



Township of South Frontenac Fire Master Plan

©2026

Township of South Frontenac Fire Master Plan

Prepared by:

The Loomex Group Ltd.

550-925 Airport Road

Peterborough, ON K9J 0E7

phone: 705-775-5022 | website: loomex.ca

© 2026

Table of Contents

Acknowledgements	9
Executive Summary	10
Summary of Recommendations	12
1.0 Introduction	21
1.1 Purpose of a Fire Master Plan	21
1.2 Fire Master Plan for South Frontenac	21
1.2.1 Project Background	21
1.2.2 Initial Stakeholder Engagement Process	22
1.2.3 Data Collection Process	22
1.2.4 Drafting the Fire Master Plan	24
1.2.5 Finalizing the Fire Master Plan	25
2.0 Community Characteristics	26
2.1 Overview of the Township of South Frontenac	26
2.2 Overview of South Frontenac Fire & Rescue	26
2.2.1 History	26
2.2.2 Current Structure	27
3.0 Legislation and Standards	28
3.1 Overview	28
3.2 Legislative Compliance in South Frontenac	28
3.3 Community Risk Assessment	29
3.4 Recommendations	30
4.0 Bylaws and Service Levels	31
4.1 Overview	31
4.2 Establishing and Regulating Bylaw	31
4.3 Core Services	34
4.4 Specialized Services	38
4.4.1 Ice Water Rescue	41
4.4.2 Surface Water Rescue Services	42
4.4.3 Vessel Rescue Services	44
4.5 Other Fire Protection Bylaws	47
4.6 Roadmap for Improvement	48
4.7 Recommendations	51
5.0 Fire Service Agreements	53
5.1 Overview	53
5.2 Mutual Aid	53
5.3 Automatic Aid	54
5.4 Fire Protection Agreements	55
5.5 Other Service Agreements	55

5.6	Roadmap for Improvement	57
5.7	Recommendations.....	57
6.0	Recruitment and Retention	59
6.1	Overview	59
6.2	Recruitment.....	59
6.3	Retention.....	60
6.4	Attendance Management.....	62
6.5	Roadmap for Improvement	65
6.6	Recommendations.....	67
7.0	Departmental Communications	68
7.1	Overview	68
7.2	Internal Communications	68
7.3	External Communications.....	70
7.4	Roadmap for Improvement	71
7.5	Recommendations.....	71
8.0	Occupational Health and Safety	73
8.1	Overview	73
8.2	Section 21 Firefighter Guidance Notes	73
8.3	Cancer Prevention Checklist.....	74
8.4	Joint Health and Safety Committee.....	75
8.5	Personal Protective Equipment.....	76
8.5.1	Proper Fit and Sizing of a Protective Ensemble.....	77
8.5.2	Cleaning, Maintaining, and Replacing a Protective Ensemble	77
8.5.3	Self-Contained Breathing Apparatus Testing	78
8.5.4	Respirator Fit Testing	79
8.6	Diesel Exhaust Systems	79
8.7	Health and Wellness.....	81
8.7.1	Overview of Firefighter Health and Wellness	81
8.7.2	Mental Health	82
8.7.3	Physical Health	83
8.8	Fireground Safety.....	84
8.8.1	Fireground Safety and Incident Command	84
8.8.2	Pre-Incident Planning	85
8.9	Roadmap for Improvement	86
8.10	Recommendations.....	88
9.0	Fire Prevention and Public Education.....	89
9.1	Overview	89
9.2	Community Demographics	90
9.2.1	Population	91
9.2.2	Seasonal Residents	91
9.2.3	Projected Growth	91
9.2.4	Age Distribution.....	91

9.2.5	Language	92
9.2.6	Level of Education	92
9.2.7	Potential Fire Protection Concerns	93
9.3	Public Education Initiatives	93
9.3.1	Smoke Alarm/Carbon Monoxide Alarm Program	94
9.4	Code Enforcement and Fire Inspections	96
9.4.1	Request and Complaint Inspections	96
9.4.2	Vulnerable Occupancy Inspections	97
9.4.3	Fire Inspection Statistics	98
9.4.4	Frequency of Fire Inspections	99
9.5	Residential Sprinkler Systems in New Residential Buildings	100
9.6	Fire Investigations	101
9.7	Roadmap to Improvement	102
9.8	Recommendations	104
10.0	Training and Certification	105
10.1	Overview	105
10.2	Training Challenges for Volunteer Fire Departments	105
10.3	Training Structure	106
10.4	Recruit Training	108
10.5	In-Service Training	109
10.6	Officer Development Program	111
10.7	NFPA Certification	112
10.8	Other Training	118
10.8.1	Provincial and Municipal Training	119
10.8.2	Driver Training and Licensing	119
10.9	Post-Incident Analysis and Review	120
10.10	Roadmap for Improvement	121
10.11	Recommendations	122
11.0	Responses	124
11.1	Overview	124
11.2	Effective Response Force	125
11.3	Response Statistics	132
11.4	Geographic Information System Mapping	135
11.5	Roadmap for Improvement	139
11.6	Recommendations	144
12.0	Fire Department Structure	145
12.1	Overview	145
12.2	Organizational Structure and Staffing Levels	145
12.3	Roadmap for Improvement	147
12.4	Recommendation	148
13.0	Fire Stations and Related Facilities	149
13.1	Overview	149

13.2	Fire Station Functionality	149
13.3	Fire Station Details	151
13.3.1	Station 1 – Bradshaw	151
13.3.2	Station 2 – Burridge	152
13.3.3	Station 3 – Verona	153
13.3.4	Station 4 – Hartington.....	154
13.3.5	Station 5 – Sydenham	156
13.3.6	Station 6 – Perth Road	158
13.3.7	Station 7 – Inverary	159
13.3.8	Station 8 – Battersea.....	162
13.4	Roadmap for Improvement	163
13.5	Recommendations.....	166
14.0	Water Supply	167
14.1	Overview	167
14.2	Hydrant Protected Areas	167
14.3	Non-Hydrant-Protected Areas.....	170
14.3.1	Superior Tanker Shuttle Accreditation	171
14.4	Roadmap for Improvement	172
14.5	Recommendations.....	173
15.0	Fire Fleet and Equipment.....	174
15.1	Overview	174
15.2	Fire Fleet.....	174
15.2.1	Safety Standards.....	175
15.2.2	Inspections, Testing, and Maintenance	176
15.2.3	Testing Schedule for Older Vehicles.....	177
15.2.4	Fleet Renewal and Rationalization	179
15.3	Fire Service Equipment	185
15.3.1	Life-Cycle Equipment and Systems	185
15.3.2	Radio Equipment.....	186
15.4	Roadmap for Improvement	187
15.5	Recommendations.....	189
16.0	Documentation and Records Management.....	190
16.1	Overview	190
16.2	Records Management System.....	190
16.3	Written Documentation	192
16.4	Roadmap for Improvement	193
16.5	Recommendations.....	193
Appendix A: List of Abbreviations		194
Appendix B: References		196
Appendix C: Applicable Legislation.....		200

List of Tables

Table 1. List of recommendations.....	13
Table 2. Selected requirements of the Fire Protection and Prevention Act.	29
Table 3. Topics addressed by an establishing and regulating bylaw.	31
Table 4. Examples of core services.....	34
Table 5. Components of an ice water rescue program.....	41
Table 6. Components of a surface water rescue program.	43
Table 7. Ice and water rescue equipment.....	43
Table 8. List of marine vessels, South Frontenac Fire & Rescue.	46
Table 9. Fire protection bylaws in South Frontenac.	48
Table 10. Types of service agreements for volunteer fire departments.	55
Table 11. Current fire service agreements in South Frontenac.	56
Table 12. Challenges associated with recruiting and retaining volunteer firefighters.	61
Table 13. Risks associated with poor attendance levels.	63
Table 14. Joint health and safety committee questionnaire.	76
Table 15. Excerpts from Firefighter Guidance Note #3-1.....	80
Table 16. Projected population growth in South Frontenac.....	91
Table 17. Age distribution in South Frontenac and the Province of Ontario.	92
Table 18. Education levels in South Frontenac and the Province of Ontario.	92
Table 19. Inspection reasons, 2020 to 2024.	99
Table 20. Core certification levels in South Frontenac.....	116
Table 21. Intermediate certification levels in South Frontenac.	117
Table 22. Optional advanced certification levels in South Frontenac.	117
Table 23. Supplemental training/licensing status in South Frontenac.	119
Table 24. Staffing and response time standards as per NFPA 1720.....	127
Table 25. Minimum firefighters required for critical tasks at single-family home fires. .	130
Table 26. Structure fire statistics in South Frontenac (2024).....	131
Table 27. Summary of response time intervals.	132
Table 28. Automatic and mutual aid responses, 2020 to 2024.....	133
Table 29. Fire responses, 2020 to 2024.	133
Table 30. Dollar loss by occupancy type, 2020 to 2024.....	134
Table 31. Typical hierarchy of a volunteer fire department.	146
Table 32. Operational areas supported by a fire station.....	150
Table 33. Fire station locations and staffing levels in South Frontenac.	151
Table 34. Colour classifications for municipal hydrants (per NFPA 291).	168
Table 35. Tests required to meet industry standards and insurance requirements.....	178
Table 36. Fire apparatus replacement for fire insurance grading purposes.....	181
Table 37. Asset management plan for the fire fleet in South Frontenac.	182
Table 38. Summary of record-keeping practices.....	191

List of Figures

Figure 1. Firefighters in South Frontenac conducting ice water rescue training.	42
Figure 2. Marine Unit 3-11.....	47
Figure 3. Advertisement for the 2025 recruitment drive.	60
Figure 4. Response area within nine minutes, South Frontenac Fire & Rescue.	136
Figure 5. Response area within ten minutes, South Frontenac Fire & Rescue.....	137
Figure 6. Response area within 14 minutes, South Frontenac Fire & Rescue.....	138
Figure 7. Response area within 18 minutes, South Frontenac Fire & Rescue.....	139
Figure 8. Current response area within 14 minutes, Station 5.....	142
Figure 9. Projected response area within 14 minutes, Station 5 (with daytime staff). ..	143
Figure 10. Organizational structure of South Frontenac Fire & Rescue.	147
Figure 11. Exterior of Station 1 – Bradshaw.	152
Figure 12. Exterior of Station 2 – Burridge.....	153
Figure 13. Exterior of Station 3 – Verona.....	153
Figure 14. Training area at Station 3 – Verona.	154
Figure 15. Exterior of Station 4 – Hartington.....	155
Figure 16. Station 4 – Hartington apparatus floor area.	155
Figure 17. PPE storage at Station 4 – Hartington.	156
Figure 18. Exterior of Station 5 – Sydenham.	157
Figure 19. PPE storage at Station 5 – Sydenham.....	157
Figure 20. Photos of Station 6 – Perth Road.	158
Figure 21. PPE extractor and dryer at Station 6 – Perth Road.....	159
Figure 22. Exterior of Station 7 – Inverary.	160
Figure 23. Fire apparatus area at Station 7 – Inverary.....	161
Figure 24. Office area at Station 7 – Inverary.	162
Figure 25. Exterior of Station 8 – Battersea.....	162
Figure 26. PPE cleaning area at Station 8 – Battersea.	163
Figure 27. Fire hydrant painted according to the NFPA 291 colour code.	168
Figure 28. Sydenham water system distribution map.	169

Acknowledgements

Statement of Impartiality

The Loomex Group acted in the role of a third-party consultant to develop this fire master plan. The company conducted impartial reviews and evaluated all findings against established legislation and industry best practices. Every effort has been made to ensure that the information provided in this fire master plan is accurate as of the date the document was finalized.

All findings and recommendations presented in this fire master plan are objective, and they are intended to represent the best interests and fire protection needs of the Township of South Frontenac. However, some of the recommendations may require additional study or consideration.

Recommended Review Frequency

Although this fire master plan provides a long-term strategic vision for the Township of South Frontenac, the plan must be kept current with the community's needs and circumstances.

At a minimum, the Township of South Frontenac should review this document annually to ensure the information it contains remains up to date. In addition, this fire master plan should be updated in five years, and it should be completely redone in ten years.

Executive Summary

Project Purpose

The Township of South Frontenac contracted The Loomex Group to develop a fire master plan (“**FMP**”).

The FMP project had the following goals:

- Identify and evaluate the current and anticipated fire protection needs in South Frontenac.
- Assess the fire protection services that South Frontenac currently receives.
- Provide data that South Frontenac can use to make informed decisions about the safety of its residents, businesses, visitors, and firefighters.
- Provide strategies and identify resources that South Frontenac can use to manage its current and anticipated fire protection needs adequately and cost-effectively.

The Council of the Township of South Frontenac (“**Council**”) and South Frontenac Fire & Rescue (“**the Department**”) can reference this FMP when making policy, organizational, capital, and operational decisions for the short term (0 to 5 years) and long term (5 to 10 years), as well as on an ongoing basis.

Project Development Process

The FMP development process included the following components:

- Evaluate the Department’s structure, programs, and levels of service.
- Meet with stakeholders from South Frontenac and the Department to gain first-hand insights about the community and the Department’s operations.
- Analyze the current fire safety risks, needs, and circumstances in South Frontenac.
- Review recent fire loss statistics for South Frontenac and then compare them to current trends in order to estimate the community’s future fire protection needs.

After completing all reviews and stakeholder meetings, The Loomex Group consolidated its findings and developed this FMP document.

Each section of this FMP focuses on a specific area of the Department’s operations, providing context for various legislative or operational topics and then presenting relevant findings (as applicable). Each section of this FMP also includes a “Roadmap for Improvement” and recommendations (as applicable).

Summary of Project Findings

Some of the Department's strengths are as follows:

- The Department is staffed by personnel who are dedicated to working in the fire service and serving their community.
- The Department obtained its Superior Tanker Shuttle Accreditation in July 2022.
- The Department recruited 22 new firefighters during its most recent recruitment drive, and two other firefighters have also joined the Department in 2025.

Some of the challenges facing the Department are as follows:

- The Department cannot always ensure adequate staffing levels during daytime hours.
- Some of the Department's fire stations are older buildings that have limited amounts of space and outdated infrastructure.
- The current radio communication infrastructure in South Frontenac does not provide full, reliable coverage throughout the community.

The Department's strengths and weaknesses are both given due consideration in order to provide South Frontenac with a realistic picture of the Department's current capabilities and limitations.

Summary of Recommendations

This FMP contains various recommendations for Council and the Department to consider. The recommendations focus on several topics, such as:

- increasing fire protection coverage during daytime hours
- investing in various training and officer development initiatives
- conducting strategic planning to relocate and modernize fire stations

All of the recommendations in this FMP are designed to prioritize the safety of South Frontenac's residents and firefighters. The recommendations are all within the township's means to implement, and they include ways for South Frontenac to act cost-effectively wherever possible.

Overall, this FMP outlines strategies and resources that will help Council and the Department provide an appropriate level of service to the South Frontenac community now and in the coming years.

Summary of Recommendations

Purpose of Recommendations

The recommendations in this FMP are designed to help the Department accomplish the following objectives:

- Meet legislative obligations.
- Adhere to best practices.
- Enhance operational effectiveness.
- Protect the safety of community residents, visitors, and businesses.
- Protect firefighter safety.

Collectively, the recommendations suggest practical improvements that the Department can reasonably complete within the next ten years..¹

Additional Considerations

Each recommendation in this FMP involves the following considerations:

- Does the recommendation need to be implemented for compliance purposes?
- Does Council need to approve the recommendation before it is implemented?
- Does the recommendation need to be included in the Department's budget through the regular budgeting process?
- When should the recommendation be implemented?
 - Short-term: Implement the recommendation within 0 to 5 years.
 - Long-term: Implement the recommendation within 5 to 10 years.
 - Ongoing: Implement the recommendation on an ongoing basis as needed.

The purpose of the additional considerations is to give South Frontenac a practical schedule for implementing the recommendations in this FMP.

List of Recommendations

Table 1 collects the 36 recommendations found in this FMP.

¹ This FMP also contains information and observations that the Department can use to guide its operations over a longer term.

Table 1. List of recommendations.

Rec. #	Section	Recommendation	Considerations
4-1	Bylaws and Service Levels	The Fire Chief should update South Frontenac's establishing and regulating bylaw (as needed) if any of the recommendations from the 2026 South Frontenac Fire Master Plan are implemented.	Mandatory: Yes Council approval: Yes Budget impact: No Timeframe: Short-term
4-2	Bylaws and Service Levels	The Fire Chief should continue to review South Frontenac's establishing and regulating bylaw on an annual basis, as well as when any levels of service change. The reviews should ensure that the bylaw remains current and lists all emergency and non-emergency services provided by South Frontenac Fire & Rescue.	Mandatory: No Council approval: Yes Budget impact: No Timeframe: Ongoing
4-3	Bylaws and Service Levels	South Frontenac should pursue the development of formalized agreements with neighbouring municipalities to ensure there is reliable access to specialized rescue teams that deliver services not provided by South Frontenac Fire & Rescue. The agreements should enhance operational capacity, support effective emergency response, and ensure that the community has timely access to specialized skills and resources when required.	Mandatory: No Council approval: Yes Budget impact: Possible Timeframe: Short-term
4-4	Bylaws and Service Levels	South Frontenac Fire & Rescue should continue reviewing its specialized training, equipment, and strategic planning in order to ensure that it can provide safe, effective, and timely responses.	Mandatory: No Council approval: No Budget impact: Yes Timeframe: Ongoing
4-5	Bylaws and Service Levels	The Fire Chief should review the South Frontenac Community Wildland Fire Protection Plan after the document is endorsed. The Fire Chief should also reference the plan and its findings when reviewing existing strategies in order to mitigate the impact of wildland fires in South Frontenac.	Mandatory: Yes Council approval: No Budget impact: Possible Timeframe: Short-term

Rec. #	Section	Recommendation	Considerations
5-1	Fire Service Agreements	The Fire Chief should review all agreements that South Frontenac Fire & Rescue currently has in place. The Fire Chief should then update the agreements (as needed) to ensure they reflect the community's current risks, needs, and circumstances. All updated agreements should be presented to Council for consideration and approval.	Mandatory: No Council approval: Yes Budget impact: Possible Timeframe: Short-term
5-2	Fire Service Agreements	The Fire Chief should review the tiered medical agreement with Frontenac County on a continuing basis. The agreement should be updated (as needed) to ensure that it serves the best interests of all applicable residents and municipalities.	Mandatory: No Council approval: Yes Budget impact: No Timeframe: Ongoing
5-3	Fire Service Agreements	The Fire Chief should review the South Frontenac Community Risk Assessment, as well as any identified gaps related to the specialized services provided by South Frontenac Fire & Rescue. Based on that review, the Fire Chief should attempt to establish automatic aid agreements with neighbouring fire departments that can support those specialized services.	Mandatory: No Council approval: Yes Budget impact: Possible Timeframe: Ongoing
6-1	Recruitment and Retention	The Fire Chief and the South Frontenac Human Resources Department should review the types of retention initiatives that are used by fire departments across Ontario. The Fire Chief should then develop a report that summarizes the review and provides recommendations for Council's consideration and approval.	Mandatory: No Council approval: Yes Budget impact: Possible Timeframe: Short-term
7-1	Departmental Communications	The Fire Chief should continue to develop communication strategies for South Frontenac Fire & Rescue to enhance information flow and ensure timely updates are provided.	Mandatory: No Council approval: No Budget impact: No Timeframe: Ongoing

Rec. #	Section	Recommendation	Considerations
7-2	Departmental Communications	The Fire Chief should work with the Fire Advisory Committee to develop a survey for the members of South Frontenac Fire & Rescue. The Fire Chief and the committee should then evaluate the responses to the survey and try to find ways to improve communications within the fire department.	Mandatory: No Council approval: No Budget impact: No Timeframe: Short-term
8-1	Occupational Health and Safety	The Fire Chief should ensure that the joint health and safety committee is fully compliant with the requirements of the Occupational Health and Safety Act.	Mandatory: Yes Council approval: No Budget impact: Possible Timeframe: Short-term
8-2	Occupational Health and Safety	The Fire Chief should review the existing policies and standard operating guidelines for South Frontenac Fire & Rescue. If any gaps are identified, the Fire Chief should develop new or revised policies and guidelines, ensuring that all procedures align with the Section 21 Firefighter Guidance Notes.	Mandatory: Yes Council approval: No Budget impact: No Timeframe: Short-term
8-3	Occupational Health and Safety	The Fire Chief should review Firefighter Guidance Note #3-1 and then develop a strategy to reduce the amount of diesel exhaust that accumulates within the fire stations in South Frontenac.	Mandatory: Yes Council approval: Yes Budget impact: Yes Timeframe: Short-term
8-4	Occupational Health and Safety	The Fire Chief should develop a comprehensive health and wellness component to be implemented within South Frontenac Fire & Rescue's training program. This training component should incorporate the Resilient Minds program, and it should be applicable to both recruits and firefighters. In order to support firefighter mental health, resilience, and overall well-being, the training component should continue to include education and awareness sessions for the families of South Frontenac's fire service personnel.	Mandatory: Yes Council approval: No Budget impact: No Timeframe: Short-term

Rec. #	Section	Recommendation	Considerations
9-1	Fire Prevention and Public Education	The Fire Chief should determine whether it is feasible for South Frontenac Fire & Rescue to establish a fire prevention committee to help manage its public education programs.	Mandatory: No Council approval: No Budget impact: Yes Timeframe: Short-term
9-2	Fire Prevention and Public Education	South Frontenac Fire & Rescue should develop a cost-effective fire prevention policy as part of the establishing and regulating bylaw for South Frontenac. The policy should align with NFPA 1035, and it should be designed to meet all applicable community needs. The policy should also include a smoke alarm/CO alarm program, an inspection schedule (which should be based on occupancy type and risk level), and other public education initiatives.	Mandatory: Yes Council approval: Yes Budget impact: Possible Timeframe: Short-term
9-3	Fire Prevention and Public Education	As part of a proactive approach to community risk reduction, South Frontenac should conduct an exploratory review of the benefits of residential sprinkler systems.	Mandatory No: Council approval: Yes Budget impact: No Timeframe: Long-term
10-1	Training Program	The Fire Chief should continue formalizing an officer development program for South Frontenac Fire & Rescue. This program should equip the officers with technical competencies, leadership skills, and the ability to meet the definition of a competent supervisor (as defined by the Occupational Health and Safety Act).	Mandatory: Yes Council approval: No Budget impact: Yes Timeframe: Short-term
10-2	Training Program	The Fire Chief should consider incorporating leadership training and incident command training into South Frontenac Fire & Rescue's officer leadership team meetings.	Mandatory: Yes Council approval: No Budget impact: Possible Timeframe: Short-term

Rec. #	Section	Recommendation	Considerations
10-3	Training Program	The Fire Chief should ensure that all applicable members of South Frontenac Fire & Rescue become certified to the standard of NFPA 1002, Chapter 5, Apparatus Equipped with Fire Pump, by July 1, 2026 (which is the deadline mandated by O. Reg. 343/22).	Mandatory: Yes Council approval: No Budget impact: Yes Timeframe: Short-term
10-4	Training Program	South Frontenac Fire & Rescue should continue to take a proactive and comprehensive approach to driver training and licensing by supporting its personnel, maintaining compliance, and ensuring the safe operation of fire apparatus.	Mandatory: Yes Council approval: No Budget impact: Yes Timeframe: Short-term
11-1	Responses	The Fire Chief should develop an emergency response baseline for South Frontenac Fire & Rescue. The baseline should establish response standards based on the concept of an effective response force. Ideally, a specific baseline should be developed for low-, moderate-, and high-risk responses (as established in the South Frontenac Community Risk Assessment). Once the baseline is developed, it should be presented to Council for consideration and approval.	Mandatory: No Council approval: Yes Budget impact: Possible Timeframe: Short-term
11-2	Responses	The Fire Chief, working with the South Frontenac Human Resources Department, should develop a report that outlines a comprehensive staffing strategy for South Frontenac Fire & Rescue. This strategy should be based on historical incident data, legislative requirements, projected population growth, and an assessment of both current and future community risks and service demands. The Fire Chief should submit the finalized report to Council for consideration and approval.	Mandatory: No Council approval: Yes Budget impact: Yes Timeframe: Short-term
11-3	Responses	South Frontenac Fire & Rescue should consider implementing a daytime staffing program that uses its paid on-call staff members. The program should be structured to ensure a four-person fire crew assigned to a pumper is available to operate ten hours per day, five days per week (for a total of 200 staffing hours per week). Ideally, the four-person fire crew should be based at a centrally located fire station in South Frontenac.	Mandatory: No Council approval: Yes Budget impact: Yes Timeframe: Short-term

Rec. #	Section	Recommendation	Considerations
12-1	Fire Department Structure	The Fire Chief should continue to support South Frontenac Fire & Rescue's platoon chiefs by ensuring they receive initial and ongoing training, as well as mentorship and access to necessary equipment.	Mandatory: No Council approval: No Budget impact: Yes Timeframe: Ongoing
12-2	Fire Department Structure	The Fire Chief should consider establishing acting platoon chief and captain positions as part of South Frontenac Fire & Rescue's succession planning.	Mandatory: No Council approval: No Budget impact: Possible Timeframe: Short-term
13-1	Fire Stations and Related Facilities	South Frontenac should conduct a fire station location study to determine optimal sites for fire stations in the community (based on the considerations of efficiency, effectiveness, and fiscal responsibility). The study should also validate the need for a consolidated station in a central location, identifying the most appropriate site for that facility.	Mandatory: No Council approval: Yes Budget impact: Yes Timeframe: Short-term
13-2	Fire Stations and Related Facilities	As part of its ongoing facilities condition assessment program, South Frontenac Fire & Rescue should continue to use the annual budgeting process to secure and allocate funding for routine facility maintenance and planned capital upgrades.	Mandatory: No Council approval: Yes Budget impact: Yes Timeframe: Ongoing
14-1	Water Supply	The Fire Chief should implement a program to identify and assess long laneways within South Frontenac. The program should focus on the impacts these laneways have on the local fireground water supply. In order to improve response efficiency and firefighter safety, applicable findings from the program should be integrated into pre-incident planning and South Frontenac Fire & Rescue's rural water supply strategy.	Mandatory: No Council approval: No Budget impact: Possible Timeframe: Short-term

Rec. #	Section	Recommendation	Considerations
14-2	Water Supply	South Frontenac should conduct a water supply study that focuses on areas of the community that are not protected by a municipal hydrant system. The study should identify and prioritize optimal locations where dry hydrants can be located.	Mandatory: No Council approval: No Budget impact: Possible Timeframe: Short-term
15-1	Fire Fleet and Equipment	The Fire Chief should continue to update the South Frontenac Fire & Rescue Asset Management Plan by using current information from the fire department's Fleet Rationalization Plan.	Mandatory: No Council approval: Yes Budget impact: Yes Timeframe: Short-term
15-2	Fire Fleet and Equipment	As part of the ongoing asset management plan, Council should continue investing in the South Frontenac Fire & Rescue Fire Fleet Replacement Program, recognizing that this support is essential to maintaining a reliable, safe, and operationally appropriate fire fleet.	Mandatory: No Council approval: Yes Budget impact: Yes Timeframe: Ongoing
15-3	Fire Fleet and Equipment	The Fire Chief should implement a formal life-cycle program that includes inspection programs, maintenance programs, and replacement schedules for South Frontenac Fire & Rescue's fire fleet and mission-critical equipment. The program should reference the South Frontenac Fire & Rescue Asset Management Plan.	Mandatory: No Council approval: No Budget impact: Possible Timeframe: Short-term
15-4	Fire Fleet and Equipment	The Fire Chief should prepare a report that outlines options for improving the radio communication infrastructure and equipment used by South Frontenac Fire & Rescue.	Mandatory: No Council approval: Yes Budget impact: Yes Timeframe: Short-term

Rec. #	Section	Recommendation	Considerations
16-1	Documentation and Records Management	In order to ensure the consistent tracking and management of critical departmental data, the Fire Chief should enhance, expand, and standardize the use of South Frontenac Fire & Rescue’s records management system.	Mandatory: No Council approval: No Budget impact: No Timeframe: Short-term

1.0 Introduction

1.1 Purpose of a Fire Master Plan

An FMP is a strategic planning document that evaluates a fire department from administrative, legislative, and operational perspectives. In addition to evaluations, an FMP includes recommendations designed to enhance the fire department's operations.

The goal of an FMP is to provide information that a fire department can use to accomplish the following initiatives:

- Protect the safety of local firefighters, residents, and businesses.
- Adjust or enhance services to meet current and anticipated needs.
- Remain compliant with applicable legislation and training requirements.
- Explore opportunities to introduce shared services.
- Prepare budgets, implementation plans, and asset management plans.

Overall, an FMP is intended to guide a fire department's operations and allow it to meet the community's current and anticipated risks, needs, and circumstances for the foreseeable future.

1.2 Fire Master Plan for South Frontenac

1.2.1 Project Background

The Township of South Frontenac contracted The Loomex Group to complete an FMP. The township stated that the FMP must provide information to help the local fire service personnel make policy, capital, and organizational decisions over a ten-year timeframe.

In order to meet the stated objectives, the FMP development process reviewed the Department from legislative, administrative, and operational perspectives. The community's past, current, and anticipated fire protection needs were also considered.

Based on the findings obtained during the FMP development process, various recommendations have been developed to help South Frontenac enhance community safety for its residents, visitors, and businesses. These recommendations include strategies related to governance, services, and personnel. All recommendations prioritize the safety of local residents and firefighters, and they aim to provide South Frontenac with ways to enhance its services in a cost-effective manner.

1.2.2 Initial Stakeholder Engagement Process

Start-up Meeting

The Loomex Group began the FMP development process by meeting with the Fire Chief to review the project's work scope and framework.

Following the start-up meeting, The Loomex Group provided the Fire Chief with a project framework for review and approval.

Stakeholder Engagement

After the project framework was approved, The Loomex Group held engagement sessions with the following stakeholders from South Frontenac and the Department:

- Louise Fragnito, CAO
- Del Blakney, Fire Chief
- James Thompson, Clerk/Community Emergency Management Coordinator
- Brad Smith, Deputy Chief
- Mayor of South Frontenac
- platoon chiefs, fire officers, and firefighters

The stakeholder consultations were held in order to gain insights about the fire protection services in South Frontenac from the individuals who are directly involved with approving and providing those services.

1.2.3 Data Collection Process

Document Reviews

The Loomex Group reviewed various administrative, legislative, and operational documents about South Frontenac and the Department, such as:

- applicable legislation, bylaws, and agreements
- municipal maps
- operating and capital budgets
- organizational charts
- current fire protection services
- standard operating guidelines ("**SOGs**"), policies, and other documents that provide directions for the local fire service personnel

Site Visits

Representatives of The Loomex Group spent time in South Frontenac to observe the community firsthand.

Engagement with Fire Service Personnel

The Loomex Group facilitated an engagement analysis session with the Department's personnel to gather their opinions about the Department's operations, organizational structure, facilities, and resources. The participants also discussed the Department's current and anticipated needs.

In total, seven separate engagement sessions were held with the Department's officers and firefighters. These sessions took place throughout March 2025, with a final session offered on April 1, 2025. All in-person sessions were facilitated at the Department's fire stations. Virtual sessions were also offered.

Key takeaways from the engagement process are as follows:

- The Department's firefighters are very dedicated to providing the community with high-quality fire protection services.
- In general, the firefighters think that the Department provides them with the equipment they need to perform their duties.
- In general, the firefighters think that it is important to participate in community events (such as the annual toy drive) and fundraising initiatives in order to support members of the community.
- In general, the firefighters think that the Department has a good training program.

Overall, the response to the engagement process was constructive. The results indicate that the Department's personnel are very dedicated to their work, and they care about serving their community and enhancing the Department's operations.

Engagement with Mayor and Council

The Loomex Group provided a survey to South Frontenac's mayor and councillors to gather their opinions about the following topics:

- the Department's current services
- concerns related to the Department
- initiatives that Council could approve to optimize the Department's services
- initiatives that Council could approve to support the Department's efforts to meet new legislative requirements
- ten-year strategic direction for Council

The answers provided for the survey yielded valuable insights that have been incorporated into this FMP.

1.2.4 Drafting the Fire Master Plan

Developing the Fire Master Plan

The Loomex Group considered the following questions as the FMP was drafted:

- What can the Department do to enhance firefighter safety?
- What can the Department do to enhance the community's well-being?
- Are there opportunities for the Department to introduce shared services?
- Are there opportunities for the Department to save or avoid costs?

The Loomex Group also identified baselines and benchmarks that the Department can use to perform an ongoing self-assessment of its service delivery capabilities.

Ongoing Review Process

Regular meetings were held with the Department's personnel. These meetings ensured that the FMP benefited from continual stakeholder contributions.

Document Structure

The information in this FMP is organized into four main categories.

Context: The information included under a heading that reads "Context" is intended to provide relevant background details about the legislation, standards, or best practices that are related to a specific topic. This information is applicable to the Ontario fire service in general, not any fire department exclusively.

Findings: The information included under a heading that reads "Findings" is intended to explain how the legislation, standards, or best practices discussed under the preceding "Context" heading are directly applicable to South Frontenac and the Department.

Roadmap for Improvement: The information included under the heading "Roadmap for Improvement" provides a detailed explanation of the strategies that have been developed for South Frontenac.

Recommendations: The information included under the heading "Recommendations" includes the strategies that have been developed specifically for South Frontenac and the Department. In order to understand the rationale for the recommendations, South Frontenac and the Department can refer to the information under the "Context," "Findings," and "Roadmap for Improvement" headings in the applicable sections of this FMP.

1.2.5 Finalizing the Fire Master Plan

The final deliverables for this FMP project are as follows:

- finalized copies of the FMP document for the Fire Chief and the CAO of South Frontenac
- a presentation with Council to provide an overview of key findings and recommendations from the finalized FMP document

2.0 Community Characteristics

2.1 Overview of the Township of South Frontenac

The Township of South Frontenac was amalgamated in 1998, and it is made up of four former townships: Bedford, Loughborough, Portland, and Storrington. The township is located in eastern Ontario, situated in an area north of Kingston and Lake Ontario. It is a part of Frontenac County, and it is bordered by the following communities:

- The Township of Central Frontenac is located to the north of South Frontenac.
- Tay Valley Township, the Township of Rideau Lakes, and the Township of Leeds and the Thousand Islands are located to the east of South Frontenac.
- The City of Kingston is located to the south of South Frontenac.
- The Township of Stone Mills and Loyalist Township are located to the west of South Frontenac.

In terms of geography, South Frontenac is approximately 65 per cent land and 35 per cent water. South Frontenac is known for its inviting hamlets, lakes, and naturalized spaces, including its provincial park, conservation area/parks, and its regional trails network. The township has a rich agricultural heritage, and it is committed to serving its diverse and growing community of 20,188 residents through a wide range of services and programs.

Because of the natural attractions in the area, South Frontenac typically experiences an influx of seasonal residents and transient visitors in the summer months. As a result, the Department may receive an increased number of calls for assistance during those months, including calls related to incidents at water-access-only properties.

According to the 2021 Community Safety and Well-Being Plan for the townships of Central Frontenac, North Frontenac, South Frontenac, and Frontenac Islands, “South Frontenac is home to families, farmers, artisans, self-employed tradespeople, entrepreneurs and professionals who contribute to a vibrant community spread between numerous villages and hamlets, crossroad communities and rural properties.”

2.2 Overview of South Frontenac Fire & Rescue

2.2.1 History

In 1998, the townships of Loughborough, Storrington, Portland, and Bedford amalgamated to form the Township of South Frontenac. Before the amalgamation, the townships operated their own paid on-call fire departments. Each of those departments faced challenges related to limited resources and localized coverage.

As part of the 1998 amalgamation, the separate fire departments were combined. This change allowed for better coordination, resource sharing, and the standardization of training and equipment. The current fire department in the area is South Frontenac Fire & Rescue.

2.2.2 Current Structure

The Department's paid on-call firefighters provide various fire protection services for the residents, businesses, and visitors of South Frontenac. Over the years, the Department has expanded its services to include emergency medical response, water rescue, fire prevention education, and emergency management services. In addition to these services, the Department participates in various local events throughout the community.

The Department has also obtained a Water Tanker Shuttle Accreditation, which may qualify residents within 8 km of a fire station to receive home insurance discounts.

As of this FMP, the Department has the following eight fire stations:

- Station 1 – Bradshaw
- Station 2 – Burridge
- Station 3 – Verona
- Station 4 – Hartington
- Station 5 – Sydenham
- Station 6 – Perth Road
- Station 7 – Inverary
- Station 8 – Battersea

The eight fire stations are staffed by approximately 108 fire suppression personnel, including 24 recruits who joined the Department in 2025.

The combined response area of the fire stations is 948 km. In terms of vehicles, there are 24 fire apparatus distributed amongst the eight fire stations. These vehicles include pumper trucks, tankers, and rescue trucks. The Department also has various special rescue equipment, such as boats, ATVs, utility trucks, and a lighting unit.

The Department's administrative team consists of the Fire Chief, the Deputy Chief, and an administrative assistant. These personnel operate at Station 6 – Perth Road. The duties assigned to the administrative team are as follows:

- Oversee and support the provision of all fire protection services.
- Manage operating and capital budgets.
- Manage external agreements.
- Work with the Human Resources team and the Emergency Response team to recruit personnel.

3.0 Legislation and Standards

3.1 Overview

Legislation

In Ontario, fire departments must operate in accordance with numerous acts and other types of legislation, such as:

- Fire Protection and Prevention Act, S.O. 1997 (“**FPPA**”)
- Occupational Health and Safety Act, R.S.O. 1990 (“**OHSA**”)
- Emergency Management and Civil Protection Act, R.S.O. 1990 (“**EMCPA**”)
- O. Reg. 332/12: Building Code (“**OBC**”)
- O. Reg. 213/07: Fire Code (“**OFC**”)
- O. Reg. 343/22: Firefighter Certification
- applicable municipal bylaws

For brief definitions of these documents—as well as definitions of other applicable legislation—see Appendix C of this FMP.

Industry Standards

The following industry standards and guidelines also influence how fire departments operate:

- National Fire Protection Association (“**NFPA**”) standards
- Office of the Fire Marshal (“**OFM**”) guidelines and memoranda
- Section 21 Firefighter Guidance Notes

The resources listed above provide baselines that fire departments should use to gauge the effectiveness of their operations and safety initiatives.

3.2 Legislative Compliance in South Frontenac

Context

The FPPA outlines the minimum standards that municipalities and fire departments must meet. Various FPPA requirements also relate to other regulations and codes, such as the OFC and OBC (which deal with life safety systems).

As per section 6 (3) of the FPPA, each fire chief is responsible for ensuring that their fire department is compliant with applicable legislation and standards.

Findings

Table 2 lists some of the legislative requirements that all fire departments and municipalities must meet. The table indicates whether South Frontenac and the Department are compliant with the stated requirements.

Table 2. Selected requirements of the Fire Protection and Prevention Act.

Reference	Requirement	Compliant?
FPPA, 2 (2) (b)	Establish a fire department.	Yes
FPPA, 2 (1) (a)	Establish a program in the municipality which must include public education.	Yes
FPPA, 6 (1)	Appoint a fire chief for the fire department.	Yes
O. Reg. 364/13	Implement a vulnerable occupancy program.	Yes
O. Reg. 365/13	Complete inspections upon complaint.	Yes
O. Reg. 365/13	Complete inspections upon request.	Yes
O. Reg. 378/18	Complete a community risk assessment (“ CRA ”).	Yes

As indicated in the table above, South Frontenac and the Department are compliant with the stated requirements of the FPPA.

Going forward, Council and the Department should continue to allocate the time and resources needed to meet their legislative obligations.

3.3 Community Risk Assessment

Context

On July 1, 2019, the Province of Ontario passed O. Reg. 378/18, “Community Risk Assessments.” This regulation falls under the authority of the FPPA.

As per O. Reg. 378/18, every municipality in the province is required to complete a new CRA aimed at addressing the threats the community is most likely to face.

Findings

As of this FMP, South Frontenac is in the process of completing a CRA. The information in this document will identify and evaluate the potential fire and life safety hazards that are most likely to affect the township. During the FMP development process, a copy of the draft CRA was provided to The Loomex Group.

When the CRA is finalized, it will serve as a resource that South Frontenac can reference in order to make informed decisions about fire protection services and response planning. In addition, the Department will be able to use the information in the CRA to shape the types of fire prevention and public education initiatives it develops for the township. The finalized CRA will also place South Frontenac in compliance with O. Reg. 378/18.

3.4 Recommendations

There are no recommendations regarding legislation and standards in South Frontenac.

4.0 Bylaws and Service Levels

4.1 Overview

In Ontario, a bylaw is a local law enacted by a municipality under the authority of the Municipal Act, 2001. Municipalities use bylaws to regulate various aspects of their governance, including municipal services, operational procedures, and enforcement protocols.

Fire protection services are also established and formalized through various bylaws, such as:

- establishing and regulating bylaw (“**E&R bylaw**”)
- open-air burning bylaw
- fees and charges bylaw

All municipal bylaws should be tailored to each community based on local risks, needs, and circumstances.

4.2 Establishing and Regulating Bylaw

Context

An E&R bylaw is used to formalize which types and levels of service a fire department must deliver to its community.

Table 3 summarizes the various topics that a well-structured E&R bylaw should address.

Table 3. Topics addressed by an establishing and regulating bylaw.

Topic	Scope of Bylaw
Legal authority	• Formally establish a fire department under municipal law. • Grant a fire chief and officers the authority to act under the FPPA.
Roles and responsibilities	• Outline the structure of the fire department, clarifying whether it is a volunteer, composite, or full-time fire department. • Specify the duties of the fire chief, officers, and firefighters, including volunteer (or paid on-call) firefighters • Clarify reporting relationships and command structures.

Topic	Scope of Bylaw
Scope of services	- Identify the types of services provided by the fire department (such as fire suppression, rescue, medical response, and public education services). - Consider whether the bylaw should address mutual aid participation, emergency management, and hazardous materials responses.
Operational clarity	- Set expectations for training, equipment, and response standards. - Help guide decisions about budgets and resource allocation.
Public and political accountability	- Provide a transparent framework for councillors, staff members, and the public. - Support performance evaluations and strategic planning initiatives.
Risk management and liability protection	- Ensure the fire department operates within a clearly defined legal framework in order to reduce liability risks. - Support compliance with the OFC and the OHSA.
Legislative foundation	Serve as a foundational document for related bylaws (such as bylaws related to open-air burning, false alarms, and fees and charges).

In order to develop an E&R bylaw, a municipal council must assess its community's risks, needs, and circumstances. The local fire chief should also be involved in discussions about the content of the bylaw.

Because an E&R bylaw is based on local risks, needs, and circumstances, decisions about fire protection services will be specific to each community. For instance, vehicle extrication is a service that is needed in many communities. However, technical or heavy urban rescues are specialized services that may only be necessary in specific jurisdictions. As such, each community should evaluate its population density, building stock, emergency response history, and available resources in order to develop an E&R bylaw.

After identifying which services are needed in the community, it is important to determine a level of service for the fire department. That level of service should align with community needs and available resources.

In recent years, the Province of Ontario has passed legislation that requires firefighters to obtain NFPA certification before delivering specific firefighting services. The type of

NFPA certification a firefighter must obtain depends on the level of service they are expected to provide. As such, fire chiefs and councils should work together to determine whether their fire service personnel can obtain the appropriate certifications before those personnel are assigned a level of service. A council may choose to accept recommendations about service levels as they are presented, or the council may choose to modify them to reflect budgetary constraints, strategic priorities, and community expectations.

Once a municipal council formalizes and approves the E&R bylaw, the councillors and the local fire chief must review and update the document on a regular basis to make sure it remains current with the community's needs. The fire chief should also advise the council to approve updates to the E&R bylaw each time there is a change to the local fire department's structure, services, or operations (for both emergency and non-emergency services). For instance, implementing recommendations from an FMP may require councillors to update the E&R bylaw. As a best practice, an updated version of the E&R bylaw should be presented to the council for consideration and approval before any recommendations are implemented.

Overall, an E&R bylaw should clearly define a fire department's responsibilities, service levels, and operational framework. The bylaw must ensure that there is a mandate for delivering the approved services in a way that aligns with the FPPA.

Findings

The current E&R bylaw for South Frontenac is Bylaw No. 2018-56.

According to Bylaw No. 2018-56, the Department is authorized to perform the following core and specialized services:

- water/ice rescue
- marine access fire suppression and rescue
- emergency first response (including external defibrillation)
- auto extrication – light hydraulics and heavy hydraulics
- agriculture extrication
- hazmat awareness
- wildland firefighting
- fire prevention, public education, and fire investigation services
- fire suppression – interior and exterior operations
- gas detection and response – O₂, CO, H₂S, and LEL

The most recent update to Bylaw No. 2018-56 occurred in 2018.

For more information about the Department's core and specialized services, see sections 4.3 and 4.4 of this FMP.

4.3 Core Services

Context

Core services are the main services that most fire departments offer. Common examples of these services include interior and exterior fire suppression, auto extrication, public service responses, and medical responses.

As noted in section 4.2, an E&R bylaw should outline the core services that a fire department is expected to provide to its community. Decisions about core services can be based on various considerations, such as:

- How many calls does the fire department receive for a specific type of service?
- What level of risk does a specific threat pose to the community?
- Is it affordable to provide a specific service?
- Does the local municipal council need to approve the service before it is offered?

Table 4 lists some of the core services that a fire department might offer.

Table 4. Examples of core services.

Category	Services
Fire suppression	• Residential, commercial, and wildland fire response • Vehicle and structural fire control
Emergency medical response (first responder)	• Basic life support • CPR and AED use • Stabilization until paramedics arrive
Common passenger vehicle rescue	• Motor vehicle collisions (extrication) • Scene stabilization
Fire prevention and public education	• Fire safety inspections • Smoke alarm and carbon monoxide detector checks • School and community outreach programs
Hazardous materials response	• Initial response and containment • Coordination with specialized hazmat teams

Category	Services
Disaster and emergency management	• Support during floods, storms, and other natural disasters • Participation in municipal emergency plans
Mutual aid support	• Assistance to neighbouring fire departments during large-scale incidents

After a list of core services is approved, the fire department must strive to become proficient at delivering those services. It is vital for a fire department to gain this proficiency before it attempts to develop specialized services.

In order to develop an acceptable level of proficiency for its services, a fire department should have appropriate documentation, training, and equipment in place across the organization.

Findings

Fire Suppression

According to Bylaw No. 2018-56, the Department is approved to provide interior and exterior fire suppression, vehicle fire suppression, and wildland fire protection services. However, there are several challenges that may impact the Department's ability to provide these services. Examples of these challenges are discussed below.

According to South Frontenac's most recent CRA, the Department has a total of 108 fire suppression personnel, including the following staff members:

- 1 full-time Fire Chief
- 1 full-time Deputy Fire Chief
- 4 paid on-call platoon chiefs
- 20 paid on-call captains
- 82 paid on-call firefighters

As noted in section 2.2.2, the Department recently hired 24 new firefighters. As of this FMP, the Department is in the process of training these recruits to meet current provincial standards.

When an emergency call is received, all of the Department's firefighters receive a page or a message on the "Who's Responding" phone application. The personnel then advise whether they are available to respond to the emergency. The Fire Chief and the Deputy Chief can also be contacted after their regular work hours, and they respond to major incidents as required.

Although the Department has the personnel it needs to fill key positions, there are challenges related to staffing levels.

It is crucial that an appropriate number of firefighters respond to each emergency so that a fire department can perform necessary duties safely and efficiently. However, in smaller communities that have paid on-call fire departments, firefighter turnout numbers may be lower than required. In South Frontenac, the Department uses a two-station deployment model to address this issue. Under this model, firefighters from two stations respond to every incident.

The Department has also taken steps to address challenges related to licensing, as only 65 of its 108 personnel hold a DZ licence. Currently, the Department provides a gear bag and firefighting equipment to any firefighter who holds a DZ licence. These firefighters are allowed to attend any incident within South Frontenac. It is the firefighter's responsibility to ensure that the gear is clean before transporting it in their personal vehicles.

Another challenge for the Department relates to the suppression services it provides at water-access-only properties for both structure and wildland fires. The Department has two aluminum boats that it can use to transport firefighters and equipment to water-access-only properties. In addition, the Department can call marine vessels from other fire departments to respond to fires at water-access-only properties in South Frontenac as part of the Kingston, Frontenac, and Lennox & Addington Mutual Aid Plan. However, in the winter, when the water in South Frontenac freezes, marine vessels may be unable to reach water-access-only properties. Although the risk of a fire at one of these properties is lower during the winter, the risk still exists.

As noted above, the Department responds to wildland fires, including vegetation fires and brush fires. In 2025, the Department began developing a community wildland fire protection plan ("**CWFPP**") for South Frontenac. The CWFPP will be used to enhance community safety and the township's resilience against the threat of wildland fires.

For more information about the Department's response times and challenges related to delivering firefighting services, see section 11 of this FMP.

Emergency Medical Response

The Department provides emergency medical response services to support the County of Frontenac Paramedic Service. The overall intent of the medical response program is to ensure that patients receive proper care in a timely manner prior to the arrival of paramedic crews.

As of this FMP, the Department responds to the following medical emergencies:

- vital signs absent

- unconscious patient
- airway obstruction
- absence of breathing
- motor vehicle collisions
- high-priority calls where an ambulance would take more than 15 minutes to respond to the emergency scene
- high-priority calls where the Department can reach the emergency scene more quickly than an ambulance

According to South Frontenac's most recent CRA, 43.5 per cent of the Department's calls between 2020 and 2024 were for medical responses.

When the Department receives a call for service, personnel from the two fire stations that are nearest to the incident scene respond using "Rapid Response Units" (pick-up trucks). Typically, two to four personnel respond aboard each truck.

The Department's medical response program continues to support the delivery of rapid assistance to South Frontenac's residents. However, call volumes in the township have increased in recent years, leading to increased pressure on the County of Frontenac Paramedic Service. When call volumes are higher, local paramedics are not always able to respond to calls within 15 minutes on a consistent basis. As a result, the Department has been dispatched to a greater number of medical calls.

Common Passenger Vehicle Rescue

The Department provides common passenger vehicle rescue services in South Frontenac. According to South Frontenac's most recent CRA, 13.1 per cent of the Department's calls between 2020 and 2024 were for motor vehicle accidents.

In 2024, the Department responded to 77 motor vehicle accidents. In that year, motor vehicle accident responses were the second-most common type of call the Department responded to, with approximately 12 per cent of the Department's calls related to that type of emergency.

Hazardous Materials Response

The Department's personnel are trained to respond to hazardous materials incidents at the operations level. As such, the personnel are prepared to respond to hazmat incidents in a way that protects people, property, and the environment, but they are not trained to stop the release of any contaminants. The personnel are trained to recognize hazardous substances, assess risks, and implement protective measures to contain and control the spread of contaminants.

Mutual Aid Support

The Department provides mutual aid support as per agreements with neighbouring municipalities. Vehicles and firefighters respond to emergencies in these communities on request.

For more information about the Department's participation in mutual aid services, see section 5.2 of this FMP.

4.4 Specialized Services

Context

In addition to core services, a fire department may provide specialized services to its community. Examples of specialized services are as follows:

- water/ice rescue services
- hazardous materials response services
- confined space rescue services
- trench rescue services
- high- and low-angle rescue services
- search and rescue services

The following NFPA standards provide recommendations related to specialized services:

- NFPA 1006, *Standard for Technical Rescue Personnel Professional Qualifications*, outlines the minimum job performance requirements for technical rescue personnel.²
- NFPA 1670 sets the operational guidelines for various search and rescue services, as well as the planning and training related to those services.
 - NFPA 1670 is included in the consolidated standard NFPA 2500, *Standard for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services*.

² As of July 1, 2028, fire departments delivering select specialized services will be required to train personnel to the relevant standards of NFPA 1006 (in accordance with O. Reg. 343/22). For more information about this regulation, see section 10.7 of this FMP.

The NFPA has also outlined three levels of operational capability for technical rescue services:

- **Awareness Level.** This level represents the minimum capability of organizations that respond to technical search and rescue incidents.
- **Operations Level.** This level represents the capability of organizations to respond to technical search and rescue incidents and to identify hazards, use equipment, and apply limited techniques specified in this standard to support and participate in technical search and rescue incidents.
- **Technician Level.** This level represents the capability of organizations to respond to technical search and rescue incidents and to identify hazards, use equipment, and apply advanced techniques specified in this standard necessary to coordinate, perform, and supervise technical search and rescue incidents..³

At a minimum, a municipality should consider the following questions to determine which (if any) specialized services its fire department should deliver:

- Is there any current documentation that supports the need for specific specialized services in the community?
- How frequently do incidents requiring the provision of specialized services occur in the community?
- Does the municipality have the resources needed to fund the cost of having the fire department provide specialized services?
- Does the fire department have enough firefighters to deliver specialized services?
- How will offering specialized services impact firefighter safety?
- Does the fire department have the equipment needed to deliver specific specialized services? If so, what is the condition of that equipment?
- What initial level of training will the firefighters need to complete before they can provide specific services safely and effectively? Can the fire department provide that training to its firefighters?
- What level of ongoing training will the firefighters need to complete to maintain the necessary knowledge and skill levels that specialized services require?

As noted in section 4.3, a municipality must ensure that its firefighters are proficient at delivering their core services before they attempt to deliver any specialized services.

³ National Fire Protection Association, *NFPA 2500, Standard for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services*.

Although infrequent, calls that involve specialized services often place firefighter safety at a significantly higher risk than calls requiring the provision of core services. Most specialized services are also costly to deliver, and many require firefighters to complete ongoing training to obtain applicable certifications. In addition, it is unlikely that a fire department will provide specialized services effectively if it does not attain proficiency in its core services.

When a municipality does not have the capacity to address the risks within its community, it can establish mutual aid agreements with neighbouring fire departments or specialized teams in order to ensure a timely and effective response.

In Ontario, municipalities can also request the help of the Provincial Emergency Operations Centre (“**PEOC**”) when a major emergency occurs (such as a large-scale technical rescue incident, an evacuation, or a natural disaster) that is beyond the municipality’s capacity to handle. The PEOC will then coordinate provincial resources, mutual aid, and specialized teams to support the local response efforts.

A municipality’s E&R bylaw should outline information about mutual aid agreements and PEOC activations, including the scope of services provided and clear information about all relevant legal and operational matters.

Findings

As of this FMP, the Department performs water rescue services, including ice water rescues and surface water rescues. These are the specialized rescue services that the Department most frequently provides.⁴

The Department also regularly responds to search and rescue incidents and medical calls within Frontenac Provincial Park. The Department also has a drone that it uses to assist in searches. The park’s landscape presents unique challenges due to its terrain, remote location, and the potential for complex incidents that may occur within its boundaries.

The Department also responds to a variety of other technical rescue incidents as needed. Even though the Department responds to technical rescue incidents, its personnel are only trained to the awareness level (as outlined in NFPA 1006). This level of training is due to the fact that the Department currently has limited training resources.

The Department’s awareness-level training enables responders to identify hazards, understand the scope of an incident, initiate proper response protocols, and support operations. However, the Department’s responders who have awareness-level training do not have the training to engage in direct rescue activities.

⁴ For more information about the Department’s water rescue services, see sections 4.4.1 to 4.4.3 of this FMP.

For example, effective search and rescue operations require specialized knowledge of navigation, victim stabilization, terrain assessment, and incident command. If a responder with inadequate training performs search and rescue services, the safety of both responders and victims is at risk.

4.4.1 Ice Water Rescue

Context

In the fire service, the term “ice water rescue” refers to specialized emergency operations conducted to save individuals who have fallen through ice-covered bodies of water or are otherwise trapped in freezing water conditions. These rescues are high-risk operations, and they require specific training, equipment, and procedures to ensure the safety of both the victim and the rescuers.

Table 5 lists the key components of an ice water rescue program.

Table 5. Components of an ice water rescue program.

Component	Details
Rescue personnel training	Water and ice rescue teams often include surface ice rescue technicians and support personnel. Firefighters who perform water and ice rescues are trained in the following subjects: • cold water survival • hypothermia recognition • rescue techniques
Specialized equipment	Specialized equipment used for water and ice rescue includes: • cold water/ice rescue suits (insulated and waterproof) • throw bags and rescue ropes • ice awls or picks • inflatable rescue sleds or boats • personal flotation devices
Rescue techniques	Rescuers should use the “Reach, Throw, Row, Go” method, which is a progressive approach to rescues that starts with the least risky action. Rescue may involve the use of ladders, poles, or ropes to reach the victim without entering the water. If it is necessary to enter the water, rescuers are tethered and monitored by a shore-based team.

Component	Details
Victim care	Victims are often hypothermic and require immediate medical attention. Gentle handling is crucial to avoid triggering a cardiac arrest in cold water victims.
Scene safety and incident command	It is crucial to establish a safe perimeter on potentially unstable ice. A coordinated command structure is required to manage resources and communication.

Findings

As of this FMP, South Frontenac has 2,222 bodies of water that are fully located within its boundaries. In total, 2,188 of those bodies of water are classified as lakes. Between 2020 and 2024, approximately 9 per cent of the water rescues performed by the Department were ice water rescues.

The Department provides ice water rescue services, and its ice water rescue personnel are trained to the standard of NFPA 1006. (An example of a training session is shown in Figure 1). However, the Department should update its SOGs related to ice water rescues to ensure they reflect the services that are being provided.



Figure 1. Firefighters in South Frontenac conducting ice water rescue training.

4.4.2 Surface Water Rescue Services

Context

The term “surface water rescue” refers to the emergency response that is provided for individuals who are in distress or struggling on the surface of a body of water (such as a lake, river, or pond), excluding incidents involving swift water.

There are several factors that a municipal council should consider before deciding whether the local fire department needs to deliver surface water rescue services. Table 6 lists the key components of a surface water rescue program.

Table 6. Components of a surface water rescue program.

Component	Details
Training standards	By July 1, 2028, all fire departments that provide surface water rescue services must ensure that their personnel are trained and certified to the standard of NFPA 1006 (as per O. Reg. 343/22). This standard outlines the skills and knowledge required for surface water rescue operations.
Specialized equipment	Specialized equipment used for water and ice rescue includes: • throwing flotation devices • throw ropes • personal flotation devices
Communications	In order to perform surface water rescues, rescue personnel must ensure that they have a good level of communication with their incident commander or sector officer.

Findings

Between 2020 and 2024, approximately 92 per cent of the water rescues performed by the Department were surface water rescues. Historically, July is the month with the most surface water rescues, and Saturday is the day of the week with the most surface water rescues.

The Department is equipped with a comprehensive inventory of specialized ice and water rescue gear (listed in Table 7). This equipment is designed to support a wide range of emergency scenarios.

Table 7. Ice and water rescue equipment.

Category	Equipment
Patient transport	• 3 Stokes baskets for patient transport
Cold water operations	• 24 Ice Commander suits complete with ice picks for cold water operations • 24 ice/water helmets outfitted with both flashing red lights and headlights
Boats	• 8 Oceanid Rapid Deployment Crafts with paddles

Category	Equipment
Personal flotation devices	• 20 Stearns personal flotation devices • 30 Mustang personal flotation devices
Rope and reach poles	• 4 reels of 200-foot buoyant rope • 4 reels of 100-foot buoyant rope • 20 throw bags (each containing 50 feet of rope) • 2 telescopic reach poles that extend up to 30 feet (with various victim retrieval attachments)

Overall, the Department maintains an adequate supply of personal flotation devices and other water-rescue equipment, and its responders are properly trained and equipped to manage water-related emergencies effectively.

4.4.3 Vessel Rescue Services

Context

Some surface water rescue services require a marine vessel for specific tasks, such as:

- transporting first responders to and from emergency scenes
- transporting patients to shore
- rescuing passengers from vessels (with rescue tools on board the boat)
- responding to fire-related calls that require flotation devices and firefighting gear
- conducting search and rescue or salvage operations
- managing fuel spills

In order to determine whether a fire department needs a marine vessel, a municipal council should consult its local fire chief. The municipal council also needs to ensure that sufficient funding is available to support the applicable water rescue services. Many fire departments use small commercial vessels to deliver surface water rescue services. Transport Canada defines a small commercial vessel as follows:

[A] vessel that is not a pleasure craft or used for commercial fishing. [...] Vessels of all types, including human-powered vessels and vessels that are owned by any level of government and government entities like fire and police departments, are commercial vessels unless used only for pleasure.

A small commercial vessel is a vessel that is no larger than 15 gross tonnage and, if it is used to carry passengers, carries no more than 12 passengers..⁵

⁵ Transport Canada. "TP 14070E – Small Commercial Vessel Safety Guide."

Owners of small commercial vessels (including municipalities) must follow all applicable Transport Canada boating regulations, including licensing regulations.

From a compliance standpoint, fire departments must ensure that their commercial vessels have the correct registration and are operated only by qualified personnel who have completed training on operating the vessel, towing and launching the vessel, and firefighter safety.

Fire departments should also make sure that commercial vessels and other marine rescue equipment are replaced at the end of their life cycles (or earlier, as required). As such, a fire department should include its marine vessels and other rescue equipment in an approved asset management program. The asset management program should list the year that each vessel should be replaced.

Each fire department that uses a vessel to deliver surface water rescue services should also have an SOG that clarifies how to operate a rescue boat safely. At a minimum, a marine rescue SOG should address the following considerations:

- What are the requirements and responsibilities of the boat's operator?
- What is the maximum number of staff and guests permitted on the boat?
- What are the standard practices for guests on the boat?
 - This component of the SOG should include instructions for identifying guests and ensuring that non-trained passengers know what to do if an emergency occurs on board the vessel (for liability purposes).
- How to use personal flotation devices correctly (including when to use seasonal life jackets or floater suits in cold weather conditions).
- How to follow safety plans that address staff needs.
 - This component of the SOG should also outline a plan for ensuring a second boat is available if the primary boat fails.
- How to respond to emergency calls on and off the water.
- How to use the boat to transport non-fire department passengers.
- How to respond to vessel fires.
 - This component of the SOG should include instructions for how to fight fires from the boat.
- How to deal with fuel spills on the water.
- How to transport and operate personal protective equipment ("**PPE**") on the boat during rescues.
- How to work with EMS crews, including clarification on the role of EMS crews and what is permitted and not permitted on the boat.

- How to work with other fire departments while on the boat.
- How to trailer the boat.

Appropriate training about the marine vessel and the related services should also be provided. All personnel who operate a vessel for surface water rescues must be certified to the standard of NFPA 1006 prior to July 1, 2028.

Findings

The Department takes an active role in responding to emergencies on local waterways. Over the past five years, the Department's marine units have been deployed to a total of 72 marine incidents. As of July 2024, the Department has three marine vessels. Information about these vessels is provided in Table 8.

Table 8. List of marine vessels, South Frontenac Fire & Rescue.

Unit #	Location	Type of Boat	Equipment
Marine Unit 3-11	Station 1 – Bradshaw	16' aluminum boat	• emergency lighting and siren • licensed Coast Guard mobile radio • mobile fire department radio • Hummingbird XPLORE 10 depth finder with 3D and side scan imaging, data recording, and mapping capabilities
Marine Unit 3-21	Station 2 – Burridge	12' rubber inflatable Zodiac boat	• N/A
Marine Unit 3-61	Station 6 – Perth Road	21' aluminum boat	• emergency lighting and siren • search lights • licensed Coast Guard mobile radio • mobile fire department radio • Hummingbird XPLORE 10 depth finder with 3D and side scan imaging, data recording, and mapping capabilities • fire pump

Figure 2 shows a picture of Marine Unit 3-11, which is currently kept at Station 1 – Bradshaw.



Figure 2. Marine Unit 3-11.

There are over 300 water-access-only seasonal residences located on islands in South Frontenac. For emergencies in these areas (such as marine fires or island fires), the marine units are the Department's sole transportation and rescue apparatus.

As of this FMP, the Department does not have a way to protect water-access-only residences when the lakes are frozen.

4.5 Other Fire Protection Bylaws

Context

In addition to an E&R bylaw, a municipal council may pass other fire protection bylaws, such as:

- open-air burning bylaws
- false alarm bylaws
- firework bylaws
- fire route bylaws
- fee for service

Some municipalities also have fire protection bylaws that outline their service agreements, such as mutual aid and automatic aid agreements. For more information about fire service agreements, see section 5 of this FMP.

Findings

Table 9 lists the fire protection bylaws that South Frontenac has in place as of this FMP. These bylaws have been designed for the following purposes:

- Establish the legal authority, standards, and expectations that guide the Department's operations.
- Establish the legal authority, standards, and expectations that guide the public safety practices in South Frontenac.
- Outline the services the Department is authorized to provide.
- Outline the powers and responsibilities of the Fire Chief and municipal officials.
- Set consistent requirements for fire prevention, open-air burning, fire safety planning, and property maintenance.

Table 9. Fire protection bylaws in South Frontenac.

Bylaw #	Description
2011-20	Bylaw for Charging or Services – Motor Vehicle Accidents
2012-68	Open Air Burning Bylaw
2013-66	Establish Fees or Charges and Require payment for services
2018-04	Appoint Acting Fire Chief
2018-20	Appoint Fire Chief
2018-56	Establish and Regulate Fire Department
2020-08	Amend Appendix E of By-Law 2018-56
2024-02	Appoint Director of Emergency Services
2024-46	Bylaw to Establish Fees or Charges
2025-17	Appoint Deputy Fire Chief

4.6 Roadmap for Improvement

Bylaws

Each time that South Frontenac develops a new fire protection bylaw, it should follow a structured and collaborative approval process in order to ensure the bylaw complies with applicable legislation, supports operational requirements, and aligns with the township's strategic goals and service expectations.

As part of the bylaw approval process, South Frontenac should review current industry best practices and consider the types and levels of services the Department is approved to provide. Doing so can help the township ensure that the bylaw is defensible and reflects modern fire service delivery models.

When a new bylaw is being developed, the following municipal stakeholders should be involved in the development process:

- The Fire Chief and the Department's senior leadership personnel should provide insight into the Department's operations.
- The Municipal Clerk or Legislative Services should provide guidance related to governance and procedures.
- Municipal legal counsel should provide information related to legislative compliance and risk mitigation.
- The CAO should review the bylaw to ensure corporate alignment.
- The Finance Department should assess cost-recovery processes and financial impacts associated with the bylaw.
- Other municipal departments (such as Public Works or Infrastructure) should contribute to the development of bylaws that affect their services or area of expertise (such as water supply, access routes, or related operational infrastructure).

In addition, whenever there are changes to the Department's approved level of service, the Fire Chief should ensure that the E&R bylaw is updated accordingly. The E&R bylaw must remain accurate, current, and compliant with legislation.

Core Services

As noted in section 4.3, the Department has been receiving a higher number of medical calls than it has in years past. This call volume increases the need for the Department to provide medical response services. As such, the Department should reassess its medical response services program in order to determine whether the program remains sustainable, efficient, and aligned with the organization's core mandate.

It is vital to determine whether the current medical response services program represents a cost-effective and appropriate use of the Department's resources.

Ice Water Rescue

The Department performs ice rescues on an infrequent basis. Based on the current level of need for this service, when the Department analyzes its ice water rescue program, it should focus on readiness, sustainability, and strategic resource management.

Going forward, the Department should provide ongoing training in ice rescue techniques in order to ensure that all personnel who perform this service maintain the certifications, competencies, and practical skills required to perform rescue operations safely and effectively. For high-risk, low-frequency services (such as ice rescue services), ongoing training is critical, as it promotes consistent skill retention, adherence to current standards, and the ability to perform confidently under challenging conditions.

Surface Water/Vessel Rescues

In recent years, most of the Department's water rescues have been surface water rescues. As such, the Department should ensure that its surface water rescue program is specialized, scalable, and effective.

The Department must also ensure that its personnel receive advanced training in swift dynamics, victim approach techniques, and boat-based rescues. Additionally, the Department's personnel should participate in regular scenario-based exercises to maintain their proficiency.

Finally, the Department has ensured that its surface water rescue teams remain fully equipped with the necessary resources to perform this service safely and effectively. In 2025, Council approved funding to support this capability, which positions the Department to maintain an appropriate level of equipment and readiness. Going forward, continued oversight, equipment maintenance, and periodic reviews of resource needs will help ensure that the Department remains properly equipped to provide surface water rescue services in alignment with recognized standards and operational best practices.

Wildland Fires

As noted in section 4.3, the Department is in the process of developing a CWFPP. Once the CWFPP is complete, the Department should:

- Review the document's findings.
- Develop a program to mitigate wildland fires in South Frontenac.
- Train personnel to meet the obligations of the Ministry of Natural Resources.

When determining which changes to make to its levels of service, the Department should consider how it can take the following actions:

- Ensure preparedness.
- Protect structures and resources.
- Promote public safety.
- Work with applicable community stakeholders and external resources.

Search and Rescue

The Department has a limited amount of training in search and rescue operations. This limited level of training presents a significant risk to the safety of the Department's personnel, and it may result in delayed or ineffective rescue efforts.

Although the Department's operations are guided by a strong commitment to serving the community, the absence of formalized and competency-based training increases operational risks, potential liability issues, and the likelihood of unsuccessful outcomes. In order to mitigate these concerns, the Department must ensure that its personnel are properly trained, and it must have protocols in place to request and access additional resources when needed.

Going forward, the Department could consider offering additional training that covers such topics as:

- wilderness search techniques
- patient care
- coordination with park authorities and other agencies

By bolstering its training efforts, the Department can strengthen its operational readiness, enhance public confidence, and improve its ability to respond to search and rescue incidents safely, confidently, and effectively.

4.7 Recommendations

Recommendations regarding bylaws and service levels in South Frontenac are as follows:

- 4-1. The Fire Chief should update South Frontenac's establishing and regulating bylaw (as needed) if any of the recommendations from the 2026 South Frontenac Fire Master Plan are implemented.
- 4-2. The Fire Chief should continue to review South Frontenac's establishing and regulating bylaw on an annual basis, as well as when any levels of service change. The reviews should ensure that the bylaw remains current and lists all emergency and non-emergency services provided by South Frontenac Fire & Rescue.
- 4-3. South Frontenac should pursue the development of formalized agreements with neighbouring municipalities to ensure there is reliable access to specialized rescue teams that deliver services not provided by South Frontenac Fire & Rescue. The agreements should enhance operational capacity, support effective emergency response, and ensure that the community has timely access to specialized skills and resources when required.

- 4-4. South Frontenac Fire & Rescue should continue reviewing its specialized training, equipment, and strategic planning in order to ensure that it can provide safe, effective, and timely responses.
- 4-5 The Fire Chief should review the South Frontenac Community Wildland Fire Protection Plan after the document is endorsed. The Fire Chief should also reference the plan and its findings when reviewing existing strategies in order to mitigate the impact of wildland fires in South Frontenac.

5.0 Fire Service Agreements

5.1 Overview

Under the authority of the Municipal Act and the FPPA, a municipality can enter into an agreement with another municipality to provide or receive a service. The most common types of agreements are mutual aid plans, automatic aid agreements, and fire protection agreements.

If a municipality decides to formalize a fire service agreement, the community's E&R bylaw should permit the local fire department to participate in those agreements, specifying which services and aid the participating municipalities and departments are to provide.

5.2 Mutual Aid

Context

A mutual aid plan allows a participating fire department to request assistance from a neighbouring fire department (as long as the other fire department is authorized to participate in a plan approved by the Fire Marshal).

Section 7 of the FPPA states that the Fire Marshal may appoint fire coordinators to “establish and maintain a mutual aid plan under which the fire departments that serve [a] designated area agree to assist each other in the event of an emergency.”

Findings

Bylaw No. 2018-56 authorizes the Department to participate in the Kingston, Frontenac, and Lennox & Addington Mutual Aid Plan. The other participating municipalities are:

- City of Kingston
- Loyalist Township
- Town of Greater Napanee
- Township of Addington Highlands
- Township of Central Frontenac
- Township of Frontenac Islands (Howe Island and Wolfe Island)
- Township of North Frontenac
- Township of Stone Mills

The mutual aid plan ensures that assistance for the participating municipalities is not constrained by municipal boundaries.

5.3 Automatic Aid

Context

An automatic aid agreement allows the closest fire department to respond to an incident regardless of municipal boundaries. The purpose of the agreement is to reduce the time it takes for firefighters to arrive at the scene of a fire and begin suppression duties.

Some automatic aid agreements include a cost for providing services, but some automatic aid is offered at no cost to the municipality receiving the service.

Findings

South Frontenac signed and established an automatic aid agreement with the Township of Central Frontenac in May 2025.

This agreement states that South Frontenac and Central Frontenac will provide each other with reciprocal fire protection services for responses to structure fires and wildfires, as well as ice water rescue services and tiered medical response to all the properties and residences situated within the fire area upon request.

According to the terms of the agreement, payment for the specified services will be as follows:

- a) Each party to this agreement shall retain their respective rights as the Home Fire Department to be responsible for all fees, charges, and bills that are assessed or collected from properties and owners for incidents occurring in their jurisdiction.
- b) Each party to this Agreement shall be solely responsible for the wages, benefits and other payments to their respective Fire Department employees and paid-on call firefighters responding to any Fire Protection Services rendered under this Agreement.
- c) Each party to this Agreement shall also retain their respective rights as the Home Fire Department in regard to invoicing the Ministry of Transportation for the appropriate fees for services provided on provincial highways as defined in the Fire Area.
- d) There are no fees to be charged between municipalities as part of this automatic aid agreement.

Schedule “A” of the automatic aid agreement defines the response areas as follows:

The Corporation of the Township of South Frontenac will provide Protection Services under Automatic Aid to the areas of the Township of Central Frontenac atom 601 from boundary to White Lake Road and cover all roads south as identified in the Map in schedule “B”.

The Corporation of the Township of Central Frontenac will provide Fire Protection Services under Automatic Aid to the areas of the Township of South Frontenac atoms 102,103,304 as defined in the map in Schedule “B”.

5.4 Fire Protection Agreements

Context

A municipality may enter into a fire protection agreement if it does not have an existing fire department or does not have the means to establish one. A municipality may also participate in a fire protection agreement to have multiple departments operating a joint fire department.

A fire protection agreement can provide a municipality with access to resources such as additional staffing and specialized equipment. The agreements can also help a municipality obtain assistance with its public education and code enforcement initiatives.

Findings

As of this FMP, South Frontenac has a fire protection agreement with the Township of Central Frontenac.

5.5 Other Service Agreements

Context

Municipal fire departments can enter into various types of service agreements to formalize roles, responsibilities, and partnerships with other agencies or municipalities. These agreements help ensure clarity, legal protection, and effective service delivery.

Table 10 describes some of the different service agreements that may be established for a volunteer fire department.

Table 10. Types of service agreements for volunteer fire departments.

Type of Agreement	Scope
First Responder Medical Service Agreements	Purpose: Authorize fire departments to provide emergency medical care before an EMS crew arrives. Parties: Local health authorities, EMS providers, or base hospitals. Key features: Medical oversight, training standards, and scope of care.

Type of Agreement	Scope
Dispatch Service Agreements	Purpose: Coordinate emergency call handling and dispatching services. Parties: Regional dispatch centres or police services. Key features: Communication protocols, technology integration, and response coordination.
Training and Resource Sharing Agreements	Purpose: Share training facilities, instructors, or specialized equipment. Parties: Fire departments, training academies, or emergency management agencies. Key features: Joint training exercises, cost-sharing, and access to resources.
Ministry of Natural Resources	Purpose: Coordinate the response to wildland fires in South Frontenac, as well as in provincial fire protection zones. Parties: Fire departments and the Ministry of Natural Resources. Key features: Established response boundaries, costs, and access to resources.

A municipality may enter into agreements for strategic, operational, or financial reasons. Doing so can help ensure that fire protection and emergency services are delivered effectively, especially in areas with limited resources or complex geographic needs.

Findings

Table 11 summarizes the current service agreements that Council has approved for South Frontenac.

Table 11. Current fire service agreements in South Frontenac.

Type of Agreement	Year Established	Participating Partner	Scope of Agreement
Dispatch	2020	City of Kingston	Fire dispatch services
Urban Wildland Interface	2024	Ministry of Natural Resources	Wildland firefighting services for 44 per cent of Frontenac Provincial Park

Type of Agreement	Year Established	Participating Partner	Scope of Agreement
Medical Tiered Response Program	2007	County of Frontenac	Medical tiered response services

5.6 Roadmap for Improvement

Conduct a Needs Analysis on a Regular Basis

Although South Frontenac has established some agreements, it has a limited number of agreements with fire departments in neighbouring municipalities.

As the demographics of South Frontenac change, the Fire Chief should continue conducting needs analyses on a regular basis. These analyses can be used to examine community needs and the Department's level of service, deployment models, and response statistics. Conducting a needs analysis can uncover information that can be used to assist the Department with providing faster and more reliable responses through automatic aid agreements. These responses will ensure that the closest units respond to incidents, which can reduce response times and improve outcomes.

In addition, agreements with neighbouring fire departments will provide access to aerial ladders, hazmat units, and specialty equipment. Shared services help reduce the duplication of equipment and personnel, allowing for better use of limited budgets.

Finally, it is worth noting that the Department is not currently equipped to provide many of the specialized rescue functions noted in section 4.4 of this FMP, including high-angle rescue, trench rescue, and hazardous materials response. Information about these service gaps—in conjunction with the findings of the South Frontenac CRA—will help determine both the level of risk and the frequency or likelihood of such events occurring. Based on the current analysis, it may be beneficial for South Frontenac to pursue cost-effective automatic aid or mutual aid agreements with neighbouring fire departments that already deliver the required specialized services.

5.7 Recommendations

Recommendations regarding the fire service agreements in South Frontenac are as follows:

- 5-1. The Fire Chief should review all agreements that South Frontenac Fire & Rescue currently has in place. The Fire Chief should then update the agreements (as needed) to ensure they reflect the community's current risks, needs, and circumstances. All updated agreements should be presented to Council for consideration and approval.

-
- 5-2. The Fire Chief should review the tiered medical agreement with Frontenac County on a continuing basis. The agreement should be updated (as needed) to ensure that it serves the best interests of all applicable residents and municipalities.
 - 5-3. The Fire Chief should review the South Frontenac Community Risk Assessment, as well as any identified gaps related to the specialized services provided by South Frontenac Fire & Rescue. Based on that review, the Fire Chief should attempt to establish automatic aid agreements with neighbouring fire departments that can support those specialized services.

6.0 Recruitment and Retention

6.1 Overview

Strong recruitment and retention levels are crucial to the success of fire departments, especially departments that employ volunteer (or paid on-call) firefighters. Without proper staffing numbers, a department cannot provide adequate services to its community. As such, it is critical for volunteer fire departments to have the necessary tools, information, and support to recruit and retain an appropriate number of firefighters.

Attendance levels are also important to consider. In the context of the fire service, attendance refers to the number of firefighters who respond to an emergency call.

As a best practice, volunteer fire departments should prioritize sustainable and effective recruitment and retention programs, as well as attendance levels. Often, there are significant costs involved with replacing trained and certified personnel, and the loss of these personnel can impact a fire department's performance levels due to the loss of experience.

6.2 Recruitment

Context

Many fire departments struggle to recruit a consistent number of volunteer firefighters. Although the factors affecting recruitment vary from region to region, there are some common themes that most fire departments face, such as aging populations, competing interests, and cultural shifts away from community service.

Another difficulty is the amount of time it takes to identify, develop, and implement strategies to resolve recruitment challenges. Often, trying to resolve recruitment issues can cause a significant drain on a fire department's time and resources. In many cases, the issues that impact recruitment levels can also affect retention levels.

Findings

The Department completed a recruitment drive in 2025. This initiative attracted 19 recruits. In addition, eight other firefighters joined the Department in December 2025.

During the recruitment drive, a concerted effort was made to attract recruits for Station 1 and Station 2 (in the northern part of the municipality). In order to attract recruits, a smoke alarm and recruitment program was implemented, and crews went door-to-door with smoke alarm information and recruitment information about the Department.

Other events that took place during the recruitment drive included:

- holding open houses at the fire stations
- providing information and talking with the public
- posting information on municipal social media channels, including Facebook
- advertising on road signs at major intersections to alert the public of the need for firefighters

Figure 3 shows a poster that was used to advertise the 2025 recruitment drive.



Figure 3. Advertisement for the 2025 recruitment drive.

By taking the time to analyze the factors influencing its recruitment numbers, the Department has gained valuable insights that can be used to strengthen its paid on-call firefighter recruitment strategies and support long-term sustainability. During its most recent recruitment initiative, the Department successfully attracted qualified candidates without significant challenges, which demonstrates the effectiveness of its current approach.

6.3 Retention

Context

Many volunteer fire departments find it challenging to retain qualified firefighters. It is not uncommon for a department to lose 10 to 20 per cent (or more) of its volunteer workforce each year, which means that a complete turnover of volunteer personnel is possible within five to ten years.

Due to poor retention rates, fire departments must spend a significant amount of time and money recruiting and training new volunteers. Because new volunteer firefighters often have limited experience and skills, volunteer fire departments are likely to have

fewer qualified personnel who can fill leadership roles (such as officer positions) when they become available.

Table 12 lists some of the challenges associated with volunteer recruitment and retention. The table is a direct excerpt from the article “Where Are They Going?”, written by Deputy Fire Chief Ian Shetler for the Association of Municipal Managers, Clerks, and Treasurers of Ontario.⁶

Table 12. Challenges associated with recruiting and retaining volunteer firefighters.

Source of Problem	Contributing Factors
Time Demands	• The two-income family and working multiple jobs • Increased training time demands • Higher emergency call volume • Additional demands within the department (administrative, fund-raising, etc.)
Training Requirements	• Higher training standards and new government requirements • More time demands • Greater public expectation of capabilities (broader range of services) • Additional training to meet broader range of services • Recertification demands
Increasing Call Volume	• Fire department assuming wider response roles (EMS, hazmat, technical rescue) • Increasing emergency medical call volume • Increasing number of automatic alarms
Change in the “Nature of the Business”	• Abuse of emergency services by the public • Less of emphasis on social aspects of volunteering

⁶ Shetler, “Where Are They Going?”

Source of Problem	Contributing Factors
Changes in Sociological Conditions (In Urban and Suburban Areas)	• Transience • Loss of community feeling • Loss of community pride • Less of an interest or time for volunteering • Two-income families • “Me” generation
Changes in Sociological Conditions (In Rural Areas)	• Employers less willing to allow response to calls • Time demands • “Me” generation
Leadership Problems	• Poor leadership and lack of coordination • Authoritative management style • Failure to manage change

Findings

In the Department, the average number of years of experience is 7.4 years per member. This level of experience ensures that the Department has a wealth of knowledgeable and skillful personnel throughout its ranks. Collectively, the members of the Department have 865 years of fire service experience.

The Department has used social interaction and social events to promote retention, as regular social interaction with colleagues has the potential to motivate some firefighters to remain with the organization. South Frontenac has also allowed its firefighters to enroll in the OMERS pension plan, which is another retention strategy.

6.4 Attendance Management

Context

It is critical for fire service personnel to respond to emergencies, complete training sessions, and participate in equipment maintenance activities. Attending these events helps firefighters maintain their knowledge, skills, and operational readiness.

Fire chiefs and other leadership personnel must monitor attendance levels in their fire departments in order to ensure their department is staffed by firefighters who can meet the following criteria:

- Respond to incidents safely and effectively.
- Implement the skills acquired from completing training.

- Operate equipment safely.
- Understand their role within the fire department.
- Educate community members at public education events.
- Ensure all fire apparatus and equipment are operating properly.
- Remain aware of the fire department's goals and objectives.
- Conduct pre-incident planning and building familiarization activities.
- Contribute to a healthy organizational culture.

The importance of consistent attendance cannot be overstated. However, it is also important to acknowledge that it is difficult for firefighters to attend every event that involves their fire departments, as significant time commitments are required. Maintaining consistent attendance is especially difficult for volunteer firefighters, as they must balance their fire service duties with their employment and personal commitments. Firefighters also need an appropriate amount of rest after completing an emergency response.

The pressure to maintain consistent attendance levels while meeting other obligations can lead to an unsustainable work-life balance. Therefore, fire departments that rely on volunteer personnel must ensure that they create opportunities that provide all staff members with the time needed to maintain a healthy work-life balance. From the firefighter's perspective, the schedule will provide time to fulfill other obligations. From the fire department's perspective, the schedule may help encourage good firefighter retention rates.

Table 13 identifies some of the risks associated with poor attendance levels. Many of the risks described in the table stem from poor training attendance, as low levels of training participation can lead to a range of operational issues.

Table 13. Risks associated with poor attendance levels.

Risk	Explanation
Increased risk of injury	Firefighting is inherently dangerous. If firefighters do not attend training sessions on a regular basis, they are at a higher risk of injury due to a lack of preparedness for the challenges they face during emergency responses.
Investigations by the Fire Marshal	A pattern of poor attendance and the resulting lack of training can prompt the OFM to investigate a fire department's compliance with safety and training standards.

Risk	Explanation
Legal liability	A municipality could face legal repercussions if the Ministry of Labour finds that inadequate training—stemming from poor attendance—has compromised firefighter readiness. This situation could lead to charges against a municipality for failing to provide necessary training.
Compromised service delivery	Inadequate training due to poor attendance can lead to subpar service delivery, exposing a municipality to greater liability and damaging its credibility. This can erode public trust/confidence in a fire department's ability to protect the community.
Attrition among firefighters	Firefighters who perceive that there is an increased level of risk to their personal safety due to insufficient training may choose to leave their fire department. The departure of experienced personnel can further strain a fire department's capabilities.
Morale issues	The presence of safety-related concerns—exacerbated by poor attendance at training sessions—can significantly impact morale. Firefighters may feel undervalued and unprotected, which can lead to a demotivated workforce.
Reluctance to take necessary risks	When firefighters lack confidence in their training and safety measures, they may be hesitant or unwilling to take calculated risks that are often crucial for saving lives and property. This hesitancy can hinder a fire department's effectiveness during emergency responses.

Many fire departments implement an attendance management program to keep track of how many staff members are attending various functions and events on a regular basis. Ideally, the goal of the program is not to assign blame to staff members who do not have high levels of attendance. Rather, the program should be used to uncover issues that are affecting consistent attendance levels. In addition, a fire department can use the results of the program to help create a minimum attendance standard that is applicable to its number of available staff members, as well as its structure, services, and operations.

The results of an attendance management program may also provide an opportunity for a fire chief to speak candidly about the challenges that the fire department's personnel are facing. Fire chiefs can use this opportunity to reinforce the importance of regular attendance and its direct effect on public safety.

A fire chief can also strive to find cost-effective ways of enhancing the fire department's operations to help the firefighters overcome attendance-related challenges. For

instance, a fire chief may take steps to increase the level of job satisfaction among personnel in order to increase attendance.

It is important to note that attendance levels can also be affected by call volumes. For example, it is common for fire departments to experience periods of low call volumes, as well as periods with an unusually high number of calls for service over a very short timeframe. Because instances of low and high call volumes are both possible, a fire department must use discretion when evaluating attendance levels during these periods. Without due discretion, a fire department may end up with an inaccurate impression of the readiness or availability of its staff members.

As a best practice, a fire department's management team should consider extending the length of time they use as "assessment periods" for their fire department's attendance management program. Doing so will help yield a more accurate picture of the availability and readiness levels of the fire department's personnel.

Findings

As of this FMP, the Department's personnel are expected to attend a minimum of 35 per cent of emergency responses, as well as all required training. These expectations are communicated to recruits when they receive an offer of employment (developed jointly by the Department and the South Frontenac Human Resources Department). Although this practice provides clarity at the recruitment stage, it is not currently supported by a formalized, standalone attendance policy.

Currently, the Department's administrative assistant produces a quarterly attendance report, which is reviewed by the Fire Chief. Members who do not meet the established attendance expectations receive a written notification outlining the deficiency. If attendance remains below acceptable levels in the subsequent quarterly review, the member is required to meet with the Fire Chief to identify contributing factors and outline steps for improvement. Although this process demonstrates an informal approach to monitoring and addressing attendance concerns, the Department does not currently have a formalized attendance and accountability policy that clearly defines expectations, progressive corrective actions, roles and responsibilities, or consistent enforcement measures.

6.5 Roadmap for Improvement

Recruitment Strategies

Like many fire departments across Ontario, the Department faces challenges related to the recruitment and retention of paid on-call firefighters. These challenges can contribute to staffing shortages and potential impacts on emergency responses—especially in rural areas.

Going forward, the Department should continue to modernize its recruitment strategies by targeting and showcasing the personal, professional, and community benefits of serving as a paid on-call firefighter. By employing a more adaptable approach to recruitment, South Frontenac can strengthen its roster of paid on-call firefighters, enhance the Department's operational capacity, and build a more resilient and sustainable workforce for the future.

Additionally, the Department should continue to monitor recruitment trends and consider strategies to attract firefighters who already have the required experience and training (where possible). Doing so can reduce training time, improve operational readiness, and enhance the depth of skills within the Department's firefighter ranks.

Mentoring Process

The Department should consider establishing a formal mentorship program in order to strengthen the development and retention of its personnel, as well as overall organizational resilience. Pairing each new firefighter with an experienced member would provide guidance, support, and knowledge transfer during the early stages of their service, helping recruits feel more confident, connected, and supported.

In addition to improving onboarding, a well-designed mentorship program contributes directly to succession planning by developing future leaders. This process ensures that operational knowledge, technical skills, and organizational culture are passed on effectively. By creating clear opportunities for growth and preparing personnel for future supervisory or leadership roles, the Department can build a more stable, skilled, and sustainable workforce capable of meeting the community's long-term service demands.

Attendance Management Program

The Department should strive to implement a more robust attendance management program. For instance, the Fire Chief should be able to standardize minimum certification levels (based on years of service and rank). The Fire Chief should also set minimum attendance expectations for incident responses, training sessions, and public education events. These attendance levels should be set for all officers and firefighters. The overall goal of these attendance requirements should be to help the Department improve its service delivery while maintaining an appropriate number of active firefighters.

6.6 Recommendations

Recommendations regarding recruitment and retention in South Frontenac are as follows:

- 6-1. The Fire Chief and the South Frontenac Human Resources Department should review the types of retention initiatives that are used by fire departments across Ontario. The review should focus on initiatives related to compensation and benefits. The Fire Chief should then develop a report that summarizes the review and provides recommendations for Council's consideration and approval.

7.0 Departmental Communications

7.1 Overview

A community consists of many groups, each with its own history, culture, and behaviours. Examples of community groups include residents, municipal staff, and fire service personnel. Other groups include external agencies that share services with the local fire department. It is important for fire departments to communicate openly with both internal and external groups. Doing so can help build trust and increase collaboration.

Fire departments need to have good communication with their firefighters, partners, and the public in order to operate effectively. The success of a fire department in recruiting and retaining staff—as well as its success in maintaining a good relationship with the community—can be significantly affected by how well it communicates and interacts socially.

7.2 Internal Communications

Context

Maintaining effective internal communications can be challenging for volunteer fire departments. Often, fire departments have personnel operating from different stations, and it can be difficult to communicate the same messages to every staff member in an accurate and timely fashion. As a result, some firefighters may start to feel disengaged or isolated from the wider organization, and they may only communicate with the other firefighters assigned to their station. If a scenario like this persists, it can lead to performance issues and safety hazards.

There are many proven ways to practise effective communication, such as:

- Distribute online surveys.
- Hold face-to-face meetings and discussion groups.
- Send regular emails, newsletters, and text messages.
- Use social media platforms to relay updates.

Effective communication is especially important when a fire department wants to introduce changes to its services or structure. Without due consideration of social dynamics, the potential benefits of changes at the operational level may be offset by consequences at the social level. If a fire department does not communicate its plans, some staff members and residents may be resistant to changes that will affect existing services or staffing models. However, when staff members and residents contribute to the planning process and understand the specifics of proposed decisions, they usually feel a sense of involvement.

Findings

As of this FMP, over the past 12 to 18 months, the Department has made significant efforts to strengthen its internal communication practices with officers and firefighters.

Given that the Department operates eight fire stations spread across a large and geographically dispersed area, effective communication is essential to maintaining operational consistency, coordination, and situational awareness. In order to address challenges related to these areas, the Department has implemented several new communication initiatives designed to improve the flow of information, support station-level engagement, and enhance overall organizational connectivity. Some of these initiatives are as follows:

- The Fire Chief facilitates a monthly “Fire Chief Address” to provide updates about departmental issues. These updates are provided on maintenance evenings, and they usually last 15 to 20 minutes. In order to ensure personnel from all stations receive consistent information, the Fire Chief uses Microsoft Teams to deliver the updates.
 - The Fire Chief has been providing these updates in person by travelling to each fire station sequentially and delivering the presentation directly to personnel. In addition, the presentation is streamed at the other fire stations, ensuring that all staff can access the information regardless of their location or schedule.
- Platoon chief meetings are held on a monthly basis.
- Captain meetings are held on a quarterly basis.
- A SharePoint information system is maintained for all personnel.
 - The SharePoint website is used as a resource to store, organize, and share information. The site provides the flexibility to access documents, images, news, links, data lists, and tasks.
- Comment forms, health and safety committee forms, and meeting minutes are made available.
- A fire advisory committee has been established. This committee maintains a firefighter page that provides access to notices, announcements, training information, and comment forms. The committee also serves an important function by gathering insights and suggestions from the Department’s personnel. The information gathered by the committee helps to ensure that the perspectives of frontline personnel are incorporated into departmental decision-making and continuous improvement efforts.

- The Department provides an annual training calendar, as well as the training materials, lesson plans, and PowerPoint slide decks for the current training sessions.
 - These materials are available online.
 - The resources for previous training sessions are also available.
 - All equipment manuals have been downloaded to the website, and municipal policies and procedures can also be accessed.
- As new SOGs are developed, they will also be added to the site.
- The website currently includes a link to the Section 21 Firefighter Guidance Notes..⁷
 - Reviewing the Section 21 Firefighter Guidance Notes can help the Department's personnel understand potential health and safety issues in the workplace.

The development of this FMP included stakeholder engagement sessions with firefighters and officers. During these sessions, participants noted that the Fire Chief and Deputy Fire Chief have done a much better job of communicating ideas and plans with staff members than in previous years. The firefighters and officers noted that they feel engaged and have opportunities to be involved in decision-making processes.

7.3 External Communications

Context

External communications are a vital part of a fire department's operations. These communications are especially important for volunteer departments that rely heavily on public trust, community engagement, and inter-agency coordination. As a best practice, municipal councils and fire departments should avoid making significant operational changes until they understand which external groups those changes will affect. It is also important to anticipate how the affected groups will react to any proposed changes.

In order to enhance community engagement and communication, a multifaceted approach is essential. Possible initiatives are as follows:

- A fire department can strengthen its social media presence to reach diverse audiences by sharing behind-the-scenes content, safety tips, and celebrating community heroes on social media platforms.
- Educational outreach through school partnerships and seasonal safety campaigns can promote public awareness.

⁷ For more information about the Section 21 Firefighter Guidance Notes, see section 8.2 of this FMP.

- Fire departments can use public events to promote volunteer recruitment opportunities, emphasizing testimonials, participation in local events, and flexible, family-friendly training options.
- Encouraging community members to share their thoughts through surveys, advisory groups, and town hall meetings ensures public voices are heard.
- Collaborating with local organizations for joint events and campaigns can broaden outreach efforts.
- Recognizing volunteers and sharing success stories publicly reinforces a culture of appreciation and community pride.

By facilitating a diverse number of external communication initiatives, fire departments can gain information that they can use to understand what initiatives are working, where to improve, and how to better connect with the community.

Findings

The Department is striving to strengthen its external communications through the use of social media. As of this FMP, the Department has only a minimal social media presence. However, the Department is actively exploring options to enhance this service and improve its ability to share timely information, promote public education, and engage more effectively with the community.

The Department is also looking for ways to provide better communication for residents during times of the year when burning is prohibited. For instance, during these periods, the Department has increased the number of events it facilitates in the community, and it has increased its social media presence.

7.4 Roadmap for Improvement

Improved Internal Collaboration and Communication

The Department's management team should continue to explore cost-effective ways of improving internal collaboration and communication efforts. Doing so may help strengthen the level of camaraderie in the organization, and it may also improve the experience personnel have while working in the Department.

7.5 Recommendations

Recommendations regarding departmental communications in South Frontenac are as follows:

- 7-1. The Fire Chief should continue to develop communication strategies for South Frontenac Fire & Rescue to enhance information flow and ensure timely updates are provided.

- 7-2. The Fire Chief should work with the Fire Advisory Committee to develop a survey for the members of South Frontenac Fire & Rescue. The Fire Chief and the committee should then evaluate the responses to the survey and try to find ways to improve communications within the fire department.

8.0 Occupational Health and Safety

8.1 Overview

Fire departments must take occupational health and safety seriously. Firefighting is a challenging profession, and it is impossible to know what dangers a firefighter will face on any given day. Emergencies may escalate unexpectedly, involve harmful chemicals, or cause serious mental trauma to first responders.

Due to the dangers that firefighters encounter, fire departments should ensure that they implement health and safety practices that are proactive rather than reactive. For instance, firefighters often need to access their gear at a moment's notice, which is why fire departments should strive to always keep their equipment clean and ready for service.

From a compliance standpoint, there is specific health and safety legislation that all fire departments must follow, such as the OHSA. There are also many examples of industry best practices that fire departments can follow to safeguard their firefighters.

8.2 Section 21 Firefighter Guidance Notes

Context

The Section 21 Firefighter Guidance Notes are a set of best-practice documents developed by the Ontario Fire Service Health and Safety Advisory Committee. The committee was formed under Section 21 of the OHSA, and it comprises stakeholders from across Ontario. The Section 21 Firefighter Guidance Notes are reviewed and approved by the Minister of Labour.

According to the website for the Section 21 Firefighter Guidance Notes:

[The] firefighter's guidance notes [are intended to] help fire service workers understand potential health and safety issues in their workplace. The notes also help employers identify hazards that are unique to fire services and determine how to prevent injury and illness to their workers..⁸

The Section 21 Firefighter Guidance Notes are divided into seven sections that cover the following topics:

1. Apparatus and equipment.
2. Communications.
3. Environment.

⁸ ontario.ca, "Firefighter Guidance Notes."

4. Personal protective equipment.
5. Personal accountability.
6. Procedures.
7. Training.

Employers and workers can reference the Section 21 Firefighter Guidance Notes for advice about meeting the requirements of the OHSA and promoting a culture of safety within their fire department.

The Section 21 Firefighter Guidance Notes are not legally binding, but they are widely respected, and they are often used by inspectors and fire departments to guide safe practices.

Findings

All of the Department's personnel are aware that they have access to an internal SharePoint site that includes a link to the Section 21 Firefighter Guidance Notes.

8.3 Cancer Prevention Checklist

Context

Cancer prevention is a vitally important topic for fire departments to understand.

Firefighters are exposed to toxic chemicals and carcinogens while responding to fires and hazardous situations. These exposures significantly increase the risk of developing various types of cancer, which is a leading cause of firefighter illness and death. By prioritizing cancer prevention through proper decontamination efforts, the use of protective equipment, and regular health screenings, fire departments can protect the long-term health and well-being of their firefighters. In addition to saving lives, these kinds of initiatives help support operational readiness, reduce healthcare costs, and demonstrate a commitment to the safety and longevity of the firefighting workforce.

Ontario's Firefighter Cancer Prevention Checklist is a self-audit tool designed to help fire departments identify and reduce cancer risks associated with firefighting. The checklist was developed by the Section 21 Committee (with support from the Ministry of Labour), and it addresses many key areas, such as:

- field decontamination
- handling and transporting contaminated equipment
- in-station cleaning
- PPE usage
- gear maintenance

- post-fire hygiene practices
- administrative policies
- ensuring apparatus area ventilation is adequate for gear storage

The Firefighter Cancer Prevention Checklist also discusses the primary routes of exposure (such as inhalation and skin absorption), and it describes the steps that fire departments can take to minimize those risks. These actions cover topics like the proper use of respiratory protection, the cleaning of gear, and the implementation of hygiene protocols.⁹

Findings

As of this FMP, the Department is not using the Firefighter Cancer Prevention Checklist. However, the Department is in the early stages of establishing a cancer prevention program, and it is actively working to provide information on cancer prevention initiatives to all of its personnel. As these initiatives continue to be developed, the Department should use the Firefighter Cancer Prevention Checklist as a guide to support a comprehensive and sustainable program. It is also acknowledged that Council demonstrated strong leadership and commitment to firefighter health and safety in 2025 through several meaningful improvements, including the purchase of PPE, which further supports the Department's ongoing efforts to enhance occupational health and safety.

8.4 Joint Health and Safety Committee

Context

Each fire department should have a joint health and safety committee (“**JHSC**”) that includes representation from its senior management team and its firefighters. In some municipalities, the local fire department and municipal staff share a single health and safety committee. As per the OHSA, a JHSC should perform monthly health and safety inspections and meet at quarterly intervals to discuss applicable concerns.

Findings

The Department re-established a JHSC in 2024. However, the committee faces challenges related to sporadic worker membership.

The members of the Department's JHSC are required to be certified under the OHSA. Certification involves completing Part One training (which covers general health and safety principles) and Part Two training (which focuses on workplace-specific hazards). As of the FMP, no members of the Department's JHSC have been certified.

⁹ Ministry of Labour, Training and Skills Development. “Firefighter's cancer prevention checklist.”

Table 14 shows the JHSC questionnaire that was completed as part of this FMP.

Table 14. Joint health and safety committee questionnaire.

Question	Answer
Does the Department participate in a JHSC?	Yes
Does the JHSC have terms of reference?	No
Does the JHSC consist of both fire service personnel and municipal staff members?	No
Is the JHSC compliant with all applicable regulations and bylaws?	No
Is the JHSC conducting monthly inspections?	Yes
Is the JHSC holding quarterly meetings?	Yes
Does the JHSC post its health and safety minutes on a bulletin board?	Yes
Is the JHSC bulletin board up to date?	Yes
Is the JHSC documenting its actions?	Yes
Has the JHSC formalized a complaint process?	Yes

As noted in the table above, the Department completes monthly health and safety inspections, and it posts health and safety information at its stations on a regular basis.

8.5 Personal Protective Equipment

Context

Firefighters use a variety of PPE to protect themselves from injury and death. This gear is referred to as a protective ensemble.

A firefighter's protective ensemble includes the following types of PPE:

- firefighter pants and jackets
- helmets
- firefighting boots
- gloves
- flash hoods

Every piece of a firefighter's protective ensemble is crucial to protecting their safety.

Findings

The following subsections discuss topics related to the Department's PPE.

8.5.1 Proper Fit and Sizing of a Protective Ensemble

Context

When a firefighter wears a protective ensemble that is too long or bulky, it may impede their movement and stability.

In some fire departments, it is common for firefighters to wear a protective ensemble that is a "close fit." However, this practice raises health and safety concerns. For example, when female firefighters wear gear designed for male firefighters, they are at a higher risk of injury or death.

The NFPA and other organizations have gathered sizing data that identifies the need for female firefighters to have uniforms designed specifically for them. The sizing data also indicates that female firefighters cannot simply "size down" with their gear, as this option is ineffective and inappropriate.

Ideally, all fire departments should arrange for their firefighters to have a protective ensemble that is properly sized by a manufacturer representative. Although there is a cost to acquiring properly sized protective ensembles, it is a necessary cost, as it helps protect firefighter safety.

Findings

As of this FMP, the Department uses an approved supplier to ensure that all of its firefighters are provided with protective ensembles that are appropriately sized. Doing so supports firefighter safety, comfort, and operational effectiveness.

8.5.2 Cleaning, Maintaining, and Replacing a Protective Ensemble

Context

Over the last few decades, health and safety agencies have conducted studies to find ways of reducing firefighter injuries and deaths. For example, WSIB Ontario has recognized that certain cancers are directly attributable to the toxic by-products of fires and hazardous materials, which can attach to the fabric of a firefighter's protective ensemble.

As a result of the health and safety studies, the fire service has revised many of the regulations it has for protective ensembles. There are now several legislative requirements that fire departments must follow in order to ensure their firefighters have protective ensembles that meet compliance standards.

According to O. Reg. 714/94, fire departments must provide their firefighters with garments that meet or exceed the requirements of the following standards:

- NFPA 1971, *Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*, 2007 edition (for garments manufactured on or after March 1, 2007)
- CAN/CGSB-155.1-M88, *Firefighters' Protective Clothing for Protection Against Heat and Flame* (for garments manufactured before March 1, 2007)

In addition, NFPA 1851, *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*, recommends that fire departments retire ensemble elements “no more than 10 years from the date the ensembles or ensemble elements were manufactured.” (Firefighter Guidance Note #4-8, “Care, maintenance, inspection and replacement of structural firefighting personal protective equipment,” recommends that Ontario fire departments consider this standard.)

Remaining compliant with protective ensemble regulations and standards is vitally important, given how frequently firefighters use their gear. As part of their obligation to meet protective ensemble standards, fire departments must strive to implement robust cleaning measures that limit the chances of their firefighters and fire apparatus becoming exposed to contaminants. Doing so will also help fire departments maintain clean environments in their fire stations.

Findings

The Department sends its firefighter protective ensembles to a third party for cleaning and inspections on an annual basis. The Department also has three extractors that are used to clean protective equipment after incidents. The extractors are located at Station 4 – Verona, Station 6 – Perth Road, and Station 8 - Battersea. As of this FMP, the Department is working on providing its personnel with decontamination equipment at emergency scenes. Once this procedure is in place, an SOG will be established.

Currently, the Department replaces its firefighter PPE after ten years. This practice aligns with Firefighter Guidance Note #4-8, “Care, maintenance, inspection and replacement of structural fire fighting personal protective equipment.”

8.5.3 Self-Contained Breathing Apparatus Testing

Context

A self-contained breathing apparatus (“**SCBA**”) is a vital type of PPE that firefighters rely upon to complete critical tasks during emergency responses. Firefighters must wear an SCBA whenever a toxic atmosphere is present or suspected, such as during fires, carbon monoxide calls, and hazardous material spills.

In order to ensure that all SCBA units will function properly when they are needed, fire departments need to complete the mandatory maintenance work and testing.

Findings

The Department completes all mandatory SCBA testing as per NFPA standards and manufacturer recommendations.

Currently, the Department has two breathing air containment filling stations, a fixed filling station, and a mobile filling station. This equipment is used to ensure that all SCBA cylinders are refilled with clean, compressed air safely and efficiently.

8.5.4 Respirator Fit Testing

Context

All firefighters should have a fit-tested mask when they wear an SCBA during an emergency response. Every firefighter should also have a fit-tested N95 mask for protection against airborne contaminants.

CAN/CSA Z94.4-18, *Selection, Use, and Care of Respirators*, outlines specific fit-testing requirements that all fire departments should follow.

Findings

As of this FMP, the Department completes fit testing using an approved procedure for SCBA face pieces. Testing is completed for recruit firefighters every two years following the recruitment period. The fit testing equipment is shared with the Central Frontenac Fire Department.

The Department does not currently provide fit testing for N95 masks.

8.6 Diesel Exhaust Systems

Context

Table 15 provides excerpts from Firefighter Guidance Note #3-1, "Controlling exposure to diesel exhaust."

Table 15. Excerpts from Firefighter Guidance Note #3-1.

Topic	Excerpt from Firefighter Guidance Note #3-1
Background	Exhaust produced by diesel engines is a complex mixture of gases, vapours, and particulates. The gas portion of diesel exhaust is mostly carbon dioxide, carbon monoxide, nitric oxide, nitrogen dioxide and sulfur oxides. Vapours include hydrocarbons, such as Polycyclic Aromatic Hydrocarbons. The particulate portion of diesel exhaust is made up of particles such as carbon, organic materials [...] and traces of metallic compounds.
Concerns/hazards	The International Agency for Research on Cancer, part of the World Health Organization, has classified diesel engine exhaust as carcinogenic to humans. It found that diesel exhaust is a cause of lung cancer and noted a positive association with an increased risk of bladder cancer.
Actions for employers	Employers must: • make sure the fire station is adequately ventilated by either natural or mechanical means so that the atmosphere does not endanger the health and safety of workers • take all measures reasonably necessary in the circumstances to protect workers from exposure to diesel exhaust components, including: ○ substitution of the hazardous biological or chemical agent ○ engineering controls ○ administrative controls, including work practices ○ hygiene facilities and practices ○ where applicable, personal protective equipment

In order to reduce diesel exhaust exposure, the Section 21 Firefighter Guidance Notes recommend using a series of control measures related to the following topics:

- ventilation
- buildings
- trucks
- equipment

- written operating procedures
- choice of fuel
- air monitoring
- maintenance
- housekeeping
- firefighter education

Findings

As of this FMP, Station 6 – Perth Road and Station 8 – Battersea are the only fire stations in South Frontenac with diesel exhaust extraction systems.

The Department does not currently have any policies for mitigating diesel exhaust at the other fire stations that lack diesel exhaust extraction systems.

8.7 Health and Wellness

8.7.1 Overview of Firefighter Health and Wellness

It is crucial for employers to support the well-being of their employees in order to maintain a healthy workplace environment.

Fire departments can support their firefighters through health and wellness programs that address topics such as:

- cancer prevention
- nutrition and physical activity
- critical incident management
- post-traumatic stress disorder

There are several standards that provide guidance about health and wellness for fire departments, such as NFPA 1550, *Standard for Emergency Responder Health and Safety*.

The following three sections of NFPA 1550 are particularly important:

- Chapter 13 addresses the topics of health, fitness, and infection control.
- Chapter 14 states that fire departments must provide their members and their immediate families with access to a behavioural health program.
- Chapter 15 provides guidance regarding occupational exposure to potentially traumatic events.

There are also standards that address mental health in the workplace, such as CAN/CSA-Z1003-13/BNQ 9700-803/2013: *Psychological Health and Safety in the Workplace*.

CAN/CSA-Z1003 identifies 13 organizational factors that affect psychological health at work:

- organizational culture
- psychological and social support
- clear leadership and expectations
- civility and respect
- psychological demands
- growth and development
- recognition and rewards
- involvement and influence
- workload management
- engagement
- balance
- psychological protection
- protection of physical safety

Fire departments can use the available health and wellness guidelines to develop programs to support all personnel in their organizations.

8.7.2 Mental Health

Context

Typically, mental health support programs involve several components, such as:

- onboarding training
- regular mental health training
- critical incident stress defusing and debriefing support
- peer support

It is also common for a mental health program to be split into subcategories, such as pre-incident education, peer support, and critical incident stress management (“**CISM**”).

Pre-incident education involves providing firefighters with information about managing their mental health. Because of the nature of their work, firefighters are exposed to more tragic events than the average individual.

Peer support is the emotional and practical support exchanged between two people who have undergone a shared experience, such as a mental health challenge or illness. A peer supporter is an individual who has lived through a distressing event and is trained to support others who have undergone similar experiences.

A critical incident is any situation that can cause a firefighter to experience strong emotional reactions that have the potential to interfere with their ability to function. A CISM team is responsible for recognizing the signs of exposure to critical incident stress and taking steps to help affected personnel recover.

Findings

As of this FMP, the Department is working with the South Frontenac Human Resources Department to improve mental health training for the local firefighters. In addition to its existing support services, the Department is planning to provide Resilient Minds training to all of its members in 2026.

South Frontenac also has an EAP program that its firefighters can access. There is also a support system called Boots on the Ground. This program is an anonymous peer support resource for first responders that is run by first responders, and it offers a 24/7 help line that the Department's firefighters can call.

8.7.3 Physical Health

Context

Physical fitness programs can teach firefighters ways to reduce injuries at work and improve their overall quality of life.

Engaging in physical exercise can also help firefighters maintain good mental health.

Findings

The Department currently uses local services to facilitate a training wellness program and a nutrition wellness program for its firefighters. These programs address various aspects of physical health.

In June 2021, the townships of Central Frontenac, North Frontenac, South Frontenac, and Frontenac Islands completed a community safety and well-being plan. The decision to complete this plan shows that each community is committed to ensuring the safety and well-being of its residents and firefighters.

8.8 Fireground Safety

8.8.1 Fireground Safety and Incident Command

Context

Fireground safety is a critical component of a fire department's operations. The fireground is the area where firefighters actively work to control and extinguish a fire and protect lives and property using various techniques (including direct attack, defensive attack, ventilation, and search and rescue). In order to maintain safety on the fireground, various protocols and procedures must be in place.

There are several key components that help ensure fireground safety. Some of these components are as follows:

- A fire department should establish protocols based on the incident command system (“**ICS**”), which is a standardized approach to the command, control, and coordination of emergency responses. The ICS provides a common hierarchical structure that multiple response agencies can use. Using the ICS can help a fire department ensure that its personnel operate under a unified command, which enables efficient resource management, coordinated decision-making, and accountability.
- All personnel on the fireground must use appropriate PPE.¹⁰
- Radio communications are essential for maintaining situational awareness, coordinating efforts, relaying assignments, and transmitting urgent information. Effective radio communications rely on clear/concise language, active listening, and adherence to department procedures.
 - An example of common terminology is the word “mayday.” In the fire service, a “mayday” is a critical distress signal that is used when a firefighter's life is threatened because they are lost, trapped, or injured. All fire crews must have the training/ability to declare a mayday situation, and procedures for responding to a mayday situation must be universally understood.
- An incident safety officer is responsible for monitoring conditions, identifying hazards, and advising command personnel about proper risk management throughout the incident.
 - NFPA 1521 outlines the standards for an incident safety officer. NFPA 1521 is included in the consolidated standard NFPA 1550, *Standard for Emergency Responder Health and Safety*.

¹⁰ For more information about PPE, see section 8.5 of this FMP.

Overall, a proper approach to fireground safety helps ensure that fire crews can operate safely and with a high level of coordination.

Findings

As of this FMP, the Department follows the ICS, but it has a limited number of SOGs related to fireground safety.

In order to ensure fireground safety, the Department's current procedure is to have two fire stations respond to emergency calls rather than dispatching a single station. The main purpose of this procedure is to ensure adequate personnel are available once the Department is dispatched to an incident. It is important to note that responding to a structure fire may require the Department to dispatch two to five stations in order to have a sufficient number of personnel to complete tasks.

Also, the Department's current daytime staffing levels present operational challenges, as there is a limited number of firefighters available to attend incident scenes. Lower staffing levels can result in longer response times, and they may reduce overall operational and strategic effectiveness. This scenario has potential safety implications for firefighters and the public. In some instances, mutual aid assistance helps to support operations and mitigate these challenges, but limited staffing levels may still contribute to increased demands being placed on available personnel. As a result, the Department may face longer scene operations, extended clean-up efforts, and higher associated costs.

Currently, the Department has six members who are trained to NFPA 1521. These personnel can serve as incident safety officers. As of this FMP, the Department is planning to train more personnel to this standard in the future.

8.8.2 Pre-Incident Planning

Context

When firefighters respond to an emergency in a building with an unfamiliar layout, the risk to their safety increases significantly. The risk increases even more in commercial, industrial, and institutional buildings. Firefighters are also at risk when they respond to an emergency in a building where visibility is limited.

By completing the pre-incident planning process, firefighters can familiarize themselves with site layouts and prepare themselves for the risks inherent to a building's construction, such as the likelihood of collapse. The fire department can then use that information when developing its response protocols in order to enhance the safety of building occupants and fire crews during emergencies.

Fire departments should make it a priority to complete the pre-incident planning process for all buildings that are at high risk, have vulnerable occupants, or have high value to the community. It is also important to revisit those buildings on a regular basis to reassess the results of any previous pre-incident planning. Doing so can help ensure that all data is kept current with any changes to a building's uses, layouts, and on-site materials.

Employers are also part of the pre-incident planning process. According to Firefighter Guidance Note #6-45, employers should take the following actions:

- Develop a pre-incident planning program that compiles building information.
- Keep building data updated with information gained during fire prevention activities or from other allied agencies.
- Provide known building information to responding firefighters, including building configurations and functions.
- Coordinate building tours for firefighters.
- Train firefighters to conduct pre-incident planning for the employer's specific occupancy.

By working together, local businesses and fire departments can help protect the safety of firefighters and community members.

Findings

As of this FMP, the Department does not have a formalized pre-incident planning program.

8.9 Roadmap for Improvement

Joint Health and Safety Committee

As noted in section 8.4, the Department has recently reestablished a JHSC. As such, the Department should consider creating terms of reference for the committee.

The terms of reference should establish clear guidelines that the JHSC can follow to resolve disagreements and respond to questions about how to proceed in a given scenario. The terms of reference can also help ensure that the JHSC operates in accordance with the OHSA, as well as the Section 21 Firefighter Guidance Notes (as applicable).

The Department should also develop SOGs for the JHSC, including an SOG that outlines a formal complaint process. Developing a formalized complaint process will provide the JHSC with a clear, equitable, and efficient way to receive and resolve complaints of discrimination and harassment in the Department.

It is recognized that the Department is currently experiencing challenges in obtaining sufficient worker representation on JHSC, including having worker representatives who are formally certified. Addressing this gap is an important way to strengthen the Department's occupational health and safety framework while also ensuring effective worker participation. Opportunities to improve representation and certification should be explored in order to support compliance, enhance the effectiveness of the JHSC, and promote a strong safety culture within the Department.

In order to comply with the OHSA and remain effective, the JHSC must meet the following certification requirements:

- All members of the JHSC must receive health and safety training.
- At least one worker representative and one management representative must complete the JHSC training program and become certified. (This program includes both Part One and Part Two training.)

Cancer Prevention and Diesel Exhaust

The Department is working to ensure that each of its fire stations has a diesel exhaust extraction system. In addition to this initiative, the Department should investigate ways to improve cancer prevention.

For instance, installing delayed closing timers on all overhead doors at the fire stations can help mitigate the amount of gas and diesel exhaust that firefighters are exposed to when operating at the stations. (The decision to install these kinds of timers is also compliant with Firefighter Guidance Note #3-1.)

Also, going forward, whenever any renovations are made to the Department's fire stations (and any new facilities), the ventilation strategies defined in Firefighter Guidance Note #3-1 should be considered.

Health and Wellness

The Department should consider forming peer support and CISM teams in order to support the health and wellness of its firefighters. These teams can be formed internally or externally with other fire departments within the current mutual aid group.

Fireground Safety

As a way to improve fireground safety, the Department should continue to build upon and continually enhance its firefighter safety training through comprehensive and consistent programs. This initiative should include regular drills, scenario-based exercises, and ongoing reinforcement of training practices that promote a strong "safety-first" culture.

The Department can also continue to support operational readiness, resilience, and overall firefighter safety by continuing to hold debriefing sessions following incidents and training evolutions. Sustained access to peer support, health services, and wellness services for firefighters and their families should also be provided.

It is important to review the number of firefighters who can perform the required critical tasks at emergency scenes. As noted in section 8.8.1 of this FMP, it is challenging for the Department to provide consistent staffing levels during daytime hours under its current circumstances. Going forward, the Department should try to find a solution that will help ensure a minimum number of trained firefighters are available to respond to emergency scenes during daytime hours.

In addition, the Department should continue investing in modern equipment and technology that reduces risks and supports safe, efficient operations.

8.10 Recommendations

Recommendations regarding occupational health and safety in South Frontenac are as follows:

- 8-1. The Fire Chief should ensure that the joint health and safety committee is fully compliant with the requirements of the Occupational Health and Safety Act.
- 8-2. The Fire Chief should review the existing policies and standard operating guidelines for South Frontenac Fire & Rescue. If any gaps are identified, the Fire Chief should develop new or revised policies and guidelines, ensuring that all procedures align with the Section 21 Firefighter Guidance Notes.
- 8-3. The Fire Chief should review Firefighter Guidance Note #3-1 and then develop a strategy to reduce the amount of diesel exhaust that accumulates within the fire stations in South Frontenac.
- 8-4. The Fire Chief should develop a comprehensive health and wellness component to be implemented within South Frontenac Fire & Rescue's training program. This training component should incorporate the Resilient Minds program, and it should be applicable to both recruits and firefighters. In order to support firefighter mental health, resilience, and overall well-being, the training component should also include education and awareness sessions for the families of South Frontenac's fire service personnel.

9.0 Fire Prevention and Public Education

9.1 Overview

Fires are extremely dangerous incidents that can lead to fatalities and severe property damage. According to the OFM, there were 53,339 structure fires in Ontario between 2017 and 2021. Those incidents caused 473 deaths, 3,598 civilian injuries, and nearly \$4.5 billion in property loss.¹¹

Due to the negative outcomes that result from fires, fire departments have traditionally viewed fire suppression as their primary focus. However, many fire departments now recognize the importance of developing proactive fire prevention initiatives to increase community safety. Statistics show that most fires—as well as injuries, deaths, and costs resulting from fires—are preventable. For instance, structure fires often occur due to a lack of fire safety knowledge or a disregard for fire safety regulations. While improved building codes contribute to fire safety, public awareness and proper emergency responses are essential for occupant survival.

The OFM endorses the use of a fire safety model known as the three lines of defence, which was first introduced by the Honourable John B. Webber in the Report of the Public Inquiry into Fire Safety in Highrise Buildings (published in 1983). The three lines of defence are:

1. Public education.
2. Code enforcement.
3. Fire suppression.

The goal of the three lines of defence is to encourage fire departments to use fire prevention initiatives to reduce the need for fire suppression. Although fire suppression must remain a critical focus for fire departments, it is important for fire departments to take steps to reduce the need for this kind of response.

Despite the OFM's emphasis on prevention, many municipalities underfund public education and code enforcement initiatives, often reallocating resources to suppression efforts. However, choosing to fund proactive fire prevention initiatives is the more cost-effective option.

A strong prevention plan can significantly reduce fire-related harm and enhance community safety. Moreover, the FPPA requires every municipality to implement a fire prevention program.

¹¹ OFM, 2022.

Effective fire prevention programs should use public education initiatives to bring safety issues to the forefront. Once established, the programs will require continued monitoring and revision to ensure they keep pace with the community's current and anticipated fire protection needs.

By prioritizing public education and code enforcement initiatives, a municipality is more likely to protect lives and property. The municipality can also benefit from cost savings over the long term.

9.2 Community Demographics

Context

When a fire department understands its community's demographics, that department can tailor its services to meet the specific needs of the population it serves. Examples of relevant community demographics are as follows:

- age distribution
- population density
- language diversity

Emergency responses, public education campaigns, and fire prevention programs can all be based on an understanding of community demographics. Consider the following examples:

- If a municipality's population has a large percentage of senior citizens, that community may require an increased level of medical response readiness.
- If a municipality has a large percentage of residents who speak a diverse number of languages, that community would benefit from having multilingual safety materials to reduce potential language barriers.
- Lower-income neighbourhoods are often at an increased fire risk due to older housing stock and a lack of smoke alarms. Factors like these may prompt the need for free alarm installation programs.

Aligning resources and strategies to respond to community demographics can help a fire department bolster safety and build stronger community trust.

Findings

The following subsections discuss the demographics in South Frontenac.

9.2.1 Population

According to the 2021 Statistics Canada census:

- South Frontenac has a population of 20,188 permanent residents, which is 8.3 per cent higher than the number of residents recorded in the 2016 census (18,646 residents).
- South Frontenac's population density is 21.3 people per square kilometre, and the land area is 948.05 square kilometres.
- There are 9,503 private dwellings in South Frontenac, and 7,937 of those dwellings are occupied by permanent residents.
- The average household size in South Frontenac is 2.5 people.

9.2.2 Seasonal Residents

According to the 2025 Township of South Frontenac Official Plan, the local population increases by approximately 10,000 seasonal residents during the summer.

9.2.3 Projected Growth

Table 16 shows projected growth patterns for South Frontenac (according to the 2025 Township of South Frontenac Official Plan).

Table 16. Projected population growth in South Frontenac.

Category	Stats for 2034	Stats for 2039
Projected increase in permanent residents compared to 2025 (approximate)	1,500	2,620
Projected number of permanent residents (approximate)	22,160	23,280
Projected increase in seasonal residents compared to 2025 (approximate)	440	650
Projected number of seasonal residents (approximate)	11,200	11,400

In total, the combined permanent and seasonal population in South Frontenac is expected to reach approximately 34,700 residents by 2039.

9.2.4 Age Distribution

Table 17 compares the age distribution in South Frontenac to the Province of Ontario (based on the findings of the 2021 Statistics Canada census).

Table 17. Age distribution in South Frontenac and the Province of Ontario.

Age Range	South Frontenac	Ontario
0 to 14 years	15.4%	15.8%
15 to 64 years	63.1%	65.6%
65 years and over	21.5%	18.5%
85 years and over	1.3%	2.4%

Based on the 2021 census data, the average age in South Frontenac is 44.6 (compared to the provincial average of 41.8). The median age in the township is 48.8 (compared to the provincial average of 41.6).

The 2021 census data also show that 22.8 per cent of South Frontenac's population is over the age of 65 (compared to the provincial average of 18.5 per cent).

9.2.5 Language

According to the 2021 Statistics Canada census, South Frontenac is a predominantly English-speaking community, with 97.9 per cent of its residents identifying English as their first language.

Overall, 97.9 per cent of the residents in South Frontenac can hold a conversation in English, and 1.9 per cent are bilingual in English and French.

9.2.6 Level of Education

Table 18 compares the highest level of education among South Frontenac's residents to the provincial average (based on the findings of the 2021 Statistics Canada census).

Table 18. Education levels in South Frontenac and the Province of Ontario.

Education Level	South Frontenac	Ontario
No certificate	11.9%	15.3%
High school diploma or equivalency	30.8%	27.2%
Post-secondary certificate, diploma, or degree	57.3%	57.5%

9.2.7 Potential Fire Protection Concerns

Seasonal Residents and Tourists

As noted above, South Frontenac experiences a large influx of seasonal residents during the summer months. Those influxes significantly increase the number of residents living in the township during those months. As such, the Department may see an increased number of calls for assistance during the summer, which has the potential to strain the Department's available resources.

Age of Population

According to the 2021 Statistics Canada census, 21.5 per cent of South Frontenac's population is over the age of 65. The Department must keep this statistic in mind when developing fire prevention and public education programs, as some older residents do not use newer methods of communication (such as social media). If the Department only uses newer methods to deliver public education, some residents may not receive important messages.

In addition, because South Frontenac has an older population, the township may experience a higher-than-average number of calls for pre-hospital medical services.

The Department may also experience low recruitment levels, as older residents are less likely to enlist as paid on-call firefighters.

9.3 Public Education Initiatives

Context

Public education initiatives raise a community's awareness about the importance of fire safety. For example, public education can be used to help residents understand codes and regulations.

Other initiatives can teach residents how to install and maintain smoke alarms, carbon monoxide detectors, and related fire safety technology. By delivering proactive public education initiatives, fire departments can help people of all ages understand ways to reduce the number of fires in their community.

Common ways of providing public education are as follows:

- Complete door-to-door campaigns.
- Deliver public service announcements.
- Participate in community events.

Many fire departments also deliver public education virtually through various online platforms. For instance, social media channels provide fire departments with a practical way of relaying information to a wide audience in real-time, especially if a large-scale incident is pending or has just occurred.

It is also common for fire departments to provide public fire safety education through lectures, videos, and pamphlets. However, although these are helpful tools, they are not enough to reduce fire risk. It is critical that fire departments educate the public on how to prevent, respond to, and react to fires safely. Proactive training can greatly reduce the number of fires within a community, as well as the damage caused by fires that occur.

Findings

All of the Department's public education requests go through the Fire Chief for approval. Once an activity is approved, the administrative assistant will send a request to the Department's personnel regarding their involvement.

Some of the Department's public education initiatives are as follows:

- The Department provides public education about various fire and life safety topics, such as fire extinguisher training, kitchen safety, and smoke alarm/carbon monoxide alarm awareness.
- The Department participates in Fire Prevention Week. During this annual event, the Department visits six schools in the area to provide fire and life safety information to students from JK to grade 8.
- The Department typically participates in several events throughout the year upon request (such as Music in the Park and the Frontenac Frolic).
- The Department is an active member of the Kingston, Frontenac, Lennox & Addington Fire Prevention Committee. This committee collaborates as a group to share resources and discuss various fire prevention ideas.
- As of this FMP, the Department is developing a CWFPP. The Department can use the completed CWFPP as a guide when developing public education programs regarding wildland fire safety and wildland fire prevention.

9.3.1 Smoke Alarm/Carbon Monoxide Alarm Program

Context

As of this FMP, Ontario has legislation that requires all residential occupancies to have working smoke alarms and carbon monoxide alarms. This legislation states that it is a homeowner's responsibility to test and maintain the alarms. (In the case of rental units, landlords are responsible for testing and maintaining the alarms.)

There is no legislation that requires fire departments to inspect smoke alarms and carbon monoxide alarms. However, it is highly advisable for a fire department to establish an inspection and replacement program for alarms in its community. Doing so is a proactive way to ensure the best possible outcome for residents in the event that a fire or carbon monoxide emergency occurs.

All smoke alarm/carbon monoxide alarm programs should include the following components:

- Each time firefighters interact with residents (such as during emergency responses), they should verify that the residents have working alarms.
- Fire departments should proactively check residential smoke/carbon monoxide alarms.
- Fire departments should have a method for tracking and keeping statistics regarding the number of working and non-working smoke alarms in the community.

Fire departments can accomplish most requirements of a smoke alarm/carbon monoxide alarm program by conducting home inspections and home fire escape reviews for community residents, including the residents of seasonal dwellings and trailer parks.

Findings

The Department does not currently have a formalized smoke alarm/carbon monoxide alarm program. However, the Department does issue a smoke alarm/carbon monoxide alarm deficiency form, which is attached to incident reports as applicable. Although the Department is issuing these forms, there is currently no way to reconcile the numbers without reviewing every single report. In addition, the Department does not currently have a formal process to conduct follow-up actions after a form is completed and filed.

As part of the Department's emergency response efforts, each fire station in South Frontenac has a supply of smoke alarms and carbon monoxide alarms. The Department's personnel distribute these alarms to community members on an as-needed basis during emergency calls.

Additionally, the Department's firefighters respond to requests from community members who would like to have the smoke and carbon monoxide alarms in their homes inspected. The Department conducts the inspection and then provides guidance and replacements as necessary.

9.4 Code Enforcement and Fire Inspections

Context

In Ontario, fire code enforcement inspections are conducted under the authority of the OFC and section 21 of the FPPA. The inspections are carried out by municipal fire departments to ensure that buildings comply with established fire safety standards. Inspections may be regularly scheduled, completed upon request or complaint, or conducted to address specific risks communicated to the fire department.

Inspectors have the authority to enter a building without a warrant at reasonable times in order to assess fire safety conditions. If violations are identified, inspectors can issue orders requiring property owners or occupants to take necessary measures to rectify the issues. Those actions may involve removing fire hazards, making structural repairs, or implementing fire safety plans.

Findings

The following subsections provide an overview of code enforcement and fire inspections in South Frontenac.

9.4.1 Request and Complaint Inspections

Context

As per O. Reg. 365/13, a fire department must conduct an inspection each time it receives a request or a complaint.

A fire department will conduct a request inspection (or a sale request inspection) when it receives a notification related to new occupancies, licensing, property sales, or fire code compliance.

A fire department will conduct a complaint inspection when it receives notice of a fire code violation.

Fire departments must also complete follow-up actions for all inspections. The most common follow-up action is the issuance of a letter.

O. Reg. 365/13 states:

If a Chief Fire Official receives a request made by or on behalf of an owner of a building for approval of anything that the fire code requires to be approved or permits to be approved, the Chief Fire Official shall assess the request and determine whether it would be advisable to conduct a fire safety inspection in the building or a part of the building in order to decide whether to grant or refuse the approval.

If an inspection is required, O. Reg. 365/13 states, “The Chief Fire Official shall ensure that the fire safety inspection conducted under this section is conducted in accordance with the directives, if any, issued by the Fire Marshal.”

Findings

South Frontenac does not have a formalized inspection program for the Department. As of this FMP, the Fire Chief and the Deputy Chief conduct inspections when the Department receives a request or a complaint.

The Fire Chief also works with the South Frontenac Building Department to review the plans for major buildings in the community.

9.4.2 Vulnerable Occupancy Inspections

Context

A vulnerable occupancy is a building or an organization that functions as a retirement home, a care facility, or a care and treatment facility.

As per O. Reg. 364/13, “Mandatory Inspection – Fire Drill in Vulnerable Occupancy,” fire departments must inspect vulnerable occupancies and verify that all vulnerable occupancies in their community have conducted the required fire drills.

According to O. Reg. 364/13:

3. (1) If the person ensuring that an inspector observes the fire drill [at a care occupancy, care and treatment occupancy, or retirement home] is not the Fire Marshal, the person shall file the following information with the Fire Marshal in the form and manner and within the time period directed by the Fire Marshal:
 1. The operating name of the care occupancy, care and treatment occupancy or retirement home.
 2. The street address of the care occupancy, care and treatment occupancy or retirement home.
 3. The classification of the care occupancy, care and treatment occupancy or retirement home as a care occupancy, care and treatment occupancy or retirement home.
 4. The date the fire drill was observed.
 5. The date the fire safety inspection was conducted.
- (2) If the person ensuring that an inspector observes the fire drill [...] is the Fire Marshal, he or she shall keep a record of the information described in subsection (1).

Findings

As of this FMP, South Frontenac does not contain any buildings that meet the definition of a vulnerable occupancy.

9.4.3 Fire Inspection Statistics

Context

There are several reasons why fire departments must track their inspections:

- Tracking inspections is a requirement of the FPPA.
- The information may help a fire department develop strategic plans to address operational needs (such as staffing levels).
- The information may identify occupancies where additional inspections are required.
- The information can help a fire department develop a fire prevention campaign that focuses on areas in the community that have a number of complaints and violations.
- Tracking inspections creates a paper trail, which can help protect building owners, as well as a municipality and its fire department, from potential liability issues.

Above all, tracking inspections can help a fire department identify ways to improve the safety of community residents, businesses, and visitors.

There are several types of OFC violations that a fire department may identify when conducting an inspection. Depending on the nature of the violation, the applicable authority having jurisdiction (“**AHJ**”) may issue one of the following notices:

- **Verbal:** The inspector notes an issue verbally. The issue is corrected immediately, and the officer acknowledges the correction.
- **Letter of compliance:** The inspector sends a formal letter to the building owner. The letter states that the inspection is complete, as well as whether the occupancy is compliant.
- **Order:** According to section 21 (1) of the FPPA, an inspector “may order the owner or occupant of the land or premises to take any measure necessary to ensure fire safety on the land.”
- **Notice of violation:** The inspector notes violations in a letter to the building owner. This letter includes the date by which the owner must resolve the issues.
- **Charges:** If a building owner does not comply with an order, they may be charged under the FPPA.

Findings

Table 19 categorizes the reasons for the inspections conducted by the Department from 2020 to 2024.

Table 19. Inspection reasons, 2020 to 2024.

Type of Inspection	2020	2021	2022	2023	2024	Total
Complaint	0	0	0	1	25	26
Owner request	0	0	0	0	1	1
Sale request	0	0	0	0	0	0
Routine	0	0	0	0	14	14
Licensing	13	4	13	8	11	49
Other inspections, smoke alarms, safety concerns	0	0	0	0	8	8
Total	13	4	13	9	59	98

According to the statistics shown above, the majority of inspections conducted by the Department from 2020 to 2024 were licensing inspections. However, in 2024, the Department completed a higher number of complaint inspections.

9.4.4 Frequency of Fire Inspections

Context

As discussed in the overview for this section of the FMP, the concept of the three lines of defence recommends using fire prevention activities to reduce the need for fire suppression services.

Fire inspections are a crucial component of all fire prevention programs. When a fire department inspects the different occupancies in the community on a frequent basis, it is likely to remain aware of factors that have the potential to cause a fire or other emergency. Those factors can include changes to a building's use, layout, or on-site materials.

Findings

As of this FMP, the Department conducts fire inspections when it receives a request or a complaint. By doing so, the Department is completing the minimum number of inspections it is required to conduct as per the FPPA.

When the Department conducts a fire inspection, the goal is to ensure that the building complies with fire safety codes and regulations. Maintaining this compliance is vital because it helps protect lives and property.

During an inspection, the following items are checked:

- fire alarms
- extinguishers
- emergency exits
- sprinkler systems
- electrical panels
- storage of flammable materials

The time it takes to complete a fire inspection depends on a building's size, complexity, and occupancy type, as well as whether the inspection is a routine inspection or a follow-up inspection. On average, inspections can range from 30 minutes (for a small residential property) to several hours or a full day (for large commercial or institutional buildings).

Overall, based on current statistics, the Department does not have the resources it needs to conduct inspections on a more proactive basis.

9.5 Residential Sprinkler Systems in New Residential Buildings

Context

Installing a sprinkler system in a residential building can reduce the risk of severe property damage and loss of life. The sprinkler systems can help suppress fires, keeping them small and reducing their ability to spread. If a residential sprinkler system can control a fire in this way, building occupants may have more time to evacuate their homes.

Sprinkler systems can be supported by a home's well or through standalone tanks and pump systems that activate automatically during a fire.

The NFPA has conducted a study that examined residential sprinkler systems.¹² Some of the findings of the study are as follows:

- Sprinklers were effective at controlling a fire in 98 per cent of cases in which they were used.
- Sprinklers save lives and reduce injuries and property loss.

¹² McGree, "U.S. Experience with Sprinklers."

- When sprinklers were present, the civilian fire death rates were 90 per cent lower.
- When sprinklers were present, the injury rates per fire were 32 per cent lower.
- Sprinklers have proven to work reliably in reported structure fires considered large enough to activate them.

Recent data collected by the NFPA also confirms that the enhancements in sprinkler system designs have improved their performance and reliability.

Findings

As of this FMP, South Frontenac does not have a formal approach to promote or encourage the installation of residential sprinkler systems in new homes during the construction phase.

9.6 Fire Investigations

Context

According to the FPPA, a fire department must investigate all fires that occur within its jurisdiction. In order to gain the skills needed to conduct accurate investigations, firefighters should complete advanced training to the standards of NFPA 1033.

After a fire occurs, a fire department conducts a preliminary investigation to identify the cause, origin, and circumstances of the fire. If the cause is accidental, information from the inquiry reinforces the need to increase fire prevention and public education initiatives. However, if the cause of a fire is suspicious, further investigations and actions are required. For instance, fire departments must notify the OFM and the local police about all suspicious fires.

The FPPA also states that assistants to the Fire Marshal must notify the OFM of all incidents that meet—or that appear to meet—any of the following criteria:

- The investigating firefighters suspect the fire or explosion is incendiary (criminal). Incendiary fires may include dumpster fires, car fires, and wildland fires. All incendiary fires/explosions must be reported to the applicable police authority.
- A fire or explosion results in either a fatality or serious injury that requires a person to be hospitalized as an in-patient. In such instances, the fire department must make every reasonable effort to confirm the status of injured persons transported to the nearest hospital before releasing the fire scene.
- A fire or explosion results in significant loss for the community.¹³

¹³ A significant loss refers to a dollar loss of one million dollars or more or a loss that is twice the amount of the average sale price of a residential occupancy in the community.

- An explosion is the primary event.
- A fire results in an unusual spread of fire or smoke.
- A fire or explosion involves circumstances that may result in widespread public concern (such as an environmental hazard).
- A fire or explosion involves clandestine drug operations or marijuana growing operations.
- A fire or explosion occurs in a multi-unit residential occupancy, and the impact of the fire's spread or the explosion extends beyond the unit of origin.
- A fire or explosion occurred in a multi-unit residential occupancy, and the fire department suspects that OFC violations have impacted the event.
- A fire or explosion occurs in a vulnerable occupancy.

Under the FPPA, a fire department must follow all regulated steps when conducting a fire investigation. This obligation includes notifying and working with OFM investigators (as required).

Findings

The fire investigations in South Frontenac are conducted by the Department's officers or the Fire Chief (depending on the level of investigation that is required).

The Department's management team is aware of the investigation requirements listed in the FPPA. The team also knows when to work with an OFM fire investigator, as some previous incidents have required the Department to work closely with the OFM.

9.7 Roadmap to Improvement

Smoke Alarm/Carbon Monoxide Alarm Program

The Department has a smoke alarm program, but the scope of the program is limited. Currently, the Department's personnel ensure that a residence has a working smoke alarm after they complete an emergency response at an occupancy. Doing so allows the Department to ensure the minimum compliance level is maintained.

The components of the current smoke alarm program are essential. However, a more robust program should be considered. For instance, the Department's firefighters could go door-to-door in high-risk areas or vulnerable sectors of the community to ensure that residents have working smoke alarms/carbon monoxide alarms. The goal of the program should be to inspect all residential occupancies in the community over several years.

In addition, the Department needs to develop a formal documentation process to record and track the smoke and carbon monoxide alarm inspections it has conducted.

Fire Prevention Policy

The Department should consider updating its fire prevention policy to include a proactive inspection schedule. That schedule should be based on information about South Frontenac's historical fire losses, as well as the community's risks, needs, and circumstances (as identified in its CRA).

The fire prevention policy should include public education initiatives tailored to residents and tourists who own, rent, or visit water-access-only properties.

Fire Prevention Committee

The introduction of a fire prevention committee may help improve the delivery of public education in South Frontenac. This committee—which would be developed by the Fire Chief—could consist of firefighters from each fire station who have an interest in providing this important service to the community. These firefighters would assist in the development and delivery of public education initiatives. The firefighters would also serve as a key link between the fire prevention leadership team and the firefighters within their respective stations, and this link would support consistent communication and engagement.

Over time, the Department's firefighters could obtain certification to NFPA 1035, which is the standard for fire and life safety educators..¹⁴

Community Wildland Fire Protection Plan

Upon completion of the CWFPP, the Department should develop a public education initiative about wildland fire risks and safety measures. The initiative should directly address South Frontenac's risks (as noted by the CWFPP). As part of the public education initiative, the Department should promote the installation of wildland fire sprinkler systems at residential properties.

Additional Fire Prevention Staffing

Proactive public education and code enforcement activities are critical components of effective fire protection, as they allow the Department to deliver services at a predictable and controllable cost. In contrast, fire suppression responses represent an uncontrollable cost once an incident occurs.

Going forward, the Fire Chief should prepare a report for Council that explores options to enhance the Department's fire prevention capacity. An example of one potential option is the use of paid on-call firefighters to support fire prevention, inspection, and public education activities. However, this approach would require a clear commitment to

¹⁴ NFPA 1035 is consolidated in NFPA 1030, *Standard for Professional Qualifications for Fire Prevention Program Positions*.

substantial training, certification, and ongoing competency development to ensure these personnel are properly qualified to deliver the required services effectively and consistently. Having an analysis would help Council determine the most sustainable and effective model to strengthen the Department's fire prevention and public education efforts.

The Fire Chief should also evaluate the Department's fire prevention capacity and effectiveness.

Residential Sprinkler Systems in New Residential Construction

As noted in section 9.5, there is ample evidence that shows the ways in which residential sprinkler systems can significantly reduce the likelihood of severe property damage and loss of life.

As part of a proactive approach to community risk reduction, South Frontenac should conduct an exploratory review of the benefits of residential sprinkler systems. Residential sprinklers are an effective tool for mitigating fire risks—particularly in high-risk and rural areas—and they support safe growth and new development. Residential sprinklers can also help offset limitations related to response times and available firefighting resources.

9.8 Recommendations

Recommendations regarding fire prevention and public education in South Frontenac are as follows:

- 9-1. The Fire Chief should determine whether it is feasible for South Frontenac Fire & Rescue to establish a fire prevention committee to help manage its public education programs.
- 9-2. South Frontenac Fire & Rescue should develop a cost-effective fire prevention policy as part of the establishing and regulating bylaw for South Frontenac. The policy should align with NFPA 1035, and it should be designed to meet all applicable community needs. The policy should also include a smoke alarm/CO alarm program, an inspection schedule (which should be based on occupancy type and risk level), and other public education initiatives.
- 9-3. As part of a proactive approach to community risk reduction, South Frontenac should conduct an exploratory review of the benefits of residential sprinkler systems.

10.0 Training and Certification

10.1 Overview

According to O. Reg. 297/13, subsections 4 (1) and (2):

- Employers must keep a record of the training their employees and supervisors receive.
- Employers must keep a record of any worker or supervisor who is exempt from completing specific training.
- Employers must update employee training records each time an employee completes a training program. Doing so provides evidence that the employer took steps to prevent hazards, accidents, discrimination, and harassment in the workplace.

In addition to the items listed above, there are specific training requirements that fire departments must observe. For instance, in order to perform response duties safely, firefighters must receive training that teaches them the skills they need to carry out their assigned tasks. The training must also help the firefighters develop an aptitude for recognizing the appropriate actions to take during an emergency response.

Fire departments must also offer basic training to comply with legislation. According to the OHSA, all employers must “provide information, instruction and supervision to a worker to protect the health or safety of the worker.” As such, fire departments should complete ongoing training to ensure that their operations remain safe and effective. Ongoing training also helps firefighters remain current with applicable certification requirements while keeping their knowledge and skill levels up to date—a well-trained firefighter is a firefighter who is properly equipped to make decisions that will mitigate risks and save lives.

10.2 Training Challenges for Volunteer Fire Departments

Context

Volunteer fire departments often face several training-related challenges, such as:

- a lack of time to complete mandatory and ongoing training
- a lack of certified instructors
- no dedicated training facility
- scheduling issues
- excessive travel demands

Of all the potential training challenges, time commitments are perhaps the most difficult issue for volunteer firefighters to overcome. Volunteer firefighters must balance their work and personal commitments with their fire service duties. The difficulty is that most fire service training requires significant time to complete, and it is possible that some volunteer firefighters will need to take time away from their families or jobs for several weeks or more. Such a scenario can create an unsustainable work-life balance, especially as firefighter certification standards become more demanding.

Another challenge is that some volunteer fire departments have limited personnel or resources, which makes it difficult to run an effective ongoing training program. However, fire departments must still find ways to deliver a training program that meets legislative requirements. All fire departments must adhere to the same training and certification regulations, regardless of their size.

Findings

The Department's leadership team recognizes that there are many challenges that can impact the delivery of training to paid on-call firefighters.

In response to training challenges, the Department's leadership team has established an annual training schedule, and the team ensures that training information is available on the Department's Microsoft SharePoint system. The goal is to provide the Department's personnel with the information they need to learn in order to respond to emergencies in their community.

10.3 Training Structure

Context

A well-organized training program is beneficial for many reasons, such as:

- A strong training structure ensures that firefighters are prepared to respond to a wide range of emergencies safely and effectively.
- The program supports the development of core competencies.
- The program reinforces operational procedures.
- The program keeps personnel up to date with evolving techniques, equipment, and regulations.
- A strong training framework supports teamwork, decision-making under pressure, and physical readiness.
- Regular, structured training reduces the risk of injury, improves response times, and ultimately enhances public safety.

- A well-structured training program will help a fire department ensure compliance with provincial and national standards, which can reinforce the department's credibility and professionalism.

Firefighter training begins when an individual joins the fire service as a recruit. Upon joining the fire service, a recruit will typically complete the following steps:

1. Apply to the fire department.
2. Attend a series of interviews.
3. Complete the required medical and physical fitness tests.
4. Attend an introductory session about the fire department's policies, expectations, and safety protocols.
5. Complete basic firefighter training.

After completing recruit training, firefighters begin in-service training, which is an ongoing type of training that includes weekly or bi-weekly drills, scenario-based exercises, and annual refresher courses in key skills (such as SCBA use and pump operations).

Fire departments may also offer specialized training as needed. This kind of training can cover a variety of topics, such as:

- ice and water rescue
- wildland firefighting
- rope rescue
- fire prevention
- public education
- officer development

Firefighters also need to complete evaluations and a certification process for the services they are expected to deliver. This process involves both practical and written assessments. In Ontario, formal certifications are typically issued through the Ontario Fire College or an equivalent authority. Fire departments also conduct regular performance reviews in order to ensure that firefighters remain competent in their areas of certification.

Findings

In South Frontenac, the Deputy Chief is responsible for managing the Department's training program.

By collaborating with the Fire Chief and the platoon chiefs, the Deputy Chief has developed a structured training framework that supports the Department's operational needs. This framework encompasses all stages of a firefighter's development, including recruitment and annual training.

Overall, the Deputy Chief strives to ensure that the Department's training program will equip the Department's personnel to meet their community's evolving fire protection needs.

10.4 Recruit Training

Context

Most firefighters complete approximately 400 hours of recruit training when they join the fire service. Recruit training includes basic firefighter training, and it may also include first responder medical training if the fire department performs medical services. Typically, basic firefighter training is aligned with NFPA 1001, Level I and II standards, and it covers the following essential topics:

- fire behaviour
- suppression techniques
- PPE and SCBA use
- ladder and hose operations
- search and rescue
- an overview of the ICS
- hazardous materials response (awareness level)
- other topics (as needed)

First responder medical training usually includes standard first aid and CPR training, as well as Emergency Medical Responder certification. Medical training may also include training in defibrillator use and oxygen administration.

Due to the costs and time commitments involved in providing in-house training for recruits, some fire departments send their new firefighters to third-party trainers (such as regional training centres) or establish agreements with other fire departments to share training duties.

In Ontario, the OFM trains and certifies firefighters to NFPA standards, which are the benchmark for firefighting training in North America. The training is facilitated by the OFM Academic Standards and Evaluation unit. This group is responsible for conducting written tests, practical evaluations, and other methods of assessment for certification courses.

The OFM Academic Standards and Evaluation unit can also issue International Fire Service Accreditation Congress seals and National Board on Fire Service Professional Qualifications applications (as appropriate).

Findings

The Department's recruits must complete 400 hours of training when they join the organization. This training is completed through self-study, online testing, classroom theory, and practical hands-on training. In order to facilitate the training consistently, the Department uses Resource One, which is a learning management system that provides training materials for the firefighters. The training program is designed to include various activities, such as tests and a discussion forum. The Department schedules training for its recruits in two parts.

During their first six months with the Department, recruits are trained to the standard of NFPA 1001, Level I, and they receive some medical training as well. After successfully completing Level I training, the recruits can respond to incidents (in a limited capacity) from their assigned fire stations. Allowing the recruits to respond in this capacity helps address some of the Department's issues with staffing levels.

During the next six months, the recruits complete training to the standard of NFPA 1001, Level II. This training will prepare the firefighters for the provincial exams (both practical and theory-based exams) that they must complete successfully in order to obtain their certifications for NFPA 1001, Level I, and NFPA 1001, Level II.

As of this FMP, the Department has 22 firefighters in its recruit program. The 22 recruits are currently receiving the following training:

- NFPA 1001, Firefighter I training
- Hazardous materials training (operations)
- Medical training

Once the recruits are certified, they will be able to respond to incidents from their assigned fire stations.

The current recruits are expected to complete the final portion of NFPA 1001, Level II training by the end of 2025 or the first quarter of 2026.

10.5 In-Service Training

Context

All firefighters should complete in-service training during their employment in the fire service. This ongoing training helps ensure that the firefighters maintain their knowledge and skill levels, which will help them perform their duties safely and effectively.

Findings

The Department provides its personnel with ongoing training that covers the services they are expected to provide. This in-service training is also based on applicable NFPA standards, and it covers a variety of topics, such as contemporary suppression and ventilation techniques, building construction, fire dynamics, health and safety, and PPE.

In general, the Department's in-service training sessions are two-and-a-half hours long. The sessions are held every Tuesday evening, and the last Tuesday of every month is dedicated to hall maintenance. On the maintenance evenings, crews inspect and test equipment and facilities to ensure all gear remains in working order. The Department also completes some training on weekends to cover topics that require more than two-and-a-half hours to address adequately.

Organizing the in-service training program is the Deputy Chief's responsibility. As part of this duty, the Deputy Chief must complete the following tasks:

- Develop extensive training schedules, which include a roll-out plan for all training topics.
- Maintain a training schedule that outlines all training topics that will be covered over the next year.
 - The training schedule helps the Department monitor the delivery of its in-service training in order to verify that it meets all legislative requirements.
 - The training schedule also summarizes the resources that the Department's firefighters should reference (such as Essentials of Fire Fighting, OFM job performance reviews, and resources developed by the International Fire Service Training Association).
- Keep track of training attendance and certification levels using the Department's master certification chart.

Upon review, the Department's training program has high completion rates. However, during the stakeholder engagement sessions that were conducted for this FMP, many firefighters indicated that they would like to receive more hands-on training. Although the firefighters appreciate the knowledge-based training they currently receive, they advised that hands-on training would allow them to practise the skills they are taught.

It is worth noting that the FPPA does not set a minimum standard for ongoing training. However, the Department should ensure that its firefighters keep their knowledge and skill levels current with the NFPA standards (and other industry standards) that are applicable to their roles.

10.6 Officer Development Program

Context

According to the OHSA, employers should ensure that each worker they appoint to a supervisory role has the prerequisites to qualify as a competent supervisor. The following excerpt from the Province of Ontario's website paraphrases the OHSA's definition of a competent supervisor:

The OHSA gives employers and workers duties that help support the role of the supervisor. When appointing a supervisor, the employer must ensure the person is competent. To be competent, a supervisor must have enough knowledge, training, and experience to organize the work and how it is to be performed. He or she must also be familiar with the OHSA and any regulations under it that apply to the workplace and know about any actual or potential health and safety hazards in the workplace.¹⁵

The legislation about competent supervisors applies across different employment sectors, including the fire service.

Findings

As of this FMP, the Department is working with the South Frontenac Human Resources Department to establish a formalized officer development program. As this program is developed, the Department must ensure that all of its current officers have the applicable certifications/training status. Doing so will help the Department ensure that its officers meet the requirements of a competent supervisor.

Currently, the Department trains its firefighters to NFPA standards, but further training opportunities are limited. Although the Department is successful at keeping its officers engaged, it must offer higher levels of officer training to comply with NFPA standards.

In collaboration with the South Frontenac Human Resources Department, the Department is providing all of its officers with eight hours of formal leadership training. The firefighters are also receiving training related to respect in the workplace, diversity, equity, inclusion, and anti-harassment. This related training is necessary because the OHSA defines a supervisor as a person who has responsibility for a workplace or authority over a worker.

Other components of the annual training are reviews of the duties/responsibilities of personnel in supervisory positions, reviews of issues that have arisen over the past year, and scenario-based training related to issues that have occurred in the past.

¹⁵ Ontario.ca, "Supervisors under the Occupational Health and Safety Act."

As of this FMP, all of the Department's current captains are certified to the standard of NFPA 1021, level I, and three of the four platoon chiefs are certified to the standard of NFPA 1021, level II.

10.7 NFPA Certification

Context

O. Reg. 343/22: Firefighter Certification came into effect on July 1, 2022. The regulation falls under the authority of the FPPA, and it establishes the mandatory minimum certification standards for specific fire protection services.

As per O. Reg. 343/22:

- All firefighters must have the minimum level of certification for all services they perform. This stipulation is to ensure that firefighters receive consistent, ongoing training that matches the level of service set by their municipal council. The stipulation is also in place to help protect firefighter safety.
- Municipal councils must set the types of service and the levels of service that their fire departments will provide. Once decided, the council must arrange for its fire department to receive the appropriate level of training (based on applicable NFPA standards) for those services.
- Firefighters must meet the NFPA standards that are applicable to their roles, and they must have the ability to perform the services associated with their roles. For example, a fire prevention officer must have certification at the level of inspections they provide, and captains must have certification at the level of supervision they conduct.
- A fire department must ensure that all of its personnel meet the level of training required under O. Reg. 343/22 by the compliance deadline.
 - NFPA 1006 certifications have a compliance deadline of July 1, 2028.
 - All other certifications have a compliance deadline of July 1, 2026.

In addition to the items listed above, fire departments must ensure that all applicable personnel are certified to the following standards prior to the certification deadline:

- NFPA 1001 identifies the minimum job performance requirements for career and volunteer firefighters whose duties are primarily structural in nature. (NFPA 1001 is consolidated in NFPA 1010, *Standard on Professional Qualifications for Firefighters*.)
- NFPA 1002 identifies the requirements that firefighters must meet before driving to emergency sites, as well as requirements for the regular maintenance and repair of fire apparatus. (NFPA 1002 is consolidated in NFPA 1010, *Standard on Professional Qualifications for Firefighters*.)

-
- NFPA 1072 identifies the minimum job performance requirements for firefighters operating at the scene of a hazardous materials incident or weapons of mass destruction incident. (NFPA 1072 is consolidated in NFPA 470, *Hazardous Materials/Weapons of Mass Destruction (WMD) Standard for Responders*.)
 - NFPA 1006, *Standard for Technical Rescue Personnel Professional Qualifications*, identifies the minimum job performance requirements for firefighters delivering specialized rescue services.
 - NFPA 1033, *Standard for Professional Qualifications for Fire Investigators*, specifies the job performance requirements that fire investigators must meet.
 - NFPA 1031 specifies the job requirements, knowledge levels, and skill levels that fire inspectors must meet. (NFPA 1031 is consolidated in NFPA 1030, *Standard for Professional Qualifications for Fire Prevention Program Positions*.)
 - NFPA 1035 specifies the standard that contains guidelines for fire and life safety educators. (NFPA 1035 is consolidated in NFPA 1030, *Standard for Professional Qualifications for Fire Prevention Program Positions*.)
 - NFPA 1021 identifies the minimum job performance requirements that fire officers should meet. (NFPA 1021 is consolidated in NFPA 1020, *Standard for Fire and Emergency Instructor, Fire Officer, and Emergency Medical Services Officer Professional Qualifications*.) As of July 1, 2026, the following level of certification becomes mandatory for the listed positions:
 - NFPA 1021, Fire Officer I: The fire officer at the supervisory level.
 - NFPA 1021, Fire Officer II: The fire officer at the supervisory/managerial level.
 - NFPA 1021, Fire Officer III: The fire officer at the managerial/administrative level.
 - NFPA 1021, Fire Officer IV: The fire officer at the administrative level.
 - NFPA 1041 identifies the job requirements that fire service instructors who participate in training should meet. (NFPA 1041 is consolidated in NFPA 1020, *Standard for Fire and Emergency Instructor, Fire Officer, and Emergency Medical Services Officer Professional Qualifications*.)
 - NFPA 1521 identifies the job requirements that health and safety officers and incident safety officers should meet. (NFPA 1521 is consolidated in NFPA 1550, *Standard for Emergency Responder Health and Safety*.)

Until recently, a provincial program allowed firefighters to meet certification requirements without completing NFPA training. Firefighters could attempt to have their training grandfathered or attain a legacy status that reflected their skill levels. (However, legacy status does not certify firefighters to NFPA standards. In order for the firefighters to achieve NFPA certification, they must either challenge the appropriate testing process or complete the theory or practical training and certification process.)

Under the grandfathering process, fire departments could submit lists indicating which personnel should qualify as NFPA-certified based on their years of experience and ongoing training. The Ontario government has given fire departments two opportunities to complete the grandfathering process. The final deadline was December 31, 2018.

Fire departments were also able to submit names of members who did not complete the grandfathering process but had the qualifications to perform certain fire protection tasks, such as exterior firefighting, interior firefighting, or auto extrication. The final deadline to register for legacy status was September 2023.

Legacy status was available for firefighters who had the following qualifications:

- The firefighter must have worked a minimum number of years in a suppression role. (The minimum number of years for firefighters is two, and the minimum for officers is three years.)
- The firefighter's scope of work must be less than NFPA 1001 Firefighter II (for a hybrid level of service), and their fire department must not provide all three of the following services: interior firefighting, auto extrication, and hazardous materials responses at the operations level.
- The firefighter has received training that meets or exceeds the job performance requirements of the applicable NFPA standards outlined in O. Reg. 343/22.

A fire department with personnel who completed either process prior to the final deadline must ensure that they retain the appropriate documentation to prove their firefighters hold legacy status or had their training grandfathered.

A fire department must also retain appropriate training records as proof that it meets all applicable requirements.

Findings

The Department delivers most of its certification and maintenance training during its regular evening training sessions. The training is typically facilitated by captains and designated instructors who follow a syllabus provided by the Deputy Chief. This approach ensures consistency and alignment with departmental standards and objectives. The firefighters achieve their NFPA certifications upon successful completion of the proctored OFM testing process.

Tables 20, 21, and 22 summarize the training and certification levels in the Department for core, intermediate, and advanced services. The tables provide the following information:

- the suggested training level (core, intermediate, or advanced)
- the number of personnel who should complete each course and become certified¹⁶
- the number of personnel who have completed each course or who are currently enrolled, waiting to write the certification exam, or waiting to receive exam results
 - this number includes personnel who have legacy status (or have had their training status grandfathered)
- the percentage of eligible personnel who are certified, in the process of becoming certified, or have legacy status for the certification

¹⁶ As per O. Reg. 343/22, all NFPA certifications listed in the table will be mandatory for personnel who complete the duties covered by the applicable standard as of July 1, 2026.

Table 20. Core certification levels in South Frontenac.

NFPA Standard	Targeted Applicable Personnel	IFSAC or Proboard Certified	Legacy	Percentage Completed or Pending
NFPA 1001: Fire Fighter I	108	54	26	74%
NFPA 1001: Fire Fighter II	108	54	26	74%
NFPA 1002: Fire Apparatus Driver/Operator	108	34	0	31%
NFPA 1035, Fire and Life Safety Educator I	25	9	0	36%
NFPA 1072: Hazardous Materials Response (operations level)	108	54	1	51%
NFPA 1021: Fire Officer I	25	13	7	80%
NFPA 1041: Fire Services Instructor I	25	17	8	100%
NFPA 1031: Fire Inspector I	4	4	0	100%
NFPA 1033: Fire Investigator	7	7	0	100%
NFPA 1006: Surface Water Rescue (operations level)	108	7	0	6%
NFPA 1006: Ice Water Rescue (operations level)	108	7	0	6%

Table 21. Intermediate certification levels in South Frontenac.

NFPA Standard	Targeted Applicable Personnel	IFSAC or Proboard Certified	Legacy	Percentage Completed or Pending
NFPA 1041: Fire Services Instructor II	6	2	1	50%
NFPA 1521: Incident Safety Officer	14	6	0	43%
NFPA 1021: Fire Officer II	6	5	1	100%
NFPA 1021: Fire Officer III & IV	2	2	0	100%
NFPA 1031: Fire Inspector II	2	1	0	50%
NFPA 1006: Swift Water Rescue (operations level)	24	0	0	0%

Table 22. Optional advanced certification levels in South Frontenac.

NFPA Standard	Targeted Applicable Personnel	IFSAC or Proboard Certified	Legacy	Percentage Completed or Pending
NFPA 1006: Rope Rescue	16	0	0	0%
NFPA 1006: Machinery Rescue (technician level)	16	0	0	0%
NFPA 1006: Structural Collapse	16	0	0	0%
NFPA 1006: Confined Space Rescue	16	0	0	0%
NFPA 1006: Common Passenger Vehicle Rescue	108	0	0	0%
NFPA 1006: Wilderness Search and Rescue	108	0	0	0%
NFPA 1006: Trench Rescue	16	0	0	0%

10.8 Other Training

Context

In addition to core firefighting competencies, volunteer firefighters are often expected to complete a range of supplementary training programs to enhance their operational readiness and ensure compliance with provincial regulations.

Examples of other training/services for fire service personnel are as follows:

- Legislation 101 provides a basic knowledge of the legal framework that governs the fire services, including the OHSA and related municipal bylaws.
- First Aid and CPR certification training courses are intended to equip firefighters with the knowledge and skills to provide immediate medical assistance during emergencies. This kind of training is mandated by R.R.O. 1990, Reg. 1101, First Aid Requirements (under the Workplace Safety and Insurance Act).
- Mental health training is becoming a priority for the fire service, especially as it relates to resilience, stress management, and peer support. This type of training is designed to help firefighters learn ways to address the psychological demands of emergency responses.
- DZ driver's licence training is essential for fire service personnel who operate emergency vehicles. This type of training involves both written and practical tests to equip firefighters with the skills to operate heavy vehicles safely.
- Health and safety certification equips firefighters with the knowledge to identify workplace hazards and implement safe practices. This type of training is outlined by the Ministry of Labour, and it is supported by the Infrastructure Health and Safety Association.
- Many agencies offer non-NFPA training and certifications for firefighters. Some of these courses may be mandatory for firefighters in Ontario. For instance, the Ministry of Natural Resources requires firefighters that provide wildland firefighting services to complete SP103 – Fire Department Wildland Firefighting and become certified.

Detailed information about some of the relevant training topics listed above can be found in the following subsections.

Findings

Table 23 summarizes the training and certification levels in the Department for supplementary training topics.

Table 23. Supplemental training/licensing status in South Frontenac.

Licences and Certifications	Targeted Applicable Personnel	Completed or Pending	% Completed or Pending
SP103 – Fire Department Wildland Firefighting	108	6	6%
Legislation 101	16	9	56%
First Aid CPR – Healthcare Provider Level	108	108	100%
Mental Health Training	108	4	4%
DZ Licence	108	65	60%
Health and Safety Committee – Certification	4	0	0%

10.8.1 Provincial and Municipal Training

Context

All firefighters must complete applicable provincial and municipal training. For instance, employees of public sector organizations must complete training about the Accessibility for Ontarians with Disabilities Act (“AODA”). In addition, all workers who are exposed to hazardous situations and materials must complete WHMIS training.

Findings

The Department’s personnel recognize the importance of provincial and municipal training, but those training topics are often postponed in order to prioritize other training requirements. However, there are several topics that the Province of Ontario requires fire departments to incorporate into their training programs. Failing to deliver provincially mandated training could introduce a liability issue for the Department.

The Department works collaboratively with the South Frontenac Human Resources Department to deliver and track a comprehensive annual training session that addresses all provincial and municipal training requirements.

10.8.2 Driver Training and Licensing

Context

It is critically important for fire departments to understand the current certification and regulatory requirements associated with driver training and licensing.

An individual should only operate a large vehicle (such as a fire apparatus) after completing specialized training and obtaining a DZ licence. If a fire department allows an unqualified or untrained firefighter to operate a fire apparatus, it puts the safety of the driver and others at risk.

Relevant excerpts from different legislation related to driver training and licensing are as follows:

- Section 25 (2)(a) of the OHSA states that an employer must “provide information, instruction and supervision to a worker to protect the health or safety of the worker.”
- Section 25 (2)(h) of the OHSA states that an employer must “take every precaution reasonable in the circumstances for the protection of a worker.”
- Firefighter Guidance Note #6-7, “Driving skills for emergency apparatus response,” recommends having firefighters complete theoretical and practical training if their role involves operating a fire apparatus.

Findings

As of this FMP, the Department does not have enough firefighters with valid DZ licenses. Only 57 per cent of the Department’s current firefighters have the proper licence. Additionally, only 34 per cent of those firefighters have the NFPA certifications needed to operate a fire apparatus.

The current licensing scenario puts both South Frontenac and the Department in a problematic situation. For instance, it is possible that an incident will occur, and the Department will not have any responding personnel who are qualified to drive a fire apparatus to the emergency site.

Although the Department’s driver competency program was previously suspended, it has since been reinstated (as of this FMP). With the program now back in place, the Department is re-establishing policies and procedures to ensure that its firefighters have the competency to respond and safely operate a fire apparatus during training activities and emergency responses.

10.9 Post-Incident Analysis and Review

Context

A post-incident analysis and review (“**PIAR**”) is a type of assessment that a fire department can conduct after an emergency concludes. By conducting a PIAR, a fire department may find ways to improve the effectiveness of its operations. During a PIAR, a fire department evaluates its performance and safety practices. This process allows fire departments to identify gaps in their practices and develop measures to improve their effectiveness and safety during future responses.

A fire department should not conduct PIARs to uncover blame but to reinforce practices that lead to optimal service delivery for community residents and businesses. A fire department that prioritizes safety practices is more likely to develop an internal culture that values safety.

It is beneficial for health and safety committees to participate in the PIAR process by helping to conduct the PIAR or reviewing the results of the assessment. The committee members can use the PIAR process to determine whether there are any safety practices their fire department can incorporate into its operations.

Findings

The Department conducts informal PIARs after large-scale events. However, the Department has not established a formal process for conducting PIARs.

10.10 Roadmap for Improvement

Training Structure

The Department should strive to continue developing its training program by using a “firefighter-focused” approach. This approach prioritizes regular drills, simulations, and cross-training in order to ensure that the firefighters can both maintain and enhance their operational skills. The training should also incorporate opportunities for the firefighters to achieve professional goals. Doing so may empower the Department’s personnel to take ownership of certain tasks, which can support higher levels of engagement and accountability. Mentorship and leadership development opportunities should also be offered, as the cultivation of strong relationships within the Department can lead to higher levels of trust and overall effectiveness.

Going forward, the Department should create a training development plan that will help its firefighters understand their roles while preparing them for future opportunities (such as becoming an officer). A structured training plan that includes regular reviews will help maintain the training program’s effectiveness and adaptability.

Officer Development

The Department should continue formalizing its officer development program, ensuring that it aligns with the certification requirements outlined in O. Reg. 343/22.

Although establishing a fully structured program may take time, it is a critical step toward maintaining regulatory compliance and enhancing operational effectiveness. A formalized approach will help ensure that all personnel in supervisory roles possess the necessary knowledge, skills, and qualifications to perform their duties safely and effectively.

Driver Training and Licensing

The Department should continue to take a comprehensive and proactive approach to addressing driver training and licensing requirements. This approach should focus on supporting personnel, maintaining compliance, and ensuring safe and consistent apparatus operations.

In addition, as the driver competency program has been reinstated, the Department should ensure that the process is formally defined and consistently applied. The Department can accomplish this task by clearly outlining the requirements that its personnel must meet before being authorized to operate a fire apparatus.

The driver competency program should include training and evaluation for the following areas:

- emergency response driving procedures
- defensive driving techniques
- pump operations
- rural water supply operations
- regular driver's licence verification
- driver performance evaluations
- ongoing skills assessments and reviews

The reimplementation and continued use of a driver competency program will demonstrate the Department's commitment to due diligence, effective risk management, and the safe operation of fire apparatus during both training activities and emergency responses.

Post-Incident Analysis and Review

The Department should consider formalizing a PIAR process. Doing so will support accountability, innovation, and a commitment to excellence in fire and life safety operations.

10.11 Recommendations

Recommendations regarding the training program in South Frontenac are as follows:

- 10-1. The Fire Chief should continue formalizing an officer development program for South Frontenac Fire & Rescue. This program should equip the officers with technical competencies, leadership skills, and the ability to meet the definition of a competent supervisor (as defined by the Occupational Health and Safety Act).

- 10-2. The Fire Chief should consider incorporating leadership training and incident command training into South Frontenac Fire & Rescue's officer leadership team meetings.
- 10-3. The Fire Chief should ensure that all applicable members of South Frontenac Fire & Rescue become certified to the standard of NFPA 1002, Chapter 5, Apparatus Equipped with Fire Pump, by July 1, 2026 (which is the deadline mandated by O. Reg. 343/22).
- 10-4. South Frontenac Fire & Rescue should continue to take a proactive and comprehensive approach to driver training and licensing by supporting its personnel, maintaining compliance, and ensuring the safe operation of fire apparatus.

11.0 Responses

11.1 Overview

Fire departments must respond promptly to all emergency calls in order to maximize the protection of residents and minimize potential property damage and dollar loss. Fast response times are especially critical when an emergency involves a structure fire. A fire's growth is heat-generated, and it is dependent upon fuel and air supply. Once the temperature in a room ablaze reaches approximately 1,000 °F (590 °C), a flashover will occur in the entire room within six to ten minutes (or less). A flashover is an instance of a fire spreading very rapidly across a gap because of intense heat. When a flashover occurs, it significantly increases the risk of fatalities and property damage.

It is also vital to have a quick response time when a medical emergency occurs. Recent research has shown that response times and mortality are correlated.¹⁷ For example, when a patient is experiencing a heart attack, their survivability decreases at a rate of 10 per cent/minute.¹⁸ The outcomes of many other medical emergencies also depend on fast response times.¹⁹

Although not all fire departments respond to the same incidents (such as medical calls), they should still understand the importance of response times in order to determine which services, staffing levels, and performance standards are applicable to them. Every municipal council should determine the types and levels of service for their fire department. Once those items are established, the council should determine the fire department's performance standards.

In general, performance standards establish how many firefighters should respond to an emergency and how long it should take for them to arrive at an incident site. A fire department can assign response duties based on those considerations. In all cases, it is essential for a fire department to respond to emergencies with an adequate number of personnel and resources to deliver effective fire protection and suppression services.

By setting performance standards, a fire department can ensure that it is achieving fast, consistent response times while dispatching a fire crew with enough personnel to complete all critical tasks in a timely manner.

¹⁷ Pons et al., "Paramedic Response Time: Does It Affect Patient Survival?"

¹⁸ Medical Advisory Secretariat, "Use of Automated External Defibrillators in Cardiac Arrest: An Evidence-Based Analysis."

¹⁹ Blackwell and Kaufman, "Response Time Effectiveness: Comparison of Response Time and Survival in an Urban Emergency Medical Services System"; Wilde, "Do Emergency Medical System Response Times Matter for Health Outcomes?"

The relationship between resource deployments, response times, and positive outcomes is circular. For instance, positive outcomes from an emergency response are often due to the deployment of sufficient resources. Conversely, if response times and the assembly time of an effective response force are both prolonged, it is more likely that insufficient resources have been deployed, which is associated with negative outcomes of an emergency response.

11.2 Effective Response Force

Context

Response Baselines and NFPA Standards

For many years, fire departments analyzed their performance levels by comparing their initial response times to a standard metric.

Many agencies now agree that fire departments should set their own benchmarks in order to measure their performance levels. This process involves determining a fire department's effective response force.

The term "effective response force" refers to the following:

- The number of firefighters needed to respond to an emergency safely and effectively.
- The resources needed to respond to an emergency safely and effectively.
- The time it takes for firefighters and resources to arrive at the scene of an emergency

After determining the effective response force that it should provide, a fire department should examine its past performance, fire station locations, and minimum dispatch time. By examining these factors, a fire department can identify its strengths and weaknesses and determine how often it has dispatched its intended effective response force. The fire department can then establish response benchmarks that it can use to measure its performance.

When establishing an effective response force, a fire department can use statistics related to fires in single-family residential occupancies as a baseline measurement of its responses. These statistics are useful because they are related to the most demanding, hazardous, and task-intensive type of incident that a municipal fire department is expected to handle on its own.

The baseline for a single-family residential structure fire is defined as the number of firefighters required to perform fireground critical tasks safely and concurrently. These functions include incident command, fire attack, search and rescue, ventilation, water supply, rapid intervention, and support operations.

For a volunteer or composite fire department, best practices identify that 14 to 15 on-scene firefighters (at a minimum) are required to suppress a residential structure fire safely. This staffing level allows for compliance with occupational health and safety requirements (such as two-in/two-out) while ensuring that essential life safety and fire control tasks can be conducted without overextending personnel.

If a fire department can meet its self-determined baseline, it means that the department is operating at optimal capacity during emergency responses. A fire department can also analyze responses that fall short of its benchmarks in order to identify areas for improvement. For example, suppose a fire department sets its total response time at 12 minutes and aims to achieve that time during 90 per cent of its responses. If so, the fire department assumes that 10 per cent of its responses will involve a total response time that exceeds 12 minutes. By analyzing the responses that are longer than 12 minutes, the fire department can determine the issues that hinder its ability to meet its goals. This form of self-assessment can provide information that impacts decisions about station locations, staffing levels, apparatus deployment, and future standard development.

A fire department can submit its response baseline to its municipal council for approval. Doing so can help ensure the community understands the fire protection services it can expect to receive. Each community has unique hazards, expectations, and needs, and it is important to make sure the fire department's response benchmarks consider those factors.

Finally, it is important to make sure that all decisions adhere to applicable legislation and guidelines, such as:

- the FPPA
- the OHSA
- NFPA standards

For example, under the OHSA, employers are responsible for protecting employees from workplace injuries or death. As such, fire departments and municipal councils must ensure that their firefighters receive adequate training and supervision for all services they provide.

The following NFPA standards provide information that fire departments can reference when determining their emergency response benchmarks:

- NFPA 1225, *Standard for Emergency Services Communications*
- 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*²⁰

²⁰ NFPA 1710 and 1720 are scheduled to be consolidated into NFPA 1750 by 2026.

The information in NFPA 1720 is particularly useful to review, as it contains recommendations for a variety of demand zones.

Table 24 shows the staffing levels and response time standards that NFPA 1720 provides for urban, suburban, rural, and remote area demand zones.²¹ The table defines each type of demand zone by its demographics and lists the minimum number of staff needed for responses in each area, as well as the expected response time.

Table 24 also includes a metric for measuring fire department effectiveness. (The metric lists how many personnel should respond to an incident within an expected time.) For example, if an incident occurs in an urban area demand zone, a fire department should dispatch at least 15 personnel to the emergency site. If the fire department can dispatch those 15 personnel within nine minutes at least 90 per cent of the time, that fire department is considered effective.

Table 24. Staffing and response time standards as per NFPA 1720.

Demand Zone²²	Demographics	Minimum Staff to Respond²³	Response Time²⁴ (minutes)	Meets Objective (%)
Urban area	> 1,000 people/mi ² (2.6 km ²)	15	9	90
Suburban area	500 to 1,000 people/mi. ² (2.6 km ²)	10	10	80
Rural area	< 500 people/mi. ² (2.6 km ²)	6	14	80
Remote area	Travel distance ≥ 8 mi. (12.87 km)	4	Directly dependent on travel distance	90
Special risks	Determined by AHJ	Determined by AHJ based on risk	Determined by AHJ	90

²¹ This table is adapted directly from section 4.3.2 of NFPA 1720.

²² A jurisdiction can have more than one demand zone.

²³ Minimum staffing includes members responding from the AHJ's department and automatic aid.

²⁴ Response time begins upon completion of the dispatch notification and ends at the time interval shown in the table.

Findings

As of this FMP, the Department does not measure its performance levels or response times against any response baseline.

According to the 2021 Statistics Canada census, South Frontenac has a population of 20,188 residents, as well as a population density of 21.3 people per square kilometre (or 55.2 people per square mile). Based on the community's current population density, South Frontenac should consider following the guidelines that NFPA 1720 provides for a rural area demand zone. Doing so can help applicable personnel assess the effectiveness of the fire services provided for the structure fires that occur in South Frontenac.

Crew Size

When determining response procedures, a fire department should consider its ability to provide a crew of an appropriate size. The National Institute of Standards and Technology ("**NIST**") has conducted more than 60 controlled fire response experiments to determine whether the size of a fire crew impacts its ability to protect lives and property during responses to residential fires.

The NIST summarized the findings of its fire response experiments as follows:

[...] four-person firefighting crews were able to complete 22 essential firefighting and rescue tasks in a typical residential structure 30 percent faster than two-person crews and 25 percent faster than three-person crews.

Researchers also performed simulations using NIST's Fire Dynamic Simulator to examine how the interior conditions change for trapped occupants and the firefighters if the fire develops more slowly or more rapidly than observed in the actual experiments. The fire modeling simulations demonstrated that two-person, late-arriving crews can face a fire that is twice the intensity of the fire faced by five-person, early arriving crews. Additionally, the modeling demonstrated that trapped occupants receive less exposure to toxic combustion products—such as carbon monoxide and carbon dioxide—if the firefighters arrive earlier and involve three or more persons per crew.²⁵

Direct supervision is also critical due to the inherently dangerous and unpredictable nature of emergency scenes. When firefighters are supervised directly, a fire department can ensure that safety protocols are followed, risks are properly assessed, and tasks are carried out efficiently and effectively.

²⁵ National Institute of Standards and Technology, "Landmark Residential Fire Study Shows How Crew Sizes and Arrival Times Influence Saving Lives and Property."

Fire departments must also provide direct supervision in order to meet legislative requirements:

- Section 25.2 (a) of the OHSA states that employers must “provide information, instruction and supervision to a worker to protect the health or safety of the worker.”
- Section 25.2 (h) of the OHSA states that employers must “take every precaution reasonable in the circumstances for the protection of a worker.”

Critical Tasks

A fire department can determine its optimal effective response force by completing a critical tasks analysis for each type of emergency response that it is required to provide. This process allows a fire department to standardize its emergency response protocols and ensure it dispatches the appropriate number of personnel for each type of incident.

A critical tasks analysis can be completed by using the following steps:

1. Examine the type of risks that exist at an emergency scene.
2. Identify the tasks needed to eliminate the risks that exist at an emergency scene.
3. Determine the number of personnel needed to carry out the tasks that will mitigate and eliminate the risks that exist at an emergency scene.

When it comes to performing critical tasks, fire departments can either assign the tasks to multiple personnel or carry out the tasks sequentially.

Often, fire departments use an assignment chart (based on information received at the time of an emergency call) to assign critical tasks on the fireground during an emergency response. If an incident safety officer is available, they can assess the overall safety of the incident and provide critical information to the Incident Commander.

Fire departments must also consider the location of the emergency, as the location will impact the assignment and performance of critical tasks. For example, when a fire occurs in an area that does not have municipal fire hydrants, it is critical for the responding fire department to have enough firefighters on the scene to ensure there is an adequate level of support and water supply to perform suppression duties.

Various fire service authorities have developed general guidelines about resource deployment.

Table 25 presents a critical tasks analysis for a fire in a single-family home (based on best practices and findings from the NIST, NFPA, and OFM). In addition to the number of personnel noted in the table below, fire departments should also consider assigning an individual to serve as an incident safety officer.

Table 25. Minimum firefighters required for critical tasks at single-family home fires.

Personnel	Critical Tasks	Firefighters Required
Crew #1	- Perform search and rescue duties. - Conduct fire control/extinguishment duties on the fire floor. - Serve as the pump operator.	4
Crew #2	- Provide backup support for Crew #1. - Perform search and rescue duties. - Locate the fire extension beyond the immediate fire area.	4
Crew #3	- Assume the role/duties of a rapid intervention team. - Conduct firefighting operations after another crew has exited the structure and is ready to take over the rapid intervention team duties.	4
Chief Officer	Serve as Incident Commander.	1
Accountability/ Scribe	Help the Incident Commander organize tasks on the fireground.	1
Total		14

Findings

As noted in section 4.3 of this FMP, the Department has introduced a two-station response model to address low personnel turnout. Under this model, firefighters respond from their current location (such as their home or workplace) to their assigned fire station before they are deployed to an incident scene on a fire apparatus.

Although the two-station response model improves the likelihood of assembling a response crew, it has not resolved the underlying staffing shortfall. For instance, even when two fire stations are dispatched simultaneously, the Department is frequently unable to mobilize enough firefighters to establish an effective response force for a structure fire. As such, three to five stations are often required to achieve the minimum staffing levels necessary for safe and effective operations at single-family dwelling fires.

When the Department must dispatch multiple fire stations to reach the minimum staffing threshold, it results in increased response times, reduced coverage in other areas of South Frontenac, and a greater reliance on personnel travelling longer distances to the incident site.

These factors indicate that the challenge is not the response model itself, but rather insufficient personnel availability to assemble an effective response force within an acceptable timeframe on a consistent basis.

According to the Department's records, from 2020 to 2024, the Department consistently achieved the minimum number of firefighters required to complete critical fireground tasks at single-family residential fires. However, this staffing level was only achievable through a multi-station response model. For instance, in 2024, the Department responded to nine structure fires (as shown in Table 26). Most of these responses required the activation of three to five stations in order to assemble a sufficient number of on-scene personnel, with an average of 3.6 stations activated per incident. An approximate average of 21 firefighters responded to each structure fire in 2024. The Department needed to use this type of multi-station response in order to assemble sufficient on-scene staffing levels to complete critical fireground tasks and support fire suppression, ventilation, search and rescue, rapid intervention, and water supply operations.

Table 26. Structure fire statistics in South Frontenac (2024).

Number	Month	Day	Time	Stations Dispatched	Firefighters On Scene	Mutual Aid	Automatic Aid
2401-00066	Jan.	Thu.	11:40:22	4	9	No	No
2401-00334	Jan.	Sun.	16:39:03	4	22	No	No
2403-00128	Mar.	Tue.	8:20:47	2	13	No	No
2405-00337	May	Mon.	17:35:25	4	19	No	No
2406-00590	Jun.	Thu.	20:22:11	3	21	No	No
2406-00796	Jun.	Wed.	21:56:24	4	32	No	No
2410-00437	Oct.	Tue.	12:22:43	2	15	No	No
2411-00736	Nov.	Fri.	19:13:42	5	41	No	No
2412-00629	Dec.	Tue.	1:51:24	5	16	Yes	No

11.3 Response Statistics

Context

Reviewing historical performance levels can help a fire department identify its service delivery capabilities. In addition, modelling and statistical analyses can be conducted to determine whether resources are being used efficiently and effectively.

All fire departments should also retain accurate records of their historical response times. The information is essential to have when measuring performance levels, making strategic decisions, and determining service alternatives. Table 27 defines the four steps that are involved in dispatching a response to an emergency call.

Table 27. Summary of response time intervals.

Step	Description	Actions
1	Public safety answer point call processing time	- Step 1 begins when the public safety answer point or 911 call centre receives an emergency call and transfers the call to the fire department. - This step ends when the fire department's dispatch centre answers the transferred call.
2	Secondary public safety answer point alarm processing time	- Step 2 begins when the fire department's dispatch centre receives an alarm (referred to as the "incident beginning"). - This step ends when the communication technician/dispatcher activates the paging devices at the fire station (referred to as "dispatch time").
3	Chute time	- Step 3 begins when the fire station activates its pagers (and the responding apparatus begins its response). - This step ends when the apparatus's response is noted by (or to) the dispatcher via the fire department's radio system (referred to as "en route time").
4	Travel time (first unit)	- Step 4 begins when the responding apparatus initially acknowledges its response. - This step ends when the responding apparatus uses its radio to notify the dispatcher that it has arrived at the emergency scene (referred to as "on-scene time").

By timing how long it takes to complete each of the four steps defined above, a fire department can determine the average response time of its first due unit (which is the first vehicle to arrive at the emergency scene).

In order for historical data to be useful, fire departments must ensure they track their response times consistently across all types of responses.

Findings

This FMP includes a review of the Department's response statistics, as well as trends that may impact the Department's effective response force.

Table 28 lists the number of times per year (from 2020 to 2024) the Department assisted other agencies with emergency responses, including automatic aid or mutual aid responses.

Table 28. Automatic and mutual aid responses, 2020 to 2024.

Type of Aid	2020	2021	2022	2023	2024	Avg.
Assistance to other agencies	0	0	0	0	0	0
Assistance to police	0	0	0	1	0	0.2
Automatic aid	0	0	0	0	8	1.6
Mutual aid	3	4	3	2	5	3.4
Total	3	4	3	3	13	5.2

Table 29 lists the number and type of fire responses made by the Department from 2020 to 2024.

Table 29. Fire responses, 2020 to 2024.

Type of Response	2020	2021	2022	2023	2024	Avg.
Loss fires: structures	14	9	12	8	9	10.4
Loss fires: other	0	1	1	0	0	0.4
Loss fires: vehicles	2	4	2	1	10	3.8
Total	16	14	15	9	19	14.6

Table 30 lists the dollar loss amount per occupancy group in South Frontenac from 2020 to 2024.

Table 30. Dollar loss by occupancy type, 2020 to 2024.

Occupancy Type	2020	2021	2022	2023	2024
Group A: assembly	\$0	\$0	\$0	\$0	\$0
Group B: care, treatment, and detention	\$0	\$0	\$0	\$0	\$0
Group C: residential	\$946,250	\$3,709,500	\$2,076,100	\$2,122,000	\$1,850,000
Group D & E: mercantile and commercial	\$0	\$3,600	\$12,500	\$310,500	\$80,000
Group F: industrial	\$0	\$	\$27,500	\$0	\$0
Other	\$3,200	\$24,000	\$91,500	\$1,000	\$797,500
Yearly Loss	\$949,450	\$3,764,600	\$2,180,100	\$2,433,500	\$2,727,500

The Department's staffing levels for emergency responses are tied directly to the availability of its paid on-call personnel, which can vary depending on the time of day and day of the week.

In order to ensure effective and timely responses, it is essential for the Department to monitor its effective response force on a continuous basis. The Department must also make use of all available tools and data to evaluate its performance levels. This kind of ongoing analysis will provide information that the Department can use to support its established performance objectives and response criteria.

Based on data related to the Department's current deployment trends and effective response force, the Department should consider exploring alternative staffing models, particularly for periods of historically lower availability (such as daytime hours, holidays, and long weekends).

An analysis of response data shows that the Department's average chute time between 2020 and 2024 was five minutes and five seconds. Although individual responses may vary (due to time of day, personnel availability, and station proximity), the Department's overall performance aligns with expected standards for paid on-call fire service operations.

11.4 Geographic Information System Mapping

Context

In years past, fire departments determined where to locate their fire stations by measuring and marking distances on a physical map. Fire departments now use geographic information system (“**GIS**”) mapping technology and response modelling software to compare multiple data sources. Doing so increases the accuracy and effectiveness of station location and response time calculations.

During the mapping process, fire departments study their station response zones by analyzing road networks, speed modelling, historical statistics, and existing GIS data. The maps generated during this process illustrate the travel routes from the station to areas where a potential emergency could occur. A fire department can study these maps to understand the response boundaries of its effective response force—that is, the areas it can and cannot reach within a reasonable response time.

Fire departments then try to determine the areas they can and cannot reach within a reasonable response time. A fire department must know whether it can dispatch an effective response quickly in all parts of the community, especially in areas that contain high-risk occupancies. Reviewing GIS maps can help a fire department determine the most effective location for a new fire station.

Findings

During the FMP development process, GIS maps were created to illustrate the Department’s average response times based on the Department’s historical chute times and travel times. In order to align with the benchmarks listed in NFPA 1720, the maps cover the following time intervals:

- Figure 4 illustrates the area that the Department can reach within nine minutes.
- Figure 5 illustrates the area that the Department can reach within ten minutes.
- Figure 6 illustrates the area that the Department can reach within 14 minutes.
- Figure 7 illustrates the area that the Department can reach within 18 minutes.

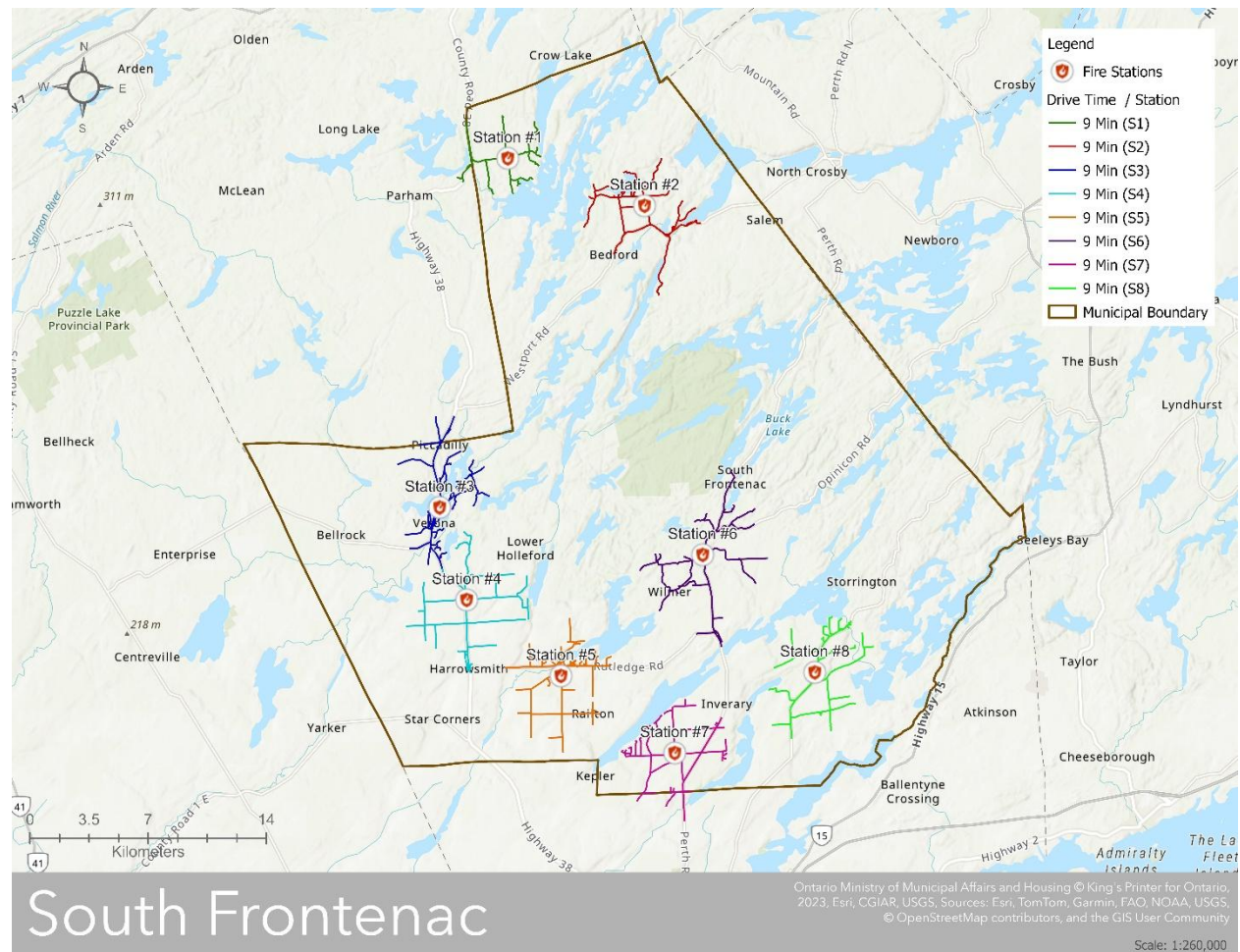


Figure 4. Response area within nine minutes, South Frontenac Fire & Rescue.

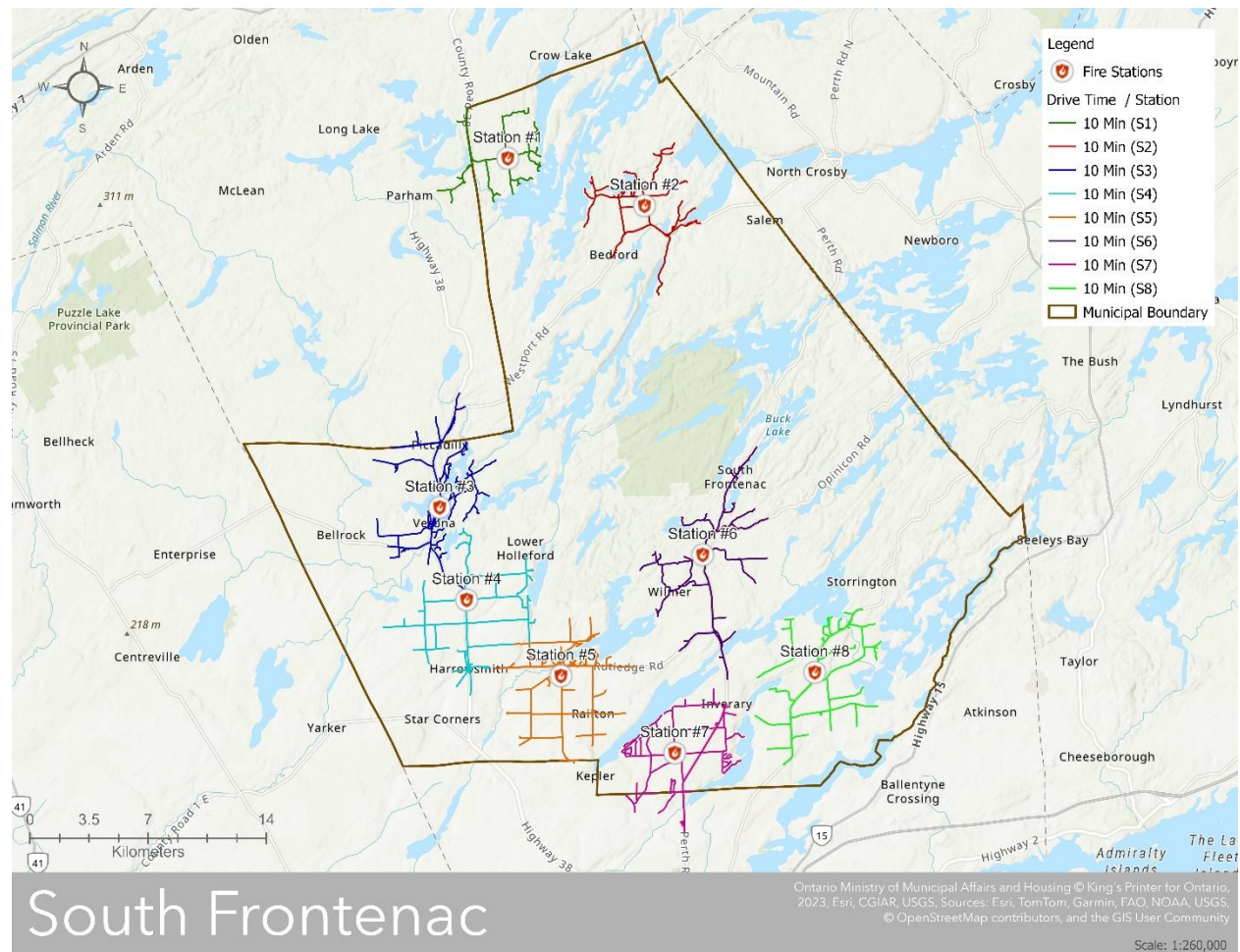


Figure 5. Response area within ten minutes, South Frontenac Fire & Rescue.

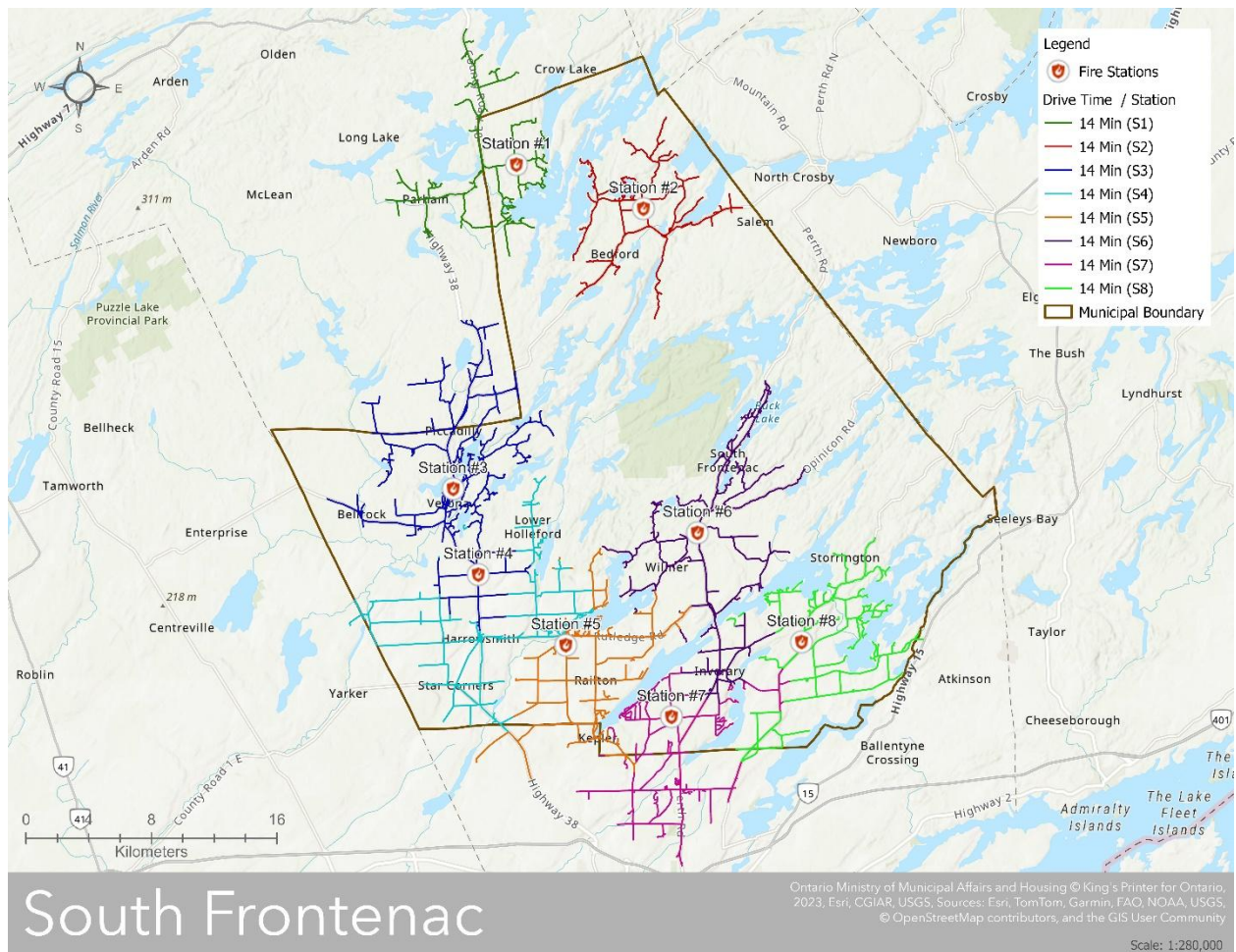


Figure 6. Response area within 14 minutes, South Frontenac Fire & Rescue.

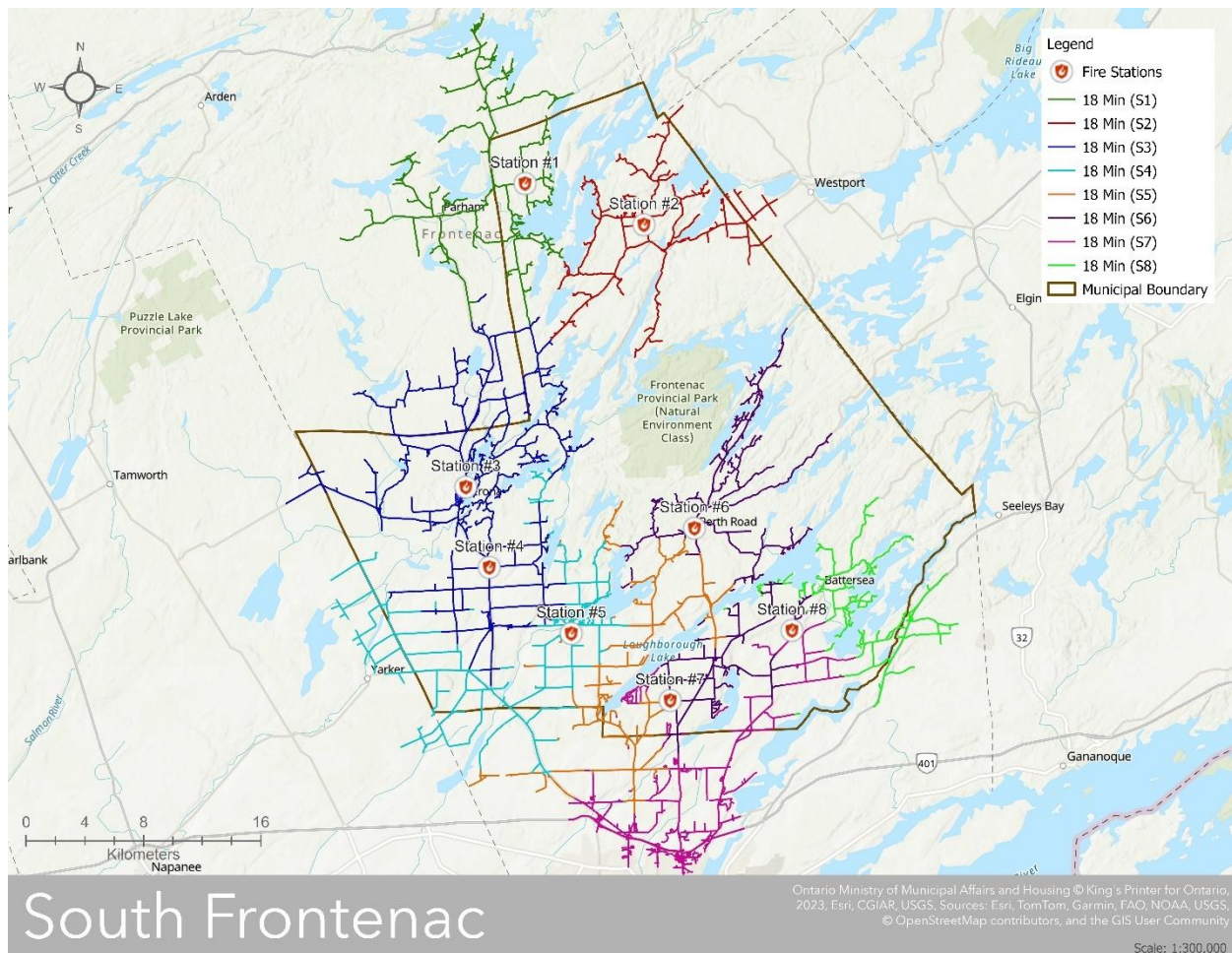


Figure 7. Response area within 18 minutes, South Frontenac Fire & Rescue.

11.5 Roadmap for Improvement

Response Benchmark

Going forward, the Fire Chief should develop a response benchmark that includes targets for response times and the number of firefighters needed at emergency scenes.

In order to develop a response benchmark, the Fire Chief should consider using the following process:

1. Analyze each component of the Department's past dollar-loss fire response data.
2. Compare the Department's services and statistics to those of similar municipalities.
3. Review relevant legislation, guidelines, and standards, including NFPA 1720.
4. Review the location of the Department's fire station and the locations of stations in neighbouring municipalities.

5. Identify the minimum number of qualified firefighters needed to form an effective response force for dollar loss fires within a specified time.
6. Continue to review the staffing levels on weekends, weeknights and weekdays.

Ideally, the proposed response benchmark should align with the demand zone standards from NFPA 1720. Once the proposed response benchmark is ready, it should be presented to Council for consideration and approval. After the response benchmark is established, the Department should conduct an annual review of its effective response force, deployment statistics, and response times to ensure it is meeting the benchmark.

Overall, the Department's emergency response capabilities must remain adaptable, and its personnel must be equipped to make quick, informed decisions under pressure. In addition, the Department's goals should align with South Frontenac's needs in order to strengthen the Department's positive impact on the community and reinforce its purpose.

Daytime Staffing Program

As discussed earlier, the Department has lower staffing numbers on weekdays during regular business hours. This challenge is common among Canadian fire departments that use volunteer (or paid on-call) firefighters.

In order to mitigate challenges related to daytime staffing levels, the Department should consider implementing a daytime staffing program. This program would enhance service coverage during weekday daytime hours by assigning qualified firefighters from the Department's paid on-call staff to work additional scheduled shifts, as operationally required. The program should provide up to 200 staffing hours per week, with those hours allocated across multiple days to ensure consistent coverage.

The proposed daytime staffing program should be structured to support a four-firefighter crew on a pumper. This crew size is recognized as the minimum staffing level that allows a pumper crew to operate safely, effectively, and independently at a structure fire while meeting applicable occupational health and safety requirements. For instance, a four-person crew enables the simultaneous performance of critical tasks, such as apparatus operation, hose advancement, fire attack, supervision, and compliance with two-in/two-out principles until additional resources arrive.

In order to allocate the 200 hours effectively, the proposed daytime staffing program should be implemented as follows:

- Assign four firefighters per day.
- Assign ten hours per day to each firefighter.
- Assign the firefighters to work five days per week.

This staffing schedule would ensure that a fully functional pumper crew is available during peak daytime hours, which is when the availability of paid on-call personnel is historically at its lowest level.

In addition to emergency response readiness, the daytime staffing hours could be used to support other essential functions, such as:

- fire prevention and public education activities
- inspections
- training
- equipment maintenance
- administrative or compliance-related duties

The flexible use of staffing hours would allow the Department to better meet its legislative obligations, maintain service delivery standards, and improve overall operational effectiveness.

In order to implement a daytime staffing program, Council would need to approve the initiative and the associated costs. As such, the Fire Chief should consider developing a report that recommends implementing a daytime staffing program and then submit the report to Council for consideration and approval. If the program is implemented, any subsequent changes that the Department may want to make (such as increasing the number of hours allotted to the program) will require Council's approval.

Also, if the Department proceeds with the implementation of a daytime staffing program, it is recommended that all daytime personnel be deployed from a single, centrally located fire station. This deployment model will maximize response efficiency and operational consistency. Station 5 – Sydenham is the preferred location due to its central position within South Frontenac, as well as its ability to support timely access to all response areas in the community. Locating daytime staff at this station would ensure the availability of a dedicated four-firefighter crew capable of responding to emergency incidents across South Frontenac during daytime hours.

Overall, implementing a daytime staffing program would directly address daytime response gaps, reduce reliance on multi-station dispatches to achieve minimum staffing levels, and improve the Department's ability to provide timely and safe responses to emergency incidents—particularly structure fires—across South Frontenac.

Figure 8 shows the area that an apparatus from Station 5 – Sydenham could reach within 14 minutes of receiving an emergency call (assuming a chute time of five minutes).

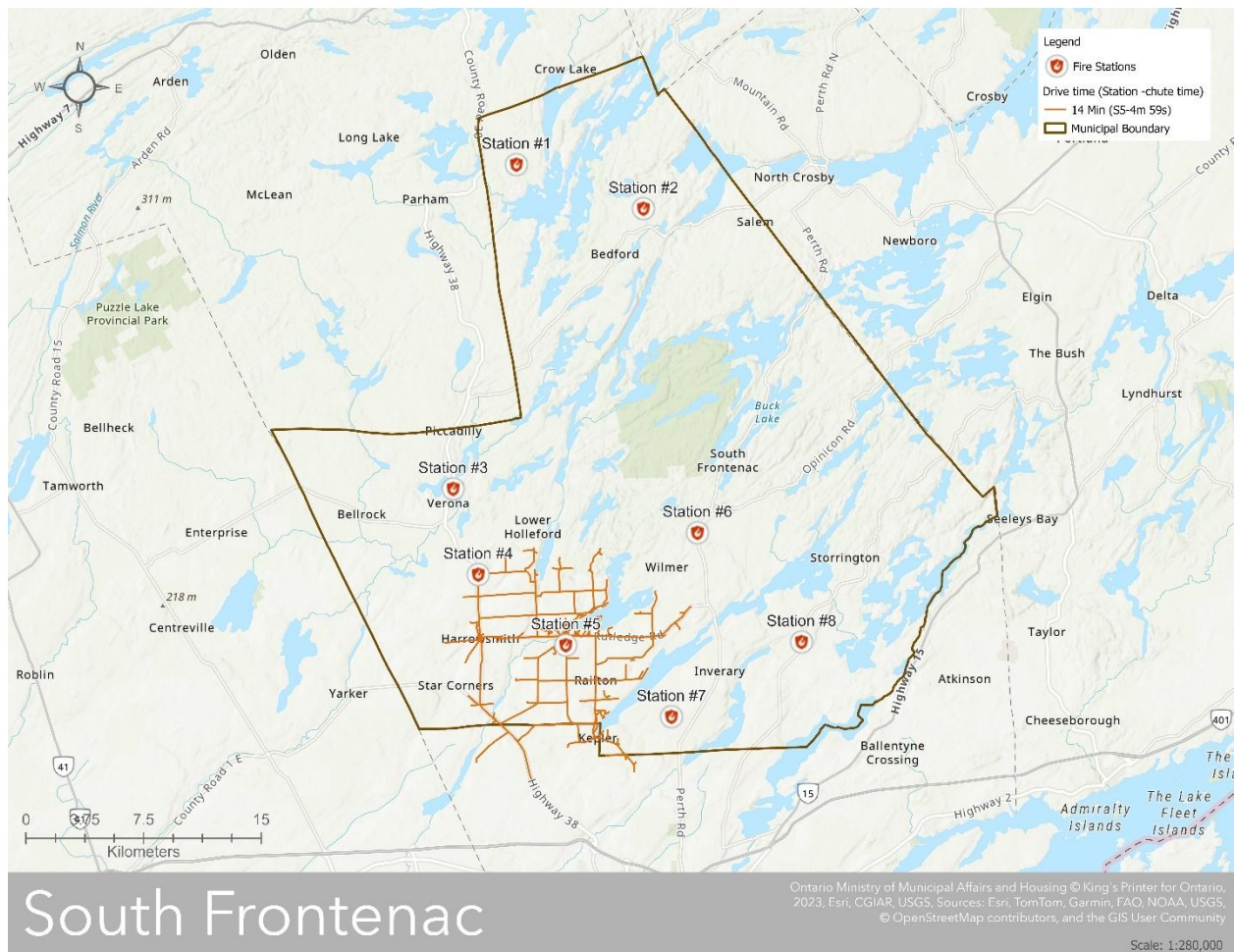


Figure 8. Current response area within 14 minutes, Station 5.

Providing daytime staffing at Station 5 – Sydenham could reduce that station's chute time to approximately 90 seconds. This reduction would allow firefighters to reach the station more quickly than they currently can, and they would also be able to reach the response areas of several other stations within 14 minutes (as shown in Figure 9).

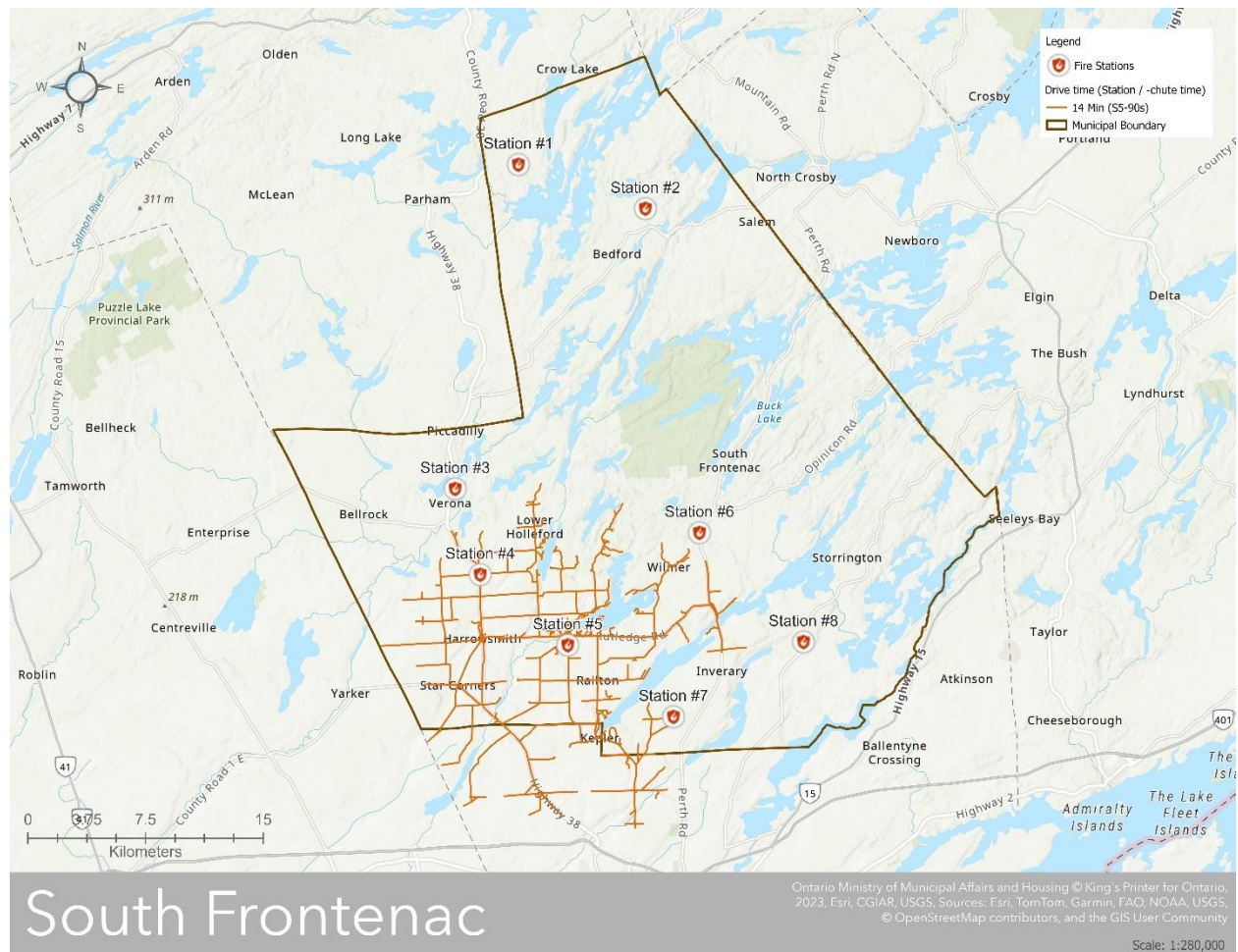


Figure 9. Projected response area within 14 minutes, Station 5 (with daytime staff).

Paid On-Call Firefighter Levels

The Department should consider whether additional paid on-call firefighters are required to meet operational demands. If needed, additional firefighters may help the Department provide an effective response force consistently.

Stand-By Teams or On-Call Teams

The Fire Chief should review historical data to determine staffing levels during high-risk periods (such as holiday weekends and dry seasons). If the resulting data reveals gaps in staffing levels, the Department should consider assigning personnel to stand-by teams or on-call teams. These teams would function as rotating groups of firefighters who will remain ready to respond to emergencies during the identified high-risk periods.

Going forward, the Fire Chief, working with the South Frontenac Human Resources Department, should develop a strategic plan to mitigate current staffing gaps by increasing daytime staffing, establishing standby teams, and increasing paid on-call staffing levels.

11.6 Recommendations

Recommendations regarding responses in South Frontenac are as follows:

- 11-1. The Fire Chief should develop an emergency response baseline for South Frontenac Fire & Rescue. The baseline should establish response standards based on the concept of an effective response force. Ideally, a specific baseline should be developed for low-, moderate-, and high-risk responses (as established in the South Frontenac Community Risk Assessment). Once the baseline is developed, it should be presented to Council for consideration and approval.
- 11-2. The Fire Chief, working with the South Frontenac Human Resources Department, should develop a report that outlines a comprehensive staffing strategy for South Frontenac Fire & Rescue. This strategy should be based on historical incident data, legislative requirements, projected population growth, and an assessment of both current and future community risks and service demands. The Fire Chief should submit the finalized report to Council for consideration and approval.
- 11-3. South Frontenac Fire & Rescue should consider implementing a daytime staffing program that uses its paid on-call staff members. The program should be structured to ensure a four-person fire crew assigned to a pumper is available to operate ten hours per day, five days per week (for a total of 200 staffing hours per week). Ideally, the four-person fire crew should be based at a centrally located fire station in South Frontenac.

12.0 Fire Department Structure

12.1 Overview

Reviewing a fire department's organizational structure typically involves an examination of the following factors:

- leadership hierarchy
- resource allocation
- staffing levels

These factors can directly affect a fire department's efficiency and safety during emergency responses, as well as the public's level of trust in the fire department's capabilities.

According to the NFPA, organizational effectiveness is closely linked to emergency response outcomes, with well-managed fire departments showing better incident control and lower injury rates.²⁶

A strong organizational foundation can also enhance a fire department's ability to conduct fire prevention, public education, and community engagement initiatives.

12.2 Organizational Structure and Staffing Levels

Context

Most volunteer fire departments have organizational structures and staffing levels that are designed to meet the following objectives:

- Maintain operational readiness even though many (or all) of the fire department's personnel are employed on a part-time or on-call basis.
- Provide effective leadership to the fire department's personnel.
- Ensure operational efficiency.
- Provide effective community service.

A typical hierarchy for a volunteer fire department is defined in Table 31.

²⁶ National Fire Protection Association, *NFPA 1201: Standard for Providing Fire and Emergency Services to the Public*.

Table 31. Typical hierarchy of a volunteer fire department.

Role	Organizational Responsibility
Fire chief ↓	A fire chief is the chief officer in a fire department. The fire chief is responsible for overseeing command duties and providing administrative leadership.
Deputy chiefs, platoon chiefs, or district chiefs ↓	Deputy chiefs, platoon chiefs, and district chiefs support the fire chief. These personnel may oversee specific areas, such as operations, training, or logistics.
Operational officers ↓	Operational officers (such as captains and lieutenants) lead individual stations and apparatus crews. These officers also assist chief officers and supervise firefighters during emergency responses and training exercises. Some operational officers may hold specialized roles, such as training officers (who are responsible for coordinating drills and certifications) and safety officers (who ensure compliance with safety protocols).
Volunteer (or paid on-call) firefighters	Volunteer (or paid on-call) firefighters make up the primary workforce of a volunteer fire department. These personnel respond to emergency calls, participate in training, and participate in community outreach initiatives. In some fire departments, recruits serve as probationary firefighters during their initial evaluation process.

A fire department may also have various support staff, such as:

- administrative assistants for clerical duties
- a public information officer to manage media and community relations
- personnel responsible for maintenance and logistical duties, such as ensuring that equipment and vehicles remain operational

Findings

The Department currently consists of the following 115 personnel:

- 1 fire chief
- 1 deputy fire chief
- 1 administrative assistant

- 4 platoon chiefs
- 20 suppression captains
- 88 firefighters

Figure 10 illustrates the Department's current organizational structure, indicating the roster assignments for each fire station.

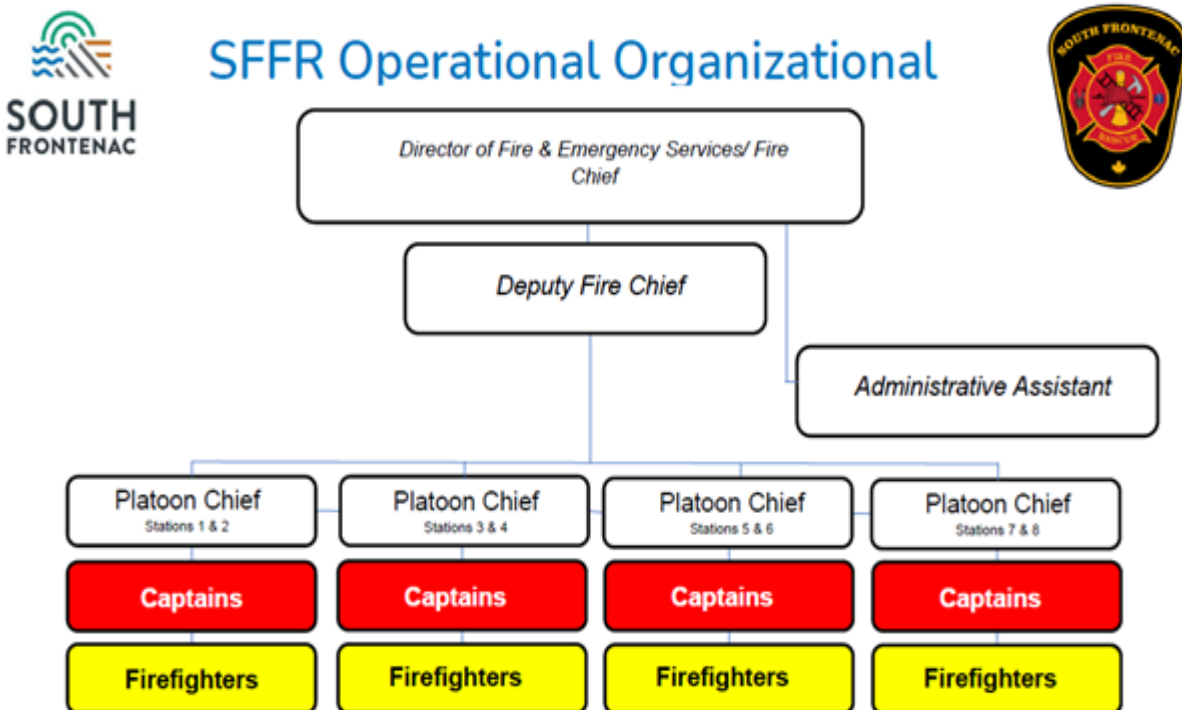


Figure 10. Organizational structure of South Frontenac Fire & Rescue.

12.3 Roadmap for Improvement

Acting Roles for Platoon Chiefs and Captains

An organizational structure is the foundation for leadership, organization, and team development. Having clearly defined leadership roles supports operational efficiency and empowers personnel to take an interest in their professional growth. Moreover, it is essential for all members of a fire department to understand their responsibilities, as this will help maintain accountability at every level of the organization.

Going forward, the Department should consider introducing acting roles for its platoon chief and captain positions. Doing so will provide potential leadership personnel with valuable experience, and it will also support leadership development and ensure operational continuity as the Department's leadership structure evolves over time (due to position vacancies or personnel turnover).

The Department should also continue to ensure that platoon chiefs receive initial and ongoing training and mentorship opportunities, as well as access to necessary equipment.

12.4 Recommendation

Recommendations regarding the fire department structure in South Frontenac are as follows:

- 12-1. The Fire Chief should continue to support South Frontenac Fire & Rescue's platoon chiefs by ensuring they receive initial and ongoing training, as well as mentorship and access to necessary equipment.
- 12-2. The Fire Chief should consider establishing acting platoon chief and captain positions as part of South Frontenac Fire & Rescue's succession planning.

13.0 Fire Stations and Related Facilities

13.1 Overview

A fire station assessment is conducted in order to determine whether a fire station is likely to support its fire department's current and anticipated operations.

There are several key factors that all fire station assessments should consider, such as:

- size of facility
- building features
- age and condition of facility
- building capacity
- resources to support various administrative operations

The size of a fire station is of primary importance. In order to provide effective fire protection services, a fire department requires a station with appropriate space, functionality, and accessibility features.

Fire departments also need stations that are easy to renovate or furnish with new technology or equipment. Having a fire station that is easily adaptable will help support a fire department as it grows or begins offering new services.

The age of a fire station is another important consideration. Often, older fire stations are unable to undergo significant renovations or accommodate new equipment, such as updated health and safety systems. In many municipalities, budgeting concerns have impacted the ability to keep the systems in older buildings up to date. For example, it is common for older fire stations to have poor or failing lighting and HVAC systems.

The design of older buildings may also fail to meet current legislative requirements, such as the AODA or disaster-proof construction legislation.

The results of a fire station assessment can help a fire department decide whether its station is likely to support its needs or whether it is time to renovate or replace an existing facility.

13.2 Fire Station Functionality

Context

A fire station is a critical hub that must offer a fire department with the functionality it needs to operate efficiently and meet community needs.

Table 32 lists the operational areas that a fire station supports, as well as the aspects of a fire station that are relevant to each area.

Table 32. Operational areas supported by a fire station.

Operational Area	Relevant Aspects of Fire Station
Emergency response	• Apparatus bays that house fire trucks and rescue vehicles • Dispatch and alert systems • Turnout gear storage (to support rapid deployment)
Training and personnel support	• Dedicated training rooms • Drill yards or towers for hands-on exercises • Fitness facilities
Administration	• Offices for leadership personnel and staff members • Meeting rooms for planning and debriefing sessions • Systems for documentation and regulatory compliance
Community engagement	• Public access areas for tours and education • Event spaces for open houses, safety demonstrations, and recruitment activities
Logistical operations	• Workshops for equipment repairs • Storage rooms for essential supplies • Decontamination areas to keep gear and vehicles clean and safe

Fire stations should also have the features needed to meet applicable accessibility needs, such as the requirements outlined in the AODA. The intention of the AODA is to improve accessibility features in all public establishments in Ontario by 2025. Fire stations are publicly funded buildings, which means they should be accessible and inclusive spaces for all members of the public and staff. However, many fire departments in Ontario are operating from stations that were constructed before the requirements of the AODA took effect. Consequently, numerous fire departments do not have facilities that meet current accessibility requirements.

Findings

As of this FMP, the Department has eight fire stations. In 2025, South Frontenac completed a facility conditions assessment for each of the Department's fire stations.

Table 33 shows the locations of the Department's stations, as well as the number of personnel and apparatus assigned to each site (excluding the Fire Chief, the Deputy Chief, the platoon chiefs and the administrative assistant).

Table 33. Fire station locations and staffing levels in South Frontenac.

Station	Address	# of Staff	# of Apparatus
Station 1 – Bradshaw	11 Steele Road Tichborne, ON	15	4
Station 2 – Burrridge	237 Burrridge Road Tichborne, ON	7	5
Station 3 – Verona	6930 Road 38 Verona, ON	13	3
Station 4 – Hartington	4808 Holleford Road Harrowsmith, ON	18	8
Station 5 – Sydenham	4223 Stage Coach Road Sydenham, ON	17	3
Station 6 – Perth Road	5582 Perth Road Crescent Perth Road, ON	10	4
Station 7 – Inverary	3516 Latimer Road Inverary, ON	14	3
Station 8 – Battersea	4490 Battersea Road Inverary, ON	15	4

13.3 Fire Station Details

Information about each of the Department's fire stations is provided in the subsections below.

13.3.1 Station 1 – Bradshaw

Station 1 – Bradshaw was constructed in 1980, and it is located in the northwest portion of South Frontenac. As of this FMP, the station has a staffing complement of 15 personnel, and it houses a mini pumper, a tanker, a light response vehicle, and a boat.

Figure 11 shows the exterior of Station 1 – Bradshaw.



Figure 11. Exterior of Station 1 – Bradshaw.

In terms of size, Station 1 – Bradshaw has a relatively limited amount of apparatus floor space in relation to the number of vehicles currently housed at the station. The facility also has limited space available for firefighter training activities, which may restrict the Department's ability to conduct certain on-site training, equipment familiarization, and skill development functions at this location.

Additionally, the PPE at Station 1 – Bradshaw is located on the apparatus floor. Keeping the PPE in this area exposes it to various contaminants, such as the exhaust that is emitted from the fire apparatus.

13.3.2 Station 2 – Burrridge

Station 2 – Burrridge was constructed in 1970, and it is located in the northeast portion of South Frontenac. As of this FMP, the station has a staffing complement of seven personnel, and it houses a pumper, a tanker, a light response vehicle, and an ATV on a trailer.

Figure 12 shows the exterior of Station 2 – Burrridge.



Figure 12. Exterior of Station 2 – Burrige.

The layout of Station 2 – Burrige is similar to Station 1 – Bradshaw. In terms of size, the Burrige station was designed to house two fire apparatus, but there are currently three types of fire apparatus and a utility trailer kept at the station. The Department's bunker gear is also stored on the apparatus floor area.

Station 2 – Burrige has a radio tower that supports 50 per cent of South Frontenac's communication signal. However, the station lacks a backup generator to support this piece of critical infrastructure.

13.3.3 Station 3 – Verona

Station 3 – Verona was constructed in 1998, and it is located in the mid-west portion of South Frontenac (in the village of Verona). As of this FMP, the station has a staffing complement of 13 personnel, and it houses a pumper, a tanker, and a light response vehicle.

Figure 13 shows the exterior of Station 3 – Verona.



Figure 13. Exterior of Station 3 – Verona.

Station 3 – Verona poses challenges that are similar to the issues found at some of the Department’s other fire stations. For instance, Station 3 – Verona was built to house a total of two fire apparatus, but the station currently houses three vehicles. However, this station has a training room (shown in Figure 14) where the Department can conduct theory training.



Figure 14. Training area at Station 3 – Verona.

13.3.4 Station 4 – Hartington

Station 4 – Hartington was constructed in 1958, and it is located along Highway 38 (between the villages of Harrowsmith and Hartington). As of this FMP, the station has a staffing complement of 18 personnel, and it houses a pumper, a tanker, a rescue vehicle, two light response vehicles, one mobile air filling station, and a wildland firefighting trailer.

Figure 15 shows the exterior of Station 4 – Hartington.



Figure 15. Exterior of Station 4 – Hartington.

Station 4 – Hartington is the oldest of the eight fire stations in South Frontenac, and the age and condition of the building both indicate that a new facility will need to be built in the near future.

In addition to the problems that have resulted due to the age of the building, there are several challenges at Station 4 – Hartington that are similar to the issues affecting some of the Department's other fire stations. For instance, the apparatus floor area is too small to house the number of vehicles that need to be kept at the station for emergency responses (as shown in Figure 16).



Figure 16. Station 4 – Hartington apparatus floor area.

Station 4 – Hartington also lacks the space to store PPE properly, which means the gear is stored on the apparatus floor, where it is exposed to the contaminants produced by diesel exhaust.

Figure 17 shows the proximity of the stored PPE to the fire apparatus.



Figure 17. PPE storage at Station 4 – Hartington.

13.3.5 Station 5 – Sydenham

Station 5 – Sydenham was constructed in 1972, and it is located in the south/central portion of South Frontenac (in the village of Sydenham). As of this FMP, the station has a staffing complement of 17 personnel, and it houses a pumper, a tanker, and a light response vehicle.

Figure 18 shows the exterior of Station 5 – Sydenham.



Figure 18. Exterior of Station 5 – Sydenham.

Station 5 – Sydenham was built to house three fire apparatus, and, as of this FMP, three vehicles are assigned to the facility. As such, there appears to be enough room for the Department's personnel to move around the fire station safely. The PPE at the station is stored on proper racks (as shown in Figure 19), but it is still exposed to exhaust contaminants.



Figure 19. PPE storage at Station 5 – Sydenham.

Station 5 – Sydenham is well-positioned to support wildland fire responses and water operations. However, storage space at the facility is too limited to house the equipment needed to perform those services. This limitation reduces the Department’s ability to provide effective and efficient services to the community.

13.3.6 Station 6 – Perth Road

Station 6 – Perth Road was constructed in 2019, and it is located in the northeastern portion of South Frontenac. As of this FMP, the station has a staffing complement of ten personnel, and it houses a pumper, a tanker, a light response vehicle, and a fire boat.

Figure 20 shows the exterior of Station 6 – Perth Road.



Figure 20. Photos of Station 6 – Perth Road.

Station 6 – Perth Road is a modern facility. The station has three drive-through apparatus bays, and it meets all applicable OBC and AODA requirements. This station is also where the Department’s administrative staff is located.

The existing office space is adequate for the Department’s current staffing complement. However, there are emerging challenges that limit this station’s suitability for future staffing and administrative functions. Notably, the station does not have the capacity to accommodate additional personnel.

Furthermore, the station’s location in the eastern portion of South Frontenac limits its effectiveness as a base for administrative staff who may need to respond to incidents across South Frontenac. Due to its non-central location, staffing and deployment decisions—particularly those related to administrative or daytime response personnel—should not be tied to Station 6 – Perth Road. From an operational perspective, this station is not optimally positioned to support timely emergency responses across all of South Frontenac.

Station 6 – Perth Road has other limitations as follows:

- The Deputy Chief's office was converted from a storage room, reducing the available administrative storage for the station.
- The station lacks a proper storage area for equipment.

In terms of features, Station 6 – Perth Road has a training room that offers ample space. The building was also designed to be the Department's main PPE cleaning and storage facility, and it has washing machines, a PPE extractor, a PPE dryer (shown in Figure 21), and a bunker gear storage area.



Figure 21. PPE extractor and dryer at Station 6 – Perth Road.

Although Station 6 – Perth Road is a modern facility, and it is situated in a good location for responses in the eastern portion of South Frontenac, there are challenges. For instance, the office area can accommodate the current number of staff assigned to the Department, but there is not enough space to accommodate additional personnel. Another challenge is that a station situated in the eastern portion of South Frontenac is not an ideal site for a headquarters (administrative) fire station, as the location is not central.

13.3.7 Station 7 – Inverary

Station 7 – Inverary was constructed in 1990, and it is located in the southern portion of South Frontenac. As of this FMP, the station has a staffing complement of 14 personnel, and it houses a pumper, a tanker, and a light response vehicle.

Figure 22 shows the exterior of Station 7 – Inverary.



Figure 22. Exterior of Station 7 – Inverary.

Station 7 – Inverary is experiencing ongoing moisture and humidity challenges that may be affecting the condition of both the facility and the fire apparatus housed at the site. As of this FMP, South Frontenac is installing a new HVAC system to help mitigate the moisture and humidity challenges.

According to guidelines developed by Fire Underwriters Survey (“**FUS**”), a fire apparatus is typically expected to achieve an average service life of 20 years. The fire apparatus at Station 7 – Inverary currently appear to be reaching approximately 65 per cent of their anticipated service life, which presents potential concerns related to firefighter safety, apparatus reliability, and long-term cost efficiency.

In an attempt to reduce the humidity levels in Station 7 – Inverary, the Department has installed large industrial fans. Figure 23 shows the fire apparatus and the PPE storage area at Station 7 – Inverary. The image also shows one of the large industrial fans that the Department is using to address excess moisture.



Figure 23. Fire apparatus area at Station 7 – Inverary.

Station 7 – Inverary also presents challenges that are similar to the issues found at some of the Department's other fire stations. For instance, the station currently houses more vehicles than it was designed to accommodate. Another challenge is the layout of the facility, which can be described as a "cut-up interior."

From an operational standpoint, Station 7 – Inverary has a layout that presents some functional limitations when compared with some of the Department's other facilities. For example, the station does not currently have shower amenities, and there is no dedicated space designated for firefighter training activities. In addition, overall space within the facility is limited (as shown in Figure 24).



Figure 24. Office area at Station 7 – Inverary.

13.3.8 Station 8 – Battersea

Station 8 – Battersea was constructed in 2023, and it is located in the northeast portion of South Frontenac (in the village of Battersea). As of this FMP, the station has a staffing complement of 15 personnel, and it houses a pumper, a tanker, a rescue vehicle, a light response vehicle, and a reserve pumper.

Figure 25 shows the exterior of Station 8 – Battersea.



Figure 25. Exterior of Station 8 – Battersea.

Station 8 – Battersea contains one of the Department’s three PPE cleaning areas, which includes an extractor (shown in Figure 26) and a gear dryer.



Figure 26. PPE cleaning area at Station 8 – Battersea.

Station 8 – Battersea is the newest fire station in South Frontenac. After the station was constructed, the Department began using the site to conduct response responsibilities that were previously managed from the Burnt Hills Road location.

Station 8 contains three drive-through apparatus bays, and it is approximately 7,600 sq. ft. The facility uses energy-efficient technology, including roof-mounted solar panels, LED lighting, and an air-source heat pump. The station also contains a large training room designed to support firefighter certification and training programs, as well as a firefighter wellness area and an air filling station.

13.4 Roadmap for Improvement

Fire Station Features

Many modern fire stations are designed to support the growing complexity and frequency of emergency responses, including a wider range of incident types and service expectations. Community growth and aging populations have contributed to higher call volumes, placing additional demands on fire departments and their facilities.

As service demands have increased, many older fire stations are no longer well-suited to support modern fire service operations. In addition to layouts that can limit operational efficiency and response effectiveness, older facilities often lack design features now commonly incorporated into contemporary fire stations to support firefighter health, safety, accessibility, and operational functionality. Several fire stations in South Frontenac experience challenges consistent with these broader trends.

Going forward, South Frontenac should continue to modernize its fire stations to ensure they align with current and future operational requirements. For example, incorporating contemporary building practices and infrastructure improvements will help ensure that facilities are capable of supporting the evolving service demands.

In addition to individual station improvements, the Department should consider establishing a centralized facility (or headquarters) to support its overall operations. This facility would serve the following functions:

- administrative facility
- response hub
- centralized storage and logistics area
- depot for specialized equipment

Strategic Planning and Fire Station Locations

Initial Considerations

Strategic planning is essential for a fire department's success. One key component of strategic planning is ensuring that fire stations are adequately maintained. Another key component is determining optimal fire station locations. Having fire stations placed in optimal locations will ensure timely responses, effective resource deployment, and long-term service sustainability.

Upon review, many of the current fire stations in South Frontenac need to be upgraded in order to meet firefighter safety standards and operational requirements. Some of the stations need to be replaced in the near future, while others requiring substantial repairs may also face eventual replacement.²⁷ The financial implications associated with this initiative are significant.

In order to support informed decision-making about its fire stations, South Frontenac should conduct a fire station location study ("**FSLS**"). This study should use data-driven analytics (such as call volumes, travel times, population distribution, growth projections, road networks, and risk profiles) to identify the most effective and efficient locations for fire stations in the community.

By evaluating multiple scenarios, the FSLS will provide a defensible, cost-effective framework to guide immediate and future infrastructure investments.

²⁷ As of this FMP, South Frontenac has closed one fire station and constructed two new facilities. The new facilities are Station 6 – Perth Road (constructed in 2019) and Station 8 – Battersea (constructed in 2023).

Completing an FSLS will provide information that will enable the Department to:

- Maximize coverage and minimize response times across the community.
- Improve coordination during large-scale and multi-station incidents.
- Align infrastructure investments with growth and risk trends.
- Identify opportunities for the consolidation or relocation of existing stations.
- Ensure long-term cost efficiency and service sustainability.

During the FMP development process, projections related to fire station replacements over the next five to ten years were considered. Based on the findings of this review, South Frontenac should consider establishing its next fire station in a central location, ideally within or near a population centre. However, this decision should be supported by the findings of the FSLS. This validation will help ensure that the fire station provides the greatest overall improvement to the Department's response performance and coverage.

In terms of features, any proposed fire station must provide reliable access to water, and it must have strong power and communications infrastructure. The facility must also be designed in a way that can support the Department's growth over time.

By integrating an FSLS into the strategic planning process, South Frontenac can ensure that future capital investments are defensible and aligned with community risks and service expectations. This alignment will help maintain operational effectiveness and fiscal responsibility.

Renovation and Technological Considerations

Several fire stations in South Frontenac should be replaced, and the remaining stations should be updated to include new systems, technologies, or features.

For instance:

- The Department should explore ways to protect the safety of its firefighters by reducing the number of contaminants that accumulate in the stations due to diesel exhaust.
- The Department should consider installing gender-neutral showers and washroom facilities (where possible).

13.5 Recommendations

Recommendations regarding the fire stations and related facilities in South Frontenac are as follows:

- 13-1. South Frontenac should conduct a fire station location study to determine optimal sites for fire stations in the community (based on the considerations of efficiency, effectiveness, and fiscal responsibility). The study should also validate the need for a consolidated station in a central location, identifying the most appropriate site for that facility.
- 13-2. As part of its ongoing facilities condition assessment program, South Frontenac Fire & Rescue should continue to use the annual budgeting process to secure and allocate funding for routine facility maintenance and planned capital upgrades.

14.0 Water Supply

14.1 Overview

In the context of fire suppression, a water supply can be a municipal water supply (which is found in hydrant-protected areas) or a rural water supply (which is found in areas without fire hydrants).

Fire departments must remain aware of which water supplies are available in their communities, as a reliable water supply is essential for delivering effective fire suppression services.

14.2 Hydrant Protected Areas

Context

In hydrant-protected areas, municipal water and distribution systems provide the water supply that firefighters use for emergency responses. These systems must have the capacity to provide firefighters with a water supply that has a sufficient flow for firefighting operations, and they must be able to support the local distribution system (including fire hydrants).

Municipalities are responsible for fire pump flow testing, hydrant testing, repairs, and replacements. In addition, a municipality must ensure that its fire hydrants adhere to the following standards:

- NFPA 291, *Recommended Practice for Water Flow Testing and Marking of Hydrants*
- OFC, section 6.6.3.5 (regarding fire pump flow tests)
- OFC, section 6.6.4 to 6.6.6 (regarding hydrant condition, inspection, and markings)

Table 34 shows the fire hydrant colour-coding scheme outlined in NFPA 291, *Recommended Practice for Water Flow Testing and Marking of Hydrants*. The NFPA colour scheme helps fire crews identify the amount of fire flow they can expect from a given hydrant. This visual indication allows firefighters to arrive at an incident site and quickly verify if there is enough water to complete the necessary response services. The colour-coding scheme also ensures that fire crews can make decisions about increasing the water supply by attaching it to another hydrant (if needed).

Table 34. Colour classifications for municipal hydrants (per NFPA 291).

Class	Top and Nozzle Colour	Barrel Colour	Fire Flow	Pressure
AA	Light Blue	Chrome Yellow	1,500 gpm (5,680 L/min or greater)	20 psi (140 kPa)
A	Green	Chrome Yellow	1,000 to 1,499 gpm (3,785 to 5,675 L/min)	20 psi (140 kPa)
B	Orange	Chrome Yellow	500 to 999 gpm (1,900 to 3,780 L/min)	20 psi (140 kPa)
C	Red	Chrome Yellow	500 gpm (1,900 L/min or less)	20 psi (140 kPa)

Figure 27 shows an example of a fire hydrant that is painted according to the colour scheme outlined in NFPA 291.



Figure 27. Fire hydrant painted according to the NFPA 291 colour code.

Findings

The Sydenham area is the only part of South Frontenac that is equipped with a pressurized hydrant system. This system is managed and maintained by Utilities Kingston.

Figure 28 illustrates the water distribution system in the hydrant-protected area of South Frontenac.

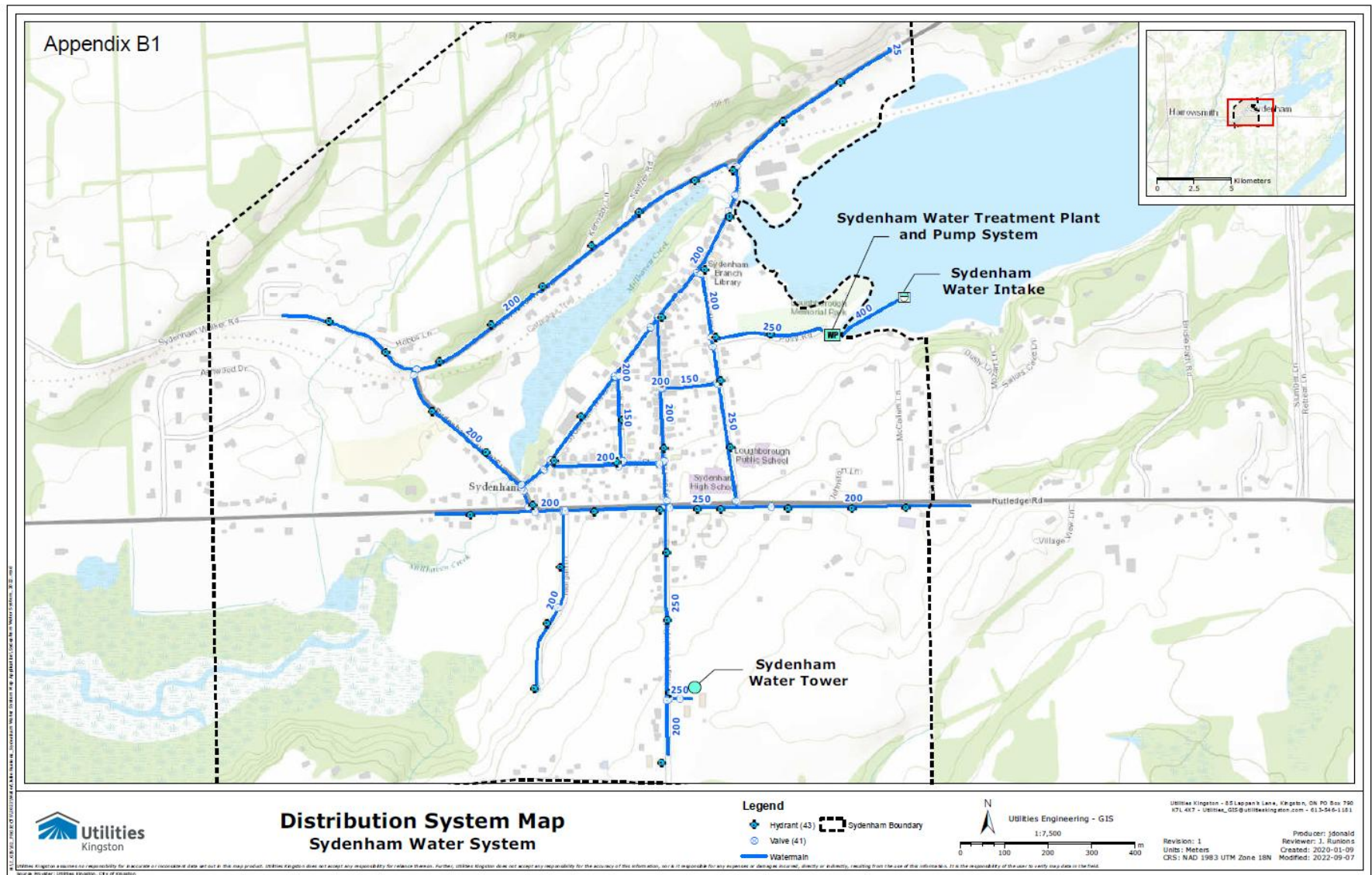


Figure 28. Sydenham water system distribution map.

In addition to the pressurized hydrant system, South Frontenac operates a drinking water network that includes 43 dry-barrel hydrants. All hydrants are colour-coded according to their flow capacity (gallons per minute), with blue indicating the highest rating of more than 1,500 gallons per minute. In Sydenham, there are only two hydrants that do not have this blue rating. Both of those hydrants are rated green, which means they are capable of a flow capacity between 1,000 and 1,499 gallons per minute.

Utilities Kingston conducts an annual flushing of all of its hydrants in order to ensure proper operation and clear distribution lines throughout the water system. As part of its maintenance responsibilities, City of Kingston also tests and services the hydrants in Sydenham on a regular basis to ensure they remain in optimal working condition.

14.3 Non-Hydrant-Protected Areas

Context

Section 3.2.5.7 (1) of the OBC states, “An adequate water supply for firefighting shall be provided for every building.”

When fire departments respond to emergencies in areas without fire hydrants, they must use an alternate water source to provide fire suppression services. Dry hydrants and tankers are both common alternative water sources that fire departments can use to meet the requirements of the OBC.

Dry hydrants provide fire departments with a water supply culled from rivers, lakes, ponds, or storage tanks. Many fire departments that respond to calls in non-hydrant-protected areas rely on dry hydrants.

A tanker is a type of fire apparatus that can transport water to non-hydrant-protected areas.

Findings

As of this FMP, South Frontenac has seven dry hydrants that supply water in non-hydrant-protected areas of the community. The dry hydrants are installed at the following locations:

1. 3793 Road 38 (Murvale Creek, Harrowsmith)
2. Quarry Road (end of Quarry Road, Hartington)
3. Desert Lake Road (bridge in between Rock Lake and Howes Lake, Verona)
4. Meredith Land (off Bauder Road, off Desert Lake Road, Verona)
5. Westport Road (Wolfe Lake, Burridge)
6. 4737 Perth Road (Loughborough Lake Bridge, Perth Road)
7. Oak Bluff Road (by Crow Lake, north end)

Upon review, the dry hydrant that is located on Fire Access Road (Perth Road) is not accessible and the dry hydrant located on Perth Road (at Loughborough Lake Bridge) is currently out of service. The dry hydrants are not inspected annually, and they are not recognized by FUS.

In addition to dry hydrants, the Department uses various lakes and rivers to maintain a year-round water supply for firefighting purposes.

14.3.1 Superior Tanker Shuttle Accreditation

Context

The Superior Tanker Shuttle Accreditation program is offered by FUS, and it is available for fire departments that meet the following criteria:

- The fire department can maintain a minimum water supply of 200 gallons/minute for a two-hour duration for residential properties up to 8 km away from a fire station.
- The fire department can maintain a minimum water supply of 500 gallons/minute for a two-hour duration for commercial properties up to 5 km away from a fire station.

Overall, a fire department with Superior Tanker Shuttle Accreditation is equipped to provide a sustainable water supply, enhancing firefighter and resident safety at fires. However, obtaining and maintaining Superior Tanker Shuttle Accreditation can be a challenge in areas that lack municipal water infrastructure.

In order to uphold its Superior Tanker Shuttle Accreditation, a fire department must demonstrate a high level of organization and operational readiness through regular practice, testing, and documentation that confirms the ability to deliver water volumes exceeding the minimum requirements for municipal-type hydrant systems.

One benefit of a tanker service is that it may lead to reduced costs for a community's residents. Many insurance providers offer reduced fire insurance premiums in communities that have fire departments with Superior Tanker Shuttle Accreditation.

Findings

The Department obtained its Superior Tanker Shuttle Accreditation in July 2022. In order to achieve the accreditation, the Department performed the water shuttle accreditation test and was able to ensure flowing water at a rate of 804 IGPM (3,655 LPM). This water flow rate allowed the Department to pass both the residential and industrial certification tests.

Because the Department has obtained its certification, residents and property owners in South Frontenac have a substantial discount on their fire insurance if their property is within 8 km of a fire station (for residential properties) or 5 km of a fire station (for commercial properties).

It is important to note that the Department's accreditation excludes Station 1 – Bradshaw and Station 2 – Burridge due to their locations. In addition, the Department's certification will expire in July 2027.

14.4 Roadmap for Improvement

Managing Long Laneways

As a way to support effective emergency responses and enhance the Department's operational readiness, the Fire Chief should consider implementing a program to identify and manage long laneways within South Frontenac. These extended access routes present significant challenges to establishing and sustaining an adequate water supply during fire incidents. These challenges are especially prevalent in rural and semi-rural areas where municipal hydrants are unavailable or located at substantial distances from the incident site.

Long laneways can delay the deployment of water shuttle operations, increase hose lay distances, and restrict the ability of tankers and pumpers to access optimal dump and fill sites. In some cases, apparatus weight limits, narrow driving surfaces, limited turnaround areas, or poor road conditions may further complicate water delivery, which can negatively impact fireground operations.

By proactively mapping and assessing long laneways, the Department can better understand water supply limitations and develop mitigation strategies. Examples of potential strategies are as follows:

- pre-incident planning
- identification of suitable nurse tanker or relay pump locations
- improved signage for water sources
- coordination with property owners regarding driveway improvements or alternative access points

Incorporating laneway assessments into a broader water supply and pre-incident planning strategy will help ensure that responding crews have the information and resources needed to establish reliable water supply operations safely, efficiently, and without unnecessary delays.

Dry Hydrant Study

In order to strengthen its water supply planning and support effective fire suppression efforts, South Frontenac should consider commissioning a dry hydrant water supply study. This study should help identify strategic locations for installing dry hydrants throughout the community. Installing dry hydrants would improve the Department's access to reliable and sustainable water sources in areas that are not served by pressurized water systems. The study should also include the establishment of standards for the ongoing inspection and maintenance of all water supply assets. Having these standards should ensure the long-term reliability of those assets.

The water supply study could also evaluate potential dry hydrant locations that may provide operational benefits to neighbouring fire departments. Installing dry hydrants at shared or strategically located water sources may create opportunities for enhanced regional collaboration. Where mutually beneficial sites are identified, the feasibility of cost-sharing arrangements for installation, inspection, and long-term maintenance should be explored.

In order to ensure operational readiness, all existing dry hydrants—as well as any new dry hydrants installed as a result of the study—should be subject to a formal annual inspection and maintenance program. This program should verify accessibility, structural integrity, draft capability, signage visibility, and seasonal usability. The program should be accompanied by documentation to support training, pre-incident planning, and regulatory due diligence.

Once optimal dry hydrant locations and maintenance requirements are identified, the Fire Chief should present a report to Council for consideration as part of future capital and operational planning. The report should indicate possible installation sites, cost estimates, inspection/maintenance requirements, and an implementation plan that aligns with municipal budget cycles and long-term fire protection objectives.

14.5 Recommendations

Recommendations regarding the water supply in South Frontenac are as follows:

- 14-1. The Fire Chief should implement a program to identify and assess long laneways within South Frontenac. The program should focus on the impacts these laneways have on the local fireground water supply. In order to improve response efficiency and firefighter safety, applicable findings from the program should be integrated into pre-incident planning and South Frontenac Fire & Rescue's rural water supply strategy.
- 14-2. South Frontenac should conduct a water supply study that focuses on areas of the community that are not protected by a municipal hydrant system. The study should identify and prioritize optimal locations where dry hydrants can be located.

15.0 Fire Fleet and Equipment

15.1 Overview

A fire fleet and equipment management plan outlines the purchase, use, and upkeep of the various fire apparatus and equipment that a fire department uses during emergency responses and training. Fire departments require their fire apparatus and equipment to remain in good working condition so that they can provide services safely and effectively.

A comprehensive fire fleet and equipment management plan is essential to the success of a fire department's operations. The primary components of the plan include strategic planning, cost forecasting, and budgeting. The plan should also be integrated with a municipality's asset management plan.

15.2 Fire Fleet

Context

Firefighters respond to many kinds of emergencies, including fires, explosions, and motor vehicle collisions. In order to manage these situations safely and effectively, firefighters need an adequate and reliable fire fleet. A typical fire fleet consists of various specialized vehicles, such as pumpers, tankers, rescue vehicles, and aerials.

Purchasing a vehicle for a fire fleet is a significant investment. Due to these costs, it is crucial for fire departments to make sure they only purchase vehicles that are necessary for responding to the specific risks in their communities. Each type of vehicle serves a distinct purpose, and not every fire department requires every type of vehicle.

In addition to the initial purchase, the ongoing maintenance and eventual replacement of the vehicles in a fire fleet can be costly. Because fire fleets are used to complete tasks in extreme conditions, the vehicles require regular maintenance to ensure they remain operational. Therefore, municipalities must budget for both the upkeep and the replacement of their fire fleets.

Despite the financial and time commitments involved in purchasing and maintaining a fire fleet, it is essential for every municipality to ensure that its fire department has the vehicles it needs to mitigate and resolve emergencies in the community.

Findings

As of this FMP, the Department maintains a fire fleet that includes the following vehicles:

- eight pumpers

- eight tankers
- two rescues
- eight rapid response units
- one mini-pumper
- three marine units (two aluminum boats and one inflatable boat)

The Department also has various small vehicles that it uses to provide both emergency and non-emergency services.

15.2.1 Safety Standards

Context

Over the years, the vehicles used by the fire service have undergone considerable changes. For example, modern vehicles are generally larger than older models, and they have significantly more advanced technology. In addition, many types of older vehicles do not possess important features mandated by current regulations, such as anti-lock braking systems and roll stability control.

Due to changes in construction materials and onboard features, the vehicles in a modern fire fleet must comply with stricter safety standards than their older equivalents. These safety standards are outlined in various legislative documents, such as:

- the OHSA
- NFPA 1901, *Standard for Automotive Fire Apparatus*
- NFPA 1912, *Standard for Service Tests of Fire Pump Systems and Fire Apparatus*
- ULC S515-04: *Automotive Fire Fighting Apparatus*

Before purchasing any new vehicles for their fire fleets, municipalities and fire departments should carefully review all relevant laws and safety standards. This review is a crucial part of the planning and budgeting discussions that should take place during the development of an asset management plan.

By budgeting for the replacement of vehicles at the appropriate times, fire departments can protect the health and safety of their firefighters and maintain service levels in their communities.

Findings

When purchasing a vehicle for its fire fleet, the Department ensures that the new fire apparatus meets the requirements of all relevant legislation and standards.

15.2.2 Inspections, Testing, and Maintenance

Context

A fire fleet must undergo weekly and annual inspections, tests, and maintenance in order to ensure that each vehicle can start and operate properly whenever an emergency occurs. This level of servicing involves the following tasks:

- checking and adjusting brakes
- making lubrication and oil changes
- completing annual pump tests
- completing non-destructive ladder tests
- completing Ministry of Transportation inspections

Ongoing vehicle maintenance is imperative to the success of a fire department's operations. If the vehicles in a fire fleet cannot pass routine maintenance requirements (such as pump testing and regular valve replacements), a municipality and its firefighters are at risk of safety and liability concerns.

As a result of routine upkeep, each vehicle in a fire fleet will be out of service for several days a year in order to undergo scheduled maintenance. In addition, many types of servicing cannot be performed in-house. For example, fire departments usually need to hire mechanics with specialized training to inspect and repair safety systems, pollution control systems, and engine and driveline systems. In years past, a mechanically skilled firefighter could have performed those tasks, but the complex technology in modern vehicles has made it necessary to contract specialized assistance. Advanced maintenance work may also require certain vehicles to be taken out of service for extended periods.

Findings

The Department has established a maintenance and repair program to keep its various fire apparatus ready to respond to an emergency call at any given time.

Minor maintenance work can be completed by the Department's firefighters at their fire stations. If one of the Department's firefighters identifies a problem with one of the vehicles, the firefighter reports the issue to the platoon chiefs. The Fire Chief is then informed, and the problem is scheduled to be repaired accordingly.

All major maintenance, repairs, and safety testing required by the Ministry of Transportation are completed by a third-party mechanic in Kingston. Annual pump testing is completed by a third-party company.

15.2.3 Testing Schedule for Older Vehicles

Context

The age of the vehicles in a fire fleet significantly influences the level of maintenance, testing, and inspection that is necessary to keep those vehicles operational.

There are several standards that fire departments can use to assess the functionality of the vehicles in their fire fleets. As noted above, these standards include NFPA 1901, NFPA 1912, and ULC S515-04. Fire departments can also review the performance standards and technical updates developed by FUS. These standards are designed to help fire departments manage their fire fleets effectively, especially as vehicles age and become less reliable.

In 2004, Canada adopted ULC S515-04 as a national standard. This standard (and the related technical guidelines) provides fire departments with valuable information for assessing and replacing the vehicles in their fire fleets. Adhering to this standard can help a fire department maintain effective service levels both now and in the future.

FUS has developed a testing schedule that fire departments can reference in regard to used or rebuilt vehicles. This schedule (shown in Table 35) offers a framework for evaluation, and it can be used to identify deficiencies in vehicles that are over 20 years old.²⁸

Common concerns for older vehicles may include the following issues:

- slower acceleration speeds
- reduced braking capability
- structural weaknesses (due to load wear on the chassis and extended use of the pump system)

By resolving vehicular issues, a fire department can help protect the safety of its firefighters and the community it serves.

²⁸ This table is adapted from a technical bulletin produced by FUS called “Insurance Grading Recognition of Used or Rebuilt Fire Apparatus.”

Table 35. Tests required to meet industry standards and insurance requirements.

Reason for Testing ²⁹	Test at Time of Purchase (New or Used)	Testing on an Annual Basis	Testing at 15 Years	Testing at 20 Years ³⁰	Annual Testing at 20 to 25 Years	Testing After Extensive Repairs ³¹
Recommended for fire insurance purposes	Acceptance test ³² if new Service test ³³ if used and over 20 years old	Service test	Acceptance test	Acceptance test	Acceptance test	Acceptance or service test depending on extent of repair
Required for fire insurance purposes	Acceptance test if new Service test if used and over 20 years old	No test required	No test required	Acceptance test	Acceptance test	Acceptance or service test depending on extent of repair
Factor in FUS grading	Yes	Yes	Yes	Yes	Yes	Yes
Required by listing agency	Acceptance test	No	No	No	N/A	Acceptance test
Required by NFPA ³⁴	Acceptance test	Annual service test	Annual service test	Annual service test	Annual service test	Service test

²⁹ Refer to “Service Tests for Used or Rebuilt Fire Apparatus” (in the FUS technical bulletin “Insurance Grading Recognition of Used or Rebuilt Fire Apparatus”) for a description of applicable tests.

³⁰ Apparatus older than 20 years may not be eligible for insurance grading purposes regardless of testing. Application must be made in writing to FUS for an extension of the gradable life of the apparatus.

³¹ After extensive repairs, testing should occur regardless of apparatus age (within reason).

³² Acceptance tests consist of a 60-minute capacity test and a 30-minute pressure test.

³³ Service tests consist of a 20-minute capacity test and a 10-minute pressure test (in addition to other listed tests).

³⁴ For information on acceptance tests, see NFPA 1911, *Standard for Automotive Fire Apparatus*. For information on service tests, see NFPA 1911, *Standard for Service Tests at Fire Pump Systems on Fire Apparatus*, Article 5.1.

Findings

The Department's commitment to maintaining operational readiness is demonstrated through its ongoing testing and evaluation of its fire apparatus. Regular inspections, performance assessments, and preventative maintenance protocols ensure that each vehicle meets safety standards and is capable of responding effectively to emergency calls when they are received. Some of the evaluations the Department conducts are as follows:

- annual safety inspections
- annual pump testing
- annual ladder inspections
- compliance with manufacturer and regulatory requirements

Based on the findings obtained by the Department's assessments, the fire fleet in South Frontenac is in good operational condition. Identified deficiencies are addressed promptly through repairs or equipment upgrades.

The Department's proactive approach to vehicle testing is useful for extending the service life of its various types of apparatus, and it also helps enhance firefighter safety and public confidence. The continued documentation and analysis of the fleet's performance can help the Department make informed decisions regarding future replacements, upgrades, and capital planning. The Department should keep taking this approach in order to remain equipped to meet the evolving needs of the community.

15.2.4 Fleet Renewal and Rationalization

Context

A fire fleet assessment can begin with the following considerations:

- What types of apparatus comprise the current fire fleet?
- What types of responses does the fire department make?
- What are the fire department's available staffing levels for responses?

A fire department should keep these considerations in mind because they will help identify which fire apparatus it should purchase to suit its current and expected needs. Once a fire department has identified which fire apparatus it is likely to need, it should work with its municipal council to develop a strategic plan that outlines an appropriate fleet replacement schedule. A fleet replacement schedule should consider several factors for each vehicle in the fire department's fire fleet.

The main factors to consider include:

- age of current vehicle
- availability of replacement parts
- number of engine hours
- safety features and reliability
- current costs of maintenance and servicing
- availability of replacement parts
- the features and technology of a current vehicle compared to a new vehicle

Every municipal council and fire department should strive to have a fire fleet that is applicable to their community's needs. The fleet must have the functionality to operate whenever it is needed, and it must have the reliability to operate with minimal breakdowns at an emergency scene or during a training session.

When it is time to replace a fire apparatus, the factors of applicability, functionality, and overall vehicle condition should also be considered. Various technologies that firefighters can use while operating a new vehicle should also be considered, as well as ways to protect the safety of the vehicle's occupants.

Fire departments can also reference material developed by FUS when developing an apparatus replacement plan. For example, in smaller communities, FUS will not recognize an apparatus that is more than 20 years old. However, FUS also recognizes the tremendous financial burden that buying fire apparatus places on municipalities. As such, FUS will allow a community to extend the life cycle of a used or rebuilt fire apparatus if the vehicle can pass the recommended annual tests and is deemed to be in excellent mechanical condition.

When it is time to replace a fire apparatus, FUS recommends following the CAN/ULC-S515-13 standard, which was developed by the Underwriters Laboratories of Canada. This standard, titled the "Standard for Automotive Fire Fighting Apparatus," has been adopted as a national standard of Canada. Table 36 presents the fleet replacement schedule that has been developed by FUS. The table's content and footnotes are sourced directly from FUS, as written by SCM Risk Management Services.³⁵

³⁵ "Insurance Grading Recognition of Used or Rebuilt Fire Apparatus," Fire Underwriters Survey.

Table 36. Fire apparatus replacement for fire insurance grading purposes.

Apparatus Age	Major Cities ³⁶	Medium Sized Cities ³⁷ or Communities Where Risk is Significant	Small Communities ³⁸ and Rural Centres
0-15 years	First line	First line	First line
16-20 years	Reserve	Second line	First line
20-25 years ³⁹	No credit in grading	No credit in grading or reserve ⁴⁰	No credit in grading or reserve ⁴⁰
26-29 years ⁵²	No credit in grading	No credit in grading or reserve ⁴⁰	No credit in grading or reserve ⁴⁰
30+ years	No credit in grading	No credit in grading	No credit in grading

Most municipalities develop fleet replacement plans for five- or ten-year timeframes. In order to be realistic, the plans must account for inflation rates. Some price fluctuations are due to heightened material and labour costs. Other price changes are due to supply chain issues.

Due to inflation rates, suppliers may reserve the right to increase the amount they charge customers for a new apparatus, even if a customer has a fixed-price contract or has pre-ordered an apparatus.

³⁶ Major Cities are defined as an incorporated or unincorporated community that has:

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

³⁷ Medium Communities are defined as an incorporated or unincorporated community that has:

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

³⁸ Small Communities are defined as an incorporated or unincorporated community that has:

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

³⁹ All listed fire apparatus 20 years of age and older are required to be service tested by recognized testing agency on an annual basis to be eligible for grading recognition.

⁴⁰ Exceptions to age status may be considered in a small to medium sized communities and rural centres conditionally, when apparatus condition is acceptable and apparatus successfully passes required testing.

Because inflation rates are difficult to predict with certainty, municipalities should include a contingency plan as part of their capital replacement budgets. Doing so can help a municipality manage potential price increases to its apparatus order. A capital contingency plan may also help a municipality set aside funds that it can use to offset apparatus maintenance and service costs.

Supply and demand can also affect fleet replacement schedules. As of this FMP, there is a backlog in truck orders due to supply chain disruptions that occurred during the COVID-19 pandemic. The result of the backlog is that protracted delivery times for new apparatus are possible. Due to this backlog, fire departments and municipalities should consider ordering their new apparatus at a time that accounts for possible delivery delays.

These challenges may also be compounded by new safety requirements issued by the Ministry of Transportation. In order to comply with safety requirements, fire departments must take their apparatus out of service for longer periods than previously required, which could strain their emergency response capabilities.

Findings

Table 37 lists the vehicles that comprise the Department's current fire fleet. The table also indicates the Department's current replacement schedule for each vehicle (based on information provided by the Fire Chief).

Table 37. Asset management plan for the fire fleet in South Frontenac.

Location	Asset Type	Asset Year	Est. Useful Life	Standard Replacement Year	Planned Replacement Year
Station 1	Mini pumper	2018	20	2038	2039
Station 1	Tanker	2004	25	2029	2029
Station 1	3/4-ton pickup truck	2021	10	2031	2031
Station 1	Marine unit	2024	25	2049	2049
Station 2	Pumper	2006	20	2026	2027
Station 2	Tanker	2004	25	2029	2029
Station 2	3/4-ton pickup truck	2022	10	2032	2032
Station 2	Marine inflatable	2002	15	2017	N/A

Location	Asset Type	Asset Year	Est. Useful Life	Standard Replacement Year	Planned Replacement Year
Station 2	ATV with trailer	2003	15	2018	2025
Station 3	Pumper	2003	20	2023	2025
Station 3	Tanker	2019	25	2044	2044
Station 3	3/4-ton pickup truck	2022	10	2032	2032
Station 4	Pumper	2011	20	2031	2031
Station 4	Tanker	2022	25	2047	2047
Station 4	Rescue truck	2012	25	2037	2035
Station 4	3/4-ton pickup truck	2018	10	2028	2028
Station 4	3/4-ton pickup truck	2003	10	2013	2025
Station 4	Forestry trailer	2004	20	2024	2046
Station 4	ATV with trailer	2007	15	2022	2040
Station 5	Pumper	2007	20	2027	2030
Station 5	Tanker	2012	25	2037	2037
Station 5	3/4-ton pickup truck	2015	10	2025	2025
Station 6	Pumper	2006	20	2026	2029
Station 6	Tanker	2023	25	2048	2048
Station 6	3/4-ton pickup truck	2021	10	2031	2031
Station 6	Marine unit	2001	25	2026	2032
Station 7	Pumper	2023	20	2043	2043

Location	Asset Type	Asset Year	Est. Useful Life	Standard Replacement Year	Planned Replacement Year
Station 7	Tanker	2024	25	2049	2049
Station 7	3/4-ton pickup truck	2021	10	2031	2031
Station 8	Pumper	2013	20	2033	2033
Station 8	Tanker	2013	25	2038	2038
Station 8	Rescue truck	2015	25	2040	2040
Station 8	3/4-ton pickup truck	2011	10	2021	2025
Administrative Fleet	Pickup truck	2024	8	2032	2032
Administrative Fleet	Pickup truck	2026	8	2034	2025

Upon review, the Department is using the FUS classification system as a guide for its fire fleet. The Department also refers to an asset management plan that South Frontenac completed in 2026. Both resources are used to establish the Department's fire fleet replacement program.

The Department's fire fleet replacement program is generally aligned with a 20-year service life for major types of fire apparatus, including pumpers and tankers. Smaller units and specialty vehicles (such as rescue vehicles and support equipment) are replaced on alternate life-cycle schedules that reflect their operational role, usage, and asset type.

Administrative and command vehicles (such as the Fire Chief's vehicle) are replaced on a shorter ten-year cycle, while other support vehicles (such as ATVs and boats) are managed on longer replacement timelines that are consistent with their usage and condition.

15.3 Fire Service Equipment

15.3.1 Life-Cycle Equipment and Systems

Context

In addition to various types of apparatus, firefighters rely on a range of equipment to perform their duties. Examples of fire service equipment are as follows:

- fire hoses and nozzles
- fittings
- ladders
- generators and lighting
- ventilation fans
- portable pumps
- saws
- gas detectors
- thermal imaging cameras
- various hand tools
- extrication equipment

Examples of other essential systems and equipment are as follows:

- radio communication systems
- emergency communications infrastructure, including radio towers and transmission equipment
- administrative systems, such as a records management system (“**RMS**”)

All equipment is considered part of a fire department’s assets. As a best practice, municipalities should keep track of the equipment their fire departments use, as this will assist with budget planning for any necessary repairs or replacements.

Findings

As of this FMP, the Department has a formalized life-cycle replacement schedule for fire hose, SCBA, and structural firefighting protective clothing (bunker gear). The Department does not have a similar replacement schedule for its small equipment inventory, but it does maintain an annual operating budget to replace lower-cost items that have reached the end of their service life or are no longer repairable. Under the current approach, most small equipment is replaced on an as-needed basis.

Higher-cost items (such as extrication equipment and SCBA equipment) are replaced when required through the regular capital budget process.

In order to support equipment readiness and reliability, the Department conducts monthly equipment inspections during dedicated hall maintenance nights. In addition, the fire hose is tested annually, and ladders are inspected and tested each year by a qualified third-party provider. These practices help ensure that the Department's equipment remains serviceable and compliant with applicable standards.

15.3.2 Radio Equipment

Context

Fire service personnel use radio communication systems to communicate with dispatch services, response agencies, and other responders at emergency scenes. Although purchasing, maintaining, and upgrading radio systems may require a significant level of capital investment, these systems are vital during emergency responses. Without effective radio communications, it is difficult for first responders to coordinate response efforts safely.

Findings

Several organizations interact with the Department, including fire crews from other municipalities in the County of Frontenac and the communities that are mutual aid partners with South Frontenac.

As of this FMP, a multicast platform is used to communicate information between organizations. Under this arrangement, each municipality is operating independently, which means that there is no county-wide communication system or true interoperability. In addition, because each fire department is responsible for its own communication system, some pieces of equipment have been in use for much longer than other systems. As a result, some pieces of equipment are over 25 years old. Due to the age of this equipment, replacement parts are becoming difficult to obtain, and repairs are becoming more difficult to manage.

In terms of service, the current coverage is supplied by different sites. This arrangement has caused "communication dead zones." One of the challenges is that a multicast system allows only for one site to transmit information at any given time. The terrain in South Frontenac also causes challenges with the current radio communication system. The geographic features of the region can cause poor coverage areas, which result in limited communication capabilities.

Due to the limited level of communication, mutual aid support can be difficult to coordinate, and fluctuating maintenance work is required. These issues can affect response times, and they can pose health and safety risks for the responding firefighters.

15.4 Roadmap for Improvement

Update the Fleet Rationalization Plan on a Regular Basis

The Department should implement a scheduled review cycle. The reviews should include annual or biannual updates that align with both the municipal budget process and long-range financial planning. Each update should reassess fleet composition, apparatus condition, life-cycle status, and replacement timelines. Based on this information, current market pricing, delivery forecasts, and operational requirements should be incorporated. This approach will ensure that the Department's fleet planning remains current, defensible, and responsive to internal needs and external pressures.

In order to ensure the continued reliability, safety, and cost-effectiveness of the Department's fire apparatus fleet, the Fire Chief should update the Fleet Rationalization Plan on a regular basis as part of an ongoing improvement process. Regular updates are essential to account for changing apparatus costs, extended manufacturing lead times, evolving operational demands, and the condition and performance of existing vehicles.

The updated plan should also integrate data from inspections, maintenance records, performance testing, and post-incident analyses. Incorporating this information will help ensure evidence-based decision-making. Doing so will also allow the Department to identify emerging risks, adjust its replacement priorities, and avoid unplanned apparatus failures or emergency purchases.

Testing Schedule for Older Fire Apparatus

The Department should implement a structured life-cycle evaluation and management program. Doing so will help the Department ensure compliance with the FUS standards for used and rebuilt fire apparatus. Implementing the program should also help to protect the safety of personnel and the reliability of emergency responses.

The scope of the program should focus on the early identification of mechanical and structural deficiencies that commonly emerge as apparatus age beyond their intended service life. The first step in this process should be the development of a formal inspection and testing schedule for apparatus that are over 20 years old, aligned with FUS recommendations and industry best practices.

Establishing consistent inspection intervals will provide a systematic process that the Department can use to assess vehicle condition rather than relying solely on reactive maintenance or visible failures.

Building on this foundation, the program should include regular performance-based assessments, such as acceleration, braking efficiency, steering response, suspension integrity, and pump system functionality.

These evaluations are critical for identifying deficiencies that may not be evident during routine inspections but can significantly affect apparatus performance during emergency operations. Early detection of these issues allows for timely corrective action, informed decision-making regarding refurbishment or retirement, and reduced risk of in-service failure.

Overall, this initiative is an essential way to maintain operational reliability, firefighter safety, and insurance grading outcomes. Also, a structured evaluation schedule supports defensible lifecycle management decisions, improves capital planning accuracy, and helps avoid unplanned apparatus downtime or emergency replacements.

Life-Cycle Maintenance and Replacement Program

In order to strengthen fire fleet management practices, regulatory compliance, and long-term financial planning, the Fire Chief should develop and implement a comprehensive life-cycle maintenance and replacement program for the Department.

Although funding is currently allocated annually to address repairs and equipment replacement as needs arise, a formalized and proactive program will enable the Department to manage assets more effectively while also maximizing safe service life and anticipating replacement requirements rather than responding reactively to equipment failures.

The life-cycle program should be fully aligned with the Department's Fleet Rationalization Plan. The plan should also be designed to ensure compliance with both FUS standards and the Ministry of Transportation's inspection and safety requirements. Aligning with these frameworks will ensure that maintenance and replacement decisions support operational readiness, firefighter safety, insurance grading considerations, and regulatory obligations.

The structure of the life-cycle program should include standardized inspection, maintenance, and performance evaluation schedules (based on manufacturer guidance, FUS expectations, and MTO requirements). By tracking equipment age, condition, usage, and compliance status, the Department will be better positioned to forecast future capital and operating budget needs, prioritize replacements, and reduce the risk of unexpected equipment failures or emergency purchases. This initiative will also help improve life-cycle cost management, support informed decision-making, and ensure the long-term sustainability of the Department's fleet and equipment.

In addition, the Department should formalize its equipment life-cycle management process by establishing planned replacement schedules for its small equipment (such as auto extrication equipment, chainsaws, hand tools, generators, and portable water pumps).

The replacement cycles should be incorporated into the Department's long-range financial plan, with routine replacement funding allocated through the operating budget (where appropriate). Higher-value life-cycle replacements should be planned through the capital budget.

Finally, the Department should use an RMS to track equipment inventories, inspection results, maintenance activities, and repair history. Doing so will further support a proactive approach to asset management while also improving budget accuracy and reducing the risk of unexpected equipment failures.

Radio System Upgrades

The Fire Chief should explore options for upgrading the current radio system in order to ensure reliable fire ground communications for the Department's firefighters.

As part of this initiative, the Fire Chief should engage a third-party radio communications company to help develop a report about the radio communication infrastructure in South Frontenac for Council's consideration.

15.5 Recommendations

Recommendations regarding the fire fleet and equipment in South Frontenac are as follows:

- 15-1. The Fire Chief should continue to update the South Frontenac Fire & Rescue Asset Management Plan by using current information from the fire department's Fleet Rationalization Plan.
- 15-2. As part of the ongoing asset management plan, Council should continue investing in the South Frontenac Fire & Rescue Fire Fleet Replacement Program, recognizing that this support is essential to maintaining a reliable, safe, and operationally appropriate fire fleet.
- 15-3. The Fire Chief should implement a formal life-cycle program that includes inspection programs, maintenance programs, and replacement schedules for South Frontenac Fire & Rescue's fire fleet and mission-critical equipment. The program should reference the South Frontenac Fire & Rescue Asset Management Plan.
- 15-4. The Fire Chief should prepare a report that outlines options for improving the radio communication infrastructure and equipment used by South Frontenac Fire & Rescue.

16.0 Documentation and Records Management

16.1 Overview

It is vital for every fire department to maintain up-to-date records about its response statistics, fire prevention, inventory, and maintenance efforts.

Proper records management ensures there is documentation to support the following administrative and operational needs:

- Proper records management provides evidence that the fire department, its fire chief, and its municipal council are meeting their legislative requirements.
 - For instance, accurate fire prevention records are crucial for ensuring that a fire department complies with local regulations.
- Thorough documentation can help a fire department reduce the risk of liability issues for itself and its municipality.
- A fire department can use documentation to complete strategic planning.
- Historical response data enables fire departments to analyze response times, identify service gaps, and justify staffing or funding needs. A fire department can also use this data to guide targeted community risk reduction efforts.
- Having a set of up-to-date inventories can support operational readiness by ensuring equipment is accounted for and serviceable. In addition, detailed fleet repair logs can help prolong the expected life cycle of an apparatus, and they can assist with scheduling preventative maintenance and controlling costs.

Best practices have shown that using a formalized RMS is the most efficient way of maintaining accurate records.

16.2 Records Management System

Context

All fire departments should use an electronic RMS in order to ensure critical information is kept organized and accessible. An effective electronic RMS can support:

- operational efficiency
- data-driven decision-making processes
- compliance and accountability
- training and certification tracking
- risk management and legal protection

Findings

As of this FMP, the Department is in the process of consolidating records that are currently maintained across multiple systems, including The Ontario Municipal Records Management System (“**TOMRMS**”) and SharePoint. (The Department also uses an RMS that is shared through Microsoft Teams. This system is called SharePoint. The Department also uses Microsoft Excel.) The purpose of this consolidation is to store all records in a centralized RMS platform. The Department’s goal is to improve data consistency, accessibility, and long-term record retention across all functional areas.

The Department has selected FirePro as its primary RMS. FirePro is purpose-built for the fire service, and it is suitable for paid on-call, composite, and full-time staffing models. Once the FirePro system is fully implemented, it will serve as a unified system for managing operational, training, asset, and incident-related information. Table 38 summarizes the Department’s current record-keeping practices for various information.

Table 38. Summary of record-keeping practices.

Type of Information	Record-Keeping Method
Operating guidelines	SharePoint
Hose testing	None (hoses that fail tests are removed)
Online training	- FirePro - SharePoint
Training records	- FirePro - SharePoint - Corporate file retention program - TOMRMS
Truck check records and truck maintenance records	SharePoint is used for maintenance-related records, but they are being transitioned to FirePro
Fire inspection statistics	None currently (FirePro can store these records)
Response statistics	FirePro
Asset records	- Microsoft Excel - Cartegraph
Fire response statistics	FirePro
Paid on-call firefighter payroll	FirePro

16.3 Written Documentation

Context

In order to maintain operational safety and effectiveness, a fire department should strive to have standardized processes. This consistency is especially important when a fire department has paid on-call personnel or a rotating roster of personnel.

Clearly documented safety protocols and equipment checklists are critical for reducing the risk of injuries and operational failures. Moreover, having written policies supports legal and regulatory compliance with provincial legislation, NFPA standards, and health and safety regulations. For example, written documents can serve as a legal safeguard if a fire department is audited or if there are questions about incidents or litigation.

From an operational perspective, a fire department can minimize confusion during high-stress incidents when all responding personnel follow the same procedures. Consistent training can also support operational cohesion. As such, documented SOGs and manuals are valuable resources that all personnel should be able to access. These documents are particularly valuable for recruits and part-time personnel who are completing training and other onboarding, as the documents will enable them to understand expectations and operational procedures quickly.

Consistent documentation also supports operational continuity and succession planning. Both of these areas are important for ensuring that a fire department can function effectively even in the absence of key personnel. Additionally, written maintenance protocols can ensure that all gear is kept ready for use through routine inspections. Maintenance protocols can also be used to track repairs and replacement purchases.

Finally, thorough documentation enables performance monitoring and continuous improvement by allowing a fire department to review past incidents and refine its policies based on lessons learned.

Findings

As of this FMP, the Department is in the process of enhancing and maintaining its RMS. The Department is completing this initiative as part of its commitment to improving the organization, accessibility, and security of critical documentation.

The Department is also focused on maintaining the sustainability and accountability of its records across all functions.

16.4 Roadmap for Improvement

Enhance the Usage of the Records Management System

In order to track, manage, and analyze vital information consistently, the Department should enhance and standardize the use of its current RMS. Fully leveraging the RMS will strengthen data integrity, improve accessibility, and support evidence-based decision-making across operational, training, and asset management functions.

Examples of the information that should be captured are as follows:

- apparatus and equipment inventories
- inspection and maintenance records
- training and certification data
- incident reporting
- asset life-cycle information

Establishing clear expectations for data entry, ownership, and quality control will reduce reliance on parallel systems and ensure information is complete, accurate, and readily retrievable. Enhanced RMS usage will also support alignment with Ontario's asset management planning requirements and municipal audit expectations by providing reliable, auditable records. Having these records will demonstrate due diligence and assist with life-cycle management and informed capital planning.

By strengthening RMS practices, the Department will improve transparency, support regulatory and audit readiness, and ensure critical information is available to support safe, efficient, and sustainable emergency response operations.

16.5 Recommendations

Recommendations regarding documentation and records management in South Frontenac are as follows:

- 16-1. In order to ensure the consistent tracking and management of critical departmental data, the Fire Chief should enhance, expand, and standardize the use of South Frontenac Fire & Rescue's records management system.

Appendix A: List of Abbreviations

AHJ:	authority having jurisdiction
AODA:	Accessibility for Ontarians with Disabilities Act
CISM:	critical incident stress management
Council:	Council of the Township of South Frontenac
CRA:	community risk assessment
CWFPP:	community wildland fire protection plan
Department, the:	South Frontenac Fire & Rescue
E&R bylaw:	establishing and regulating bylaw
EMCPA:	Emergency Management and Civil Protection Act, R.S.O. 1990
FMP:	fire master plan
FPPA:	Fire Protection and Prevention Act, S.O. 1997
FSLs:	fire station location study
FUS:	Fire Underwriters Survey
GIS:	geographic information system
ICS:	incident command structure
JHSC:	joint health and safety committee
NFPA:	National Fire Protection Association
NIST:	National Institute of Standards and Technology
OBC:	O. Reg. 332/12: Building Code
OFC:	O. Reg. 213/07: Fire Code
OFM:	Ontario Fire Marshal
OHSA:	Occupational Health and Safety Act, R.S.O. 1990
PEOC:	Provincial Emergency Operations Centre

PIAR:	post-incident analysis and review
PPE:	personal protective equipment
RMS:	records management system
SCBA:	self-contained breathing apparatus
SOG:	standard operating guideline
TOMRMS:	The Ontario Municipal Records Management System

Appendix B: References

- Aiken, Laura. "The Economics of Apparatus - Fire Fighting in Canada." Fire Fighting in Canada, October 27, 2022. <https://www.firefightingincanada.com/the-economics-of-apparatus/>.
- Barber, Katherine. *Canadian Oxford Dictionary*. Oxford University Press, 2004.
- Beetz, Jean, et al. "Laurentide Motels Ltd. v. Beauport (City) - SCC Cases." Supreme Court of Canada, n.d. <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/436/index.do>.
- Blackwell, T. H., and J. S. Kaufman. "Response Time Effectiveness: Comparison of Response Time and Survival in an Urban Emergency Medical Services System." *Academic Emergency Medicine* 9, no. 4 (2002): 288–95.
- Canadian Centre for Occupational Health and Safety. "Diesel Exhaust," June 13, 2023. https://www.ccohs.ca/oshanswers/chemicals/diesel_exhaust.html.
- Durlauf, Steven N., and H. Peyton Young. *Social Dynamics*. MIT Press, 2004.
- Earle, Richard B. Fire Apparatus Replacement: The Need for a Capital Plan. National Fire Academy, 1997. <https://apps.usfa.fema.gov/pdf/efop/efo27938.pdf>.
- Fire Underwriters Survey. "Insurance Grading Recognition of Used or Rebuilt Fire Apparatus," n.d. <https://fireunderwriters.ca/assets/img/FUS%20Technical%20Bulletin%20-%20Insurance%20Grading%20Recognition%20of%20Used%20or%20Rebuilt%20Fire%20Apparatus.pdf>.
- Government of Canada, Statistics Canada. "Census of Population," January 9, 2024. <https://www12.statcan.gc.ca/census-recensement/index-eng.cfm>.
- Haynes, Hylton J. G., and Gary P. Stein. *Canadian Fire Department Profile, 2014-2016, 2018*. <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/oscanada.pdf>.

-
- Health Canada. "Emergency Preparedness." Canada.ca, September 3, 2019.
<https://www.canada.ca/en/health-canada/services/health-concerns/emergencies-disasters/emergency-preparedness.html>.
- Jon's Mid America. "Should You Repair or Replace Your Old Fire Apparatus? Consider These 3 Factors," September 30, 2020. <https://jonsmidamerica.com/repair-replace-old-fire-apparatus-consider-3-factors/>.
- Legislative Services Branch. "Consolidated Federal Laws of Canada, Vessel Safety Certificates Regulations," June 23, 2021. <https://laws-lois.justice.gc.ca/eng/regulations/SOR-2021-135/>.
- McGree, Tucker. "U.S. Experience with Sprinklers." National Fire Protection Agency, April 1, 2024. <https://www.nfpa.org/education-and-research/research/nfpa-research/fire-statistical-reports/us-experience-with-sprinklers>.
- Medical Advisory Secretariat. "Use of Automated External Defibrillators in Cardiac Arrest: An Evidence-Based Analysis." Ontario Health Technology Assessment Series 5, no. 19 (2005): 1–29. <https://pubmed.ncbi.nlm.nih.gov/23074470>.
- Ministry of Labour, Training and Skills Development. "Firefighter's cancer prevention checklist." ontario.ca, October 30, 2020. <https://files.ontario.ca/mltsd-firefighter-cancer-prevention-checklist-en-10-30-2020.pdf>.
- Ministry of the Solicitor General. "Firefighter Certification." ontario.ca, January 28, 2022. <https://www.ontariocanada.com/registry/view.do?postingId=40668&language=en>.
- National Fire Protection Association. "Female Firefighter PPE: Investigation of Design, Comfort, and Mobility Issues for Female Firefighter Personal Protective Clothing," December 10, 2019. <https://www.nfpa.org/-/media/Files/News-and-Research/Resources/Research-Foundation/Current-projects/ProjectSummaryFemaleFirefighterPPE.ashx>.
- National Fire Protection Association. "List of NFPA Codes and Standards," n.d. <https://www.nfpa.org/Codes-and-Standards/All-Codes-and-Standards/List-of-Codes-and-Standards>.
-

National Fire Protection Association. *NFPA 1021, Standard for Fire Officer Professional Qualifications*, 2020.

National Fire Protection Association. *NFPA 1201, Standard for Providing Fire and Emergency Services to the Public*, 2020.

National Fire Protection Association. *NFPA 2500, Standard for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services*, 2022.

National Institute of Standards and Technology. "Landmark Residential Fire Study Shows How Crew Sizes and Arrival Times Influence Saving Lives and Property." National Institute of Standards and Technology, April 28, 2010.

<https://www.nist.gov/el/fire-research-division-73300/firegov-fire-service/landmark-residential-fire-study-shows-how-crew>.

ontario.ca. "Fire Safety at Home," March 2, 2023. <https://www.ontario.ca/page/fire-safety-home>.

ontario.ca. "Firefighter Guidance Notes," May 27, 2022. <https://www.ontario.ca/document/firefighter-guidance-notes>.

ontario.ca. "Firefighter Training and Certification," n.d. <https://www.ontario.ca/page/firefighter-training-and-certification>.

ontario.ca. "Supervisors under the Occupational Health and Safety Act," n.d. <https://www.ontario.ca/page/supervisors-under-occupational-health-and-safety-act>.

ontario.ca. "The Office of the Fire Marshal," August 12, 2022. <https://www.ontario.ca/page/office-fire-marshal>.

Pons, Peter T., et al. "Paramedic Response Time: Does It Affect Patient Survival?" *Academic Emergency Medicine* 12, no. 7 (July 1, 2005): 594–600. <https://doi.org/10.1197/j.aem.2005.02.013>.

Shetler, Ian. "Where Are They Going?" Association of Municipal Managers, Clerks, and Treasurers of Ontario, 2011.

Transport Canada. "TP 14070E – Small Commercial Vessel Safety Guide." December 1, 2010. <https://tc.canada.ca/sites/default/files/migrated/tp14070e.pdf>.

U.S. Fire Administration. *Retention and Recruitment for the Volunteer Emergency Services*. Federal Emergency Management Association, 2023.
<https://www.usfa.fema.gov/downloads/pdf/publications/retention-and-recruitment-for-volunteer-emergency-services.pdf>.

Wilde, Elizabeth Ty. "Do Emergency Medical System Response Times Matter for Health Outcomes?" *Health Economics* 22, no. 7 (June 14, 2012): 790–806.
<https://doi.org/10.1002/hec.2851>.

Appendix C: Applicable Legislation

In Ontario, the fire service must observe various requirements outlined in the following legislation.

Accessibility for Ontarians with Disabilities Act: This act defines accessibility standards for goods, services, facilities, accommodation, employment, buildings, structures, and premises.

Coroners Act: This act outlines the regulations that govern the control of bodies. The act authorizes and regulates coroner inquests and coroner inquest recommendations.

Dangerous Goods Transportation Act: This act outlines the regulations that govern the transportation of dangerous goods.

Day Nurseries Act: This act defines the legislative requirements that day-care operators must meet (to the satisfaction of their local fire chief) before they can operate a day-care facility.

Development Charges Act: This act authorizes portions of development charges to be allocated to the fire service.

Emergency Management and Civil Protection Act: This act requires every municipality to have an emergency management plan and a trained community emergency management coordinator to conduct training exercises for the emergency control group.

Employment Standards Act: This act outlines regulations pertaining to human resources. (See also: **Labour Relations Act.**)

Environmental Protection Act: This act requires fire service personnel to report spills to the Ministry of the Environment, Conservation, and Parks (formerly referred to as the Ministry of the Environment).

Forest Fire Prevention Act: This act only applies to areas classified as “fire regions.” The act outlines regulations for controlling outdoor fires in restricted fire zones. The act requires municipalities to extinguish all grass, brush, and forest fires that occur within their geographic limits. The act authorizes the applicable minister to appoint wardens and officers.

Fire Protection and Prevention Act: This act outlines the regulations that govern both the Ontario Fire Marshal and municipalities. Part IX of the act is generally the responsibility of the Ministry of Labour, except where terms and conditions in collective agreements may adversely affect the provision of fire protection.

Highway Traffic Act: This act outlines: how fire vehicles are to operate during emergency responses; firefighter responses on roads that have been closed by police; the use of flashing green lights on the personal vehicles of fire service personnel; and controlling traffic at accident scenes.

Human Rights Code: This act defines how boards of inquiry, complaints, discrimination, and enforcement are handled.

Municipal Act: This act authorizes the passing of bylaws that are necessary for the provision of fire protection.

Municipal Freedom of Information and Protection of Privacy Act: This act defines how access to information held by institutions is granted and obtained. The intention of the act is to protect the privacy of individuals concerning personal information about themselves held by institutions.

Occupational Health and Safety Act: This act outlines regulations that govern various occupational health and safety concerns.

O. Reg. 207/96: Outdoor Fires: This regulation outlines directives for controlling outdoor fires that occur outside of restricted fire zones.

O. Reg. 211/01 and 440/08: Propane Storage and Handling: These regulations require and propane operators to obtain approval from their local fire department in regard to all risk and safety management plans. The fire department must approve the sections of the plans that deal with fire safety, fire protection, and emergency preparedness.

O. Reg. 213/07: Fire Code: This regulation outlines various requirements that fire departments must observe.

O. Reg. 297/13: Occupational Health and Safety Awareness and Training: This legislation outlines the health and safety awareness training that an employer must provide for its employees.

O. Reg. 332/12: Building Code: This regulation authorizes municipalities to appoint certain fire service personnel as building inspectors.

O. Reg. 340/94: Drivers' Licenses: This regulation outlines the licensing requirements of each class of motor vehicle.

O. Reg. 364/13: Mandatory Inspection – Fire Drill in Vulnerable Occupancy: This regulation mandates that fire departments complete inspections in vulnerable occupancies.

O. Reg. 365/13: Mandatory Assessment of Complaints and Requests for

Approval: This regulation mandates that fire departments complete inspections upon complaint or request.

O. Reg. 378/18: Community Risk Assessments: This regulation mandates that a municipality or its fire department must complete a community risk assessment no later than five years after the day its previous community risk assessment was completed. The regulation also outlines content that all community risk assessments must include.

O. Reg. 380/04: Standards: This regulation defines standards for municipal emergency management programs.

O. Reg. 714/94: Firefighters – Protective Equipment: This regulation defines protective equipment standards that fire departments must meet.

Pesticides Act: This act makes it mandatory to report wholesale and retail pesticide use to the fire department.

Provincial Offences Act: This act authorizes assistants to the Fire Marshal to serve as provincial offences officers (in regard to offences related to smoke alarms).

Workplace Safety and Insurance Act: This act requires employers to report on-the-job accidents. The act also requires employers to document employee training records and provide them upon request.