employment, retirement options and/or allowances***

11. The *fire chief* is ultimately responsible to *council*, through the (insert appropriate position for the municipality) for proper administration and operation of the *fire department* including the delivery of *fire protection services*. — ***Chief ultimately responsible to council through FPPA (via chief administrative officer, clerk, fire committee or specify appropriate position)***

12. The *fire chief* shall implement all *approved* policies and shall develop such standard operating procedures and guidelines, general orders and departmental rules as necessary to implement the *approved* policies and to ensure the appropriate — ***Developing SOP's, guidelines, rules and regulations***

care and protection of all *fire department* personnel and *fire department* equipment.

13. The *fire chief* shall review periodically all policies, orders, rules and operating procedures of the *fire department* and may establish an advisory committee consisting of such members of the *fire department* as the *fire chief* may determine from time to time to assist in these duties. ***Advisory Committee***

14. The *fire chief* shall submit to the (insert appropriate position) and *council* for approval, the annual budget estimates for the *fire department*; an annual report and any other specific reports requested by the (insert appropriate position) or *council*. ***Budgets and reports***

15. Each division of the *fire department* is the responsibility of the *fire chief* and is under the direction of the *fire chief* or a member designated by the *fire chief*. Designated members shall report to the *fire chief* on divisions and activities under their supervision and shall carry out all orders of the *fire chief*. ***Divisional responsibilities designated by chief***

16. Where the *fire chief* designates a member to act in the place of an officer in the *fire department*, such member, when so acting, has all of the powers and shall perform all duties of the officer replaced.

17. The *fire chief* may reprimand, suspend or recommend dismissal of any member for infraction of any provisions of this by law, policies, general orders and departmental rules that, in the opinion of the *fire chief*, would be detrimental to discipline or the efficiency of the *fire department*. ***Discipline***

18. Following the suspension of a member, the *fire chief*shall immediately report, in writing, the suspension and recommendation to the (insert as appropriate) and *council.* ***Suspension of members***

19. The procedures for termination of employment prescribed in Part IX of the Fire Protection and Prevention Act shall apply to all firefighters defined in Part IX of the Fire Protection and Prevention Act. ***Termination procedures***

20. A volunteer firefighter shall not be dismissed without the opportunity for a review of termination, ***Provides volunteers with the same***

if he/she makes a written request for such a review within seven working days after receiving notification of the proposed dismissal. A person appointed by the municipality, who is not employed in the *fire department*, shall conduct the review. ***opportunity for review as full-time members***

21. The *fire chief* shall take all proper measures for the prevention, control and extinguishment of fires and the protection of life and property and shall exercise all powers mandated by the Fire Protection and Prevention Act, and the *fire chief* shall be empowered to authorize: ***Prevention, control and extinguishing fires***

    a. pulling down or demolishing any building or structure to prevent the spread of fire ***Pulling down structures***

    b. all necessary actions which may include boarding up or barricading of buildings or property to guard against fire or other danger, risk or accident, when unable to contact the property owner ***Boarding up or barricading***

    c. recovery of expenses incurred by such necessary actions for the *corporation* in the manner provided through the Municipal Act and the Fire Protection and Prevention Act ***Recovery of expenses***

22. The *fire department* shall not respond to a call with respect to a fire or emergency outside the limits of the municipality except with respect to a fire or emergency:

    a. that, in the opinion of the *fire chief* or designate of the *fire department*, threatens property in the municipality or property situated outside the municipality that is owned or occupied by the municipality ***Authority to leave municipal limits***

    b. in a municipality with which an *approved* agreement has been entered into to provide *fire protection services* which may include *automatic aid*

    c. on property with which an *approved* agreement has been entered into with any person or *corporation* to provide *fire protection services*

d. at the discretion of the *fire chief*, to a municipality authorized to participate in any *county, district or regional* mutual aid plan established by a fire co-ordinator appointed by the fire marshal or any other similar reciprocal plan or program

e. on property beyond the municipal boundary where the *fire chief* or designate determines immediate action is necessary to preserve life or property and the appropriate department is notified to respond and assume command or establish alternative measures, acceptable to the *fire chief* or designate

AN APPROVED ORGANIZATIONAL CHART FORMS PART of THIS BY LAW AS Appendix A

Goals and objectives of the fire department may also be added as an appendix to the By-law

This by-law comes into effect the day it is passed by council, in the manner appropriate to the municipality.

PSFG 01-02-01: Comprehensive Fire Safety Effectiveness Model Considerations

Public Fire Safety Guidelines	Subject Coding PFSG 01-02-01
Section General	Date January 1998
Subject Comprehensive Fire Safety Effectiveness Model Considerations	Page

Under Review

Comprehensive Fire Safety Effectiveness Model Considerations For Fire Protection & Prevention In Your Community

Fire Protection & Prevention In Your Community

Every day, local elected leaders, managers and fire chiefs are faced with decisions relating to the provision of fire and other related emergency services for their community. Now, more

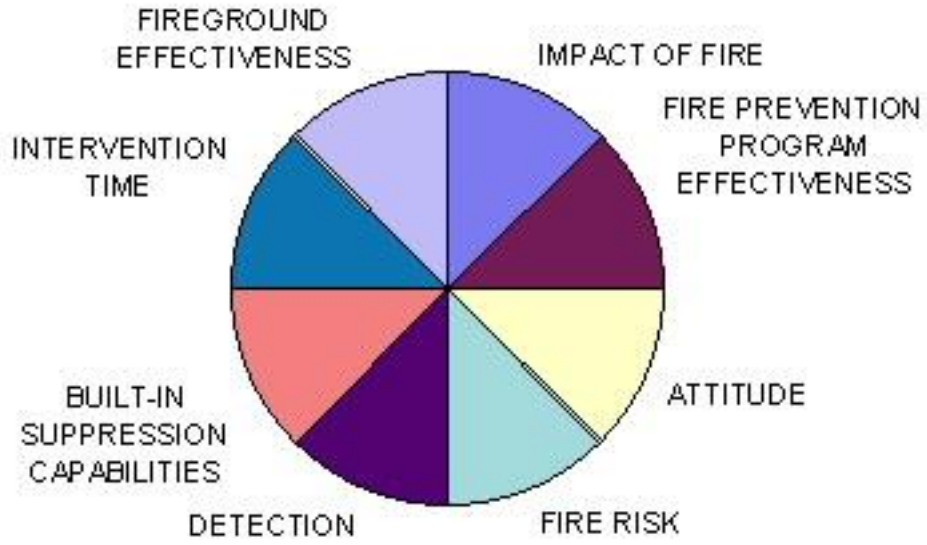
than ever there are constant pressures of doing "more with less". Many government officials are hard-pressed to justify any increase in expenditures unless they can be attributed directly to improved or expanded service delivery in the community. This effort has often been hampered by the lack of criteria by which a community can determine the level and quality of fire and other related emergency services it provides to its residents. The *Comprehensive Fire Safety Effectiveness Model* is a document which can assist communities in evaluating their level of fire safety.

The provision of fire protection in Ontario is a municipal responsibility. The level and amount of fire protection provided is determined by the residents of the community through decisions made by and support provided by the local municipal council. Due to a wide variety of factors, the Ontario fire service finds itself in a period of change. Increased community expectations coupled with reduced financial resources are forcing all communities to critically assess their fire protection needs and to develop new and innovative ways of providing the most cost effective level of service. A refocus on fire protection priorities is providing progressive fire departments and communities throughout Ontario with an exciting opportunity to enhance community fire safety. There is more to providing fire protection than trucks, stations, firefighters and equipment.

The Office of the Fire Marshal has developed the *Comprehensive Fire Safety Effectiveness Model* which can be used as a basis for evaluating fire safety effectiveness in your community. This model looks at community fire protection as the sum of eight key components, all of which impact on the fire safety of the community. Deficiencies in one of the components can be offset by enhancements in another component or components.

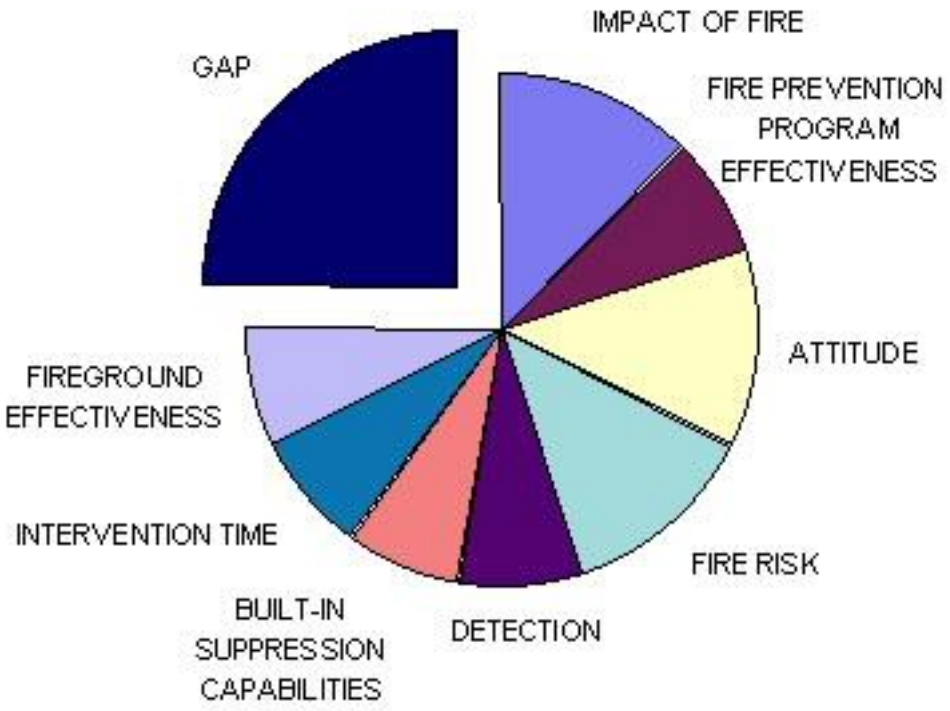
Community Master Fire Protection Plan

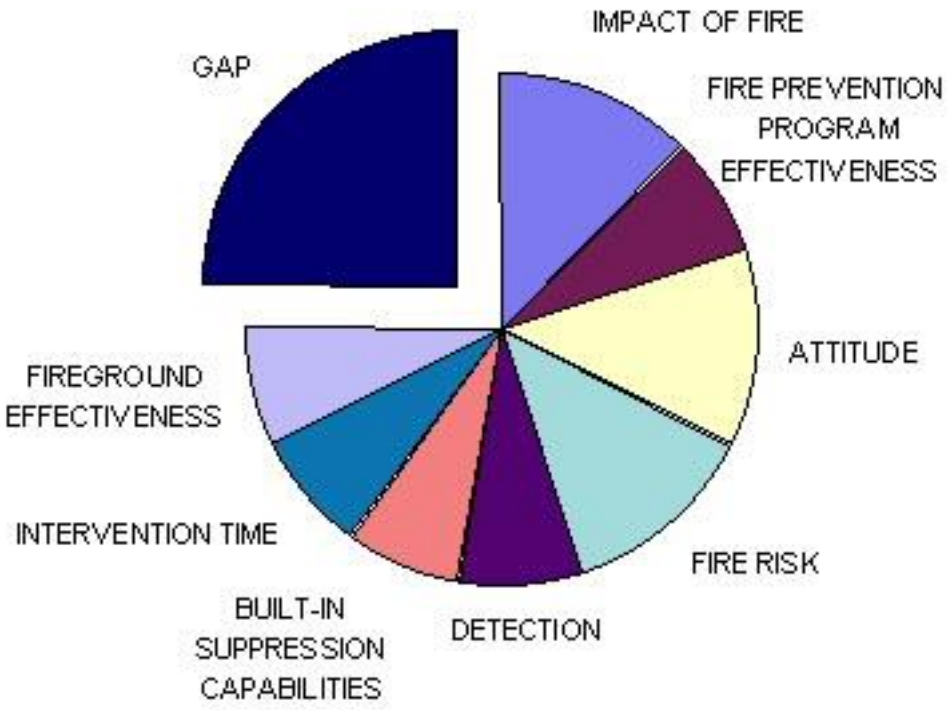
Every fire department should be guided by a master or strategic plan. This *Community Master Fire Protection Plan* traditionally focused on the identification of fire hazards and planning an appropriate suppression force response. Today, hazard or risk assessment has expanded well beyond the fire problem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

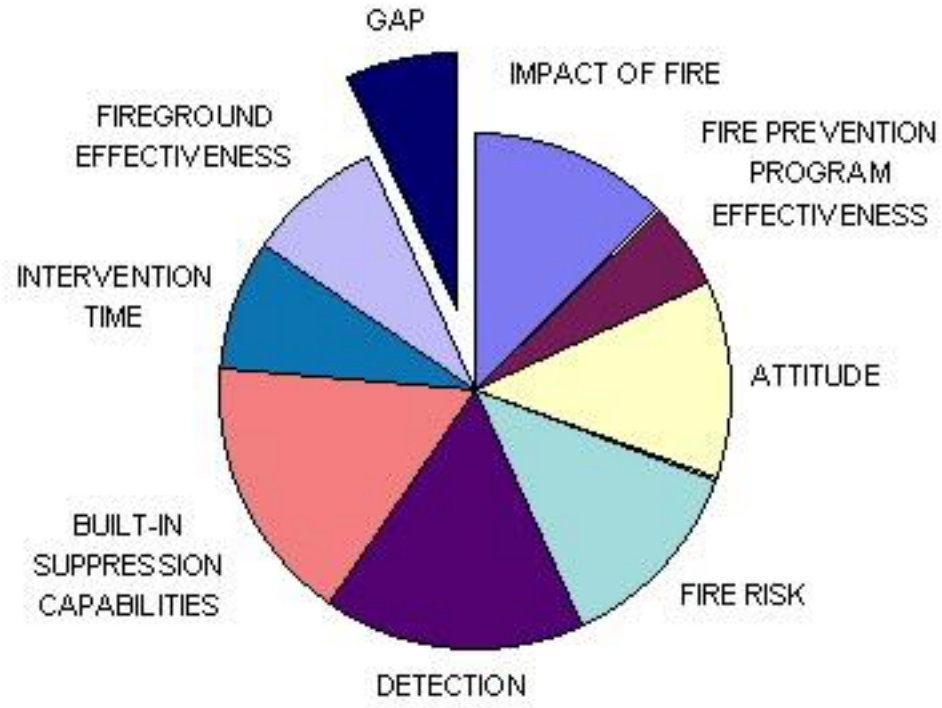


This chart shows each of the factors which make up the comprehensive model. Although the chart is divided equally, each factor will in reality contribute differently to the total level of protection provided to a community.

This chart shows how the comprehensive model can be applied to a typical fire department. The "gap" depicts the difference between the existing level of protection and the ideal.







This chart shows how the "gap" can be reduced by strengthening a number of factors in order to increase the overall level of protection provided to the community.

It is critical that the fire department be guided by a written philosophy, general goals and specific objectives which are consistent with the legal mission of the department and are appropriate for the community it serves. These should all be integral components of the Community Master Fire Protection Plan.

Application of the Comprehensive Fire Safety Effectiveness Model will enable municipalities to make informed choices by providing an objective and innovative approach to public fire protection - a new way of thinking. Communities are able to determine if the level of service provided matches the risk in the community.

1. **Impact Of Fire:**

The impact of fire in any community can be significant with far reaching consequences. Not only do fires result in deaths and personal injuries but they also cause substantial property and environmental loss. Often overlooked are factors such as the historical value of unique local properties as well as the potential for lost tax assessment. There are many communities in Ontario where the loss of a particular occupancy will have a serious impact on the local economy. Involvement in fire often has a negative psychological impact on those affected.

Every community should carefully assess the total impact of fire. This assessment should be used as a basis for a Community Master Fire Protection Plan that addresses all areas of community fire safety including fire prevention and life safety as well as the delivery of suppression and rescue services.

- Does your community have a property whose loss would result in a significant financial burden to the community?

- Does your community have a property whose loss would result in a significant impact of local employment?
- Does your community have a property which if involved in fire would pose a significant environment risk?
- Does the master fire protection plan adequately consider the impact of a major fire?

2. **Fire Prevention Program Effectiveness:**

- Perhaps the most important component of and community's fire protection services is the effectiveness of its fire prevention program. Legislation, regulations and standards pertaining to fire safety focus primarily on fire prevention. Enforcement of these codes is one of the most effective ways of reducing the loss of life and property due to fire. In addition, public fire safety education programs have the potential to substantially reduce the loss of life and property due to fire.

  Every community should strive to provide an adequate, effective and efficient program directed toward fire prevention, life safety, risk reduction of hazards, the detection, reporting of fire and other emergencies, the provision of occupant safety and exiting and the provisions for first aid firefighting equipment.

- Does your community have a fire prevention and public education policy that adequately addresses:

    - inspections?
    - public education?
    - code enforcement?
    - investigation?

- Does your community provide inspections upon request?
- Does the fire department respond to complaints?
- Does your community's fire prevention program address public life safety in structures from pre-construction planning until demolition through application of the Building Code and Fire Code?

3. **Public Attitude:**

North Americans tend to be more complacent about fires and the resulting losses than other parts of the industrialized world. Communities often accept the consequences of fire and provide community support. Comprehensive insurance packages are available to mitigate damages.

Communities need to assess the resident's attitudes toward fire to determine what role it plays in determining the extent of fire losses. Properly designed public fire safety education programs will significantly improve public attitudes toward the prevention of fire. This will result in lower fire losses.

Every community should assess public attitudes toward fire and life safety issues. This assessment should be used to develop and deliver public fire safety education programs to enhance community fire safety.

- Do the residents of your community demonstrate an interest in public fire safety?
- Is there a general awareness of fire safety in your community?
- Is there a sense of personal responsibility for one's own safety within the community?

4. **Fire Risk:**

The characteristics of your community affect the level of fire risk that needs to be protected against. Older buildings pose a different set of problems than newer buildings constructed to current construction codes. High rise, commercial and industrial occupancies each present unique factors, which must be considered. Construction, occupancy type, water supply, exposure risks, furnishings and the risk which the combination of these factors pose to the occupants must be assessed. The presence of effective built-in suppression and/or protection measures can reduce the fire risk.

36% of all structural fire alarms and 46% of all structural fire deaths in Ontario during the period 1990-1994 occurred in single family, detached, residential occupancies.

Every community should carefully assess its fire risk. The results of this risk assessment should be used as a basis for determining the level, type and amount of fire protection provided and should be a critical factor in the development of the community master fire protection plan.

- Has your community assessed the fire risk?
- Does your community have a master fire protection plan which takes into account the results of your fire risk analysis?
- Has the fire department identified all the possible actions it could take to reduce the number of fire incidents that occur in the community?
- Does your community planning process consider the impact of new developments and industries on the fire department?

5. **Detection Capabilities:**

The presence of early warning detection capabilities notifies occupants and allows them sufficient time to escape. It also allows for earlier notification of the fire department. Communities who encourage the widespread use of early warning detection systems have the potential of significantly reducing notification time, which, when coupled with effective fire department suppression, results in a corresponding reduction of loss of life, injuries and damage to property from fire.

Every community should develop and implement programs that promote the use of early warning detection systems in all occupancies. These programs should be a fire protection priority.

- Does your community have a program to ensure that all occupancies are provided with adequate early warning detection devices?

- Does your community have a program to ensure that residents are familiar with the importance and proper maintenance of early warning detection devices?
- Does your community promote the use of direct connect early warning detection devices in residential as well as commercial, industrial and assembly occupancies.

6. **Built-In Suppression Capabilities:**

Traditionally, the use of built-in suppression has been limited to fixed fire protection systems associated with assembly, commercial, industrial and manufacturing occupancies. Application of this concept has been limited in the residential environment. These systems, particularly the use of automatic sprinkler systems play an important role in minimizing the effects of fire by controlling its spread and growth. This enables the fire department to extinguish the fire more quickly and easily.

Although effective in newer buildings, it is often difficult if not impossible to provide for built-in suppression systems that effectively control fires in wall cavities and concealed spaces associated with certain older types of construction or reconstruction.

The use of built-in suppression systems should be a fire safety priority in all communities. Programs should be developed and delivered that promote the advantages of built-in suppression systems for residential, commercial, industrial and assembly occupancies.

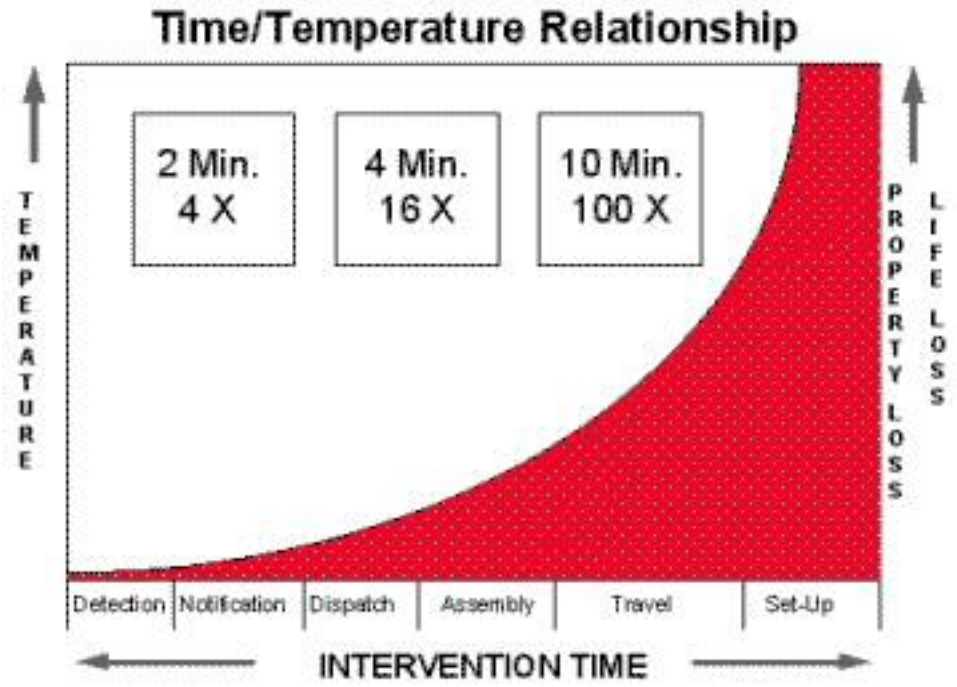
- Does your community promote the use of built-in suppression devices in all types of occupancies
    - residential?
    - commercial?
    - industrial?
    - assembly?
    - institutional?
- Does your community consider built-in suppression devices and early warning detection as an alternative to traditional concepts of fire protection?

7. **Intervention Time:**

This is the time from ignition until effective firefighting streams can be applied to the fire. There are many factors influencing this component of the model:

- the time required to detect the fire
- notification time from the public
- notification time to the firefighters
- preparation time for the firefighters to leave the station
- the distance between the fire station and the response location
- the layout of the community
- impediments such as weather, construction, traffic jams, lack of roads, etc.
- set-up time

Fire department intervention time is crucial in determining the consequences of a fire in terms of deaths, injuries and loss of property and damage to the environment. Effective fire prevention and public education programs can reduce intervention time which will result in increased fire department effectiveness.



Every community should develop and implement a range of programs and initiatives that reduce intervention time. These programs and initiatives should address all aspects of intervention time from the time required to detect the fire to the set-up time of the fire department.

- Are all occupancies in your community equipped with suitable smoke alarms and provided with fire emergency escape plans?
- Do all residents in your community know how to report a fire or other emergency?
- Does your community have a common fire emergency reporting number?
- Is the fire department dispatched by an appropriate dispatch facility?
- Does the community's master fire protection plan consider the different turn-out times for volunteer and/or full-time firefighters?
- Has the department instituted an appropriate fire department training and education program?
- Are all structures within the community clearly identified using an accepted numbering system?
- Has the department instituted a policy of having the closest fire department respond even though that fire department may be from another municipality?

8. Fireground Effectiveness:

The fireground effectiveness of the fire department has a wide range of benefits for your community. Not only does the fire department's performance affect the degree of damage to the environment and property, it also has a direct relationship to personal injury and death from fire. Many factors influence the effectiveness of any fire department. Included in these factors are:

- fire department organization
- community support of fire department
- firefighter availability
- firefighter and fire officer training
- adequate resources which are properly maintained
- time effective response to emergency incidents

The fire department should strive to provide an adequate, effective and efficient fire suppression program designed to control/extinguish fires for the purpose of protecting people from injury, death or property loss.

- Does your fire department have a comprehensive training program and evaluation system for all positions?
- Does the fire department have a system to ensure that an adequate number of trained personnel respond to all emergencies within a reasonable time period?
- Is your fire department provided with adequate resources to safely and effectively handle the risks it will be called upon to mitigate?
- Does the fire department use standard operating guidelines to define expected fire department actions for the wide variety of situations it might encounter?
- Does your fire department have automatic response agreements to guarantee an adequate level of personnel at all times?

The answers to the questions in this document will provide you with some indication of the level of fire safety in your community, however this is only the start. Application of the OFM Comprehensive Fire Safety Effectiveness Model will permit you to develop a plan for the safe, effective and economical delivery of fire protection services in your community.

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.

Further assistance is available from your local OFM representative

Appendix E: Extreme Fire Station Options

Below is an image of the interior finishing from Extreme Fire Station pamphlet and below is a conceptual floor plan for the SHFD.