

September 2020

Leeds Thousand Islands Fire Service



Fire Service Review and Modernization Plan



Developed by:
Emergency Management & Training Inc.
65 Cedar Pointe Drive, Suite 144
Barrie, ON L4N 9R3

EXECUTIVE SUMMARY

A fire service review and modernization plan (FSR) is a process of identifying a fire department's present status, and ascertaining a strategy for future goals and needs, along with assisting the department in making decisions in relation to more efficiently allocating its. This fire service review created for the Leeds and the Thousand Islands Fire Service (LTIFS) consists of a review of the community and the fire department, along with identifying present and future population statistics and anticipated growth of the community.

A review of past and present service levels was completed, keeping in mind the overall goals and expectations of the Department. Based on the review, a set of recommendations have been provided. To assist with prioritization and implementation, the recommendations provided by Emergency Management and Training Inc. have been broken down into the following timelines:

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

Ultimately, the implementation of the recommendations will depend on the Township of Leeds and the Thousand Islands (the Township) resources and ability to move forward with the associated recommendations contained within the document.

Through the utilization of best practices, including applicable standards and legislation, this report was prepared by completing an assessment of the following nine areas:

1. Community and Fire Service Overview
2. Planning – future community growth and related service needs
3. Risk Assessment of the community in relation to present and future service requirements
4. Fire Service Staffing
5. Fire Suppression Services
6. Facilities and Fire Service Agreements
7. Vehicles and Equipment
8. Emergency Management
9. Finance

Along with the previously noted nine areas, the report has addressed the scope of work as noted in the Township's Request for Proposal, which includes the following key components:

- Governance including by-laws, policies, procedures, provincial and federal legislation
- Administration

- Establishing and regulating By-law, applicable municipal, provincial, and federal legislations
- Emergency response including mutual aid, automatic aid, and fire protection agreements
- Current Master Fire Plan, Council's strategic priorities
- Simplified Risk Assessment/Community Risk Assessment profile
- Fire Prevention including public education, inspections, enforcement, and investigations
- Fire Suppression and Rescue operations including communication/dispatching services
- Training and Education including the Emergency Services Training Centre
- Firefighter safety, health, and wellness
- Fire station facility and location with response and cover mapping
- Apparatus and equipment
- Assessment of existing fire service facilities, equipment, and assets
- Maintenance program for apparatus and equipment
- Emergency Management program
- Human Resources/Leadership including staffing, organizational chart, workload, recruitment and retention, succession planning, promotional processes, etc.
- Reporting structure and requirements
- Finance/budget, including operational, capital, and reserve budgets, and development charges
- Potential revenue generation strategies
- Opportunities for innovative solutions

LTIFS is serviced by a Paid-on-Call (aka volunteer) fire service model that consists of four fire stations. The stations are in the communities of Lansdowne (Station 1), Seeley's Bay (Station 2), County Rd 32 (Station 3) and Lyndhurst (Station 4). In total, there are 75 highly dedicated volunteer fire service personnel dispersed throughout the four fire stations. LTIFS' day-to-day operations are managed by the Department's part-time Fire Chief, who is supported by a full-time Deputy Fire Chief/ Training Officer, along with a part-time Fire Prevention Officer.

The LTIFS responds to approximately 300 incidents for service per year. These incidents include, but are not limited to, fire-related incidents, medical assist, and motor vehicle collisions. These calls for service can equate to over 600 vehicle movements annually as more than one fire department vehicle may be dispatched from either the same or another fire station(s) to certain calls based on the severity of the incident and resource requirements.

To ensure that they are meeting the needs of the community and their staff, the Fire Chief and Council recognizes that it is necessary to conduct this fire service review for the intention of providing high-quality fire services to the residents and businesses of the community along with its visitors.

Based on the information received during our meetings, a review of supplied documentation and reference to industry standards and best practices, there is a total of 12 recommendations for consideration by the Fire Chief and Council to guide the Fire Department into the future.

A quick reference chart has been included within this Executive Summary, along with a more detailed chart that includes timelines for implementation and estimated costs found in Section 10.

Summary of Recommendations – Quick Reference Chart

Rec #	Recommendation	Estimated Costs	Suggested Timeline
1	<p>The present E&R By-law be reviewed, updated to reflect more recent changes, and presented to Council for approval.</p> <ul style="list-style-type: none"> The new update should include an outline of performance indicators as per NFPA. 	Staff time only	Short-term (1-3 years) and ongoing
2	<p>Organization – regular and consistent dissemination of information regarding LTIFS direction, priorities, communications internally and with Officer cadre, regular “Town Hall” style department meetings inclusive of all firefighters.</p>	Staff time only	Immediate
3	<p>LTIFS is approaching the point of requiring the equivalent of one full-time, dedicated Fire Prevention Officer.</p> <ul style="list-style-type: none"> This can also be accomplished in the interim through the use of a dedicated, part-time position, however, one that is regularly scheduled to accomplish specific fire prevention and education program hours and annual objectives. 15 to 20 hours per week, for a total annual allotment of 780 to 1,040 hours. Establish a rank for FPO commensurate with the responsibilities and authority required of the role. 	Estimated cost to implement either part-time or added time for firefighters \$20-30,000	Short to Mid-term (1-6 years)
4	<p>The Fire Chief review LTIFS inspection program to identify levels of desired frequency in relation to the inspections required under legislation as well as service level objectives as set by LTIFS.</p>	Staff time until a program is implemented	Short-term (1-3 years)
5	<p>LTIFS staff need to present the updated CRA to Council in 2020. Upon completion of the risk assessment, the Fire Chief provides Council with a draft policy for review and passage that outlines a proactive fire inspection program to address identified needs and expected outcomes. This</p>	Dependent on resource requirements to meet Fire Chief recommendations	Short-term (1-3 years) and ongoing

Rec #	Recommendation	Estimated Costs	Suggested Timeline
	<p>program should outline the building types and the frequency of inspections.</p> <ul style="list-style-type: none"> Should also identify what level of staffing is required to meet the FUS recommended inspection and the fire department recommended inspection program. To accomplish a staffing/hourly requirement, an assessment of recently conducted inspections and the time required to complete them is needed to create an anticipated costing for this program. 		
6	<p>An assessment of staffing to assist LTIFS with its records management and IT resources implementation (i.e. iPads and other electronic documentation) for responses as well as Training Centre administration and operations.</p>	Staff time	Short-term (1-3 years) and ongoing
7	<p>To assist with the fire prevention program including public fire safety education and inspection programs, a training matrix should be developed that details objectives and timings for all officers should be trained and certified to at least:</p> <ul style="list-style-type: none"> National Fire Protection Association 1031: Fire Inspector I National Fire Protection Association 1035: Fire and Life Safety Educator I 	Staff time for training	Short-term (1-3 years) and ongoing
8	<p>An annual training plan and multi-year training matrix to be developed, implemented, and assessed to ensure that the firefighters are completing the required training. To verify the training programs are meeting related NFPA (and other) training program recommendations, the following should be identified:</p> <ul style="list-style-type: none"> training programs that area appropriate for the services that LTIFS is providing number of hours required to meet the training needs 	The costs are mostly related to staff hours unless outside facilities or trainers need to be accounted for	Short-term (1-3 years) and ongoing

Rec #	Recommendation	Estimated Costs	Suggested Timeline
	<ul style="list-style-type: none"> training resources required including annualized costs joint partnerships with bordering fire departments, the OFM, and private organizations utilizing the Training Centre presented to Chief annually with key performance indicators monitor training compliance and updated business plan for Training Centre 		
9	<p>A review and overhaul of existing SOG format and creation of new SOG/Ps where needed. Consider secondment/hiring or contracting out this work as it requires significant time, effort, and consistency to complete in a reasonably short time frame.</p>	Up to \$10,000	Short-term (1-3 years) and ongoing
10	<p>To improve firefighter response reliability, expectations, retention, succession planning:</p> <ul style="list-style-type: none"> Consider hiring to maintain an overall roster to 100 firefighters. Review of the pay scale and structure for responses and training as well as officer rank-based pay structure for time spent on fire department related business. Consider review/replacement of the current 'Points' system. 	Increasing firefighter complement approx. \$45,000 in equipment in salaries. Pay scale review could cost \$15,000 per year.	Short-term (1-3 years)
11	The Fire Chief conduct an annual review of LTIFS and its response data in comparison to industry standards and surrounding departments as well as key performance indicators as established by LTIFS.	Staff time only	Short-term (1-3 years) and ongoing
12	Seeley's Bay fire station (#2) should be updated or relocated.	\$2.5 – 3 Million	Short to Mid-term (1-6 years)

Table of Contents

DEFINITIONS	11
INTRODUCTION	12
REVIEW PROCESS AND SCOPE	12
SCOPE OF REQUIREMENTS	12
PERFORMANCE MEASURES AND STANDARDS	14
PROJECT CONSULTANTS	15
SECTION 1: COMMUNITY AND FIRE DEPARTMENT OVERVIEW	17
1.1 COMMUNITY OVERVIEW	17
1.2 FIRE SERVICE COMPOSITION	19
1.3 GOVERNANCE AND ESTABLISHING & REGULATING BY-LAW	21
RECOMMENDATION(S).....	23
SECTION 2: PLANNING	25
2.1 THREE LINES OF DEFENCE	25
2.2 NATIONAL FIRE PROTECTION ASSOCIATION	26
2.3 FIRE UNDERWRITERS SURVEY (FUS)	26
2.4 STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS (SWOT)	27
2.5 STAKEHOLDER SURVEYS	29
RECOMMENDATION(S).....	32
SECTION 3: RISK ASSESSMENT	34
3.1 SIMPLIFIED RISK ASSESSMENT	34
3.2 INTEGRATED RISK MANAGEMENT APPROACH	36
3.3 COMMUNITY RISK ASSESSMENT – CURRENT AND FUTURE NEEDS	38
RECOMMENDATION(S).....	42
SECTION 4: FIRE DEPARTMENT DIVISIONS	44
4.1 ADMINISTRATION	44
4.2 FIRE PREVENTION AND PUBLIC EDUCATION	45
4.3 TRAINING AND EDUCATION	49
4.4 FIRE SUPPRESSION	51
4.5 TRAINING FACILITY	55
RECOMMENDATION(S).....	56
SECTION 5: FIRE SUPPRESSION RESPONSE AND DISPATCHING SERVICES	59
5.1 FIRE SUPPRESSION/EMERGENCY RESPONSE	59

5.2	RESPONSE DATA.....	64
5.3	SERVICE LEVEL STANDARDS – DISPATCHING SERVICES	67
	RECOMMENDATION(S).....	68
	SECTION 6: FACILITIES, VEHICLES, AND EQUIPMENT	70
6.1	FIRE STATION REVIEW	70
6.2	TRAINING FACILITIES	77
6.3	FIRE APPARATUS - NEW AND REPLACEMENT SCHEDULES	79
6.4	MAINTENANCE	85
	RECOMMENDATION(S).....	86
	SECTION 7: FIRE SERVICE AGREEMENTS	88
7.1	MUTUAL AID AND AUTOMATIC AID	88
	RECOMMENDATION(S).....	88
	SECTION 8: EMERGENCY MANAGEMENT	90
8.1	EMERGENCY MANAGEMENT PROGRAM	90
	RECOMMENDATION(S).....	90
	SECTION 9: FINANCE, BUDGETING, AND CAPITAL INVESTMENT PLAN	92
9.1	OPERATING BUDGETS.....	92
9.2	CAPITAL FORECASTS	92
9.3	RESERVE FUNDS	93
	RECOMMENDATION(S).....	93
	SECTION 10: CONCLUSION AND RECOMMENDATIONS	95
10.1	CONCLUSION	95
10.2	RECOMMENDATIONS AND ESTIMATED COSTS	95
	SECTION 11: APPENDICES	100
	APPENDIX A – DEFINITIONS AND REFERENCES	100
	APPENDIX B – FIRE UNDERWRITERS SURVEY, SUGGESTED INSPECTION FREQUENCY	102
	APPENDIX C – FIVE-STEP STAFFING PROCESS.....	103
	APPENDIX D – FIRE UNDERWRITERS SURVEY TECHNICAL DOCUMENT ON ELEVATED DEVICES.....	105
	APPENDIX E – CALL AND RESPONSE DATA FOR 2018 AND 2017	110
	APPENDIX F – OFMEM GUIDELINES	114
	PLANNING AND GROWTH PRACTICES.....	114
	STATION TRAINING PRACTICES.....	118
	SERVICE PROVIDERS - VOLUNTEER FIREFIGHTER STAFFING	120
	SELECTION OF APPROPRIATE FIRE PREVENTION PROGRAMS.....	122
	OPERATIONAL PLANNING: AN OFFICIAL GUIDE TO MATCHING RESOURCE DEPLOYMENT AND RISK	126
	SAMPLE ESTABLISHING AND REGULATING BY-LAW.....	129
	COMPREHENSIVE FIRE SAFETY EFFECTIVENESS MODEL CONSIDERATIONS.....	136

TABLES

TABLE #1: TLTI POPULATION BY YEAR..... 18
TABLE #2: FUS SUGGESTED INSPECTION FREQUENCY CHART..... 37
TABLE #3: NFPA 1720 STANDARD FOR VOLUNTEER FIRE DEPARTMENT RESPONSE TIMES 59
TABLE #4: FUS VEHICLE REPLACEMENT RECOMMENDATIONS 81
TABLE #5: APPARATUS REPLACEMENT SCHEDULE (AS NOTED BY LTIFS) 83

FIGURES

FIGURE #1: MAP OF TLTI RELATIVE TO OTHER COMMUNITIES IN THE UNITED COUNTIES OF LEEDS & GRENVILLE 18
FIGURE #2: LTIFS ORGANIZATIONAL CHART..... 20
FIGURE #3: MAP OF FIRE STATION LOCATIONS..... 21
FIGURE #4: FIRE RESPONSE/PROPAGATION CURVE 61
FIGURE #5: RESPONSE DATA FOR 2019 65
FIGURE #6: 2019 TOTAL CALLS PER STATION 66
FIGURE #7: MAP #1 – LOCATION OF THE FIRE STATIONS 71
FIGURE #8: MAP #2 – TRAVEL TIMES OF 10 AND 14-MINUTES FROM THE FIRE STATIONS 72

DEFINITIONS

Immediate	Recommendations that should be addressed urgently due to the legislative or health and safety requirements
Short-term	Recommendations that should be addressed within 1 – 3 years
Mid-term	Recommendations that should be addressed within 4 – 6 years
Long-term	Recommendations that should be addressed within 7 – 10 years
ARFF	Aircraft Rescue and Firefighting
CAO	Chief Administrative Officer
CEMC	Community Emergency Management Coordinator
CFAI	Commission on Fire Accreditation International
CRA	Community Risk Assessment
EMCPA	Emergency Management & Civil Protection Act
EOC	Emergency Operation Centre
FESO	Fire and Emergency Services Organization
FPPA	Fire Prevention & Protection Act
FSR	Fire Service Review
FUS	Fire Underwriters Survey
HFSC	Home Fire Sprinkler Coalition
IMS	Incident Management System
IRM	Integrated Risk Management Approach
LTIFS	Leeds and the Thousand Islands Fire Service
MFP	Master Fire Plan
MVC	Motor Vehicle Collision
NIOSH	National Institute for Occupational Safety & Health
NFPA	National Fire Protection Association
OFC	Ontario Fire College
OFMEM	Ontario Fire Marshal's Office and Emergency Management
PFSG	Public Fire Safety Guideline
SOG	Standard Operating Guideline
SOP	Standard Operating Policy
SRA	Simplified Risk Assessment
SWOT	Strengths, Weaknesses, Opportunities, Threats
TLTI	Township of Leeds and the Thousand Islands

INTRODUCTION

Review Process and Scope

Emergency Management & Training Inc. (EMT) has based its review process on the Township's initial Request for Proposal and the response document submitted by Emergency Management & Training Inc. The specific scope of work noted (in the Request for Proposal) was reviewed. The Fire Service Review (FSR) was completed by utilizing best practices, current industry standards, and applicable legislation as the foundation for all work undertaken. Emergency Management & Training Inc. also used both quantitative and qualitative research methodologies to develop a strong understanding of current and future needs and circumstances of the community.

Scope of Requirements

As noted in the original Request for Proposal, the following generally describes the responsibilities of the Consultant. The Plan is to include a high-level review, long-term planning, and recommendations, where appropriate, on the following key areas:

- Governance including by-laws, policies, procedures, provincial and federal legislation
- Administration
- Establishing and regulating By-law, applicable municipal, provincial, and federal legislations
- Emergency response including mutual aid, automatic aid, and fire protection agreements
- Current Master Fire Plan, Council's strategic priorities
- Simplified Risk Assessment/Community Risk Assessment profile
- Fire Prevention including public education, inspections, enforcement, and investigations
- Fire Suppression and Rescue operations including communication/dispatching services
- Training and Education including the Emergency Services Training Centre
- Firefighter safety, health, and wellness
- Fire station facility and location with response and cover mapping
- Apparatus and equipment
- Assessment of existing fire service facilities, equipment, and assets
- Maintenance program for apparatus and equipment
- Emergency Management program
- Human Resources/Leadership including staffing, organizational chart, workload, recruitment and retention, succession planning, promotional processes, etc.
- Reporting structure and requirements
- Finance/budget, including operational, capital, and reserve budgets, and development charges
- Potential revenue generation strategies
- Opportunities for innovative solutions

To accomplish the scope of requirements, EMT will:

- Review the Establishing and Regulating by-law.
- Review applicable municipal, provincial, and federal legislations.
- Review planning department documents regarding community and areas of jurisdiction growth projections.
- Review the Simplified Risk Assessment, MFPIIS, Council's strategic priorities and other pertinent documents.
- Review the Community Risk Profile including community building stock, industry, care occupancies, transportation networks, etc.
- Review current service agreements with neighbouring municipalities and any other current documents.
- Gather information on operational requirements including past and current response statistics (call volumes/response times) to analyze for trends, staff availability/needs and response capabilities, etc.
- Review service administration including staffing, organizational structure, policies and procedures, administrative support, record keeping and information management/technology, purchasing and inventory control, public and media relations and customer service.
- Tour the Leeds 1000 Islands Fire Stations conducting a location/response analysis.
- Examine fire vehicles, apparatus and equipment including the maintenance program.
- Review Fire Service policies, procedures and emergency response operational guidelines, training programs and records.
- Collect information on the Fire Prevention Program including education programs, inspection reports/data, enforcement data, and investigations.
- Identify and compare industry best practices relating to fire and emergency services performance measurement.
- Review current job descriptions, staff recruitment and retention practices, promotional policy, succession planning and demographics.
- Review the operational and capital budgets along with reserves and current revenue generation programs within the fire department and the Township (development fees).

Based on the previously noted criteria, through meetings with the Fire Chief and other stakeholders, the consulting team was able to complete a thorough review of elements that are working well and areas requiring improvement within the LTIFS. Data provided by the Fire Service was also reviewed in relation to all the previously noted items contained in the Township's request for proposal.

Performance Measures and Standards

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

- The Ontario Fire Marshal's Office and Emergency Management (OFMEM) Public Fire Safety Guidelines.
- *The Fire Prevention and Protection Act* and its subordinate regulations, including the Ontario Fire Code O. Reg 213/07, Mandatory Assessment of Complaints and Requests for Approval O. Reg 365/13, and Mandatory Inspection – Fire Drill in Vulnerable Occupancy O. Reg 364/13.
- Office of the Fire Marshal and Emergency Management's (OFMEM) Integrated Risk Management program.
- The *Ontario Health and Safety Act*, with reference to the National Institute for Occupational Safety and Health (NIOSH).
- Ontario Fire Service – Section 21 Guidelines:
 - The Section 21 Committee is based on Section 21 of the *Ontario Occupational Health and Safety Act*. This committee is charged with reviewing industry safety concerns and developing recommended guidelines to reduce injuries for the worker.
- The National Fire Protection Association (NFPA) standards:
 - NFPA 1001 – Standard for Fire Fighter Professional Qualifications
 - NFPA 1002 – Standard for Fire Apparatus Driver/Operator 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 Fire Setter Intervention Specialist and Youth Fire Setter Program Manager Professional Qualifications
 - NFPA 1041 – Standard for Fire Service Instructor Professional Qualifications
 - NFPA 1061 - Professional Qualifications for Public Safety Telecommunications Personnel
 - NFPA 1072 – Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications
 - NFPA 1201 – Standard for Providing Fire and Emergency Services to the Public

- NFPA 1221 – Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems
- NFPA 1500 – Standard on Fire Department Occupational Safety, Health, and Wellness Program
- NFPA 1521 – Standard for Fire Department Safety Officer Professional Qualifications
- NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments
- NFPA 1730 – Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations
- NFPA 1901 – Standard for Automotive Fire Apparatus
- NFPA 1911 – Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles
- The Commission on Fire Accreditation International (CFAI), which is a program that promotes fire service excellence by evaluating a fire department based on related National Fire Protection Association standards, local legislation, and industry best practices (the parent organization for Commission on Fire Accreditation International is the Centre for Public Safety Excellence.
 - This program has been adopted by many fire departments in Canada as a measure of best practices. Within Ontario, Toronto, Guelph, Kitchener, and Ottawa are just a few fire departments that have obtained accreditation from the Commission on Fire Accreditation International.
- Fire Underwriters Survey (FUS) technical documents

Project Consultants

Although several staff at Emergency Management & Training Inc. were involved in the collaboration and completion of this Plan, the overall review was conducted by:

- Darryl Culley, President
- Phil Dawson, Fire Service Consultant
- Rick Monkman, Fire Service Consultant

Together, the team has amassed a considerable amount of experience in all areas of fire and emergency services program development, review, and training. The Emergency Management & Training Inc. team has worked on projects that range from fire service reviews, creation of strategic and Master Fire Plans, and development of emergency response programs for clients.

SECTION 1- Community and Fire Department Overview

1.1 Community Overview

1.2 Fire Service Composition

1.3 Governance and Establishing &
Regulating By-law

SECTION 1: COMMUNITY AND FIRE DEPARTMENT OVERVIEW

This Fire Service Review for the LTIFS analyses and identifies current and probable community fire risks and needs over the next 10 years and beyond. This will assist the Fire Chief with future planning relating to staffing and response, fire and life safety programming, and asset management. To ensure a comprehensive review is conducted, this review has examined and researched all aspects of LTIFS operations including planning, fire prevention, training and education, communications, apparatus and equipment, human resources, station suitability and location, and large-scale emergency preparedness.

1.1 Community Overview

Leeds and the Thousand Islands is a township located within the United Counties of Leeds and Grenville. The Township is located along the Saint Lawrence River and extends north into rural hamlets and villages. Formerly, this township was divided into three separate townships: Leeds, Lansdowne, and Escott. These townships amalgamated to form the current Township of Leeds and the Thousand Islands.

The Township of Leeds and the Thousand Islands (TLTI) is a diverse community in Eastern Ontario with the 1000 Islands and St. Lawrence Seaway along its southern boundary and the Rideau Canal and lock system along its northern boundary.

The Township represents four distinct urban areas of Lansdowne, Lyndhurst, Rockport, and Seeley's Bay, numerous hamlets, and expansive countryside. While agriculture and tourism are the economic drivers, a range of commercial and industrial businesses are located within the urban areas. The population is approximately 9,465 permanent residents, with thousands of seasonal residents and tens of thousands of visitors to the region every year. The median age of TLTI is 50 years. The largest population of Leeds and the Thousand Islands is the age group between 60 and 64 years old, with 62.98% of the population are in the working age group between 15 to 64 years old. The median household income is \$76,300 per year which is greater than the national household median income.

Located approximately 2.5 hours northeast of Toronto, the Township is approximately 613 km² in land area with a population density of 15.5 people per square kilometre.¹

¹ Townfolio website, <https://townfolio.co/on/leeds-and-the-thousand-islands/demographics> accessed June 2020

FIGURE #1: Map of TLTI Relative to Other Communities in the United Counties of Leeds & Grenville



The growth of TLTI is growing at a rate of 0.29% per year over the past 15 years from 2001 to 2016. In the last two censuses, its population grew by 188 people. Average growth rate is not expected to deviate from past experience in the next 10 to 15 years.³

TABLE #1: TLTI Population by Year

2019	2026 (estimated)	2036 (estimated)
9,465	9,810	10,400 ⁴

² Townfolio website; <https://www.leeds1000islands.ca/en/governing/County-and-Jurisdiction.aspx#>; accessed June 2020

³ Townfolio website; <https://www.leeds1000islands.ca/en/governing/County-and-Jurisdiction.aspx#>; accessed June 2020

⁴ LTI Planning department discussion; July 2020

As such, it is anticipated that call volumes will increase slightly in stride with the marginal population increase. With an incident volume of up to 350 calls per year, this equates to a present ratio of 27 calls per 1,000 population. With everything being relatively constant, this would mean that LTIFS could see approximately 385 calls per year as the population grows to approximately 10,400 over the next 10+ years.

The Township is comprised mainly of residential, farming, some general commercial building such as stores, restaurants, and offices, along with some light industry. There are major transportation routes as well as the challenge of water and ice rescue along the shores and water routes.

1.2 Fire Service Composition

As previously indicated, the Township covers an area of approximately 613 km² with a population of approximately 9,465 people and have responded up to 357 incidents per year out of the four fire stations.

2019 – 242 calls

2018 – 357 calls

2017 – 317 calls

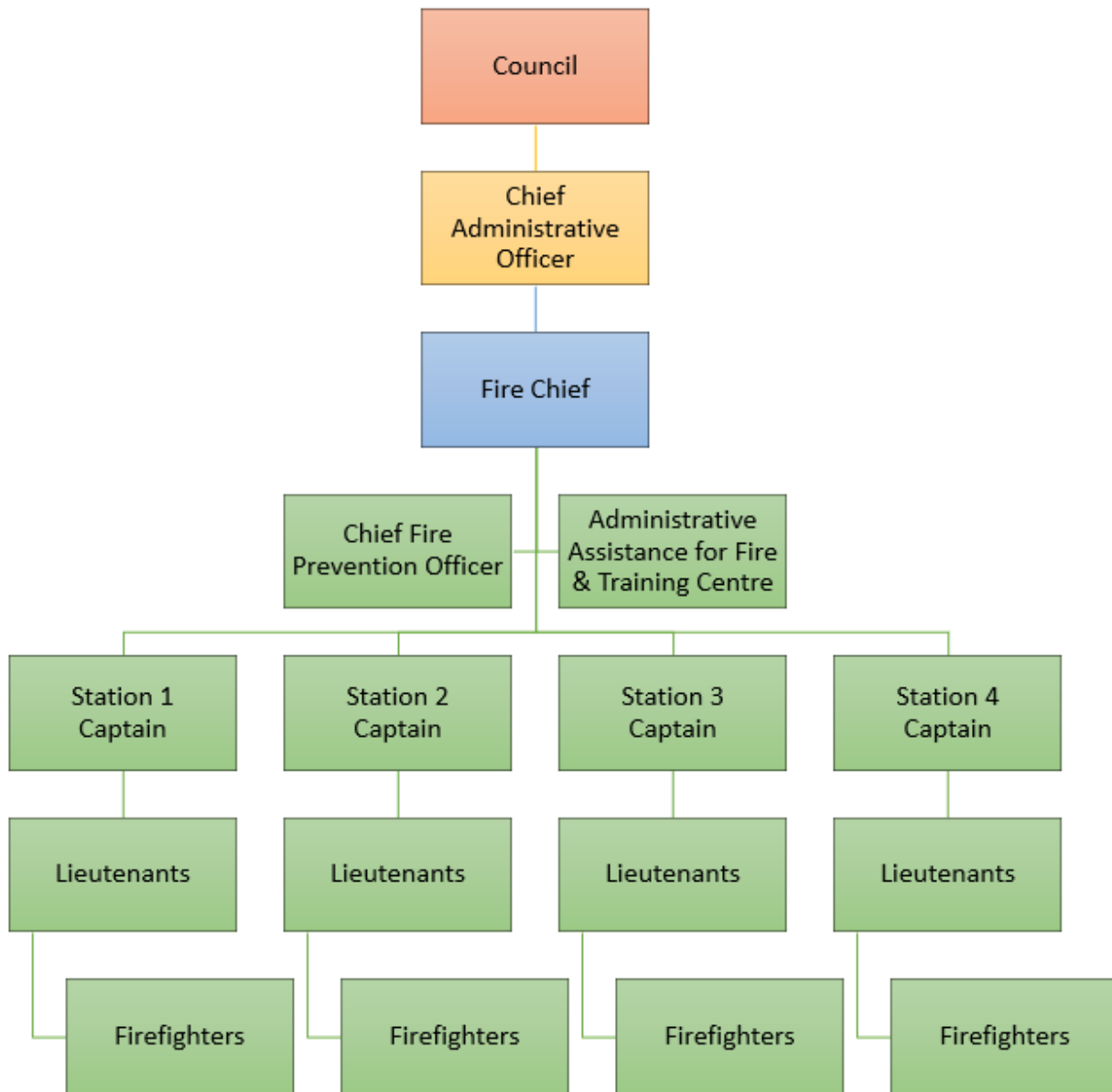
These calls range from fires, to medical assist, to motor vehicle collisions, and the demand can vary based on weather conditions (e.g. storms, heat waves, dry conditions), highway traffic and road conditions, etc.

The organizational structure of the LTIFS is comprised as follows:

- Part-time Fire Chief
- Full-time Deputy Fire Chief/Training Officer
- Part-time (seconded) Prevention Officer
- 74 Paid-on-Call Firefighters

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

FIGURE #2: LTIFS Organizational Chart

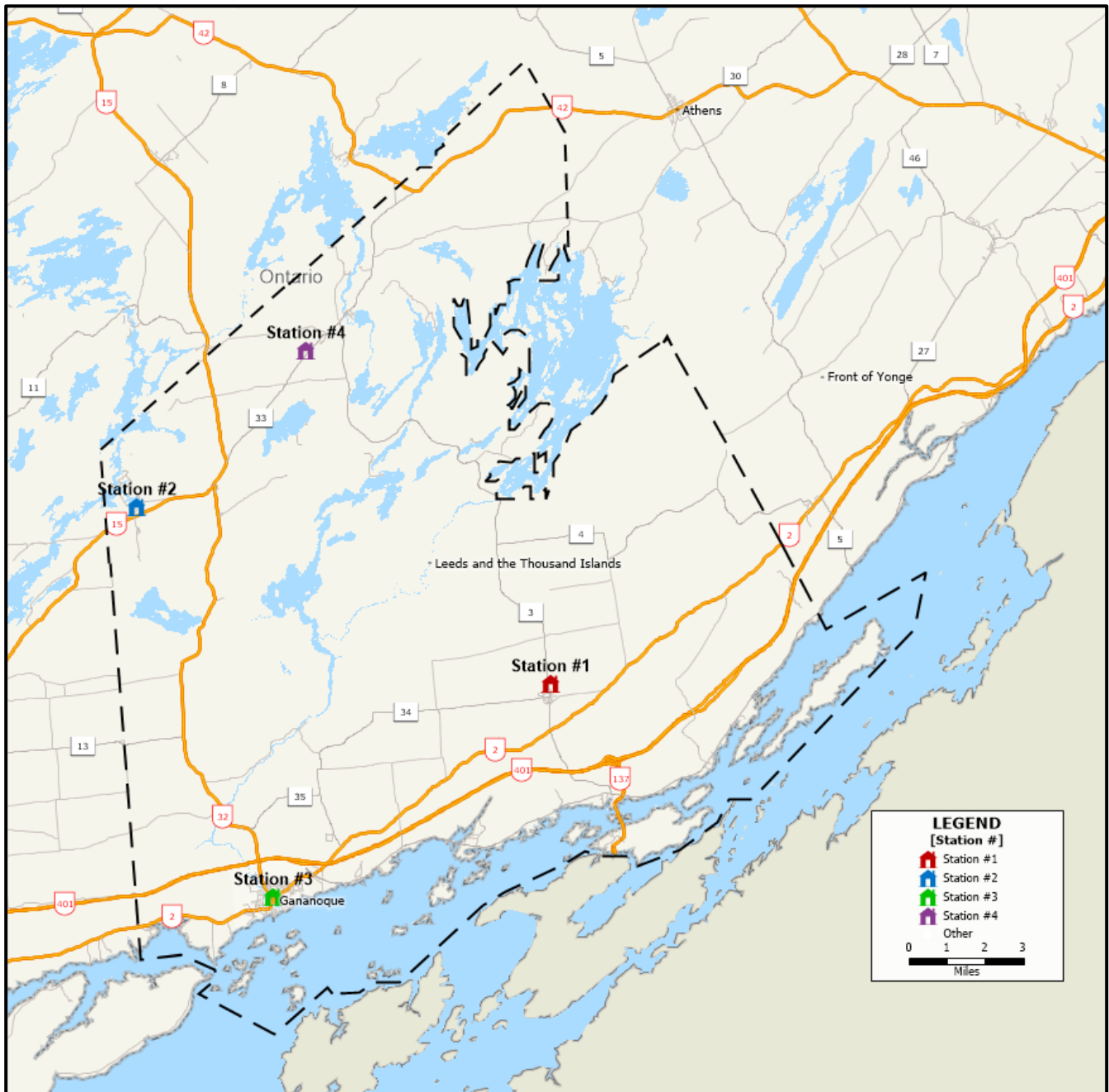


The Township's fire department is comprised of four fire stations:

- Station #1 – Lansdowne Station
- Station #2 – Seeley's Station
- Station #3 – Gananoque Station
- Station #4 – Lyndhurst Station

Each fire station has a complement of Paid-on-Call firefighters that respond to calls for service on a 24/7 basis.

FIGURE #3: Map of Fire Station Locations



1.3 Governance and Establishing & Regulating By-law

The current Establishing & Regulating By-law (E&R) was last updated in 2018 which makes it relatively current. However, it does need updating to reflect LTIFS reporting structure (including new full-time Deputy Fire Chief position) and performance indicators. This by-law is the guiding document that outlines such things as what services the Department is expected to provide to the community. It is therefore recommended that this document be reviewed on an annual basis or as significant changes

occur to the community to ensure that the noted services levels, service expectations, organizational chart, and authority of the Fire Chief are properly aligned with the service needs of the community.

As part of any by-law update process, the draft should be vetted through the Township solicitor prior to going to council.

No definitive response time expectation criteria are noted in the Department's E&R By-law. The National Fire Protection Association (NFPA) and the Commission on Fire Accreditation International (CFAI) recommend that some type of assessment be completed to evaluate a baseline for a department's response time goal. To accomplish this, the CFAI recommends that a minimum of the past three years' response times be reviewed. This review will offer an understanding of how the Department has been performing, along with identifying areas for possible improvement in relation to station location and vehicle and staffing distribution. More information on response times will be covered in Section 5 of this report.

Recommendation(s)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
1	The present E&R By-law be reviewed, updated to reflect more recent changes, and presented to Council for approval. <ul style="list-style-type: none"><li data-bbox="310 457 935 531">• The new update should include an outline of performance indicators as per NFPA.	Staff time only	Short-term (1-3 years) and ongoing

SECTION 2 – Planning

- 2.1 Three Lines of Defence
- 2.2 National Fire Protection Association Standards 1201
- 2.3 Fire Underwriters Survey
- 2.4 Strengths, Weaknesses, Opportunities, and Threats
- 2.5 Stakeholder Surveys

SECTION 2: PLANNING

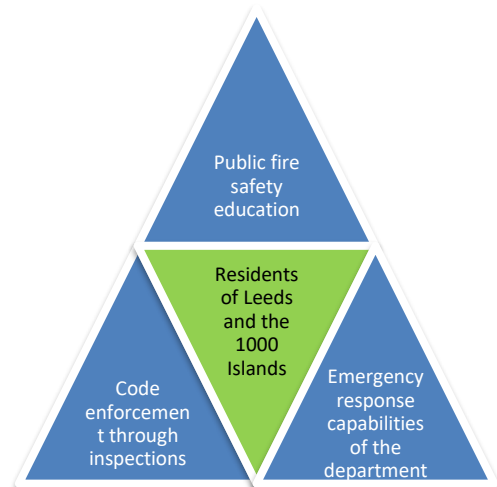
Planning is a key function of any organization and should be done with a focus on the present needs of the community, coupled with its future growth and how this will affect the service demands on the fire department. The initial phase of such planning efforts is to identify the strengths, weaknesses, opportunities, and threats affecting the department and the community it serves.

2.1 Three Lines of Defence

The Office of the Fire Marshal and Emergency Management (OFMEM) have identified “Three Lines of Defence” to be utilized by all fire departments in Ontario when planning to meet the needs of the community.

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

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



In conjunction with the Three Lines of Defence, a key industry standard that outlines goals and expectations for a fire department is the National Fire Protection Association (NFPA). These standards are not mandated but do 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.

2.2 National Fire Protection Association

In 2013, the Province of Ontario adopted a move to the NFPA Standards and away from the Ontario Fire Service Standards. To assist with Emergency Management & Training Inc.'s review and recommendations, reference has been made to a key NFPA standard that identifies the services that should be offered and how they are to be delivered based on the composition of a fire department.

National Fire Protection Association Standard 1201 – Standard for Providing Fire and Emergency Services to the Public

Section 4.3.5 notes:

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

To accomplish this, a Fire and Emergency Services Organization (FESO) must ensure open and timely communications with the Chief Administrative Officer (CAO) and governing body (Council), create a masterplan for the organization, and ensure there are mutual aid and automatic aid programs in place, along with an asset control system and maintenance program.

To provide a fire department clearer focus on what the ultimate goals for emergency response criteria are, the NFPA suggests that response times should be used as a primary performance measure in fire departments. NFPA 1720 refers to goals and expectations for Volunteer Fire Departments and has been incorporated into the evaluation of the fire department's response and staffing needs. More discussion in relation to these two standards will be presented in Sections 4 and 5.

2.3 Fire Underwriters Survey (FUS)

FUS 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. The insurance rates are based on the score that a community receives founded on such things as the fire department assessment. This

assessment included a review of apparatus, distribution of companies/fire stations, staffing, training, maintenance, pre-incident planning, etc.

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

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

2.4.1 Strengths

- Basic fire prevention and code related inspections programs are in place throughout the Township by LTIFS personnel.
- Training programs are in the process of being updated by the recently added position of full-time Deputy Fire Chief/Training, with oversight from the part-time Fire Chief.
- LTIFS has strong relationships with neighbouring departments and a history of cooperative services.

2.4.2 Weaknesses

- LTIFS, as with many Paid-on-Call fire departments, is challenged when it comes to having sufficient firefighter numbers for response as well as retention. This is an area that needs to be monitored on a constant basis to identify how many volunteers respond, or if there are times that the Department was unable to muster the appropriate number of personnel for large-scale incidents such as house fires or rescue situations. Addressing retention and succession planning needs should be a significant consideration.

Although the future growth projections do not indicate a large amount of growth in population, service demands could still increase due to an aging population and aging infrastructure, along with an increase in transportation/vehicular traffic passing through the Township. For example, while the median age of the population in Ontario is 41.3 years, the median age in the Township is 50.5 years, with the largest percentage of the population being 60 – 64 years old.

- The current part-time Fire Prevention Officer is allocated irregular and inconsistent hours a week creating a challenge to meet the required responsibilities and should be re-evaluated. This is an important position due to prevention needs and expectations outlined in such documents as the FPPA, NFPA, as well as a risk management component.

- Station #2, Seeley’s Bay, is outdated and in need of repairs/upgrades. Given the fact that there is also “community space” apportioned for this facility, consideration and planning is recommended for renovation, replacement and/or relocation that would best serve the community as well as align with LTIFS overall service level response needs.

2.4.3 Opportunities

- LTIFS has region-wide mutual aid and fire service agreements in place in which it can call on neighbouring fire departments for assistance whenever resources are exhausted and/or there is an inability to handle the situation in an efficient and effective manner.
 - This type of resource is not meant to supplement LTIFS resources on a regular basis. Mutual aid is to be used when no other options are available, such as Automatic Aid and Fire Services Area agreements. Further monitoring and updating of Fire Service Area agreements should be ongoing to identify if any adjustments need to be implemented as the community grows.

2.4.4 Threats/Challenges

- Major emergencies stressing the available Paid-on-Call suppression staffing and equipment must be considered as the community’s population continues to grow and age. This is a challenge that needs to be considered by most communities in the Province.
- The threat of weather patterns is a challenge for communities to deal with the so called “100-year storm”. Due to changes in climate, inclement weather incidents, such as freezing rain/ice storms are becoming more commonplace and need to be part of the emergency response program for each community. This change in climate conditions, along with the resulting frequency and severity of incidents, has also predicated the need for a larger response component to these emergencies.
- Daytime response by the Paid-on-Call firefighters is a challenge due to their other commitments, such as full-time jobs within or outside of the community. This is a challenge for most fire departments that depend on responses from the volunteer firefighters.
 - As previously noted, the level of response should be monitored to identify if any issues exist.
- In 2019, the Office of the Fire Marshal and Emergency Management (OFMEM) introduced a new regulation to the *Fire Protection and Prevention Act (FPPA)*:
 - Conducting a community risk assessment every five years

Note: During the initial update of the FPPA, a specific regulation of firefighter certification was presented but has been put into abeyance for review to make this regulation more achievable by both

career and volunteer fire departments. It is anticipated that this firefighter certification regulation will be reintroduced sometime in the near future. As such, all fire departments should continue to identify this type of training as part of their present and future (related) training programs.

All these noted challenges need to be monitored, evaluated, and reported to Council by the Fire Chief to ensure that LTIFS is meeting the needs and expectations of the community.

2.5 Stakeholder Surveys

To get a complete understanding of how well LTIFS is meeting the needs of its staff and the community, and to assist the Township's Council in making strategic decisions for the future of the community, surveys and interviews were conducted.

The interviews resulted in the identification of the following key points/concerns:

- The top three major challenges for LTIFS are:
 - Continuing to meet the needs of the community with the present set up of the fire stations, along with several fire service agreements
 - Staffing and retention levels and related response times
 - Changes to Provincial legislation impacting service standards and costs
- If there continues to be contracts for fire services, the go-forward contracts must clearly establish performance targets and measurement of service standards that are regularly reported.

Overall, the interviews were quite positive about the services being offered by LTIFS. The primary themes we heard were to ensure that the LTIFS continues to ensure it is meeting the community needs and can continue to provide a quality service. This quality service should be through cost effective methods, whether that is through the utilization of more Paid-on-Call firefighters or other fire service agreements.

To get a clear understanding of how well LTIFS is meeting the needs of its staff and the community, surveys were conducted with both the internal staff of the LTIFS and external stakeholders of the Township, along with survey-style feedback from members of Council.

In addition to the staff surveys, information gathering meetings with LTIFS Officers and Chief Officers were held during the month of June 2020. The community survey was advertised through local media and was set up on the Township's website (in the form of an electronic survey).

It should be noted that given the COVID-19 crisis happening at the time of the Fire Service Review (FSR) process, heavy reliance was contingent on the surveys, remote teleconferences, and virtual

meetings, as well as electronic information sharing to ensure the significant FSR process was completed within the required timeframes.

2.5.1 Internal Surveys

During the FSR process, feedback was gathered from internal staff, which included firefighters, officers, Administration, Training and Fire Prevention.

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

- The majority of the staff are proud of the service that they offer to the community and believe that the community feels that they are served by professional and dedicated firefighters.
- Generally, the respondents expressed that they have a good team, along with a variety of equipment and apparatus to do their jobs.
- The challenge “themes” that emerged from the surveys where the proactive activities of prevention and education; effective leadership including communication and prioritizing of LTIFS goals and objectives; succession planning and officer development; volunteer firefighter numbers and retention; and the assurance of properly trained and equipped staff in meeting response challenges;
- The services that were consistently mentioned that are priority to the community are:
 - Firefighting
 - Technical Rescue (i.e. motor vehicle accidents, hazardous materials incidents)
 - Community outreach/public education
 - Public Assist

2.5.2 External Surveys and Stakeholder Meeting Results

Input from the community is vital, giving the LTIFS an accurate indication of how the public perceives the Department and suggests areas for improvement from those with first-hand interaction with the Department.

The following input was received:

- Most respondents see the LTIFS as a dedicated and professional service
- The top three priorities noted by external respondents are:
 - That the LTIFS responds in a timely manner to calls for assistance
 - The presence of the LTIFS within the community in relation to public education and related safety training
 - The cost of the fire service
- The top three services noted by external respondents are:

- Firefighting, emergency preparedness
- Rescue (i.e. motor vehicle accidents)
- Medical assist and response
- In relation to what is needed over the next 10 years, the top responses were:
 - More staff to meet the growing demands of the community in Prevention
 - More public safety education and attendance at community events
 - Updated and well-equipped fire stations and equipment to meet the needs of the community

The internal and external surveys and focus group meetings were positive in relation to the services being offered by LTIFS. The primary focus we heard (both internally and externally) was ensuring that the LTIFS continues to work on being an effective, efficient, and communicative organization as the community and service level requirements grow so that LTIFS can continue to provide a quality service to the community. Therefore, regular, and consistent dissemination of information regarding LTIFS direction, priorities, communications internally and with Officer cadre, regular “Town Hall” style department meetings inclusive of all firefighters is recommended.

Recommendation(s)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
2	Organization – regular and consistent dissemination of information regarding LTIFS direction, priorities, communications internally and with Officer cadre, regular “Town Hall” style department meetings inclusive of all firefighters.	Staff time only	Immediate

SECTION 3 – Risk Assessment

- 3.1 Community Risk Assessment – Current and Future Needs
- 3.2 Simplified Risk Assessment
- 3.2 Integrated Risk Management Approach

SECTION 3: RISK ASSESSMENT

The most effective ways to reduce injuries, death, and property damage due to fire are through public education, inspections, and enforcement. The fire prevention program addresses these key components of fire safety which starts with conducting a community risk assessment.

3.1 Simplified Risk Assessment

In 2006 the Ontario Fire Marshal published Public Fire Safety Guideline, PFSG 04-40A-03 recommending municipalities develop Simplified Risk Assessments:

The simplified risk assessment (SRA) and ensuing fire concern profile will assist in identifying the degree to which these activities are required in accordance with local needs and circumstances. The simplified risk assessment is made up of the following components:

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

Conducting a simplified risk assessment 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.

3.1.1 Current Condition

Emergency Management & Training Inc. has conducted a Community Risk Assessment as part of the Fire Service Review Process, which should be presented to Council in 2020 along with this report.

- 1) **Bodies of Water:** Implement water safety public education initiatives, programs, and response protocols. Implement water safety public education initiatives, programs, and protocols.

- 2) **Technical Rescues and Hazardous Materials:** implement training and additional resources implement training, provide resources and consider response agreements with outside agencies.
- 3) **Structure Fires:** implement proactive safety and education programs as well as increased inspections and working with allied agencies on origin and cause determination.
- 4) **LTIFS:** Increased fire cause investigation training.
- 5) **Illegal Secondary Suites/Apartments:** implement a by-law addressing secondary suites. Develop a registry. Develop and deliver proactive educational training.

Many of the concerns noted in the previous risk assessment still exist today and need to be re-evaluated within the new community risk assessment being conducted at the time of this Fire Service Review.

LTIFS staff are keenly aware that a regular assessment of the community, based on present and future fire risks, needs to be conducted. In keeping with the new Provincial regulations and the NFPA 1730, it is recommended that LTIFS staff present an updated assessment to Council in 2020 and every five years thereafter.

In relation to its fire prevention and public education initiatives, LTIFS does not have a full-time Prevention Officer who functions as the Fire Prevention/Public Education Officer for the community. As such, LTIFS must consider the implementation of a full-time fire prevention and public education position as well as greater use of the firefighters and officers. By ensuring that the officers are certified in the related NFPA fire inspection standards, LTIFS would be promoting a more comprehensive fire prevention and public education program.

There are minimum fire prevention programs required for a community under the *Fire Protection and Prevention Act*. The minimum acceptable level that a municipality must provide includes the following:

- A Community Risk Assessment (every five years)
- A Smoke Alarm/Carbon Monoxide Program
- Fire Safety Education materials distributed to residents/occupants
- Inspections upon complaint or Request to Assist with code compliance (including any necessary code enforcement)
- Vulnerable Occupancy annual inspections and drills

Additional programs may also be required based upon the risks identified by the needs analysis conducted by the fire department, with consideration relating to available resources to implement the recommended programs. The FUS organization recommends the utilization of one full-time,

dedicated fire prevention/public education officer per 15,000 to 20,000 population. Based on this FUS suggestion, LTIFS is approaching the point of requiring the equivalent of the one full-time, dedicated Fire Prevention Officer. This can be also accomplished through the use of dedicated part-time staff, who are scheduled to accomplish specific fire prevention/public education program hours and objectives. The utilization of the present complement of firefighters is also an option to be considered to support this objective.

3.1.2 Preparing for Future Needs

With a more robust fire prevention/public education program in place, LTIFS will gain a greater understanding of the community and its needs. This in turn will allow LTIFS to be more proactive in its education and enforcement programs for the community. This increased level of community awareness will help to identify present and future equipment and training needs, along with what other fire safety programs may need to be rolled out to the community.

With all of this in place, when fires or other emergencies occur within the community, the firefighters will be better prepared to cope with these emergencies because they are trained, not only in the basics of firefighting, but are also much more aware of the special hazards that are found within the community (because of a more proactive fire prevention/inspection program). These hazards also need to be noted in the future risk assessment being conducted by LTIFS.

3.2 Integrated Risk Management Approach

The Integrated Risk Management (IRM) approach, introduced by the OFMEM, is a combination of reviewing 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.

Conducting a review of every building (as recommended by the IRM) within the Township may not be practical at this time; however, utilizing NFPA 1730 and 1300 definitions of risk categories may help to guide the Fire Chief and 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.

NFPA 1730 and 1300 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.

- Examples: 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.
 - Examples: 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.
 - Examples: storage, mercantile, and business

3.2.1 Current Condition

LTIFS staff have identified the vulnerable occupancies (care facilities) and schools within the community that are a high priority for annual inspections. LTIFS has been as proactive as possible based on present staffing and available resources; however, a more formal proactive inspection program needs to be put into place that goes above and beyond conducting inspections on a request and complaint basis.

To help support this proactive initiative, LTIFS should make note of and keep track of the following building stock within the Township to ensure that they are meeting the inspection recommendations outlined in the FUS table below, or at the very least using these guidelines as a benchmark to aim for.

TABLE #2: FUS Suggested Inspection Frequency Chart

Occupancy	FUS 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

The FUS Suggested Inspection Frequency Chart is highly aggressive and being able to provide inspection frequencies at the noted levels may be difficult to achieve. As a benchmark, however, the FUS chart provides an optimal set of goals for LTIFS to strive towards. Priority should be given to

Vulnerable Occupancies, institutional facilities, hotels/motels, multi-family dwellings (including basement apartments), and assemblies.

Utilizing the IRM approach in conjunction with the guidance from NFPA 1730 and 1300 standards will provide an overall picture of the resources, time, and tools required to keep the fire risks in the community to a manageable level (as defined by Council). The NFPA 1730 Standard also outlines a process in Appendix C (of the standard) to assist Council in setting the level of fire prevention service within the community based on the local needs and circumstances.

Information received confirms that based on staffing levels, LTIFS has not been able to do as efficient a job as they could be to ensure that ongoing inspections and related education programs are being conducted. Fire Prevention Officers are merely legislated to conduct inspections upon request or complaint. The desire of the LTIFS, however, is to go beyond what is required by legislation and to be more proactive within the community in relation to inspections and public education.

It is recommended that the Fire Chief review LTIFS' inspection program to identify levels of desired frequency relative to the inspections noted in the FUS Chart in Appendix "B". The FUS strongly recommends that a level of frequency be identified by the Fire Service in its quest towards ensuring a fire-safe community. LTIFS may not be able to meet the FUS recommendations, but a set of goals and expectations should be outlined to identify staffing hours required to achieve these goals and expectations.

3.3 Community Risk Assessment – Current and Future Needs

While the Province has been recommending the use and development of a Simplified Risk Assessment in the past, recent changes to the *Fire Protection and Prevention Act*, Ontario Regulation 378/18 on conducting a Community Risk Assessment (CRA) came into force. This regulation notes the following:

When to complete (at least every five years)

3. (1) The municipality or fire department must complete a community risk assessment no later than five years after the day its previous community risk assessment was completed.

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

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

Note: EMT has developed a CRA for the Leeds and the Thousand Islands community that is being supplied as a standalone document for submission to the Office of the Fire Marshal and for ease of annual reviews and update by the Fire Department.

When conducting a CRA, it is important to note that it is Council that approves the level of service within the community. It is therefore the Fire Chief's responsibility to inform Council on the risks that exist within the community, along with the related needs and circumstances. Based on the information received from the Fire Chief, Council can make an educated decision regarding any recommended improvements and/or adjustments.

The NFPA 1201 – Standard for Providing Fire and Emergency Services to the Public, section 4.3.1 notes that,

The Fire & Emergency Service Organization shall carry out a program to develop public awareness and cooperation in management of risk, based on analysis of relevant loss records and potential hazards in the identifiable physical and social sectors of the community.

Section 4.3.5 notes that the Fire and Emergency Services Organization shall provide customer service-oriented programs and procedures to accomplish the following:

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

The "needs" of a community can be defined by identifying and cataloging the types of buildings, infrastructure, and demographics of the local area, which in turn can be extrapolated into the types of services that would be offered and needed. The "circumstances" are considered the ability to afford the level of service to be provided. Together, the needs and circumstances assist in identifying a level of service for the community. This combination meets the expectations of the public for safety and the affordability of this level provided.

Conducting a risk assessment is a practical information gathering and analyzing exercise. It is 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. As the community continues to evolve, the document should not become dormant, as the results are only accurate to the time of which the review was conducted.

The recently updated *Fire Protection and Prevention Act.*, along with the NFPA 1730 Standard on *Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations*, note that this review should be conducted at a minimum every five (5) years or after significant change.

The NFPA 1730 standard also establishes a process to identify and analyze community fire risks. There are seven (7) components of a CRA outlined in the NFPA Standard. These components are:

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

Along with NFPA 1730, the OFMEM has recently released a document on conducting a CRA. This document was developed to assist communities in meeting the new FPPA Regulation that came out earlier this year.

A thorough risk assessment can also avoid invalid comparisons between your fire service and others. A municipality with a similar population may have very different fire risks, and therefore very different fire protection needs. A thorough risk assessment will ensure that such comparisons are valid. By providing a valid basis for comparison, a sufficient risk assessment can also provide confidence that innovations introduced elsewhere can be successfully applied in your municipality.

Based on the new Ontario Regulation 378/18, a fire department should be conducting a CRA every five years, to be completed no later than July 1, 2024. Emergency Management & Training Inc. has conducted the Community Risk Assessment as part of this Fire Services Review process.

It is also recommended that the Fire Chief provide Council with a fire inspection program that addresses identified needs and expected outcomes.

In relation to staffing (Fire Prevention) hour requirements, an initial assessment needs to be completed by the Fire Chief and the part-time Fire Prevention Officer to identify hours presently spent on inspections along with identification of the annual goal. By doing this assessment, future hourly requirements can be consolidated into a report to Council.

Note: Due to the complexities with fire prevention inspections, along with the variety of building stock in a community, there is no industry standard formula for calculating number of

hours based on building stock. This can only be accomplished through experience, familiarity, and understanding of the community's needs.

Recommendation(s)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
3	<p>LTIFS is approaching the point of requiring the equivalent of one full-time, dedicated Fire Prevention Officer.</p> <ul style="list-style-type: none"> This can also be accomplished in the interim through the use of a dedicated, part-time position, however, one that is regularly scheduled to accomplish specific fire prevention and education program hours and annual objectives. 15 to 20 hours per week, for a total annual allotment of 780 to 1,040 hours. Establish a rank for FPO commensurate with the responsibilities and authority required of the role. 	<p>Estimated cost to implement either part-time or added time for firefighters \$20-30,000</p>	<p>Short to Mid-term (1-6 years)</p>
4	<p>The Fire Chief review LTIFS inspection program to identify levels of desired frequency in relation to the inspections required under legislation as well as service level objectives as set by LTIFS.</p>	<p>Staff time until a program is implemented</p>	<p>Short-term (1-3 years)</p>
5	<p>LTIFS staff need to present the updated CRA to Council in 2020. Upon completion of the risk assessment, the Fire Chief provides Council with a draft policy for review and passage that outlines a proactive fire inspection program to address identified needs and expected outcomes. This program should outline the building types and the frequency of inspections.</p> <ul style="list-style-type: none"> Should also identify what level of staffing is required to meet the FUS recommended inspection and the fire department recommended inspection program. To accomplish a staffing/hourly requirement, an assessment of recently conducted inspections and the time required to complete them is needed to create an anticipated costing for this program. 	<p>Dependent on resource requirements to meet Fire Chief recommendations</p>	<p>Short-term (1-3 years) and ongoing</p>

SECTION 4 – Fire Department Divisions

4.1 Administration

4.2 Fire Prevention and Public Education

4.3 Training and Education

4.4 Fire Suppression

4.5 Training Facility

SECTION 4: FIRE DEPARTMENT DIVISIONS

Within the scope of work noted in the original Request for Proposal document, staffing needs were identified as a priority in which Emergency Management & Training Inc. was to review the capabilities of existing staffing and identify future needs for each branch, including Suppression, Training, Prevention, and Administration.

When considering the overall staffing needs for LTIFS, some of the key questions that should be considered are:

- Is there a proper level of senior staff to manage the Department, its divisions, and fire stations?
- Is there adequate administrative or management staff to effectively deal with such things as increasing records management demands and addressing day-to-day operations of the Department?
- Is there a need for other support staff in relation to vehicle and facility maintenance?
- Is there a time when the Department should consider migrating from a volunteer service to a composite or full-time service?

4.1 Administration

The Administrative Division is comprised of a part-time Fire Chief and a full-time Deputy Chief. There is one Administrative Assistant for the Department. When reviewing a department's administration division, the CFAI accreditation program has a specific section that evaluates the administration component of a fire department. In this section, the following points are noted:

CATEGORY 9C: ADMINISTRATIVE SUPPORT AND OFFICE SYSTEMS:

Administrative support services and general office systems are in place with adequate staff to efficiently and effectively 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.

Emergency Management & Training Inc. is recommending the continued utilization of a Township staff member on a permanent, full-time basis to assist LTIFS with its increasing records management, training centre specific administrative needs, and other daily/general administrative challenges. Given what would be required resourcing for the Training Centre administration and operational needs to be adequately met, there is significant workload. The position should be evaluated to determine if one full-time position remains adequate to meet the needs of LTIFS or if additional resourcing is required to efficiently and effectively conduct and manage all of the department's administrative functions. Furthermore, the situation of having a part-time Fire Chief and a full-time Deputy Chief is

unique. However, no recommendation is made at this time with regards to evaluating the need to address the part-time Fire Chief position.

4.2 Fire Prevention and Public Education

Fire prevention and public safety are the foundation to creating a safe community and this should be the initial focus of a fire service to create an effective, manageable program. As such, Emergency Management & Training Inc. has conducted a review of existing fire prevention programs, to identify their strengths, gaps, and areas for growth and improvement.

The NFPA 1035 standard section 3.3.11 identifies fire and life safety education as a “comprehensive community fire and injury prevention program designed to eliminate or mitigate situations that endangers lives, health, property, or the environment.” The Township should consider the implementation of a more comprehensive program within the fire department that focuses on fire inspections, prevention, mitigation, and preplan programs. Currently, there are minimal fire prevention inspections being conducted based on “complaint and request” requirements. Consequently, there is a gap in the level of LTIFS prevention and preplanning programs.

4.2.1 Determination of Current Staffing Requirements

The present allotted time for the occasional, part-time, Fire Prevention staff does not support a proactive program to go above the minimum requirements of a fire prevention program. To assist fire departments in the determination of staffing needs, NFPA 1730 outlines a 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 a 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 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 branch.
4. Actual availability of prevention personnel, factoring in vacation and other absences.
5. Estimating total number of personnel required based on the previous four steps.

Recommendations #3 and #4 identified the need for the Fire Chief and the Fire Prevention Officer to conduct a review on time spent on inspections. By completing this process, it will assist the department in identifying what services it not only wants to offer, but what can actually be delivered based on present staffing and the existing gap. This evaluation process will identify what additional staffing is required, or at the very least, what services can be effectively delivered with the present staffing complement.

More information on this staffing equation can be found in Appendix “C” and within the NFPA1730 standard. The Fire Chief should assess the previous five steps and evaluate LTIFS present level of activity and the future goals for fire prevention activities. By conducting this type of evaluation, a true assessment can be made on whether the utilization of the volunteer fire officers will suffice or if the implementation of a part or full-time fire prevention officers’ position is required.

To assist in this process, the Fire Chief should ensure close tracking of the actual time spent on each of the fire prevention related activities (ranging from site plan reviews, routine inspections, licensing, complaints, and requests, to name a few) over the next year. Further, reporting should include clearly identifying the number of public education events as well as the number of adults and children reached by the programs. By identifying the time spent on each project and collating this into approximate baseline times, the Fire Chief can then use those hours spent as a base amount in applying future initiatives.

As previously noted in this document, the FUS group is very supportive of Fire Prevention programs as a first line of fire safety defence within a community and support the concept of one full-time Fire Prevention Officer per 15,000 to 20,000 population. The present 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 most, if not all their fire officers (e.g. Captains and above) to be certified to conduct fire prevention/public education related inspections and programs. This not only brings more resources to the table; it also enhances the level of fire safety awareness by those trained staff.

For the immediate future, LTIFS should enhance the training and certification of its officers (Lieutenants and above) in the areas of fire prevention and public education, so they are trained and certified to at least:

- National Fire Protection Association 1031 – Fire Inspector I
- National Fire Protection Association 1035 – Fire and Life Safety Educator I

Considering the duties and other related information noted in this section, as well as Section 3, it appears that the LTIFS lacks the ability to be as pro-active in its inspections goals as it would like to be, and that it is presently impossible for them to meet the FUS Frequency Chart on inspections. It is

therefore recommended that the LTIFS, through the utilization of this FUS chart as a benchmark, develop a plan on what can be accomplished with its present staffing complement, along with presenting options for increasing inspection frequencies (through utilization of fire officers and/or a full-time fire prevention officer) and ultimately what is needed to meet the FUS benchmarks.

4.2.2 Fire Underwriters Survey Suggested Frequency Chart

Occupancy	FUS 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 would be difficult to address, therefore, the priority should be on the vulnerable occupancies (e.g. nursing homes, retirement homes, group homes, etc.), institutional buildings, assemblies, multi-residential, and industrial buildings.

The Fire Prevention Officer is ensuring that the LTIFS is meeting any related minimum requirements such as complaint and inspection requests, along with inspecting the vulnerable occupancies in the community. However, moving to a more proactive fire prevention program will require additional staff time in a managed part-time or future planned full-time position along with the requisite rank reflecting the duties, responsibilities, and authority of the position.

4.2.3 Home Fire Sprinklers

The NFPA, along with the Ontario Association of Fire Chiefs, are strong supporters of home 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, 4.6% of occupied homes (including multi-unit) had sprinklers in 2009, up from 3.9% in 2007, and 18.5% of occupied homes built in the previous four years had sprinklers.

Source: U.S. Experience with Sprinklers⁶

- 85% of all U.S. fire deaths occur in the home.
- Home fire sprinklers can control and may even extinguish a fire in less time than it would take the fire department to arrive on the scene.
- Only the sprinkler closest to the fire will activate, spraying water directly on the fire. In 84% of home fires where the sprinklers operate, just one sprinkler operates.
- If you have a fire in your home, the risk of dying is cut by about one-third when smoke alarms are present (or about half if the smoke alarms are working), while automatic fire sprinkler systems cut the risk of dying by about 80%.
- In a home with sprinklers, the average property loss per fire is cut by about 70% (compared to fires where sprinklers are not present.)
- The cost of installing home fire sprinklers averages \$1.35 per sprinklered square foot.

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, LTIFS would be demonstrating a pro-active approach to educating the public on another viable option for homeowners to help reduce the risk from fire. As such, it is noted that LTIFS should consider this safety initiative as part of their fire prevention and public education initiatives.

⁶ <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Suppression/US-Experience-with-Sprinklers>

4.3 Training and Education

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

Presently, there is no full-time dedicated Training Officer for LTIFS. Training is the responsibility of the full-time Deputy Fire Chief who is charged with identifying the training needs of the suppression staff based on industry requirements. Planning and organizing the training and ensuring all training programs are properly documented is a significant task.

During Emergency Management & Training Inc.'s review of the Training and Education programs, it was found LTIFS personnel (Station Officers) are endeavouring to ensure that all required training programs are being addressed to the best of the LTIFS ability. LTIFS does utilize the services of in-house personnel (volunteers) wherever possible in an attempt to ensure both consistency in training programs and related qualifications. They could also take advantage of the web-based Learning Management System training program to increase involvement by the volunteer firefighters. This is an effective use of training programs that are not "brick and mortar" based, which translates into a greater opportunity for personnel to conduct training online from of their own homes.

There is a lack of accurate accounting of training hours in relation to any anticipated annual goals. It is strongly recommended by EMT that an annual plan be developed, implemented, and assessed to ensure that the Paid-On-Call (aka volunteer) firefighters are completing the required training. A plan should also be put in place to identify how any training time that was not completed, can be completed.

During EMT information gathering conversations, it also became evident that more time should be dedicated to fulfilling the responsibilities of the Training Officer to allow for more dedicated focus in relation to such things as:

- Ensuring that all training programs are meeting industry standards
- That all training is conducted in a consistent manner at all fire stations
- That all training records are properly maintained and kept up-to-date
- That a proper annual training program is in place, coupled with an annual assessment relating to the efficiency of the training programs
- Review and overhaul of SOGs

The review and overhaul of the SOGs was a recommendation in the 2016 Master Fire Plan.

Recommendation #22: That the review and updating of Standard Operating Guidelines (SOG's) continue with a specific target performance metric regarding number to be developed, reviewed and updated be identified as part of the Departments annual objectives and be monitored in the quarterly report.

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

- 4.11.1 *The Fire Department Organization shall have training and education programs and policies to ensure that personnel are trained, and that competency is maintained in order to effectively, efficiently, and safely execute all responsibilities.*

The Fire Chief and Deputy Fire Chief are aware of the program needs and facility requirements. To verify in a more formal manner, however, that each training program is meeting the related NFPA program recommendations, the Fire Chief and Deputy Fire Chief should:

- Identify what training programs are required for the services that LTIFS is providing.
 - Each area needs to be evaluated regarding the present (and future) services to be provided by the Fire Service, such as suppression, EMS, hazardous materials response, etc.
- Identify the number of hours that are required to meet each of those training needs based on Provincial and/or industry standards.
 - What are the recommended training hours required and what refresher programs need to be conducted, and when?
- Identify the resources required to accomplish this training.
 - Does the training program require a full training tower for live fire and rescue scenarios, or can this be accomplished in other ways?
- Continue to strengthen joint partnerships with bordering fire departments and private organizations to achieve the training requirements identified.
 - What joint training can be accomplished to promote cost efficiencies?

Linking and supporting the training subjects with Provincial and industry standards (that highlight what standard the training is meeting) will give greater credibility to each training initiative.

The training program should include a training plan for all firefighters such as:

- NFPA 1001 – Firefighter levels one and two within the first year
- NFPA 1002 – Driver operator qualifications within the second or third year
- NFPA 1006 – Technical rescue at the awareness levels

- NFPA 1021 – Fire Officer level one and two training for all suppression officers
- NFPA 1072 – Hazardous Materials response at the awareness level
- NFPA 1041 – Fire Instructor level one and two for those teaching courses within the department

Another area related to training that needs to be considered by the Fire Chief is the implementation of a succession program to ensure that senior officer positions can be filled by qualified people as they become vacant. With all of this in mind, EMT is still recommending that a review of officer qualifications be clearly identified and that a more formal promotional process be implemented. This formal promotional process would lend itself well to creating a succession plan.

4.4 Fire Suppression

When it comes to the staffing levels required for a fire department, there is no standard that identifies a required firefighter to population ratio. Therefore, to make an informed decision on staffing requirements of the suppression division, consideration is dependent on the following points:

- Does the LTIFS have an approved response criterion as a baseline?
 - Has Council given direction to the Fire Chief regarding expected response times that are to be met by LTIFS?
 - If so, is the LTIFS meeting this response criterion on a consistent basis or is it struggling to meet the response times and perhaps falling behind?
- Does LTIFS have issues or concerns with getting enough firefighters to respond during daytime hours (or other times) on a consistent basis to ensure a viable level of response outside of the weekday hours of 8:00 AM to 5:00 PM?
 - Local and national standards and guidelines exist to help direct LTIFS in its decisions relating to station location and staffing models, specifically, NFPA 1720 along with the CFAI “industry best practices”.

The Fire Chief and Council also need to consider what growth in population, differentiation of age percentages, and industry is occurring that may precipitate the need for more stations and staffing.

As already noted, there are four main standards and industry best practices that need to be considered:

- There are industry standards/best practices in the form of the NFPA’s 1720 and 1730 standards, which offer guidance regarding response times, staffing, fire prevention, and code enforcement.

- The Department must consider the Public Safety Guidelines that are created and distributed by the OFMEM. These Guidelines advise fire services on aspects of delivering fire prevention, fire suppression, and fire station location programs.
- The FUS, which is endorsed by the insurance industry as a tool for measuring the ability of a fire service in meeting the response time, staffing, and water supply needs of a community.
- The CFAI has a focus on three key documents:
 1. A community risk assessment and standards of cover document
 2. A self-assessment manual based on the 10 categories that make up the program review
 3. A strategic plan for the service

(The fire service review can be considered the strategic plan for the service.)

4.4.1 National Fire Protection Association 1720 – Volunteer Fire Departments

Chapter 4 of the NFPA 1720 Standard does help to identify industry recommended requirements for number of response personnel. The Standard notes the following for the deployment of volunteer firefighters:

- Section 4.2.1: *“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 386 people per square kilometre/1000 per square mile), there should be a minimum response of **15 staff within 9 minutes**, 90 percent of the time.*
 - *In Suburban areas (population of 103 - 386 people per square kilometre/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 103 people per square kilometre/500 per square mile), there should be a minimum response of **6 staff within 14 minutes**, 80 percent of the time.”*

With a current population of approximately 9,450 within approximately 613 square kilometres, LTIFS community and population falls into the rural standard of having approximately 15.5 residents per square kilometre. This would require 6 firefighters on scene within 14 minutes 80% of the time.

Note: Although, overall, the Township falls within the Rural response time standard under the NFPA 1720 definition. The Fire Chief should develop a Standards of Cover document that specifically targets this core area with the NFPA 1720 Suburban standard of 10 firefighters within 10 minutes 80% of the time.

Based on a review of the response data supplied, there is a varying level of success in meeting the NFPA response criteria. This can be seen in the charts found in *Section 5 – Fire Suppression Services*. By utilizing this information in conjunction with the supplied response maps created by Emergency Management & Training Inc., we can see the effect of road networks, traffic levels, and traffic control systems on response times by emergency responders.

Note: To accomplish the National Fire Protection Association Standard, a fire department should endeavour to meet the stated minimum response standards based on responding to a 2,000-sq. ft. single family dwelling. The dwelling (noted in the Standard) does not have a basement or other exposures (buildings close enough to each other to create a greater possibility for fire spread). Most homes in Leeds and the Thousand Islands have basements, however, and these homes are often built close enough to each other to create that “exposure” for potential fire spread, which must be considered by the Fire Department in its response efforts.

Communities often ask when the Fire Department should consider moving to a career or composite (career and volunteer) model, thus reducing the reliance on its volunteer 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 time and number based on the time of the day, and day of the week (e.g. volunteer availability during day shift vs. night shift), etc. Another consideration is the recruitment and retention of the volunteers based on the turnover with many younger volunteers actively looking for a full-time firefighting career, or loss of the volunteer due to other family and work commitments.

Recruitment and retention of volunteers is becoming more of a challenge within the fire service with the increase in training that must be committed to on an annual basis and with staff turnover. As with many volunteer fire departments, the daytime hours from Monday to Friday are the greatest challenge for volunteer response due to fact that many volunteer firefighters are either at work, school, or taking care of family. As such, some municipalities add full-time firefighters Monday to Friday dayshift to compensate for a reduced volunteer availability.

Another indicator for making this decision is tracking the number of volunteer firefighters that arrive at the fire station to respond. If, for example, the standard set by a fire department is that three or more volunteer firefighters must arrive at the station before the fire truck can respond, this should be monitored along with how many times the department is unable to assemble the needed personnel

to effectively respond based on time of day and day of the week. Continued monitoring of this data will assist with future fire service needs.

Some volunteer fire departments, such as the Township of Puslinch, have created a platoon style system in which the volunteers sign up for days, weeks, or even weekends to ensure an adequate level of staffing coverage. LTIFS could consider implementing a similar program. Some increased costs (depending on the department) are associated with this type of platoon system such as a small stipend to pay for volunteers that need to stay in town for response. Any system that will provide more consistency with response by the volunteers is worth experimenting with.

Another alternative is to implement a level of full-time firefighters to guarantee a response component, but this a costly endeavour and Emergency Management & Training Inc. is not recommending this type of staffing at this time. Going to a composite or full-time service is a large cost to the community (\$2.5 million per 24/7 fire truck staffed by career firefighters) and therefore many communities that have decided to move to this staffing model accomplished this in stages. One such model is adding full-time firefighters Monday to Friday on 10-hour dayshifts to meet the needs of the community when volunteer availability is at its lowest. This model has an annual cost of approximately \$600,000-700,000 for one truck during these hours. The costs for additional staff go beyond wages including additional equipment and gear for the firefighters, along with any improvements required for the fire station itself, such as living quarters. Any consideration to moving to such a full-time model must be seriously evaluated.

LTIFS model of a Paid-on-Call (aka volunteer) fire department is a very cost-effective form of fire protection for a community of its size. The Township should invest in additional opportunities to improve those times when current response is not meeting the standards or needs of the community. LTIFS has taken advantage of fire service agreements with neighboring fire departments to minimize costs and provide timely response. The Township should continue to investigate other opportunities identified in this report to maintain a Paid-on-Call service and keep the cost minimized.

At this time EMT is not recommending that LTIFS move to a full-time or partial full-time complement of firefighters, however, consideration should be given to two areas:

- Increase to each fire station's roster
- Review of the pay model & rank-based scale for responses and training to ensure appropriate pay for time spent on fire related business

These two options will help to ensure a more robust number of firefighters available to respond to calls, and at the same time support retention of the firefighters by paying them at a defined and consistent rate of pay for time spent on fire business.

4.5 Training Centre Facility

LTIFS does have a significant training facility within its borders 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 stations. LTIFS has an area at each station where some general training can take place, but each facility is limited in what training can be accomplished.

It should be noted that very early in the examination and consideration of the Training Centre case study, it became evident that this facility presented a significant potential and opportunity for the Township. This facility is geographically positioned to service surrounding fire services and municipal needs as the nearest training centre facilities are Kingston and Trenton. Unfortunately, this facility has not been previously operated effectively or has been clearly managed to its full capacity or effectiveness. Furthermore, the Training Centre facility has been left to deteriorate in the past two years given its lack of effective management and lack of dedicated and adequate resources extended to this facility. It is very positive that the current LTIFS Administration is skillfully considering and future- visioning the Training Centre facility, its potential useage, partnerships internally and locally, as well as partnerships externally with both public and private entities.

The risk management of liability due to lack of sufficient and standardized training based on recognized standards such as the National Fire Protection Association (NFPA) needs to be considered. Potential legal action and the possibility of inquests due to performance and outcomes of emergency incidents such as structure fires and hazardous materials/transportation incidents. Litigation and courts of inquiry are significant and increasing threats in the Emergency Services industry. Robust and comprehensive organizational training processes and planning is an important component in the risk management and service level provisions for municipal fire services.

The Ontario Fire College (OFC) is scheduled to close permanently March 2021. The OFC provided the Fire Services in Ontario with classroom theory as well as practical training at its location in Gravenhurst, Ontario for 70 years. This creates a significant opportunity for LTIFS to become a regional training centre, providing critical training (classroom and practical scenario based) internally and with surrounding fire and municipal safety services. Additionally, the opportunity to establish external and non-fire industry training facility partnerships is a consideration. Partnerships with private entities such as colleges offering pre-service and continuing professional education is possible.

The Training Centre facility has the potential to mitigate risks, enhance safety, professional training and service levels, develop industry and non-industry partnerships, as well a generate a revenue stream with which to offset costs and operating expenses on an annual basis.

Additional information is presented on training facility options in Section 6.

Recommendation(s)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
6	An assessment of staffing to assist LTIFS with its records management and IT resources implementation (i.e. iPads and other electronic documentation) for responses as well as Training Centre administration and operations.	Staff time	Short-term (1-3 years) and ongoing
7	To assist with the fire prevention program including public fire safety education and inspection programs, a training matrix should be developed that details objectives and timings for all officers should be trained and certified to at least: <ul style="list-style-type: none"> • National Fire Protection Association 1031: Fire Inspector I • National Fire Protection Association 1035: Fire and Life Safety Educator I 	Staff time for training	Short-term (1-3 years) and ongoing
8	An annual training plan and multi-year training matrix to be developed, implemented, and assessed to ensure that the firefighters are completing the required training. To verify the training programs are meeting related NFPA (and other) training program recommendations, the following should be identified: <ul style="list-style-type: none"> • training programs that area appropriate for the services that LTIFS is providing • number of hours required to meet the training needs • training resources required including annualized costs • joint partnerships with bordering fire departments, the OFM, and private organizations utilizing the Training Centre • presented to Chief annually with key performance indicators monitor training compliance and updated business plan for Training Centre 	The costs are mostly related to staff hours unless outside facilities or trainers need to be accounted for	Short-term (1-3 years) and ongoing

Rec #	Recommendation	Estimated Costs	Suggested Timeline
9	<p>A review and overhaul of existing SOG format and creation of new SOG/Ps where needed.</p> <p>Consider secondment/hiring or contracting out this work as it requires significant time, effort, and consistency to complete in a reasonably short time frame.</p>	Up to \$10,000	Short-term (1-3 years) and ongoing
10	<p>To improve firefighter response reliability, expectations, retention, succession planning:</p> <ul style="list-style-type: none"> • Consider hiring to maintain an overall roster to 100 firefighters. • Review of the pay scale and structure for responses and training as well as officer rank-based pay structure for time spent on fire department related business. • Consider review/replacement of the current ‘Points’ system. 	<p>Increasing firefighter complement approx. \$45,000 in equipment in salaries. Pay scale review could cost \$15,000 per year.</p>	Short-term (1-3 years)

SECTION 5 – Fire Suppression Response and Dispatching Services

5.1 Fire Suppression/Emergency Response

5.2 Response Data

5.3 Service Level Standards – Dispatching Services

SECTION 5: FIRE SUPPRESSION RESPONSE AND DISPATCHING SERVICES

5.1 Fire Suppression/Emergency Response

5.1.1 National Fire Protection Association (1720)

To provide a fire department clearer focus on what the ultimate goals for emergency response criteria are, the NFPA suggests that response times should be used as a primary performance measure by fire departments. The NFPA’s 1720 Standard for volunteer fire department response times is noted below. Based on the overall population density of 15.5 residents per square kilometre, the Township response criteria is Rural, with a response of 6 firefighters on scene within 14 minutes, 80% of the time. However, within communities like Lansdowne, the population densities can be much greater than 15.5 residents per square kilometre. Therefore, there does exist the potential to requiring a response of 10 firefighters on scene within 10 minutes, 80% of the time. Based on this mix of population densities, EMT has utilized both the 10- and 14-minute response criteria for its review of LTIFS’s response data.

TABLE #3: NFPA 1720 Standard for Volunteer Fire Department Response Times

Demand Zone	Demographics	Minimum FF to respond	Response time (minutes)	Meets objective (%)
Urban area	>1000 people/mi ² >386 people per km ²	15	9	90
Suburban area	500-1000 people/mi ² 193-386 people per km ²	10	10	80
Rural Area	<500 people/mi ² <193 people per km ²	6	14	80
Remote Area	Travel distance > 8 mi (12.87km)	4	Directly dependent upon travel distance	90
Special risks	Determined by Authority Having Jurisdiction	Determined by Authority Having Jurisdiction	Determined by Authority Having Jurisdiction	90

When considering the response times and related needs for a community, the fire response curve (Figure 4) presents the reader with a general understanding of how fire can grow within a furnished residential structure over a short period of time. Dependant on many factors, the rate of growth can be affected in several ways, such as room contents or availability to oxygen, which can increase or suppress the burn rate through fire control measures within the structure.

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

- The distance between the fire department and response/incident location
- The layout of the community
- Impediments such as weather, construction, traffic jams, lack of direct routes (rural roads)
- Notification time
- Assembly time of the firefighters, both at the fire station and at the scene of the incident
 - Assembly time includes dispatch time, turnout time to the fire station and response to the scene. Assembly time can vary greatly due to weather and road conditions, along with the time of day, as many firefighters are at their full-time jobs and cannot respond to calls during work hours.

As illustrated in the following fire propagation diagram, the need for immediately initiating fire suppression activities is critical. It must be noted that LTIFS responds to more than just fires. For example, motor vehicle collisions can create a medical emergency that also needs to be addressed urgently. Hence, the reason to be as efficient and effective as possible in responding to calls for assistance.

FIGURE #4: Fire Response/Propagation Curve

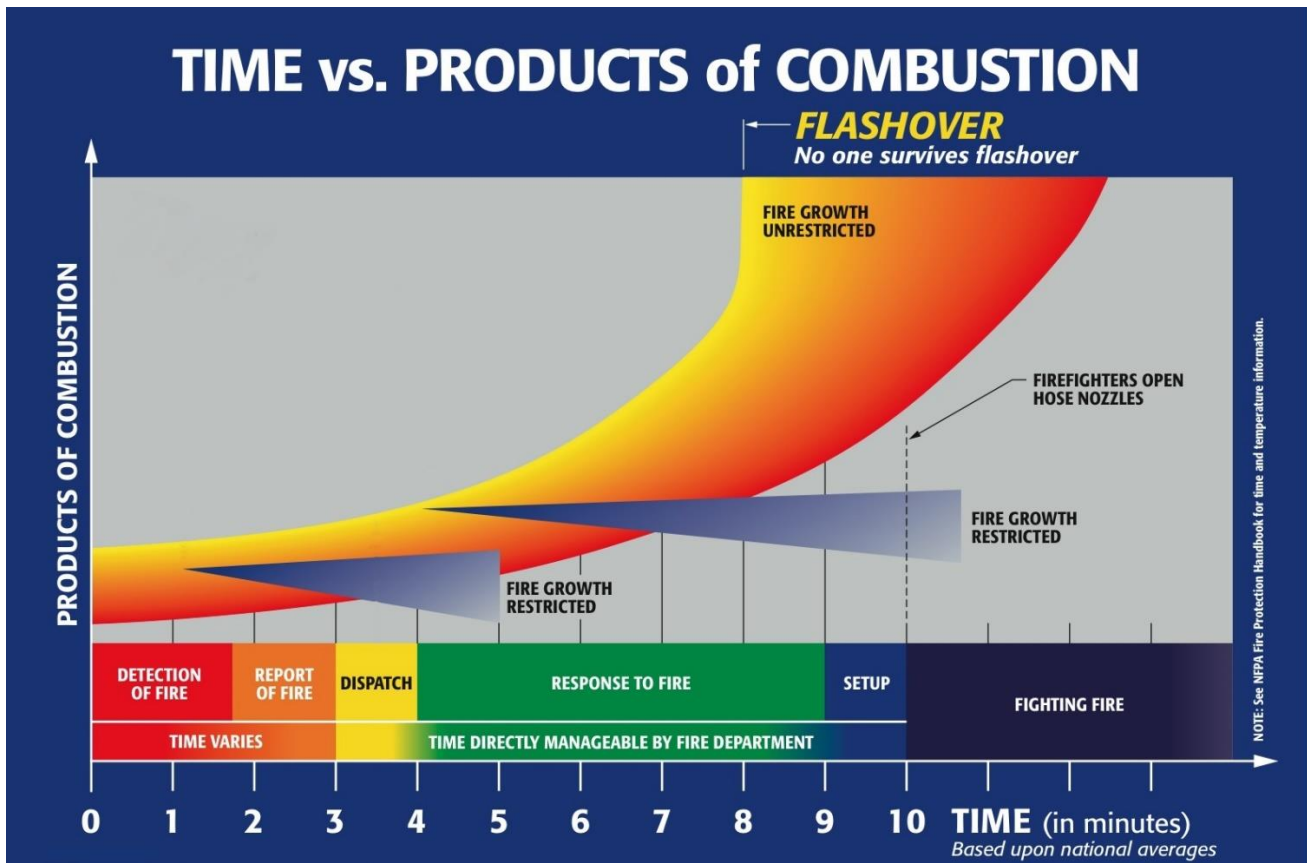


Figure 4 notes the following time variables:

- Detection of fire – when the occupant discovers that there is a fire. The fire may be in a very early stage or could have been burning for quite some time before being detected.
- Report of fire – when someone has identified the fire and is calling 9-1-1 for help.
- Dispatch – the time it takes the dispatcher to receive the information and dispatch the appropriate resources.
- Response to the fire – response time is a combination of the following:
 - Turnout time – how long it takes the career firefighters to get to the fire truck and respond or how long it takes the volunteer firefighters to get to the fire station to respond on the fire truck.
 - Drive time – the time from when the crew advises dispatch that they are actually responding, until the time that they report on scene.
- Setup time – the time it takes for the fire crews to get ready to fight the fire.
- Fighting the fire – actual time on scene extinguishing the fire.

The overall goal of any fire department is to arrive at the scene of the fire and/or incident as quickly and as effectively as possible. If a fire truck arrives on scene in eight minutes or less, with a recommended crew of four or more firefighters, there is increased opportunity to contain the fire by

reducing further spread of the fire to the rest of the structure. Alternatively, if the first fire attack team arrives with fewer than four firefighters on board, then it is limited to what operations it can successfully attempt.

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

Because volunteer firefighters will be carrying out their normal daily work and/or family related activities when a fire call comes in, they then need to get dressed to respond to the station, drive to the station, get suited up in their bunker gear, and get on the truck to respond. The time from the page until they are leaving the fire station is often referred to as the ‘chute’ or assembly time. Depending on the time of day, weather, traffic, and their distance from the fire station when the call comes in, will determine how quickly they can be ready to respond to the call.

Not having enough firefighters at an emergency scene can create an unsafe situation for the firefighters or, in a worst-case scenario, it can cause a delay in conducting fire suppression, lifesaving and/or rescue operations. The NFPA 1710 standard on firefighting notes that for a standard two-storey single-family dwelling (without a basement), the required response of 12 firefighters on scene is necessary to effectively battle the fire. LTIFS is unable to meet this staffing requirement on a consistent basis. The NFPA standards are not law, but they are an industry best practice. As noted in NFPA 1720, to be effective in delivering fire suppression services, from a risk management perspective, LTIFS should endeavour to work towards this standard.

Although there is the option of calling in mutual aid from other bordering fire departments, a delay in conducting fire suppression and rescue operations can occur if sufficient firefighters are not available to conduct these operations.

Yearly Comparisons of 80th Percentile Response Times

Note: The 80th percentile criterion is the recommended practice that is endorsed by the National Fire Protection Association and the Commission on Fire Accreditation International. This data is considered more accurate since it is evaluating the times based

on 80 percent of the calls, as opposed to averaging the times at the 50th percentile. For example:

- 8 out of 10 times the fire department arrives on scene in 14 minutes or less. Which means that only 20 percent of the time they are above that 14-minute mark, as opposed to 5 out of 10 times the fire department arrives on scene in 14 minutes or less, which means that 50 percent of the time they are above the targeted minute mark.
- Travel Time is the time tracked from when the fire vehicle has left the station until arrival at the incident location.
- Response time is the total time from receipt of page (on 9-1-1) to the time the fire vehicle arrives at the incident location.

2019 80 th percentile response time:	17:46 (minutes:seconds)
2018 80 th percentile response time:	19:13 (minutes:seconds)
2017 80 th percentile response time:	18:01 (minutes:seconds)

Currently the LTIFS 80th percentile is greater than 14:00 (minutes:seconds). This response time falls above the 14-minute timelines noted in the NFPA Standard for rural communities.

The LTIFD data shows that 80th percentile on the turnout times (time from page until the fire truck leaves the station) is approximately 10 minutes.

2019 80 th percentile turnout time:	10:27 (minutes:seconds)
2018 80 th percentile turnout time:	9:52 (minutes:seconds)
2017 80 th percentile turnout time:	10:02 (minutes:seconds)

Although there is no standard for turnout time, it is a component of the response time. In this case it is more than half of the response time. If the turnout time is reduced the overall response time will also be reduced. Ensuring adequate firefighters (e.g. increasing to 100 firefighters) will play a role in reducing this time.

It should be noted that responses to marine and island calls will create a significantly longer response time. Further, if non-emergency calls such as burn complaints, are mixed with the emergency calls, it can result in the data showing higher response/turnout times. It is important that the data being entered into the record management system separate emergency from non-emergency calls. This requires an improvement in the record keeping system.

Another requirement by NFPA is that once on scene, the fire department must have a coordinated approach, a secured water supply, and be able to begin an initial attack within 2 minutes, 90 percent

of the time. Although this is an operational goal and not presently measured by LTIFS Department, the Department should start to measure, and monitor this time for effectiveness and training purposes.

The Office of the Fire Marshal and Emergency Management's (OFMEM) Comprehensive Fire Safety Effectiveness Model Considerations, notes the following:

- 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?

In addition to the recommendations contained in this Master Plan document, the Fire Department should review these questions annually to implement effective measures to meet the OFMEM Guideline considerations.

5.2 Response Data

The following chart identifies the response types for 2019. To view more data for 2018 and 2017 refer to Appendix "E".

The following set of charts (using the supplied data) help to identify the types of calls that are creating the bulk of response demands.

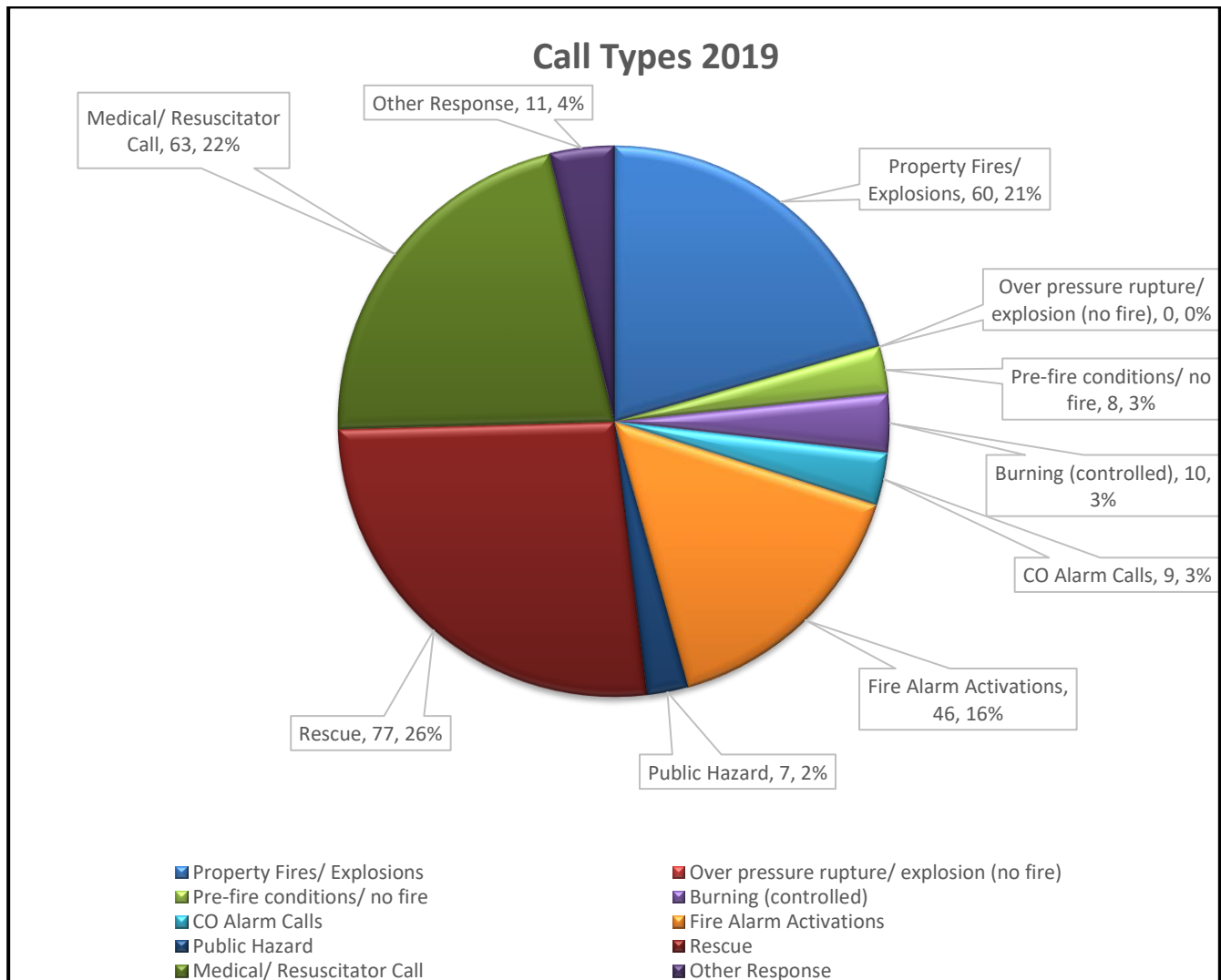
Note: The following charts may not reflect 100% of the yearly calls for service. This is due to the following:

- *To get a more accurate accounting of response times, some of the calls were removed from the data analysis due to identified anomalies in time stamping. For example, if an emergency response time was noted as taking hours, then it was removed based on the assumption of a data entry error.*

- Only the emergency responses were measured, which is the recommended practice noted by the National Fire Protection Association and the Commission of Fire Accreditation International
- For example, a department may have noted a total of 200 calls for service for the noted year. However, only 150 of those calls were emergency responses.

Figure #5: Response Data for 2019

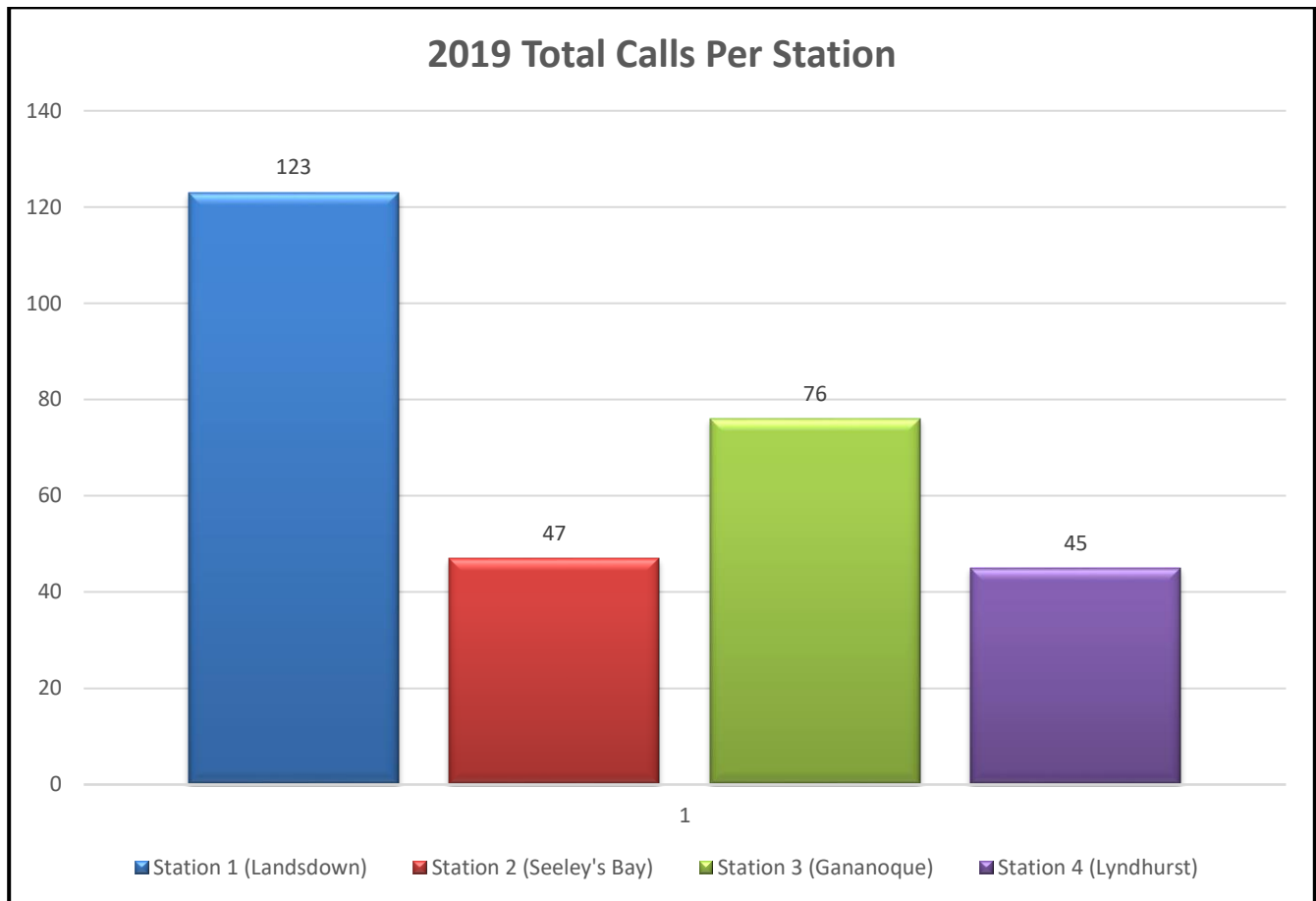
Yearly Comparisons of All Calls for 2019



As illustrated in the above chart, the top three types of calls that LTIFS responds to are:

1. Rescue calls, which account for 26% of the overall responses
2. Medical/Resuscitator calls, which account for 22% of the overall responses
3. Property fires/explosions, which account for 21% of the overall responses

Figure #6: 2019 Total Calls Per Station



Based on this information, the percentage comparison gives the Fire Chief and staff the ability to monitor where the bulk of their resources are being utilized according to type of call and by which is the busier fire station. This also offers greater focus for focused training to ensure that the firefighters are receiving training related to the types of responses that will demand a higher skill set.

Incorporating an overview of station location and its reliability to respond to calls within its response zone should be reported to Council. This review would entail identifying how many times units from the fire station are available or not available (due to being tied up at other calls) for responses. This will confirm whether there is a high percentage of reliability – ability to respond to calls without a delay. It may also identify that there is a need for more staff to be available for support or secondary calls.

Along with tracking of overall response reliability, tracking of vehicle movements will offer the Fire Chief an even more accurate accounting of how resources are being utilized. For example, we know that in 2018 the LTIFS responded to 357 incidents, but how many units from LTIFS fire stations were required to meet the needs of each response? Many calls require more than one fire truck to respond

from the fire station(s). This can also support the present level of staff and vehicles and/or indicate more tracking of these amounts to identify future needs.

5.3 Service Level Standards – Dispatching Services

LTIFS receives its dispatching services from the Brockville Fire Department. Based on information received, along with a review of the dispatching data, LTIFS is receiving adequate dispatching services from Brockville and is the benefactor of this service as noted below in the NFPA 1221 excerpt.

NFPA 1221, Section 7.4 Operating Procedures

7.4.1* Ninety-five percent of alarms received on emergency lines shall be answered within 15 seconds, and 99 percent of alarms shall be answered within 40 seconds. *(For documentation requirements, see 12.5.2.)*

7.4.1.1 Compliance with 7.4.1 shall be evaluated monthly using data from the previous month.

Recommendation(s)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
11	The Fire Chief conduct an annual review of LTIFS and its response data in comparison to industry standards and surrounding departments as well as key performance indicators as established by LTIFS.	Staff time only	Short-term (1-3 years) and ongoing

SECTION 6 – Facilities, Vehicles, and Equipment

6.1 Fire Station Review

6.2 Training Facilities

6.3 Fire Apparatus – New and Replacement Schedules

6.4 Maintenance

SECTION 6: FACILITIES, VEHICLES, AND EQUIPMENT

6.1 Fire Station Review

LTIFS stations are located in Lansdowne, Seeley's Bay, Gananoque, and Lyndhurst. A review of the existing fire station facilities was conducted by Emergency Management & Training Inc. and will be addressed in this section. It should be noted that although fire station assessment reviews were conducted with discussion, pictorial evidence, and physical walkthrough visuals of fire stations, no deconstructive testing or engineering assessment was conducted.

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

Fire stations should be situated to achieve the most effective and safe emergency responses. Distance and travel time may be a primary consideration; however, if a basic expectation of response time is set by the community's decision makers, then a more realistic level of service and fire station location criteria can be identified.

In the following maps, the shaded area around the fire station denotes a response time zone:

- The first response time zone in the coloured shade represents 10-minutes, minus 4-minutes for volunteers to arrive at the station and then respond in a fire department vehicle (the 10 minutes is related to the NFPA Suburban response time standard).
- The second response time zone in light brown represents 14-minutes, minus 4-minutes for volunteers to arrive at the station and then respond in a fire department vehicle (the 14 minutes is related to the NFPA Rural response time standard).

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

FIGURE #7: Map #1 - Location of the Fire Stations

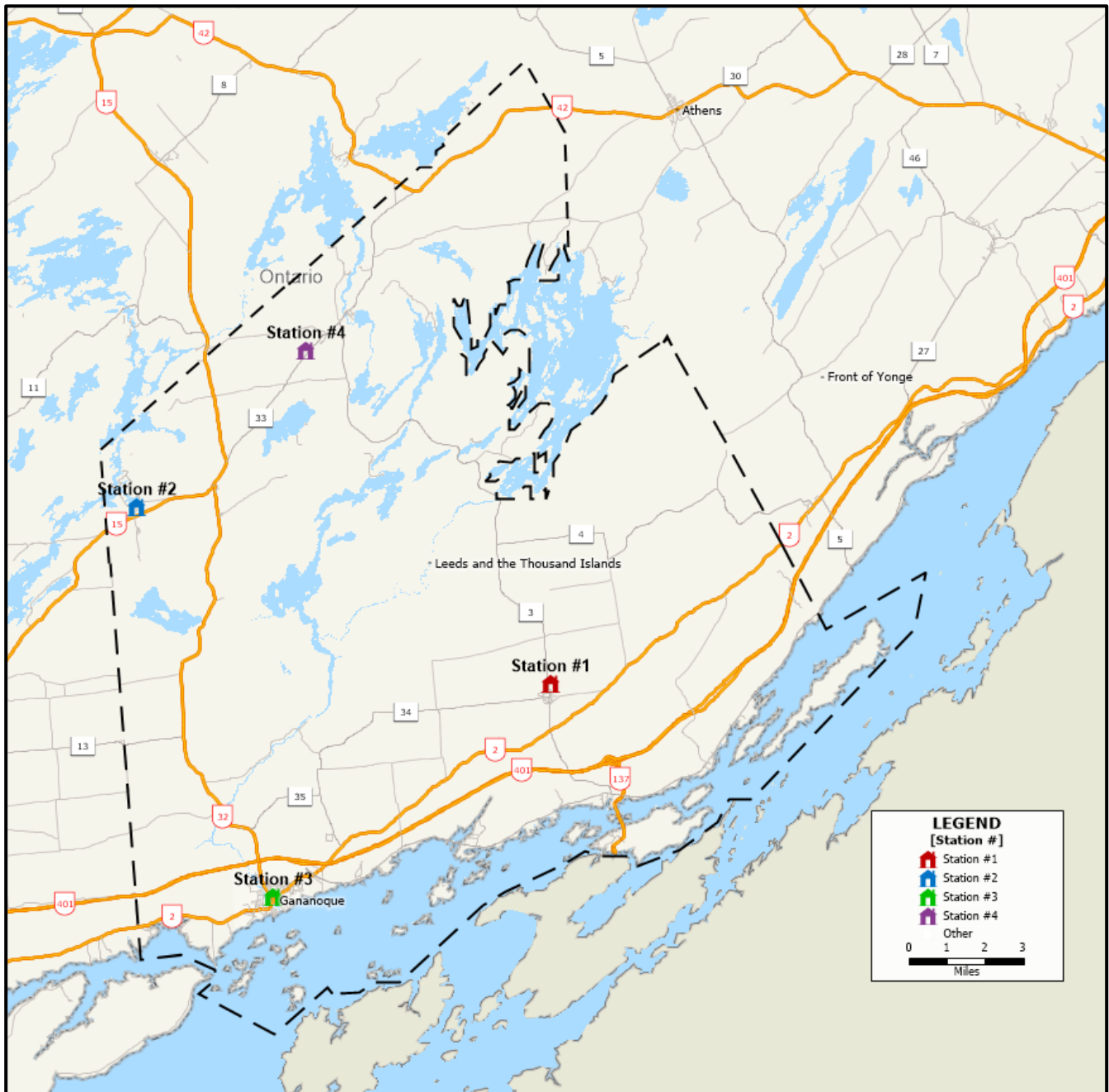
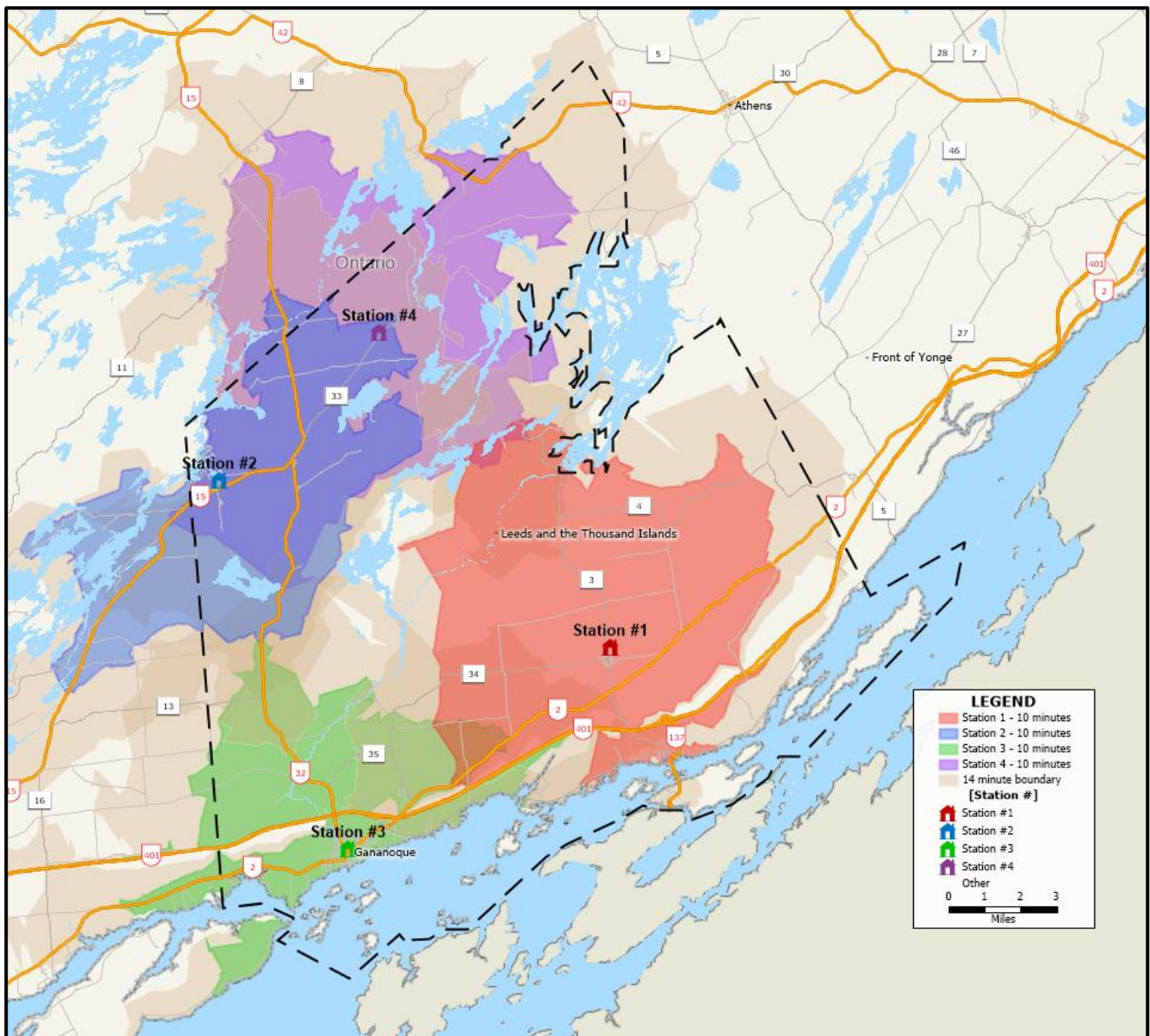


FIGURE #8: Map #2 – Travel Times of 10 and 14-Minutes from the Fire Stations



Note: the 10-minute travel times are noted in assigned station colours. Whereas the 14-minute travel times are noted in a light brown shading. If it is assumed that the firefighters can respond to the station within 4 minutes, the 10-minute travel time provides a 14-minute response time. In general, it can be seen that much of the community falls within the response coverage zones.

6.1.1 Fire Station #1- Lansdowne



Station #1 is the newest station in the Township, constructed in 2009. During the walk-through by Emergency Management & Training Inc., it was evident that the fire station is in good condition with no specific concerns noted. Overall, the office spaces, gear storage, and vehicle bays were found to be well set-up and maintained.

6.1.2 Fire Station #2 – Seeley’s Bay



Review and evaluation by Emergency Management & Training Inc. confirmed that the fire station is in operational condition. Overall, the spaces, gear storage, and vehicle bays were found to be maintained. The second floor is used as a community centre.

This station is, however, at its maximum lifespan having been in-service since 1951. Ingress and egress to station, potential hazards of combined firefighter and public parking and challenging building systems are concerning. Recommendation is being made for upgrades or possible relocation at this time. The Fire Chief should address current and future needs of this station, the firefighters, and the community, along with availability of land for any future relocation requirements.

The 2016 Master Plan recommended that planning should start for the replacement of the station.

Recommendation #8: Due to the safety hazards and age related building deficiencies, it is recommended that planning commence for the replacement of Station 2.

6.1.3 Fire Station #3 - Gananoque



During the walk-through of the fire station, it was evident that the station is in good condition with no specific concerns. Overall, the office spaces, gear storage, and vehicle bays were found to be well set-up and maintained.

6.1.4 Fire Station #4 - Lyndhurst



During the walk-through of the fire station, it was evident that the station is in good condition with no specific concerns. Overall, the office spaces, gear storage, and vehicle bays were found to be well set-up and maintained.

6.2 Training Facilities



LTIFS has a training centre within its Township boundaries. Located in Lyndhurst next to Fire Station #4, this facility, while not fully equipped with multiple training props for differing incident scenario

practical training (such as confined space, trench rescue, ARFF, MVC stabilization and extrication, hazmat scenarios), does provide “live-fire” training opportunities via the Draeger simulator and Rapid Intervention Team props. Additionally, there are training units for fire investigation, Fire Prevention Officer development, and driver/operator roads simulator.

Generally, the site, simulators and props are in operable condition and there is space for additional simulators, props, and training resources. A variety of programs and classes have been provided in previous years, with somewhat adequate resourcing of instructors for the range of topics offered.

The Ontario Fire College (OFC) had been a valued partner regarding enhancing training and certification opportunities as well as supporting resources available to the Leeds and the Thousand Islands Emergency Services Training Centre. Further enhancement of that positive relationship is continuing which will result in significant utilization of the training centre moving forward despite the closing of OFC facilities in March 2021.

There has been a turn-over of staff responsible for managing the promotion, planning, and operation of the training facility over the past 3-4 years. This has resulted in an inconsistent performance of the facility in terms of capacity scheduling, facility maintenance, enhancement of programs, and maximizing expected revenue typically targeted in the \$50,000 per annual range.

Notwithstanding the COVID-19 emergency health crisis which has suspended all operation and use of the training facility in 2020, it has seen positive and fairly robust activity in previous years, although inconsistent in daily/weekly operation and use by multiple Fire Service agencies and external industries, due to less than optimal resourcing in staff and budget.

The Training Centre is a valuable asset to the Township, LTIFS, surrounding region communities, and potential private sector industry partners.

Emergency Management & Training Inc.’s experience including consideration of the significant potential opportunities to leverage training, certification, fire service personnel development, expanding partner industry and private users has been applied in this matter. It is therefore recommended that LTIFS continue to utilize the resources at their disposal along with focusing resources (specifically staff and a separate, dedicated budget) to effectively brand and market the asset, create and monitor a multi-year business plan, establish revenue targets, operate and maintain the facility, identify ongoing joint industry and ex-industry opportunities to enhance the Training Centre.

There are areas of concern which need to be addressed in the short-term as risk management items should the facility continue to operate. Policy and documentation are needed regarding standards of

operating and safety policies; schedules of maintenance, checklists, and sign-offs for all props, units, and simulators; formal fee structure schedules, standard contract, liability and insurance documentation; templated schedules for all users.

See Appendix G, for a visual comparison of options regarding the Training Centre facility.

6.3 Fire Apparatus - New and Replacement Schedules

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

LTIFS is well-equipped with pumper trucks, tankers and support vehicles required for primary response to calls within the Township. All the vehicles have been identified in the Department's capital replacement plan. There is also reference to an aerial device that is scheduled for inclusion into the fleet in 2021. EMT is supporting the inclusion of this new aerial device as it will enhance the fire department's ability to battle 'above ground' fires that are out of the reach of conventional ground ladders.

Aerials or any type of elevated device trucks play a vital role at the scene of a structure fire; securing building access for upper floors, rescue, assisting with rooftop ventilation, and suppression can be achieved from an aerial ladder. These factors are especially important when dealing with apartment buildings and/or other structures of 2 storeys or more, such as commercial buildings and industrial facilities. As such, it is recommended that this apparatus be incorporated into the fleet's future fleet plan.

There are options relating to the types of elevated devices that a fire department can purchase.

6.3.1 Elevated Devices – Aerial Verses Tele-squirt

The following two pictures help to display the difference between an aerial truck and a tele-squirt. The aerial truck (in the left photo) is specifically designed to be used for access to upper floors of a structure for rescue. As such, it has a very large ladder structure that is generally 30 meters or more in length. Most of these ladders are equipped with a large capacity nozzle to assist with fire extinguishment on upper floors of a building or roof tops that are out of reach of regular ground ladders. Whereas the tele-squirt (in many cases) is a regular fire truck style frame that has the ability to raise a large capacity water nozzle, generally up to 15 or 20 meters. A tele-squirt has a much smaller ladder on it that can be used for firefighting purposes.



The key differences between the two vehicles are the size of the vehicle (the aerial is much larger), the reach of the elevated device and what the elevated device was designed for. Another key difference is the cost. A new aerial truck can cost as much as 1.6 million dollars. Whereas a new tele-squirt can cost as much as one million dollars or more.

The advantages of having an elevated device in a department's fleet are more than just having access to the upper floors of a building. They can also be used for rescues on angled slopes, they can be used to extend a firefighter beyond a shoreline to affect a water/ice rescue. Also, by having a more stable platform to work from, the elevated device offers a greater level of firefighter safety as opposed to working from a smaller ground ladder.

EMT is recommending that LTIFS move forward with the purchase of an aerial device.

6.3.2 Fire Underwriters Survey - Vehicle Replacement Recommendations

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

The Medium Sized Cities section (outlined in blue) is the recommendation for vehicle replacement for a township the size of TLTI. This allows for up to a 20-year replacement cycle, in which the fire vehicle can be utilized as Second Line response status. It is, however, recommended that all First Line units be replaced by a new or younger unit when it reaches 15 years of age.

TABLE #4: FUS Vehicle Replacement Recommendations

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

- All listed fire apparatus 20 years of age and older are required to be service tested by a recognized testing agency on an annual basis to be eligible for grading recognition (National Fire Protection Association 1071)
- Exceptions to age status may be considered in small to medium sized communities and rural centre conditionally, when apparatus condition is acceptable, and apparatus successfully passes required testing
- Major cities are defined as an incorporated or unincorporated community that has:
 - a. a populated area (or multiple areas) with a density of at least 400 people per square kilometre; AND
 - b. a total population of 100,000 or greater.
- Medium Communities are defined as an incorporated or unincorporated community that has:
 - a. a populated area (or multiple areas) with a density of at least 200 people per square kilometre; AND
 - b. a total population of 1,000 or greater.
- Small Communities are defined as an incorporated or unincorporated community that has:
 - a. no populated areas with densities that exceed 200 people per square kilometre; AND
 - b. does not have a total population in excess of 1,000.

Fire Underwriters Survey definition of 1st line, 2nd line and Reserve is:

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

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

The Fire Underwriters Survey is reviewed by insurance companies. Provided that the Fire Department adheres to the recommended replacement timelines through an approved capital replacement schedule, the Department will retain its fire rating for vehicle replacement. By ensuring that the vehicles are being replaced on a regular schedule, LTIFS is also demonstrating due diligence towards ensuring a dependable response fleet for the Fire Department and the community it serves through its vehicle replacement schedule.

6.3.3 National Fire Protection Association – Vehicle Replacement Recommendations

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

For fire departments that are considering refurbishing their vehicles to extend the in-service life, reference can be made to the NFPA 1912, *Standard for Apparatus Refurbishing*.

It should be noted that although the FUS do take refurbishment of vehicles into consideration, no credit rating is assigned to vehicles over 30 years of age.

During the station and equipment review, it was noted that the vehicles and small engines (pumps, generators, etc.) are in operable and good condition and that maintenance and repair work is addressed as quickly as possible by LTIFS or other maintenance and repair facilities.

TABLE #5: Apparatus Replacement Schedule (as noted by LTIFS)

Year and Type of Vehicle	Lifecycle	Scheduled Replacement
STATION 1:		
2012 Spartan Tanker	25 years	2037
2004 GMC Tanker	25 years	2029
2007 International Pumper/Tanker	25 years	2032
1997 GMC Tanker	25 years	2022
2005 GMC Rescue	20-year Review	2025 - Tentative to review. Rescues have low Mileage, rustproofed annually, and maintained – may not require replacement. Determined by Asset Management Program.
2016 Chevrolet ¾ Ton Pickup	10-year Review	2026 – Tentative to review. Pickups have low Mileage, rustproofed annually, and maintained – may not require replacement. Determined by Asset Management Program.
1998 Princecraft (19.5') with 125 hp Mercury Outboard	None	None
2002 24' Stanley Boat	None	None
2011 Kawasaki 4-Wheeler	None	None
STATION 2:		
2000 GMC Pumper	20 years	2020
2005 Ford Mini Pumper	20 years	2025
2007 International Pierce Tanker	25 years	2032
2011 Chevrolet Silverado ½ Ton	10-year Review	2021 Tentative to review. Pickups have low Mileage, rustproofed annually, and maintained – may not require replacement. Determined by Asset Management Program.

Year and Type of Vehicle	Lifecycle	Scheduled Replacement
(unknown) 17,5' Boat with 90 hp mercury outboard	None	None
STATION 3:		
2017 HME Pumper	20 years	2037
2019 Freightliner Tandem – Pumper/Tanker	25 years	2044
2016 Chevrolet Silverado ¾ Ton	10-year Review	2026 – Tentative to review. Pickups have low Mileage, rustproofed annually, and maintained – may not require replacement. Determined by Asset Management Program.
1999 19.5' Princecraft with 124 hp mercury outboard	None	None
STATION 4:		
2004 Freightliner Pumper	20 years	2024
2007 International Pierce Tanker	25 years	2032
2003 GMC Rescue	20-year Review	2023 - Tentative to review. Rescues have low Mileage, rustproofed annually, and maintained – may not require replacement. Determined by Asset Management Program.
2016 Chevrolet Silverado ¾ Ton	10-year Review	2026 – Tentative to review. Pickups have low Mileage, rustproofed annually, and maintained – may not require replacement. Determined by Asset Management Program.
2011 Kawasaki 4-Wheeler Side by Side	None	None

National Fire Protection Association and Fire Underwriters Survey both recommend replacement of front-run units after 20 years. This same vehicle can then be put into a secondary role. As such, all front-run units should be scheduled for replacement at the 20-year stage with the back-up/ secondary

units being replaced at 25 years. Once a pumper truck has passed the 25-year stage, no credit is given by Fire Underwriters.

6.4 Maintenance

LTIFS does not have its own mechanical division to complete repairs and testing to its vehicles and equipment, but they can conduct 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.

Recommendation(s)

Rec #	Recommendation	Estimated Costs	Suggested Timeline
12	Seeley's Bay fire station (#2) should be updated or relocated.	\$2.5 – 3 Million	Short to Mid-term (1-6 years)

Section 7 – Fire Service Agreements

7.1 Mutual Aid and Automatic Aid

SECTION 7: FIRE SERVICE AGREEMENTS

Due to the geographical makeup of the Township, populations are mainly located within the four communities of Lansdowne, Lyndhurst, Rockport, and Seeley's Bay. To ensure coverage in some of the outlying areas of the community, LTIFS has established response agreements with other communities to assist in providing effective coverage. LTIFS is an active participant in the Leeds and Grenville County Mutual Aid Agreement which includes the townships of Athens, Augusta, Edwardsburgh/Cardinal, Elizabethtown-Kitley, Front of Yonge, North Grenville, Rideau Lakes, Village of Merrick-Wolford, Village of Westport, Brockville, Gananoque, and Prescott.

There are mutual and automatic aid agreements with Kingston, Rideau Lakes, and Front of Yonge. These types of agreements are not only a cost-effective measure, they are also a way of ensuring that all residents of the community receive proper fire response protection when needed.

7.1 Mutual Aid and Automatic Aid

In fire and emergency services, mutual aid is an agreement among emergency responders to lend assistance across jurisdictional boundaries. This may occur due to an emergency response that exceeds local resources, such as a disaster or a multiple alarm fire. Mutual aid may be an ad hoc request only when such an emergency occurs. It may also be a formal standing agreement or cooperative emergency agreement on a continuing basis, ensuring that resources are dispatched from the nearest fire station, regardless of which side of the jurisdictional boundary the incident is on. Agreements that send the closest resources are regularly referred to as "automatic aid agreements".

During the review conducted by EMT, it was observed that LTIFS has positive working relationships with the other fire departments in the surrounding jurisdictions. As such, mutual aid and automatic aid agreements are in place and reviewed regularly. During the interviews conducted by EMT staff, no concerns were noted about the present agreements that are in place. The agreements are regularly reviewed to ensure applicable and reasonable criteria for aid responses are maintained.

Recommendation(s)

There are no recommendations for this section on fire service agreements.

SECTION 8 – Emergency Management

8.1 Emergency Management Program

SECTION 8: EMERGENCY MANAGEMENT

8.1 Emergency Management Program

In this section Emergency Management & Training Inc. conducted a review of the Township's Emergency Management Program, including existing training for Leeds and the Thousand Islands employees and response planning. 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. For every community in Ontario, there must also be an identified Community Emergency Management Coordinator (CEMC). Within the Township, this role is fulfilled by the Fire Chief.

Based on interviews with the Fire Chief, it would appear that the Township's Emergency Response Plan complies with all required legislation and that annual training exercises are conducted to ensure that the Emergency Plan is reviewed and practiced on a regular basis.

8.1.1 Current Condition

The primary and secondary Emergency Operations Centres (EOC) are functional spaces that can be set up, as needed, by the EOC group. The primary EOC is located at the Township Offices and has served the community well. The Township office is in the process of installing a back-up power system in the case of a power failure in the community which makes this a suitable location. The alternate EOC is located at the Lyndhurst Fire Station #4.

Based on a review of the two present EOC facilities and the program in place, the Township is well equipped in relation to its EOC locations. The single point of note is that, while not mandatory, the Township should consider adopting the Provincial doctrine regarding the EOC/Emergency Plan Incident Management System (IMS) model for its Emergency Management Program, the EOC and Emergency Plan document. This would align the Town's EOC/Emergency Plan with many municipalities, counties, and regions in Ontario.

Recommendation(s)

There are no recommendations for this section on fire service agreements.

SECTION 9 – Finance, Budgeting, and Capital Investment Plan

9.1 Operating Budgets

9.2 Capital Investment Plan

SECTION 9: FINANCE, BUDGETING, AND CAPITAL INVESTMENT PLAN

LTIFS has a set of annual operating and capital budget/forecasts that fluctuate based on the staffing, programs, and the equipment that have been identified for replacement. During the review of the operating and capital budget process, it was found that LTIFS is, generally, adequately funded in both areas. This indicates that there is a level of support by Council in assisting LTIFS with meeting its service level goals to the community.

Identifying cost savings was a component of this Fire Service Review. As stated above, LTIFS is, generally, adequately funded. The paid-on-call fire services delivery model is cost effective and the Fire Chief has ensured adequate cost avoidance and expenditure control. However, it is EMT's position that there are no additional opportunities to cost avoid or realize reasonable cost savings short of closing a station and/or not operating a training centre. Both options come with additional costs in balancing service levels, community expectations, and internal staff training requirements thereby negating the intention of cost avoidance or savings. LTIFS is providing a greater value than any savings that may be made.

9.1 Operating Budgets

During the review of the operating budget, it was noted that all key account operating sections are identified and tracked, such as:

Operating Budget Line Items:

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

9.2 Capital Forecasts

It appears there is a standard year replacement cycle for the fire trucks that is based on the FUS recommendations for frontline vehicles. This replacement cycle falls in line with the industry standards of 20 years or more (for smaller communities), depending on the vehicle's function.

Capital Budget Line Items:

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

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

- One pumper truck for every eight (pumpers),
- One spare aerial truck for every eight (aerials),
- One spare tanker truck for every eight (tankers), etc.

A reserve unit should always be available, should one of the primary units go out of service. This still applies if the department has less than eight vehicles. Alternate solutions include having agreements with neighbouring fire departments to provide apparatus on loan or through an automatic aid response when vehicles are out of service.

9.3 Reserve Funds

It is important to ensure that adequate annual contributions for small equipment, along with apparatus repairs, and contributions for future infrastructure (fire stations) are identified. If any shortfalls are determined, the Fire Chief should establish what effect this will have on operations and bring forward any recommendations (for funding adjustments), if necessary.

Based on information received from LTIFS, there is a business plan in place that incorporates all the department's general vehicle and equipment needs to support future goals and expectations.

Recommendation(s)

No recommendations for this section.

SECTION 10 – Conclusion and Recommendations

10.1 Conclusion

10.2 Recommendations and Estimated
Costs

SECTION 10: CONCLUSION AND RECOMMENDATIONS

10.1 Conclusion

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

Based on the present staffing, equipment, and fire stations locations, LTIFS is endeavoring to offer the most efficient and effective service possible.

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

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

10.2 Recommendations and Estimated Costs

The following chart provides a detailed overview of the recommendations found throughout this report along with any estimated costs and suggested timelines for implementation. This fire service review document is a culmination of 12 recommendations.

Summary of Recommendations

Rec #	Recommendation	Estimated Costs	Suggested Timeline
1	The present E&R By-law be reviewed, updated to reflect more recent changes, and presented to Council for approval. <ul style="list-style-type: none">The new update should include an outline of performance indicators as per NFPA.	Staff time only	Short-term (1-3 years) and ongoing
2	Organization – regular and consistent dissemination of information regarding LTIFS direction, priorities, communications internally and with Officer cadre, regular “Town Hall” style department meetings inclusive of all firefighters.	Staff time only	Immediate

Rec #	Recommendation	Estimated Costs	Suggested Timeline
3	<p>LTIFS is approaching the point of requiring the equivalent of one full-time, dedicated Fire Prevention Officer.</p> <ul style="list-style-type: none"> This can also be accomplished in the interim through the use of a dedicated, part-time position, however, one that is regularly scheduled to accomplish specific fire prevention and education program hours and annual objectives. 15 to 20 hours per week, for a total annual allotment of 780 to 1,040 hours. Establish a rank for FPO commensurate with the responsibilities and authority required of the role. 	<p>Estimated cost to implement either part-time or added time for firefighters \$20-30,000</p>	<p>Short to Mid-term (1-6 years)</p>
4	<p>The Fire Chief review LTIFS inspection program to identify levels of desired frequency in relation to the inspections required under legislation as well as service level objectives as set by LTIFS.</p>	<p>Staff time until a program is implemented</p>	<p>Short-term (1-3 years)</p>
5	<p>LTIFS staff need to present the updated CRA to Council in 2020. Upon completion of the risk assessment, the Fire Chief provides Council with a draft policy for review and passage that outlines a proactive fire inspection program to address identified needs and expected outcomes. This program should outline the building types and the frequency of inspections.</p> <ul style="list-style-type: none"> Should also identify what level of staffing is required to meet the FUS recommended inspection and the fire department recommended inspection program. To accomplish a staffing/hourly requirement, an assessment of recently conducted inspections and the time required to complete them is needed to create an anticipated costing for this program. 	<p>Dependent on resource requirements to meet Fire Chief recommendations</p>	<p>Short-term (1-3 years) and ongoing</p>

Rec #	Recommendation	Estimated Costs	Suggested Timeline
6	An assessment of staffing to assist LTIFS with its records management and IT resources implementation (i.e. iPads and other electronic documentation) for responses as well as Training Centre administration and operations.	Staff time	Short-term (1-3 years) and ongoing
7	<p>To assist with the fire prevention program including public fire safety education and inspection programs, a training matrix should be developed that details objectives and timings for all officers should be trained and certified to at least:</p> <ul style="list-style-type: none"> • National Fire Protection Association 1031: Fire Inspector I • National Fire Protection Association 1035: Fire and Life Safety Educator I 	Staff time for training	Short-term (1-3 years) and ongoing
8	<p>An annual training plan and multi-year training matrix to be developed, implemented, and assessed to ensure that the firefighters are completing the required training. To verify the training programs are meeting related NFPA (and other) training program recommendations, the following should be identified:</p> <ul style="list-style-type: none"> • training programs that are appropriate for the services that LTIFS is providing • number of hours required to meet the training needs • training resources required including annualized costs • joint partnerships with bordering fire departments, the OFM, and private organizations utilizing the Training Centre presented to Chief annually with key performance indicators monitor training compliance and updated business plan for Training Centre 	The costs are mostly related to staff hours unless outside facilities or trainers need to be accounted for	Short-term (1-3 years) and ongoing
9	A review and overhaul of existing SOG format and creation of new SOG/Ps where needed.	Up to \$10,000	Short-term

Rec #	Recommendation	Estimated Costs	Suggested Timeline
	Consider secondment/hiring or contracting out this work as it requires significant time, effort, and consistency to complete in a reasonably short time frame.		(1-3 years) and ongoing
10	<p>To improve firefighter response reliability, expectations, retention, succession planning:</p> <ul style="list-style-type: none"> • Consider hiring to maintain an overall roster to 100 firefighters. • Review of the pay scale and structure for responses and training as well as officer rank-based pay structure for time spent on fire department related business. • Consider review/replacement of the current ‘Points’ system. 	Increasing firefighter complement approx. \$45,000 in equipment in salaries. Pay scale review could cost \$15,000 per year.	Short-term (1-3 years)
11	The Fire Chief conduct an annual review of LTIFS and its response data in comparison to industry standards and surrounding departments as well as key performance indicators as established by LTIFS.	Staff time only	Short-term (1-3 years) and ongoing
12	Seeley’s Bay fire station (#2) should be updated or relocated.	\$2.5 – 3 Million	Short to Mid-term (1-6 years)

SECTION 11 – Appendices

- Appendix A - Definitions and References
- Appendix B – Fire Underwriters Survey, Suggested Inspection Frequency
- Appendix C – Five Step Staffing Process Review
- Appendix D– Fire Underwriters Survey Technical Document on Elevated Devices
- Appendix E – Call and Response Data for 2016 and 2017
- Appendix F – OFMEM Guidelines

SECTION 11: APPENDICES

Appendix A – Definitions and References

Automatic Aid Agreements

For the purposes of this report an automatic aid agreement means any agreement under which,

- a) a municipality agrees to ensure the provision of an initial response to fires, rescues and emergencies that may occur in a part of another municipality where a Fire Department in the municipality is capable of responding more quickly than any Fire Department situated in the other municipality; or
- b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and emergencies that may occur in a part of another municipality where a Fire Department situated in the municipality is capable of providing the quickest supplemental response to fires, rescues and emergencies occurring in the part of the other municipality.
 - *Automatic aid is generally considered in other jurisdictions as a program designed to provide and/or receive assistance from the closest available resource, irrespective of municipal boundaries, on a day-to-day basis.*

Commission on Fire Accreditation International - Community Definitions

- Suburban – an incorporated or unincorporated area with a total population of 10,000 to 29,999 and/or any area with a population density of 1,000 to 2,000 people per square mile
- Rural – an incorporated or unincorporated area with a total population of 10,000 people, or with a population density of less than 1,000 people per square mile.

National Fire Protection Association Documents

- National Fire Protection Association 1201 - Standard for Providing Fire and Emergency Services to the Public
- National Fire Protection Association 1500 – Standard on Fire Department Occupational Safety and Health Program, 2013 editions
- National Fire Protection Association 1710 – Standard for the Organization and Deployment of Fire Suppression Operations, Medical Operations, and Special Operations to the Public by Career Departments

- National Fire Protection Association 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments

Mutual Aid

- a) Mutual aid plans allow a participating Fire Department to request assistance from a neighbouring Fire Department authorized to participate in a plan approved by the Fire Marshal.
- b) Mutual aid is not immediately available for areas that receive fire protection under an agreement. The municipality purchasing fire protection is responsible for arranging an acceptable response for back-up fire protection services. In those cases where the emergency requirements exceed those available through the purchase agreement and the backup service provider, the mutual aid plan can be activated for the agreement area.

Appendix B – Fire Underwriters Survey, Suggested Inspection Frequency

Fire Underwriters Survey Suggested Frequency Chart

Occupancy	Fire Underwriters Survey 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

Appendix C – Five-Step Staffing Process

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

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

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

Step 2: Time Demand

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

- Local nuances
- Resources that affect personnel needs

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

Step 3: Required Personnel Hours

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

- Development/preparation
- Service
- Evaluation
- Commute
- Prioritization

Step 4: Personnel Availability and Adjustment Factor

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

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

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

Step 5: Calculate Total Personnel Required

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

Correct calculations based on the following:

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

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

Appendix D – Fire Underwriters Survey Technical Document on Elevated Devices



Fire Underwriters Survey™

TECHNICAL BULLETIN

FIRE UNDERWRITERS SURVEY™
A Service to Insurers and Municipalities

LADDERS AND AERIALS: WHEN ARE THEY REQUIRED OR NEEDED?

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

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

Fire Underwriters Survey

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

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

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

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

POWERED BY  opta

AN SCM COMPANY

Western region 1-877-255-5240
Central region 1-800-268-8080
Eastern region 1-800-263-5361

fus@optaintel.ca
fireunderwriters.ca
optaintel.ca



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

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

NFPA

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

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

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

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

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

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

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



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

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

Excerpt: National Building Code 2012

A-3 Application of Part 3.

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

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

POWERED BY  **opta**

AN SCM COMPANY

Western region 1-877-255-5240

Central region 1-800-268-8080

Eastern region 1-800-263-5361

fus@optaintel.ca

fireunderwriters.ca

optaintel.ca



Firefighting Assumptions

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

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

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

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

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



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

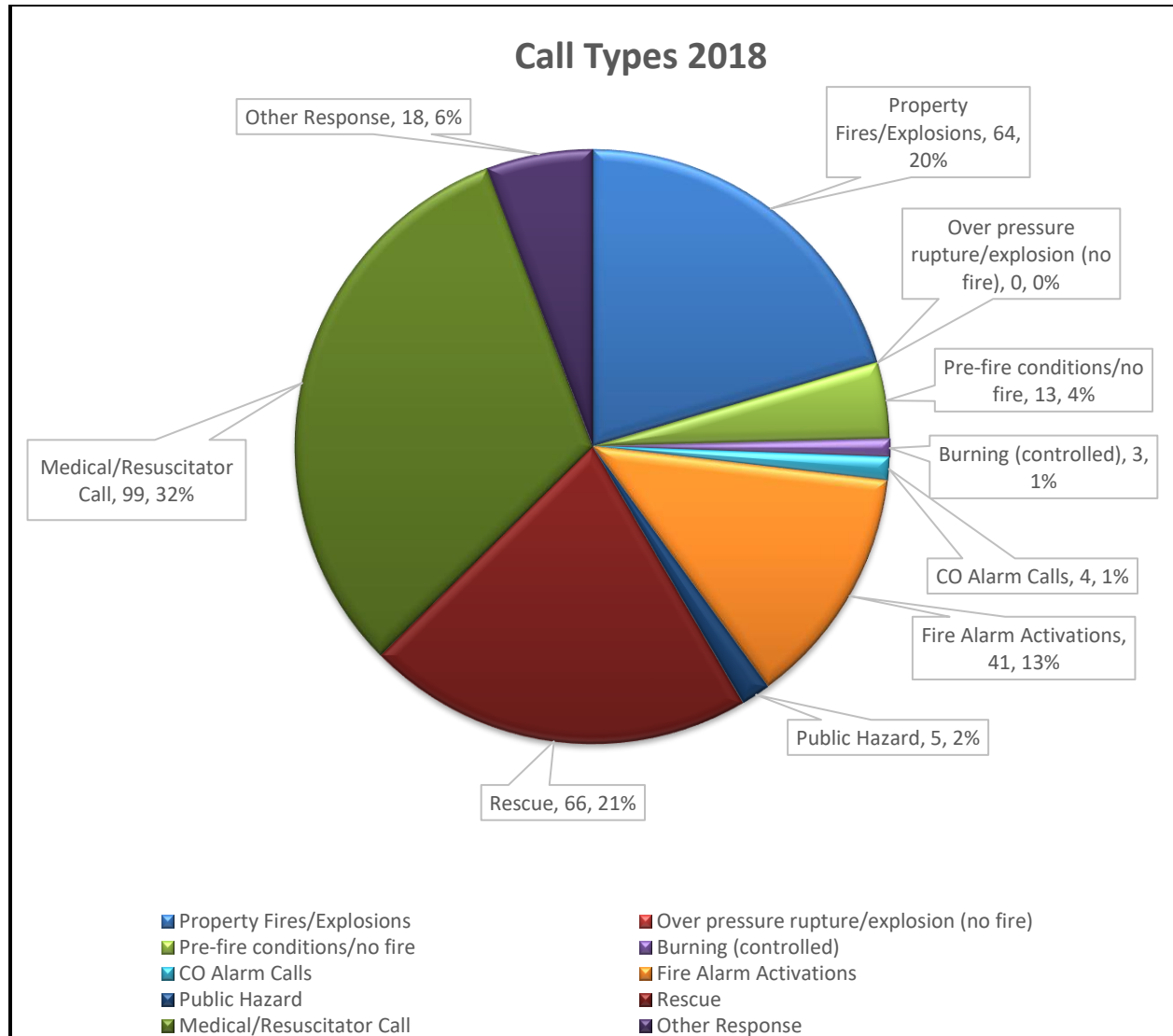
The water supply requirements for fire protection installations depend on the requirements of any automatic sprinkler installations and also on the number of fire streams that may be needed at any fire, having regard to the length of time the streams will have to be used. Both these factors are largely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

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

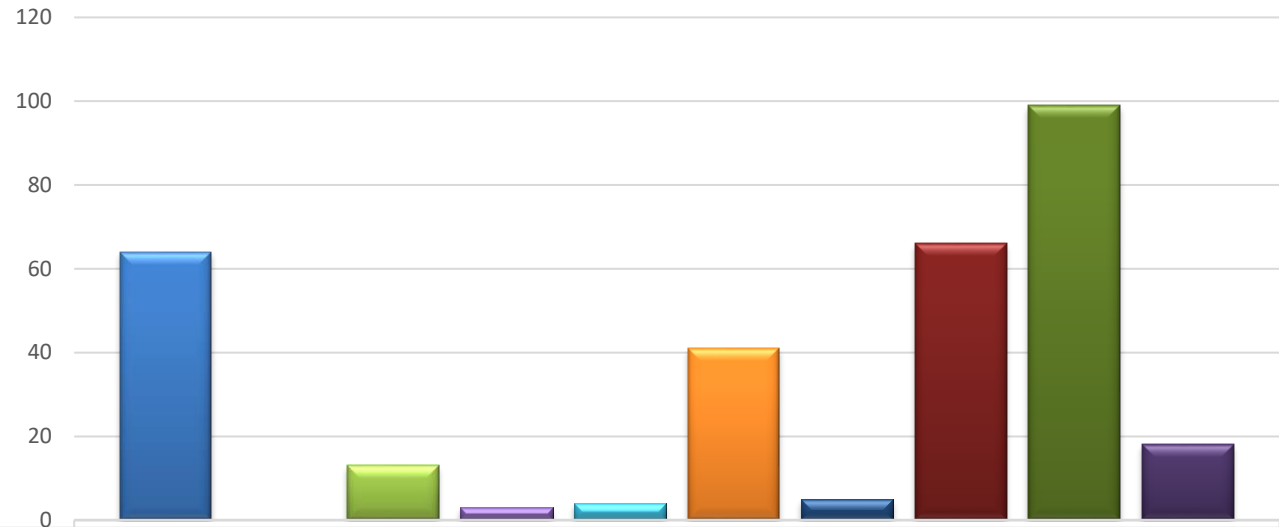
Western Canada	Quebec	Ontario	Atlantic Canada
Fire Underwriters Survey 3999 Henning Drive Burnaby, BC V5C 6P9 1-800-665-5661	Fire Underwriters Survey 255, boul. Crémazie E Montreal, Quebec H2M 1M2 1-800-263-5361	Fire Underwriters Survey 175 Commerce Valley Drive, West Markham, Ontario L3T 7P6 1-800-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

Appendix E – Call and Response Data for 2018 and 2017

2018 Calls and Response Data

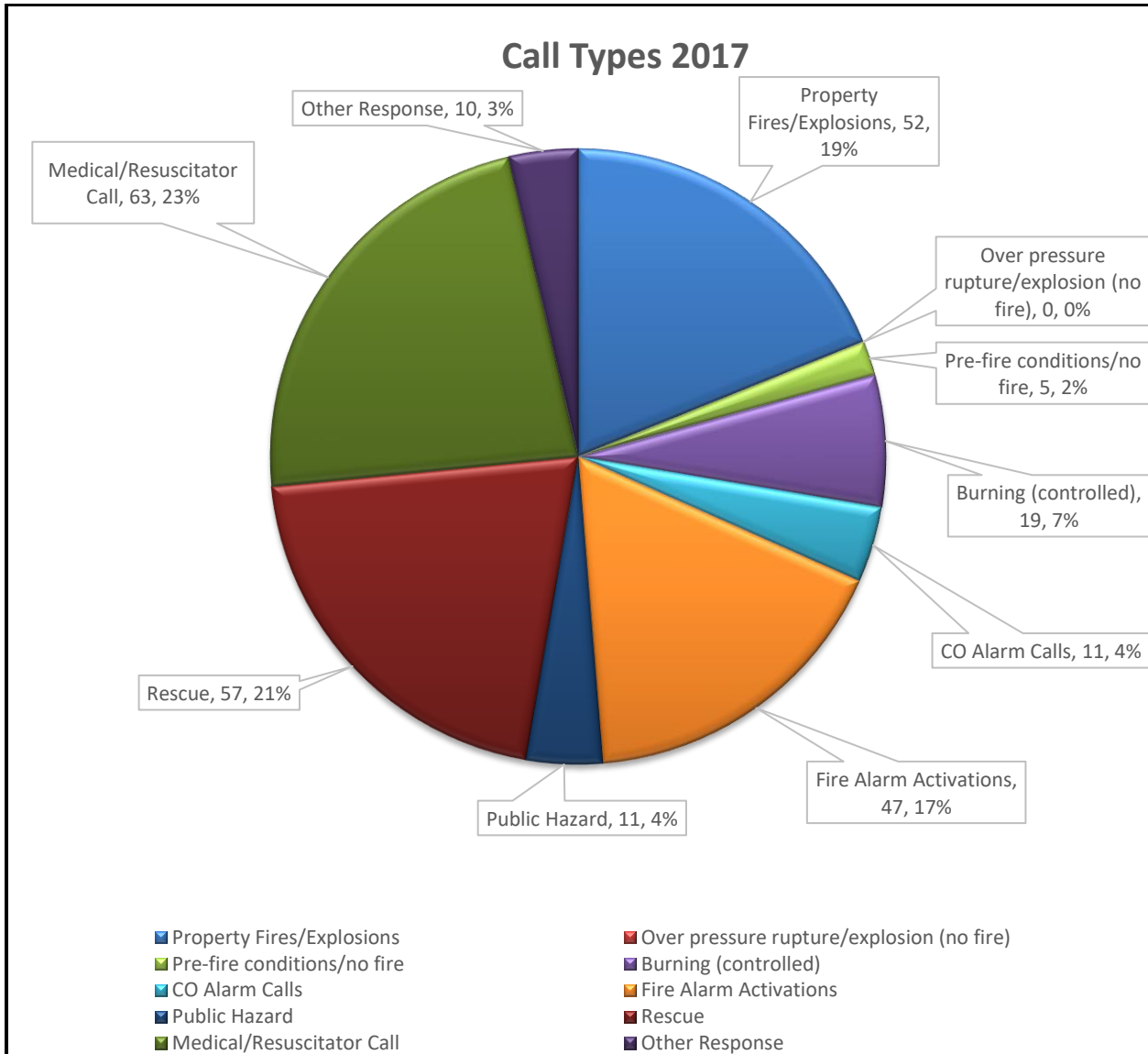


Calls 2018

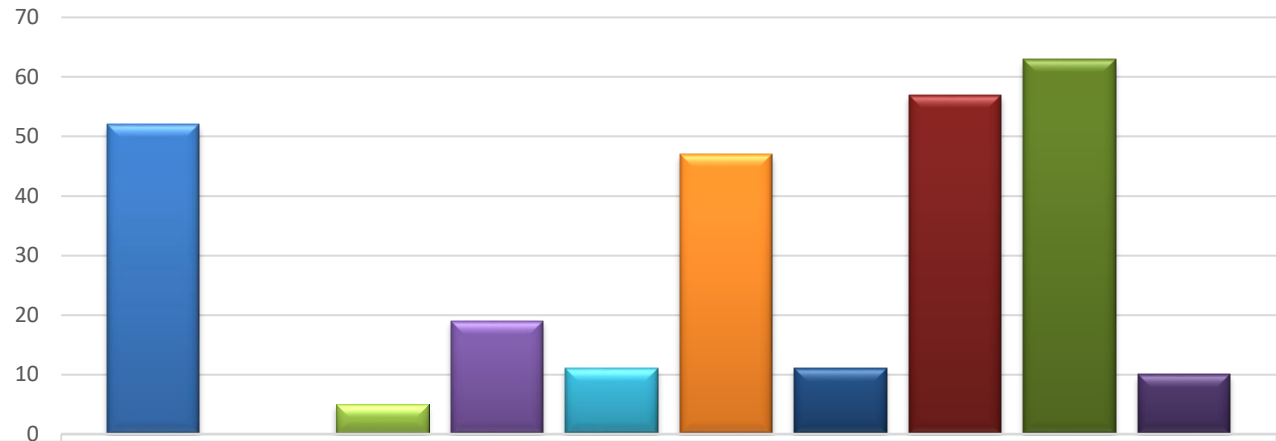


Property Fires/Explosions	64
Over pressure rupture/explosion (no fire)	0
Pre-fire conditions/no fire	13
Burning (controlled)	3
CO Alarm Calls	4
Fire Alarm Activations	41
Public Hazard	5
Rescue	66
Medical/Resuscitator Call	99
Other Response	18

2017 Calls and Response Data



Calls 2017



Property Fires/Explosions	52
Over pressure rupture/explosion (no fire)	0
Pre-fire conditions/no fire	5
Burning (controlled)	19
CO Alarm Calls	11
Fire Alarm Activations	47
Public Hazard	11
Rescue	57
Medical/Resuscitator Call	63
Other Response	10

Appendix F – OFMEM Guidelines

Planning and Growth Practices

Public Fire Safety Guidelines	Subject Coding PFSG 04-58-12
Section Fire Administration	Date August 1998
Subject Planning and Growth Practices	Page

Under Review

Purpose:

To provide municipalities and fire departments with considerations for planning and growth practices.

Service Delivery Implications:

- Fire departments, in conjunction with council and the municipal administrators, should develop and implement a planning process.
- The process should provide information for a community wide, balanced and cost-effective fire control strategy.
- Existing conditions and anticipated community growth must be taken into consideration.
- Effective planning improves:
 - financial forecasting
 - quality and quantity of services
 - organizational performance
 - efficiency and effectiveness of the department
 - the ability to identify future service demands
- Failure to consider planning and growth will lead to confusion and an inability to maintain standards of coverage.¹

Service Delivery Options:

- Most fire protection agencies are experiencing escalating demands for emergency response and fire prevention services, fire safety education, emergency medical services, and hazardous materials control. Resources to provide these services are often limited.
- Fire departments must take the following steps to ensure proper needs analysis:

1. Identify the nature and extent of risks.

2. Establish service levels.
 3. Identify the most effective use of resources to obtain the desired service level.
 4. Implement a management evaluation system to review the effectiveness of the implemented levels of service.
- This planning process should address the following:
 - master planning
 - evaluating programs and services
 - projecting station locations and re-allocations
 - determining staffing levels and assignments
 - co-ordinating with other emergency services
 - co-ordinating development with other community departments
 - co-ordinating with other counties/districts/regions
 - co-ordinating with private sector organizations

Strategic (Master) Plan

- The strategic or master plan is based upon a community risk management approach that:
 - considers the nature, extent and magnitude of the risks in the community
 - considers methods of providing protection for identified risks
 - considers alternative levels of protection
 - determines an acceptable level of risk
 - establishes objectives for the fire department and any additional requirements that are necessary for the community to limit the risk
 - develops and adopts a plan that will provide the established level of fire department services and other requirements
 - establishes a process to evaluate the effectiveness of the plan
 - establishes a process to periodically validate the plan

Policy Requirements:

- Those responsible for fire department planning should:
 - maintain an ongoing relationship with other agencies involved in community planning
 - keep the fire chief and other staff informed of community development plans, projected service demands, alternative approaches, and problems that might develop as change occurs.
- These liaisons should include budget and planning agencies, redevelopment agencies, water, street, traffic, and engineering departments, and private sector developers.

Quality Management Standards:

- The fire department should have a master plan to guide its activities. It should be:
 - long term (3 to 5 years)
 - the result of a continuous planning process
 - published and updated on regular basis
 - a companion document to the budget
 - the result of input from all stakeholders
 - approved by municipal government or authority having jurisdiction
- The fire department should have a process to assess, measure and evaluate the attainment of progress towards completion of specific objectives and overall system performance.

Quality and Performance Measures:

Evaluating Programs And Services

- Fire departments should have an evaluation system in place for programs and services.
- This program should be based on a cost/benefit analysis that:
 - determines need
 - develops objectives
 - develops the criteria for measuring effective accomplishment
 - generates alternatives
 - analyses and selects alternatives
- Any program of planning needs to encompass any or all aspects of the fire department's activities.
- The goal is to improve and maintain the efficiency and effectiveness of the fire department as well as providing for a responsive approach to the community's changing needs for service

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 <http://www.mcscs.jus.gov.on.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.

[02-02-12](#) & [03](#) Fire Risk Assessment

[02-03-01](#) Economic Circumstances

[02-04-01](#) & [23](#) Capabilities of Existing Fire Protection Services

[03-01-13](#) Preparation of Draft Report on Existing Fire Protection Services

[04-12-13](#) Core Services

04-39-12 Fire Prevention Effectiveness Model

04-56-12 Use of Fire Related Statistics

Additional References: *National Fire Service Accreditation Program*

¹ Standards of Coverage - a written statement that combines service level objectives with staffing levels to define how and when a fire agencies resources will respond to a call for service.

Station Training Practices

Public Fire Safety Guidelines	Subject Coding PFSG 04-81-01
Section Training & Education	Date August 1998
Subject Station Training Practices	Page

Under Review

Purpose:

This guideline provides suggested procedures regarding the delivery of station training programs.

Introduction:

- Training and educational resource programs express the philosophy of the organization they serve and are central to its mission.
- Increased fire service expectations and evolving suppression and apparatus technology have expanded the role of fire service personnel.

Service Delivery Implications:

- A key factor in the success of fire suppression activities is the performance of members of the organization.
- This performance level is achieved and maintained through a comprehensive training program.
- One critical component of this training program is training carried out within the fire station.
- Learning resources should include a library as well as audio visual material.
- Training staff should provide services which encourage and stimulate competency, innovation, and increased effectiveness.

Service Delivery Options:

- The training program content should be coordinated with the needs of department personnel and available resources in the community.
- Training officers should:
 - provide performance standards
 - develop training schedules
- Within the fire station an officer or other qualified person may deliver the training program.

Policy Requirements:

- The fire department should have a training program and policy that ensures personnel are trained and competency is maintained to effectively, efficiently, and safely execute all responsibilities consistent with the department's mandate.
- The training program should be consistent with the fire department mission statement and meet its organizational needs
- The program must be consistent with legal requirements for training
- Company officers should be responsible for the on-going, in-service training of members of the company assigned to them.
- Sufficient time should be spent on company (in station) training during tours of duty in full time departments, and at convenient times for volunteers, to ensure required proficiencies are met.
- Training should be in the form of self-directed learning, classroom instruction, practice drills, familiarization tours and pre-fire planning.

Quality Management Standards:

- The effectiveness of the training program should be evaluated through fire department performance at emergency incidents as well as training simulations and exercises.

This evaluation should ensure that:

- training is uniform
- fire department procedures are followed properly

Quality and Performance Measures:

- Company officers should periodically evaluate members assigned to their company to determine:
 - training objectives have been achieved
 - the training has been effective for each member
 - elements of individual performance evaluations, when required

Codes, Standards, Best Practices:

Codes, Standards, and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at www.ontario.ca/firemarshal. Please feel free to copy and distribute this document. We ask that the document not be altered in any way, that the Office of the Fire Marshal be credited and that the documents be used for non-commercial purposes only.

Additional References:

- Ontario Firefighter and Company Officer Training Curriculums
- Ontario Firefighter and Company Officer Standards

Service Providers - Volunteer Firefighter Staffing

Public Fire Safety Guidelines	Subject Coding PFSG 04-03A-12
Section Emergency Response	Date March 2001
Subject Service Providers - Volunteer Firefighter Staffing	Page

Under Review

Purpose:

To identify considerations for adequate fire department staffing using volunteer firefighters. .

Introduction:

- Most Ontario fire departments employ volunteer or part-time firefighters. They provide a provincial resource estimated to save residents more than one billion dollars annually.
- As society becomes more mobile, volunteer and part-time firefighters spend less time in their communities than has been traditional.
Safe emergency incident operations require adequate staffing at all times.

Service Delivery Implications:

- A key factor in the ability of some municipalities to organize and operate a fire department is the opportunity to utilize volunteer or part-time firefighters.
- Adequate staffing over a 24 hour period, 7 days a week requires a significant pool of well educated trained and highly motivated personnel.
- A lack of adequately trained staff has a detrimental impact on public fire protection and firefighter safety.
- While automatic aid and mutual aid may support emergency incident operations, arrival times of external resources may be significant and will vary through uncontrollable factors.

Staffing Best Practices:

Consider the following ideas used successfully by fire departments:

- Create a number of platoons within the fire department and mobilize staff based on needs established by operational policy.
- Create a daily or weekly standby list and reimburse personnel accordingly.

- Assign firefighters to particular tours of duty and reimburse personnel accordingly.
- Schedule volunteer or part-time firefighters to work on specific fire department apparatus for an assigned shift.
- Implement timely activation of automatic or mutual aid established in communications policy.
- Implement automatic aid for target occupancies during specific periods of the day when staffing levels may be insufficient.
- Establish protocols to ensure adequate resources are alerted immediately for identified high risk occupancies or properties.

Related Functions:

The continued viability of the volunteer fire service is dependent upon the successful recruitment and retention of the best qualified personnel available. The viability of volunteer or part time firefighters remains as long as there are sufficient numbers available for emergency responses at all times.

In order to demonstrate the inherent value that volunteer firefighters represent to the community, municipalities should consider should consider implementing local support mechanisms, such as:

- Fire department competency models created by the fire service
- Implementation of a mutual commitment document between the municipality and the fire service
- Define employee roles, responsibilities and expectations
- Adequate compensation with regard to roles, responsibilities expectations
- Define the benefits of belonging to the fire service
- Implementation of an exit interview policy
- Fire service recognition program

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 <http://www.mcscs.jus.gov.on.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.

See also PFSG

See also:

[04-04-12](#) Automatic Aid

[04-09-12](#) Fire Protection Agreements

[04-84-13](#) Volunteer Firefighter Recruitment and Retention

Selection of Appropriate Fire Prevention Programs

Public Fire Safety Guidelines	Subject Coding PFG 04-40-03
Section Fire Prevention and Public Fire Safety Education	Date March 2001
Subject Selection of Appropriate Fire Prevention Programs	Page

Under Review

Purpose:

To assist in developing or selecting programs to meet the four minimum fire prevention and public education requirements of the Fire Protection and Prevention Act.

Introduction:

Municipalities must develop a fire prevention and fire safety education program that addresses their needs and circumstances, as determined by the application of sound risk management principles.

Minimum Required Services:

Section 2. (1) of the Fire Protection and Prevention Act states:

(1) Every municipality shall,

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

Therefore, as a minimum acceptable model municipalities must provide the services listed below. The simplified risk assessment should identify the extent to which additional services may be required to meet the local needs and circumstances of specific municipalities. Municipalities may develop a different model for fire prevention and public education services provided they are able to demonstrate that their model meets the mandated requirements of the community's local needs.

3. Simplified risk assessment
4. A smoke alarm program
5. Fire safety education material distributed to residents/occupants

6. Inspections upon complaint or when requested to assist with code compliance

Simplified Risk Assessment:

A simplified risk assessment must be done for the community to determine the needs and circumstances of the municipality and to establish the level of fire prevention and public fire safety education required. Any significant risks identified through the analysis should be addressed. For example; if the risk assessment indicates a significant life or fire loss in multi-unit residential buildings, a program that will adequately improve their fire safety - such as routine inspections - would be appropriate to address the specific need of the community. The scope and extent of the remaining three required programs can be determined by the results of the simplified risk assessment.

Smoke Alarm Program:

The objective of a smoke alarm program is the provision and maintenance of working smoke alarms and home escape planning activities for all residential occupancies in the municipality. The activities associated with the program may include any combination of the following:

- community surveys
- distribution of pamphlets or other education material
- instruction to residents regarding smoke alarms
- providing smoke alarms at reduced or no cost
- installation of smoke alarms
- inspecting premises to determine compliance with the smoke alarm provisions of the Fire Code.

Fire Safety Material:

Fire safety education material may be distributed to residents and/or occupants consistent with the community's needs and circumstances by any combination of the following activities:

- distribution of pamphlets or other education material
- public service announcements utilizing the available media
- instruction to residents/occupants on fire safety matters
- presentations to resident groups
- attendance at public events

Fire safety education material addresses such issues as preventing fire occurrence, the value of smoke alarms, planning escape from fire, and being prepared to deal with a fire incident. The OFM Regional Office can provide assistance with fire safety education material for the public. Fire safety education material may also be found on the OFM website.

Public Fire Safety Education:

For public fire safety education, the following should be established:

- the audience to be targeted

- the message that needs to be delivered to improve the fire safety situation must be determined.
- an inventory of the available or required resources and programming.
- the most appropriate method of delivering the message.
- the duration or frequency of the message delivery.

Inspections:

Inspections of properties must be done, or arranged for, by the municipality when:

- a complaint is received regarding the fire safety of a property
- a request is made to assist a property owner or occupant to comply with the Fire Code and the involvement of the Chief Fire Official is required by the Ontario Fire Code

Any inspection conducted must include notification of the property owner or responsible person and appropriate follow-up with enforcement, if necessary.

Inspection Program Considerations:

For inspections, the following factors should be considered:

- The type of inspections to be conducted and the buildings to be inspected. For example: routine inspections of all multi-unit residential buildings, new construction inspections of all buildings, smoke alarm checks of single family residential buildings.
- The methods of inspection appropriate for the circumstance. This will have implications for the amount of time required to inspect, as more comprehensive inspections require more time.
- The category of buildings being inspected, and the skills and knowledge required to inspect them. The more complicated the building, the more skill and knowledge required.
- The frequency that the properties will be subject to inspection

Program Selection:

In addition to the minimum services outlined above, programs need to be selected, developed and implemented that address any risks identified through needs analysis. Programs being considered need to be effective for the type of concerns identified. For example; a routine inspection program would be effective to address concerns for the fire safety of a group of buildings that demonstrate poor performance during fire incidents. Similarly, a public fire safety education program such as Older and Wiser would be effective where there is a lack of knowledge of fire safety behaviour by the elderly and this lack causes them to suffer significant fire losses.

Each area of program activity has a number of factors which need to be considered.

Service Delivery Options:

The Fire Prevention Effectiveness Model may also assist with informed decision making about fire prevention and public education programs. Once the needs analysis component of the model has been completed, fire department managers can decide what programs are appropriate to address their identified local risks.

There are a number of options for delivery of selected fire prevention programs. They can be provided by fire department staff - personnel dedicated to fire prevention and/or fire suppression staff. Other persons in the community may be used. Agreements with other communities may be made for provision of services. The OFM provides assistance in delivery of fire prevention programs through the Assist Program.

Policy Requirements and Other Relevant Issues:

Any selected/mandated programs must have sufficient resources, human and others, to be effectively delivered.

Persons assigned responsibility for delivering programs must be adequately trained.

Policy decisions must be made with appropriate authority and records made of the level of service decreed.

Appropriate program guidelines must be established for each program to be delivered.

Any fees for services should be discussed and decided upon at the policy level.

Legal counsel should be consulted regarding any changes to the delivery of services to the community.

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 <http://www.mcscs.jus.gov.on.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.

See also PFSG

[01-02-01](#) Comprehensive Fire Safety Effectiveness Model

[04-12-13](#) Core Services

[04-40A-03](#) Simplified Risk Assessments

[04-40B-12](#) Smoke Alarm Programs

[04-40C-12](#) Public Education Programs

[04-40D-12](#) Inspection Programs

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 guideline 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](#)

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,
 - 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

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

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, **with the same**

Provides volunteers

if he/she makes a written request for such a review **opportunity for review as full-time members** 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.

21. The *fire chief* shall take all proper measures for the **Prevention, control and extinguishing fires** 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:

- 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.

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

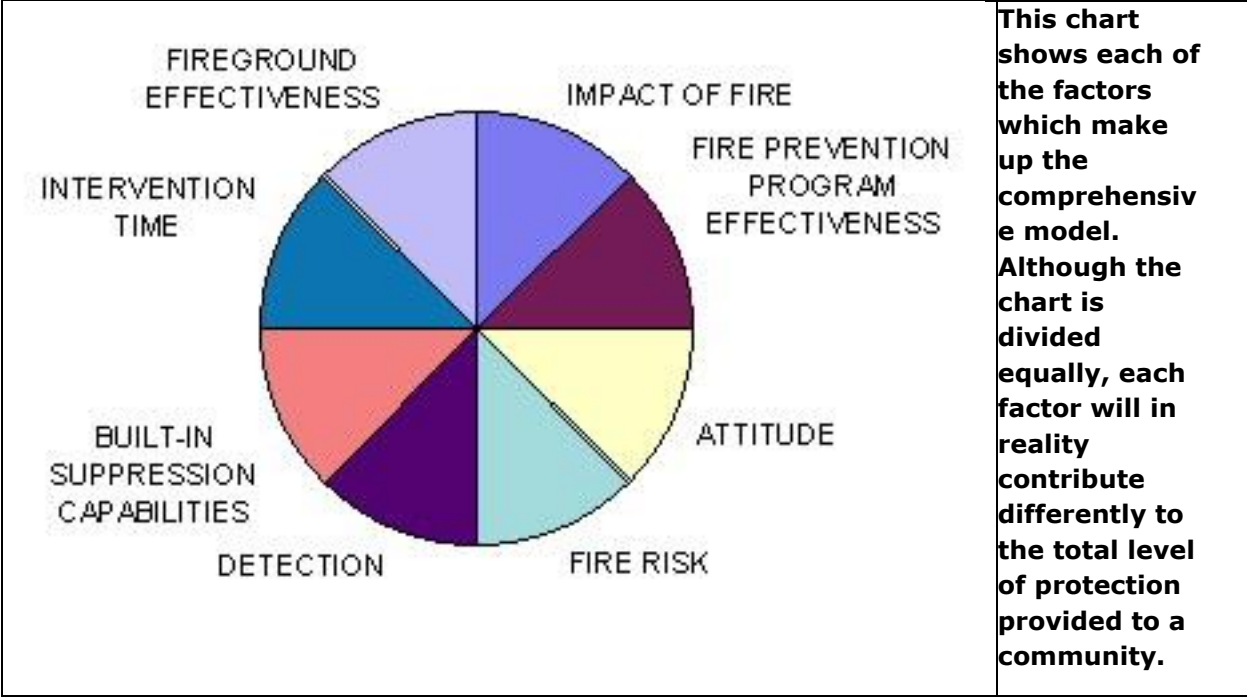
Every day, local elected leaders, managers and fire chiefs are faced with decisions relating to the provision of fire and other related emergency services for their community. Now, more than ever there are constant pressures of doing "more with less". Many government officials are hard-pressed to justify 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.

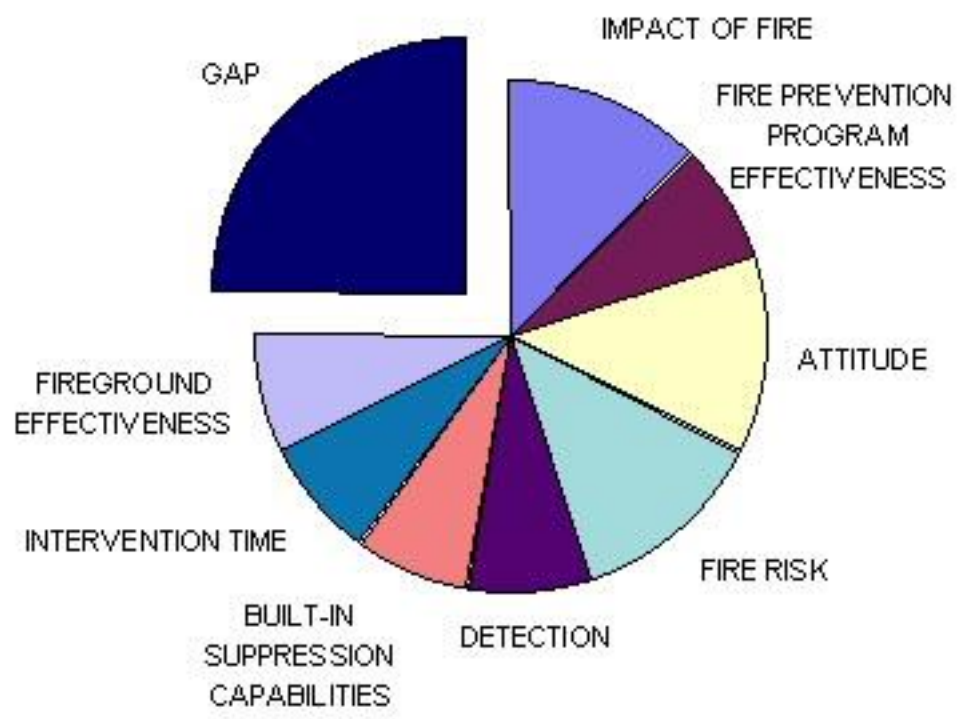
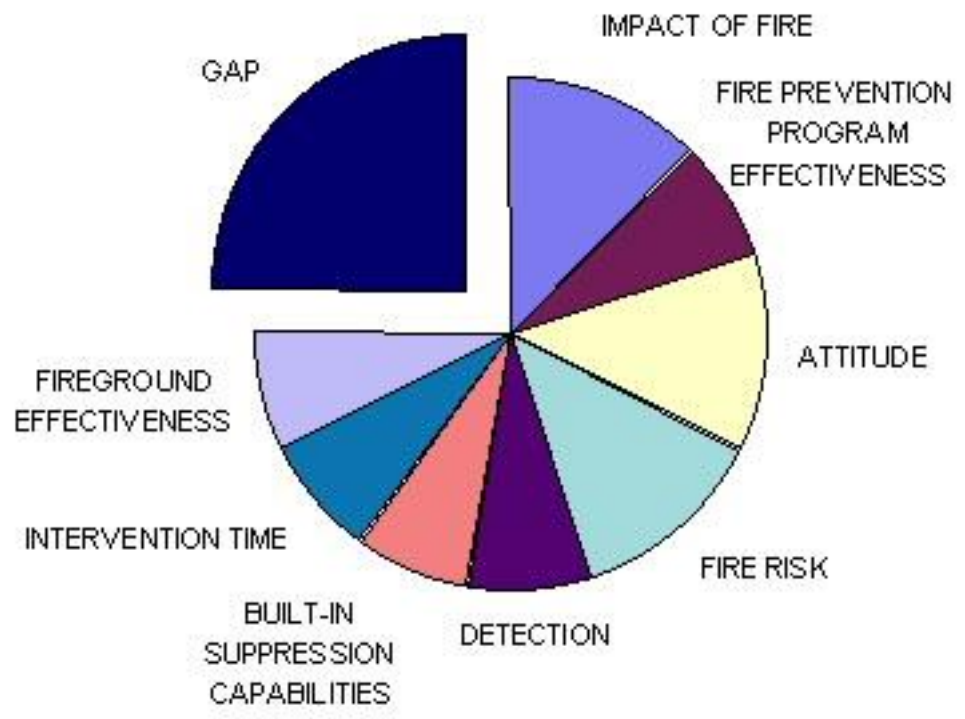
Community Master Fire Protection Plan

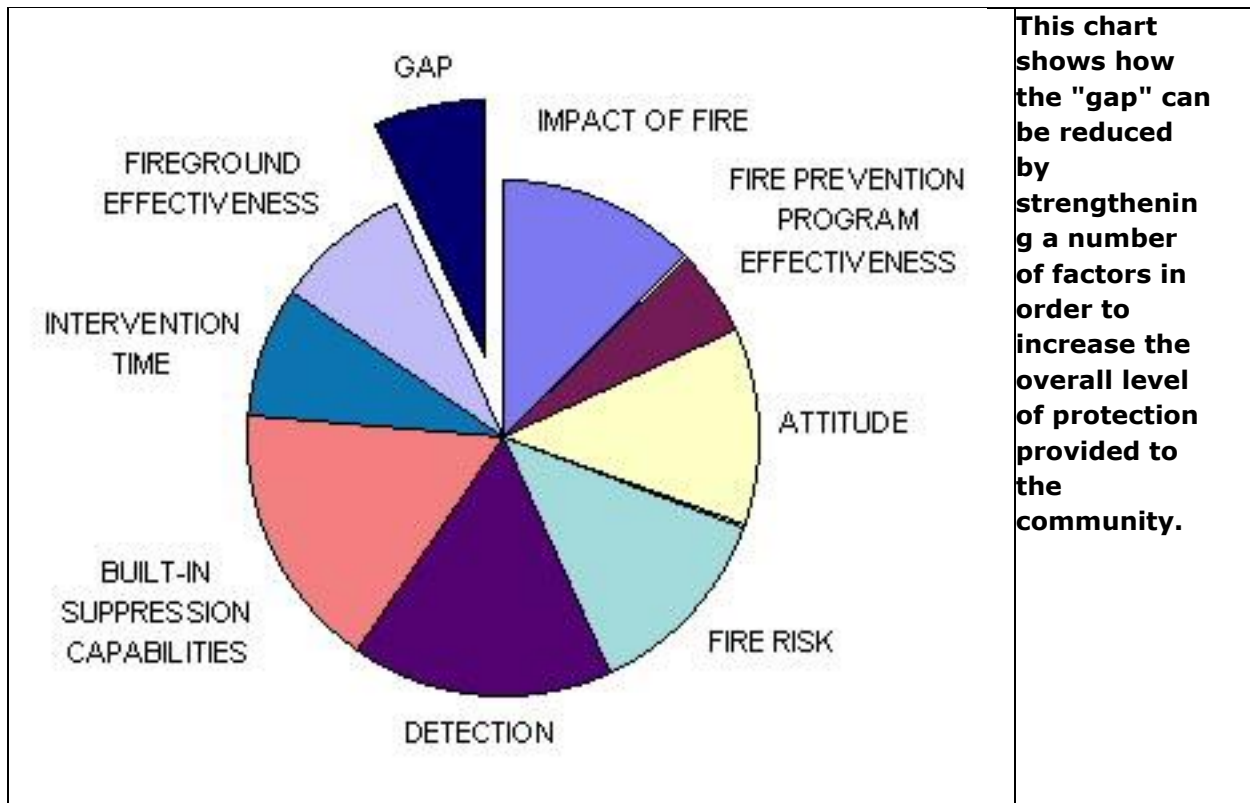
Every fire department should be guided by a master or strategic plan. This *Community Master Fire Protection Plan* traditionally focused on the identification of fire hazards and planning an appropriate suppression force response. Today, hazard or risk assessment has expanded well beyond the fire problem 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.





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 it's 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.

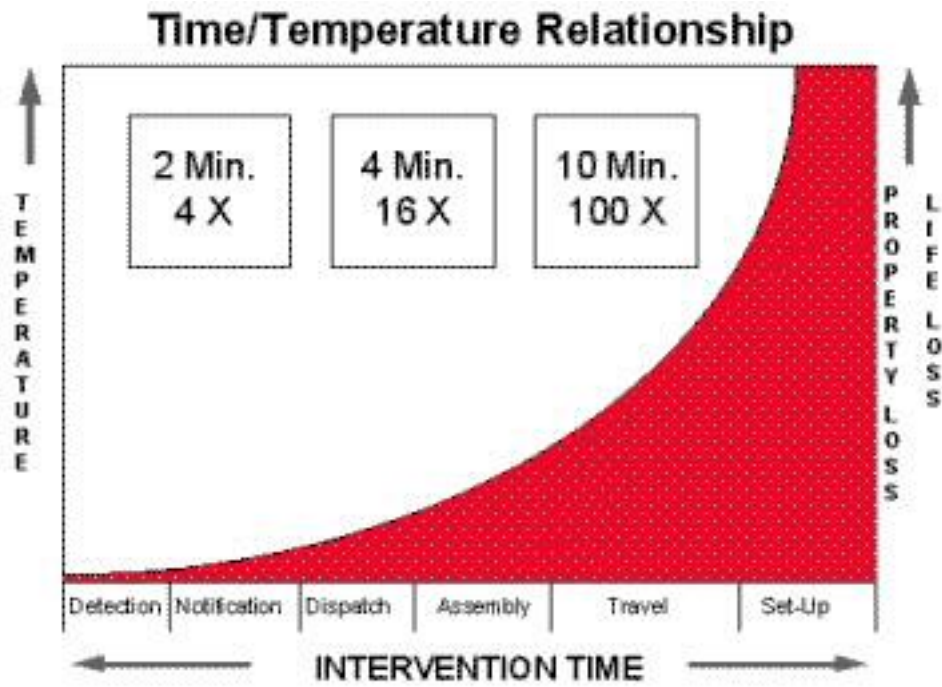
- Does your community promote the use of built-in suppression devices in all types of occupancies
 - residential?
 - commercial?
 - industrial?
 - assembly?
 - institutional?
- Does your community consider built-in suppression devices and early warning detection as an alternative to traditional concepts 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 G – Training Centre Facilities – Options Comparison

Close Facility	Outsource Training	Operate Training Centre
Revenue: \$0	Revenue: \$0	Revenue: \$1,000 day (net) - based on past actuals Expected usage: 60 days regional training centre; plus 30 days external / PPP <ul style="list-style-type: none"> o Min \$60,000 revenue anticipated o Potential of \$90,000+ (Additional PPP 30 days)
Costs: Loan: \$45,000 (until 2027)	Costs: Loan: \$45,000 (until 2027)	Costs: Loan: \$45,000 (until 2027)
Expenses: Admin: \$20,000	Expenses: Admin : \$20,000	Expenses: Admin: \$20,000
Utilities: \$5000	Utilities: \$5000	Utilities: \$15,000
	Equipment/vehicle: \$10,000	Equipment/vehicle: \$10,000
	Meals & Mileage: \$80,000	Propane: \$35,000 (live fire props operation)
	Accommodations: \$40,000	
	Salary: 81 hours x \$22 x 100 members = approx. \$180,000 Course fees per FF to NFPA FF2 \$15,000 x 100 FF = \$150,000 Maintenance/ongoing training: \$60,000 annually	
Net : \$70,000 (per year)	Net: \$175,000 - \$135,000 (per year)	Net: \$65,000 -\$35,000 (per year)

