



# The Corporation of the Town of Milton

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|------------|----------------------------------------|
| Report To: | Milton Council                         |
| From:      | Peter Gatto, Fire Chief                |
| Date:      | March 16, 2026                         |
| Report No: | CORS-007-26                            |
| Subject:   | Town of Milton - 2026 Fire Master Plan |

**Recommendation:**

**THAT Milton Council receive the Town of Milton Community Risk Assessment and the Town of Milton - 2026 Fire Master Plan;**

**THAT Milton Council adopt the Town of Milton - 2026 Fire Master Plan, with the timing of the Recommended Actions included therein subject to annual review based on the pace and composition of growth within the community;**

**THAT staff be authorized to implement the accompanying Strategic Priorities, Goals/Objectives and Recommended Actions contained within the Fire Master Plan, subject to any approvals required through the annual capital and operating budgets.**

## **EXECUTIVE SUMMARY**

The Town of Milton's 2026 Fire Master Plan (FMP), reaffirms the Department's commitment to advancing fire safety and prevention through education, enforcement, and effective emergency response. The Plan provides a forward-looking framework to guide Milton's fire protection needs through to 2031.

Underpinned by the updated legislatively required Community Risk Assessment (CRA), the FMP incorporates a comprehensive analysis of current risks, legislation, service levels, industry standards, and projected future needs. Based on this analysis, the following strategic priorities form the foundation for fire protection services:

- **Risk-Informed Service Delivery** - Ongoing application of the CRA to identify and evaluate fire safety risks, guiding targeted goals, objectives, and service levels aligned with community needs and legislative responsibilities.

## EXECUTIVE SUMMARY

- **Strengthening the First Two Lines of Defense** - Optimizing public education and fire prevention, supported by enforcement of fire safety standards and the Fire Code, to reduce risk and enhance community resilience.
- **Sustainable and Value-Driven Services** - Prioritizing strategies that ensure long-term sustainability and fiscal responsibility while delivering effective and efficient service levels.

These priorities align with the Ontario Fire Marshal's Comprehensive Fire Safety Effectiveness Model, which emphasizes the three lines of defense: Public Education, Fire Inspection/Code Enforcement, and Emergency Response. Proposed timelines for completion are included in the Summary of Observation and Recommendation Section (pg viii-xxii) and may be adjusted based on approved funding. In accordance with the Fire Protection and Prevention Act, Council retains authority to determine service levels based on community needs and circumstances. The FMP reflects the maintenance of current response times and recommends improvements to minimize risk across the Town. Financial implications are summarized within the report.

## REPORT

### Background

This FMP provides strategic direction for Milton Fire and Rescue Service (MFRS) and outlines the critical initiatives that need to be implemented in order to achieve its strategic objectives. The 2026 update is meant to be a continuation of the 2021 FMP by offering a foundational and adaptable toolkit such that MFRS has the means to navigate ongoing challenges and capitalize on opportunities. It is meant to be a living document that is continuously evolving and improving as new information is gathered and analyzed.

In 2021, Council approved an update of the Fire Master Plan as the previous version was developed in 2008. The plan was developed in phases as follows:

- i. Station location study
- ii. Development of the Community Risk Assessment
- iii. GIS modelling, analysis, reporting and consultation with stakeholders
- iv. Divisional review - to develop a strategic framework to assist in future capital assets and operating budget planning.

The updated FMP (2026) was guided by a comprehensive and evidence-based approach, drawing on recognized standards and legislative references, extensive consultative input, and comparisons with other municipalities. Together, these elements

## Background

informed a strategic, adaptable plan designed to enhance fire safety and service delivery across the Town.

The Fire Master Plan update (2026) is structured around several key components that forms a comprehensive roadmap collectively strengthening Milton's fire protection and emergency response capabilities. These include:

- Demand Zone Analysis
- Comprehensive Service and Program Review
- Staffing Model Evaluation
- Resource Alignment
- Cost Efficiency and Avoidance Measures
- Evidence-Based Recommendations
- Strategic Investment Planning
- Governance and Policy Alignment

By integrating a wide range of considerations, the Town of Milton - 2026 Fire Master Plan is designed to serve as a dynamic, continually evolving document. It adapts as new data and insights emerge, supporting informed decision-making over time.

The updated plan is intentionally structured to remain flexible and responsive and can adapt based on population growth/stability. Developing a plan this way allows service levels, resource deployment, and long-term strategies to shift in step with changing community needs, ensuring the Town can maintain efficient and resilient fire protection services under a variety of future conditions.

## Discussion

The *Fire Protection and Prevention Act* (FPPA) is the prevailing legislation of fire protection in Ontario.

Section 2 (1) of the FPPA establishes the municipal responsibilities for fire protection services as follows;

Every municipality shall,

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

## Discussion

In establishing fire protection services, the municipality is required by regulation to complete a Community Risk Assessment and utilize the results of that CRA to make informed decisions.

The Fire Master Plan outlines key strategic priorities that will guide future resource allocation, policy development, and operational improvements. Since the CRA was completed and staff had access to updated data back in late 2025, the plan reflects opportunities over a 6-year time span. To support these priorities, the FMP defines a series of goals that provide the foundation for the work to be undertaken, including:

1. Enhance administrative efficiency and support systems to ensure the seamless operation and sustainability of programming initiatives, maintain key operational activities, and maintain the appropriate resources to provide support to identified programs.
2. Develop and implement fire safety education campaigns that target risks identified in the CRA to raise awareness about fire prevention, the importance of fire safety practices, and what to do in an emergency.
3. Implement a program for proactive fire safety inspections for residential, commercial, and public buildings to ensure compliance with fire prevention codes, identify fire hazards, and encourage timely maintenance and repairs to non-compliant issues.
4. Provide emergency response services that reflect the community's identified risks, growth projections, and operational realities. Services will be delivered with a focus on health and safety, industry best practices, and a commitment to efficiency, effectiveness, and long-term value for the community.
5. Strengthen its capacity to prepare for, respond to, and recover from all types of emergencies. Through coordinated planning, training, and inter-agency collaboration, the Service will enhance community resilience, safeguard life and property, and support continuity of operations across a broad range of hazards.
6. Maintain and enhance a technologically advanced communications system that supports the operational needs of a growing community. By adopting industry-leading practices, scalable technologies, and robust dispatch protocols, the Service will ensure timely, accurate, and resilient emergency communications that enhance firefighter safety and improve overall service delivery.



## Discussion

7. Deliver a progressive and sustainable training program aligned with the services authorized in its Establishing and Regulating By-law. The program will integrate current firefighting practices, safety standards, and emerging technologies to ensure personnel are equipped with the competencies needed to respond safely and effectively to evolving risks and service demands.
8. Ensure that apparatus and equipment are available in the appropriate quantity, maintained in a ready and reliable state, that aligns with operational requirements. Through robust preventative maintenance and asset management practices, the Service will support safe, effective, and efficient emergency response across the community.

As per the FPPA, Council has the authority to determine service levels based on the needs and circumstance of the community. The FMP establishes service levels based on the risk identified by the CRA and adjustments can be made throughout its lifespan based on annual risk analysis updates (CRA) and service levels as determined by Council.

## Financial Impact

Over the term of the Fire Master Plan (2026-2031), the recommendations as outlined on pages ix to xxiii are expected to require capital investments of \$16.1 million. Funding for these initiatives has already been included in the Town's 2026 budget and forecast.

Incremental operating costs associated with the recommendations are expected to be approximately \$6.1 million over the next six years, which would result in required local residential property tax increases of approximately 0.9% annually. This estimate is expected to increase once the impacts that are associated with the on-going collective bargaining process are further defined.

The 2026 Capital and Operating budget already includes the costs and funding to support the recommendations for this year. Recommendations impacting future years have been considered in the Town's development charge update process and will be presented to Council for consideration through future annual budget processes.

Respectfully submitted,

Peter Gatto



# The Corporation of the Town of Milton

Report #:  
CORS-007-26  
Page 6 of 6

Fire Chief

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| Attachments                                                                           |
|---------------------------------------------------------------------------------------|
| Town of Milton 2026 Fire Master Plan<br>Town of Milton 2024 Community Risk Assessment |

CAO Approval  
Andrew M. Siltala  
Chief Administrative Officer

# Town of Milton FIRE MASTER PLAN

Final Report  
February 6, 2026



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## Preface

This document serves as the Fire Master Plan for the Town of Milton, providing strategic direction for long-term protection of life and property. It is informed by a comprehensive Community Risk Assessment and aligned with public safety priorities, organizational goals, and a Council-approved budgetary framework. In addition, this plan is designed as a strategic tool for assessing and anticipating the community's evolving emergency service needs.

## Acknowledgements

Behr would like to specifically acknowledge the leadership, diligence and continuous improvement focus of Fire Chief Peter Gatto. The fire services' leadership and firefighters are dedicated and engaged in all facets of their community. Their pride in the department and their service is clear.

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## ACRONYMS

| Acronym | Definition                            |
|---------|---------------------------------------|
| AHJ     | Authority Having Jurisdiction         |
| ASP     | Area Structure Plan                   |
| CAD     | Computer Aided Dispatch               |
| CRA     | Community Risk Assessment             |
| ERF     | Effective Response Force              |
| EMO     | Emergency Management Ontario          |
| FMP     | Fire Master Plan                      |
| FUS     | Fire Underwriters Survey              |
| MAP     | Mutual Aid Plan                       |
| MFRS    | Milton Fire & Rescue Services         |
| MVC     | Motor Vehicle Collision               |
| NFPA    | National Fire Protection Association  |
| OBC     | Ontario Building Code                 |
| OFC     | Ontario Fire Code                     |
| OFM     | Office of the Ontario Fire Marshal    |
| POC     | Paid-On-Call (Volunteer Firefighters) |
| PSAP    | Public Safety Answering Point         |
| RMS     | Records Management System             |
| SOC     | Standard of Cover                     |
| SOG     | Standard Operating Guidelines         |

## TABLE OF CONTENTS

|                                                    |           |
|----------------------------------------------------|-----------|
| <b>EXECUTIVE SUMMARY .....</b>                     | <b>I</b>  |
| Introduction .....                                 | i         |
| Strategic Priorities and Program Goals .....       | ii        |
| Fire Services Master Plan Process .....            | iv        |
| Project Approach and Consultative Process .....    | iv        |
| Community Overview .....                           | vi        |
| Community Risk Assessment .....                    | vi        |
| Department Overview .....                          | vii       |
| Summary of Observations and Recommendations .....  | viii      |
| Conclusion .....                                   | xxiv      |
| <b>SECTION 1 INTRODUCTION .....</b>                | <b>1</b>  |
| 1.1 Background and Significance .....              | 1         |
| 1.2 Goals and Objectives .....                     | 1         |
| 1.3 Project Scope .....                            | 2         |
| 1.4 Standards and References .....                 | 3         |
| 1.5 Fire Master Plan Process .....                 | 4         |
| 1.6 Consultative Process .....                     | 4         |
| 1.6.1 Community and Fire Station Tour .....        | 4         |
| 1.6.2 Targeted Interviews .....                    | 4         |
| 1.7 Study Considerations .....                     | 7         |
| 1.8 Municipal Comparative Analysis .....           | 8         |
| 1.8.1 Community Comparative Analysis Summary ..... | 10        |
| <b>SECTION 2 THE ENVIRONMENT .....</b>             | <b>13</b> |
| 2.1 Community Overview .....                       | 13        |
| 2.2 Economic Indicators .....                      | 15        |
| 2.3 Growth Projections .....                       | 17        |
| 2.3.1 Overview of Urban Growth Strategy .....      | 17        |
| 2.3.2 Secondary Plan Development Areas .....       | 18        |
| 2.3.3 Building Types and Associated Risks .....    | 18        |
| 2.4 Key Community Demographics .....               | 23        |
| 2.4.1 Population Growth .....                      | 23        |
| 2.4.2 Average & Median Age .....                   | 23        |

|                                           |                                                                               |           |
|-------------------------------------------|-------------------------------------------------------------------------------|-----------|
| 2.4.3                                     | Population Distribution .....                                                 | 23        |
| 2.4.4                                     | Age Distribution in Percentages.....                                          | 24        |
| 2.5                                       | Community Risk Assessment.....                                                | 24        |
| 2.5.1                                     | Factors Contributing to Risk.....                                             | 25        |
| 2.6                                       | Risk Management .....                                                         | 26        |
| 2.7                                       | Risk Evaluation vs. Service Levels .....                                      | 26        |
| 2.7.1                                     | Assigning Risk Level .....                                                    | 28        |
| 2.8                                       | Structural Fire Risk Analysis .....                                           | 29        |
| 2.9                                       | Ontario Building Code Occupancy Classifications: Building Stock Profile ..... | 30        |
| 2.10                                      | OFM Fire Risk Sub-Model Occupancy Classifications .....                       | 31        |
| 2.11                                      | Town of Milton’s Existing Major Building Classification Summary.....          | 32        |
| 2.12                                      | Potential High-Fire Risk Occupancies .....                                    | 34        |
| 2.12.1                                    | Fuel Load Concerns.....                                                       | 34        |
| 2.13                                      | Occupancies with Potential High Fire Life-Safety Risk .....                   | 34        |
| 2.13.1                                    | Registered Vulnerable Occupancies .....                                       | 34        |
| 2.14                                      | Community Risk Analysis Overview.....                                         | 37        |
| 2.15                                      | Impacts of Hazards on Fire Protection Services .....                          | 38        |
| 2.15.1                                    | Fire Underwriters Survey (FUS) .....                                          | 41        |
| 2.15.2                                    | Fire Station Response Demand Zone.....                                        | 42        |
| 2.16                                      | Water Infrastructure .....                                                    | 45        |
| <b>SECTION 3 DEPARTMENT PROFILE .....</b> |                                                                               | <b>47</b> |
| 3.1                                       | Department Overview .....                                                     | 47        |
| 3.1.1                                     | Strategic Priorities .....                                                    | 49        |
| 3.1.2                                     | Program Area Goals .....                                                      | 49        |
| 3.2                                       | Administration.....                                                           | 51        |
| 3.2.1                                     | Department Leadership, Management and Operations.....                         | 52        |
| 3.2.2                                     | Staffing Complement.....                                                      | 59        |
| 3.2.3                                     | Mission, Vision, and Values.....                                              | 62        |
| 3.2.4                                     | Command Structure .....                                                       | 63        |
| 3.2.5                                     | Remuneration, Recruitment, Selection, Retention, Promotion .....              | 64        |
| 3.2.6                                     | Selection and Training for New Staff .....                                    | 65        |
| 3.2.7                                     | Promotions and Advancement .....                                              | 67        |
| 3.2.8                                     | Succession Planning.....                                                      | 67        |
| 3.2.9                                     | Health and Wellness.....                                                      | 69        |

|                                                                                                    |     |
|----------------------------------------------------------------------------------------------------|-----|
| 3.2.10 Policies, Procedures, and Guidelines .....                                                  | 71  |
| 3.3 Fire Public Education Services .....                                                           | 72  |
| 3.4 Fire Prevention.....                                                                           | 77  |
| 3.4.1 Fire Prevention Services Overview .....                                                      | 77  |
| 3.4.2 Fire Code Inspection Services .....                                                          | 78  |
| 3.4.3 New Developments Plan Reviews .....                                                          | 84  |
| 3.4.4 Fire Cause and Origin Services .....                                                         | 85  |
| 3.5 Emergency Management .....                                                                     | 85  |
| 3.6 Operations .....                                                                               | 90  |
| 3.6.1 Structural Firefighting .....                                                                | 90  |
| 3.6.2 High-Rise and Multi-Unit Residential Firefighting Operations .....                           | 91  |
| 3.6.3 Medical Assist .....                                                                         | 94  |
| 3.6.4 Hazardous Materials/Dangerous Goods Response .....                                           | 97  |
| 3.6.5 Technical Rescue Services .....                                                              | 99  |
| 3.6.6 Motor Vehicle Rescue .....                                                                   | 101 |
| 3.6.7 Surface Ice and Water Rescue .....                                                           | 103 |
| 3.6.8 High/ Low Angle Rope Rescue .....                                                            | 103 |
| 3.6.9 Machine Rescue Operations .....                                                              | 104 |
| 3.6.10 Confined Space and Trench Rescue .....                                                      | 105 |
| 3.6.11 Structural Collapse Response.....                                                           | 107 |
| 3.6.12 Pre-Emergency Planning .....                                                                | 109 |
| 3.6.13 Mutual Aid and Other Service Agreements .....                                               | 112 |
| 3.7 Training & Professional Development.....                                                       | 114 |
| 3.7.1 Training Overview.....                                                                       | 114 |
| 3.7.2 Industry Recommended Qualifications .....                                                    | 116 |
| 3.8 Emergency Communications (Dispatch) .....                                                      | 122 |
| 3.8.1 Communications Centre Staffing .....                                                         | 123 |
| 3.8.2 Performance Benchmarks .....                                                                 | 123 |
| 3.8.3 Training and Certification .....                                                             | 123 |
| 3.8.4 Policies, Procedures, and Operations .....                                                   | 124 |
| 3.8.5 Communications Infrastructure .....                                                          | 124 |
| 3.8.6 Next Generation 911 (NG-911) .....                                                           | 124 |
| 3.8.7 Feasibility for the Expansion of Milton Fire & Rescue Services<br>Communications Centre..... | 124 |



|                                                              |                                                                     |            |
|--------------------------------------------------------------|---------------------------------------------------------------------|------------|
| 3.9                                                          | Capital Assets .....                                                | 139        |
| 3.9.1                                                        | Fire Stations .....                                                 | 139        |
| 3.9.2                                                        | Apparatus and Equipment .....                                       | 150        |
| 3.9.3                                                        | Ancillary Equipment.....                                            | 161        |
| 3.9.4                                                        | Personal Protective Equipment .....                                 | 161        |
| 3.9.5                                                        | Specialized Operations Equipment .....                              | 161        |
| <b>SECTION 4 RESPONSE PERFORMANCE AND CAPABILITIES .....</b> |                                                                     | <b>162</b> |
| 4.1                                                          | Response Performance .....                                          | 162        |
| 4.1.1                                                        | Urban Response Performance Standards.....                           | 162        |
| 4.1.2                                                        | Rural Response Performance Standards .....                          | 163        |
| 4.2                                                          | Industry Leading Practices and Standards.....                       | 164        |
| 4.2.1                                                        | National Fire Protection Association (NFPA) Standards .....         | 164        |
| 4.2.2                                                        | Ontario Regulatory Framework Regarding Community Fire Safety .....  | 165        |
| 4.3                                                          | Incident Types and Frequency Analysis .....                         | 166        |
| 4.3.1                                                        | Unique Incidents .....                                              | 166        |
| 4.3.2                                                        | Unique Incidents by Sub-Category .....                              | 168        |
| 4.3.3                                                        | Unique Incidents – Medical/Resuscitator Calls.....                  | 169        |
| 4.3.4                                                        | Unique Incidents – Other Response/Overpressure & Rupture Calls..... | 170        |
| 4.3.5                                                        | Unique Incidents – Pre-Fire Conditions/Public Hazard Calls .....    | 171        |
| 4.3.6                                                        | Unique Incidents – Rescue Calls .....                               | 172        |
| 4.3.7                                                        | Incident Types Analysis.....                                        | 172        |
| 4.4                                                          | Incident Frequency Analysis .....                                   | 174        |
| 4.4.1                                                        | Incidents by Time of Day .....                                      | 175        |
| 4.4.2                                                        | Incidents by Day of the Week .....                                  | 176        |
| 4.4.3                                                        | Incidents by Month of the Year .....                                | 176        |
| 4.5                                                          | Response Performance .....                                          | 178        |
| 4.5.1                                                        | Intervention Time .....                                             | 178        |
| 4.5.2                                                        | Performance Standards .....                                         | 180        |
| 4.6                                                          | Emergency Response Performance Analysis .....                       | 182        |
| 4.6.1                                                        | Alarm Handling.....                                                 | 183        |
| 4.6.2                                                        | Assembly Time .....                                                 | 185        |
| 4.6.3                                                        | Travel Time Performance .....                                       | 188        |
| 4.6.4                                                        | Total Response Time.....                                            | 191        |
| 4.7                                                          | Response Coverage Mapping .....                                     | 192        |

|                        |                                                               |            |
|------------------------|---------------------------------------------------------------|------------|
| 4.8                    | Effective Response Force.....                                 | 200        |
| 4.9                    | Critical Task Analysis .....                                  | 203        |
| 4.10                   | Optimizing Station location and Apparatus placement .....     | 205        |
| 4.10.1                 | Station Location .....                                        | 205        |
| 4.10.2                 | Apparatus Placement .....                                     | 207        |
| 4.10.3                 | Station-Level Concurrent Call Load Analysis (2020–2024) ..... | 209        |
| 4.11                   | Fire Station Location Analysis .....                          | 211        |
| 4.11.1                 | Strategic Role of Station Location in Service Delivery .....  | 211        |
| 4.11.2                 | Principles of Station Location Planning.....                  | 212        |
| 4.11.3                 | Growth Factors Driving the Need for New Stations.....         | 213        |
| 4.11.4                 | Staffing Model and Phased Implementation .....                | 224        |
| 4.11.5                 | Anticipated Response Time and ERF Coverage Improvements ..... | 224        |
| 4.11.6                 | Anticipated Response Time and ERF Coverage Improvements ..... | 225        |
| 4.11.7                 | 240-Second Travel Time Benchmark .....                        | 225        |
| 4.11.8                 | 300-Second Travel Time Benchmark (Proposed for Milton) .....  | 226        |
| 4.11.9                 | Staffing Implications .....                                   | 226        |
| <b>APPENDICES.....</b> |                                                               | <b>230</b> |

## EXECUTIVE SUMMARY

### Introduction

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Fire and emergency services are in a state of constant change and adaptation. Fire and emergency services are continually challenged by budget constraints, unprecedented growth, rising call volumes, and increasing and unusual risks against expectations to do more with less. The demand for emergency response and emergency management services has expanded, causing the role to shift and for services to diversify.

Effective management of fire and emergency services departments requires a clear understanding of risk and the ability to provide appropriate responses to mitigate the risks. Failing to realize and address these challenges could leave the community and its responders vulnerable.

Modern fire, rescue and emergency services have evolved into a critical component of a community's social safety net. Whereas early fire departments were established specifically to combat structure fires that, at the time, were often devastating. Today's fire departments are also called upon to respond to medical emergencies, rescues of varying types, motor vehicle incidents, dangerous goods releases, wildland fires, and natural disasters. As a result, fire departments must be adequately resourced and equipped to provide these situations safely, efficiently, effectively and with a great deal of competency.

The goal of developing this Fire Master Plan (FMP) is to provide strategic direction for Milton Fire & Rescue Services. This plan will provide a systematic and comprehensive approach to evaluate current response capabilities by identifying and mitigating risks through a community risk assessment. This plan will also assist in formulating and communicating strategic directions for the fire service while highlighting opportunities for improved service delivery. This plan can also be used to convey information to the public, staff, and municipal council about what to expect in the municipality's approach to fire and emergency service planning, service delivery model, policy, and development.

Ultimately, this plan determines options for an optimum service delivery model and serves as a blueprint for the municipality to develop more effective and efficient fire and emergency services in the face of current and future challenges.

## Strategic Priorities and Program Goals

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The Milton Fire & Rescue Services (MFRS) will utilize the 2024 Community Risk Assessment (CRA) to identify the fire safety risks within the Town to inform the development of goals and objectives for the delivery of fire protection and emergency response provided.

Optimizing the methodology of the three lines of defense (**Public Education, Fire Prevention and Code Enforcement, and Emergency Response**) will allow MFRS to provide a comprehensive fire protection program.

The following strategic priorities are the foundational principles that will inform future resource allocations, policy development and operational enhancements:

### 1. Risk-Informed Service Delivery

Ensure the ongoing application of the Community Risk Assessment (CRA) to identify and evaluate fire safety risks across the municipality. This assessment will guide the development of targeted goals, objectives, and service levels aligned with community fire life safety needs and legislative responsibilities.

### 2. Strengthening the First Two Lines of Defence

Optimize the use of public education and fire prevention, supported by the enforcement of fire safety standards and the Fire Code. These proactive measures are essential to reducing fire risk and enhancing community resilience through a comprehensive fire protection approach.

### 3. Sustainable and Value-Driven Services

Prioritize strategies that enhance the long-term sustainability of fire protection and emergency services. Focus on delivering the most effective and efficient levels of service to ensure fiscal responsibility and maximize value for the community.

To support the strategic priorities MFRS has defined a series of program-specific goals to guide the development, delivery, and continuous improvement of fire protection services.

#### Goal # 1: Administration

Enhance administrative efficiency and support systems to ensure the seamless operation and sustainability of programming initiatives, maintain key operational activities, and maintain the appropriate resources to provide support to identified programs.

#### Goal #2: Public Education

Develop and implement fire safety education campaigns that targets risks identified in the CRA to raise awareness about fire prevention, the importance of fire safety practices, and what to do in an emergency.

**Goal #3: Fire Prevention and Code Enforcement**

Implement a program for proactive fire safety inspections for residential, commercial, and public buildings to ensure compliance with fire prevention codes, identify fire hazards, and encourage timely maintenance and repairs to non-compliant issues.

**Goal #4: Operations**

Provide emergency response services that reflect the community's identified risks, growth projections, and operational realities. Services will be delivered with a focus on health and safety, industry best practices, and a commitment to efficiency, effectiveness, and long-term value for the community.

**Goal #5: Emergency Management**

Strengthen its capacity to prepare for, respond to, and recover from all types of emergencies. Through coordinated planning, training, and inter-agency collaboration, the Service will enhance community resilience, safeguard life and property, and support continuity of operations across a broad range of hazards.

**Goal #6: Communications**

Maintain and enhance a technologically advanced communications system that supports the operational needs of a growing community. By adopting industry-leading practices, scalable technologies, and robust dispatch protocols, the Service will ensure timely, accurate, and resilient emergency communications that enhance firefighter safety and improve overall service delivery.

**Goal #7: Training**

Deliver a progressive and sustainable training program aligned with the services authorized in its Establishing and Regulating By-law. The program will integrate current firefighting practices, safety standards, and emerging technologies to ensure personnel are equipped with the competencies needed to respond safely and effectively to evolving risks and service demands.

**Goal #8: Facilities, Apparatus, and Equipment**

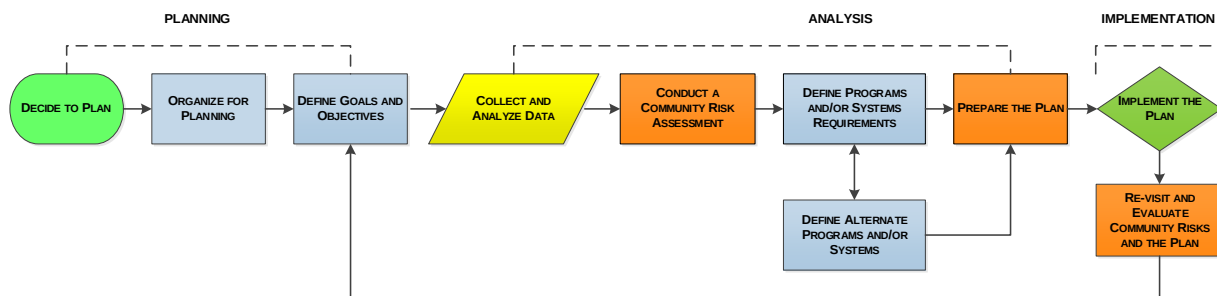
Ensure that apparatus and equipment are available in the appropriate quantity, maintained in a ready and reliable state, that align with operational requirements. Through robust preventative maintenance and asset management practices, the Service will support safe, effective, and efficient emergency response across the community.

## Fire Services Master Plan Process

The following diagram illustrates the process used to complete this plan. A Fire Master Plan is sometimes referred to as a ‘road map’ for the future and used as a guiding document for current and future department leaders and decision-makers.

As outlined in the implementation phase, it is strongly recommended that this plan be reviewed and assessed at least annually, or more frequently in response to significant changes, such as population growth or increased residential and industrial development, that may impact community risk. When feasible, a third-party review and update should be conducted at the five-year mark to provide an objective evaluation of operations and enhance the credibility of the master planning process.

Figure 1: Fire Services Master Plan Process



## Project Approach and Consultative Process

While risks are the basis for prompting response decisions, our analysis also investigated the needs of the community and will provide a point of reference upon which future decisions and priorities can be evaluated and implemented. This includes identifying priorities, challenges, and opportunities for improvement in the delivery of emergency services to the community and overall public safety. Along with risks, this plan also considers applicable legislation, industry-leading best practices, and standards to provide unbiased analysis and evidence-based recommendations.

Targeted interviews were conducted with fire service leadership and various Town department managers to gather relevant data and insights. An interview guide was used to conduct the interviews to promote open dialogue about the community, its risks, and general concerns related to municipal operations.

Three key aspects in the development of this Fire Master Plan included a community and station tour, and targeted stakeholder interviews. The community tour focused on the overall footprint, topography, transportation infrastructure of the municipality and the various response zones for the current fire service stations. Visiting the stations provided an opportunity to assess the general condition and operational functionality.

An industry peer comparative analysis<sup>1</sup> of MFRS was conducted as a method of benchmarking the performance of MFRS alongside similar municipalities. These benchmarks include budgets, performance, effectiveness, and efficiencies.

Although fire and emergency services have the same goal of ultimately protecting life, property and the environment, each community has its unique features in how to accomplish their goals. Our main criteria for the comparative analysis are indicators of effectiveness and efficiencies for risk and mitigation amongst the communities.

The communities included in the comparative analysis include:

- City of Guelph
- Town of Oakville
- City of Burlington
- Town of Halton Hills
- Municipality of Clarington
- Municipality of Chatham-Kent

For the budget year of 2024, the six services surveyed have total municipal operating budgets within the range of \$69M to \$550M annually. MFRS ranks among the lower range within the municipalities surveyed for fire department operating budget (5th), and cost per capita (6th), and is ranked 5th for the percentage of municipal budget. Combined this is considered to be a lower ranking for a Town the size of Milton vs the comparators.

There is no standard for categorizing incidents so it must be understood that these statistics are broadly based and are only general reference when comparing fire departments. The community comparative analysis can only be interpreted from an indirect basic level due to the disparity from each of the surveyed communities' organizational structure, core services and levels, emergency response categorization, and financial systems. Direct comparison is strongly discouraged.

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<sup>1</sup> Please see Section 1.8, *Municipal Comparative Analysis*, Page 8

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## Community Overview

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The Town of Milton, located in southern Ontario within Halton Region and the Greater Toronto Area (GTA), is one of Canada's fastest-growing municipalities. According to Statistics Canada, Milton had a population of 132,979<sup>2</sup> covering approximately 363.83 km<sup>2</sup>, resulting in a population density of about 365.5 persons per square kilometer.

The community comprises of 25 distinct neighbourhoods, featuring vibrant urban centres, established residential areas, rural landscapes, and industrial zones.

Milton's strategic location offers excellent regional connectivity. Highway 401 runs through the town, supported by Highway 407 to the north and Highway 25 running north-south. Additionally, the GO Transit Milton line provides convenient commuter access to Toronto and surrounding municipalities.

Situated along the Niagara Escarpment, a UNESCO World Biosphere Reserve, Milton offers both natural heritage and recreational opportunities such as the Bruce Trail. Milton's proximity to Toronto, Mississauga, Guelph, and Kitchener positions it as a strategically located community with strong economic, educational, and recreational connections throughout the Greater Toronto and Hamilton Area.

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## Community Risk Assessment

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In accordance with Ontario Regulation 378/18, Milton completed a Community Risk Assessment (CRA) in December 2024 to evaluate hazards, vulnerabilities, and risk factors that directly impact fire protection service needs. The CRA applied the nine provincially mandated profiles, geographic, building stock, critical infrastructure, demographics, hazard, public safety response, community services, economic, and past loss/event history, using data from MFRS, the Office of the Fire Marshal (OFM), Statistics Canada, MPAC, and other municipal sources. This comprehensive approach ensured a balanced evaluation of both the probability and consequence of fire and rescue-related risks.

The CRA identified several high-priority risks requiring strategic attention. Chief among these is the predominance of residential occupancies (Group C), which account for nearly 90% of Milton's building stock and the vast majority of fire-related fatalities, injuries, and losses. Contributing factors include absent or malfunctioning smoke alarms, an aging housing stock, and the growing presence of additional dwelling units (ADUs) that increase occupancy complexity without reliable identification systems.

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<sup>2</sup> <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?DGUIDlist=2021A00053524009&GENDERlist=1&HEADERlist=0&Lang=E&STATISTI Clist=1&SearchText=Milton>



Other significant risks include motor vehicle collisions along major transportation corridors, the presence of high-fuel-load industrial properties and large-footprint buildings, vulnerable occupancies such as long-term care homes, demographic risk factors associated with seniors, children, and newcomers, and extended response times and limited water supply in rural areas. Collectively, these findings emphasize the importance of prevention, education, infrastructure planning, and operational readiness.

#### Top Fire & Rescue-Related Risks Identified in Milton's CRA:

- Residential structure fires in Group C occupancies (predominant source of fatalities, injuries, and loss).
- Absent, failed, or malfunctioning smoke alarms reducing early warning and evacuation.
- Aging and higher-risk buildings constructed prior to modern building and fire codes.
- Transportation-related emergencies, particularly motor vehicle collisions and dangerous goods incidents along highways and rail.
- Industrial and large-footprint buildings with high fuel loads creating disproportionate fire risk.
- Vulnerable occupancies (e.g., long-term care, daycares) with complex evacuation needs.
- Demographic risk factors, including higher proportions of seniors, children, and newcomers requiring tailored public education.
- Geographic response challenges in rural areas, including extended travel times and limited water supply.

## Department Overview

Milton Fire & Rescue Services (MFRS) is a composite fire service that has proudly served the community since 1857. What began as a volunteer Hook and Ladder Company has grown into a modern, professional organization operating from five strategically located fire stations. The department is staffed by approximately 180 personnel, including full-time and part-time firefighters, fire prevention officers, training staff, communications personnel, apparatus maintenance, and administrative support.

MFRS delivers a broad range of services that extend well beyond traditional fire suppression. These include emergency medical response, technical rescue, water and ice rescue, hazardous materials response, fire inspections, code enforcement, and public education initiatives. The department also maintains fire protection agreements with neighbouring municipalities such as Halton Hills, Oakville, Burlington, and Mississauga, ensuring operational flexibility during major or simultaneous incidents. Guided by Establishing & Regulating By-law 072-2025, MFRS is committed to safeguarding the community through risk-informed service delivery, collaboration, and continuous improvement.

## Summary of Observations and Recommendations

A Fire Master Plan intends to provide a series of recommendations which are generally implemented over a five to ten-year timeframe. The following recommendations are drawn from findings presented throughout the report. They are grouped into three categories according to priority: critical, short-term, and long-term.

Progress on the implementation of recommendations should be monitored and adjusted to reflect available funding and administrative capacity. Most of the recommendations presented in this report are achievable using existing staff or members' time and will therefore not pose significant additional costs to the community. However, there are some recommendations that are substantial and will require review of potential funding strategies.

Costs are estimates only and will require further investigation. 'Cost neutral' refers to the use of internal staff through a normal work schedule. This would include support from other internal departments that may or may not require additional resources (costs) to complete. Undertaking of these cost neutral recommendations are also contingent upon staff availability.

A timeframe within 1 – 72 months (1 – 6 years) has been assigned to each recommendation. These recommendations are subject to the Town's corporate priorities, Council's budget approval, and the current rate and scale of community growth.

Their implementation is contingent upon alignment with Council-endorsed strategic direction, the availability of approved funding, and demonstrated growth-related service demands. Accordingly, the recommendations reflect a conditional and adaptable approach that allows the Town to respond appropriately as priorities, financial capacity, and growth pressures evolve.

| Level           | Timeline                | Meaning                                                      |
|-----------------|-------------------------|--------------------------------------------------------------|
| High            | 1–12 months             | Immediate safety/compliance/operational risk; must act fast. |
| Medium          | 12–36 months            | Important improvements: delay increases exposure.            |
| Low             | 36–72 months            | Enhances performance; flexible timing.                       |
| Future Planning | Beyond the FMP timeline | Long-term planning consideration; low immediate impact.      |

**Note:** Recommendations are numbered according to their order of appearance in the report.

## Goal #1: Administration

**Recommendation #1a:** Revise the Town of Milton’s Establishing and Regulating By-law to formally incorporate Council-approved response performance objectives, clearly differentiating between urban and rural settlement areas to reflect the unique service delivery challenges and capabilities across the municipality.

**Suggested completion:** 6-12 months

**Recommendation #1b:** Develop and adopt a Standard of Cover (SOC) policy that clearly outlines response performance benchmarks, deployment strategies, and staffing requirements across different risk zones and occupancy types.

**Suggested completion:** 6-12 months

**Cost:** Neutral

**Strategic Objective** – Administration

**Recommendation # 2a:** Phase in 1.5 FTEs for divisional administrative staffing to support internal coordination, program deliver, regulatory compliance, and operational efficiency across all branches of MFRS.

**Suggested completion:** 12-36 months

**Cost:** Annual cost of \$55,115 - \$68,894 / FTE (2024 rates) plus benefits. Net increase \$82,673 - \$103,341 (plus benefits).

**Strategic Objective:** Administration

**Recommendation #2b:** Create a dedicated management position, such as an Assistant Chief or Division Chief of Composite Operations, responsible for the administration, coordination, and development of the Paid-On-Call firefighter program.

**Suggested completion:** 24-36 months

**Cost:** Annual cost of \$139,713 (2024 rates) plus benefits

**Strategic Objective:** Administration

**Recommendation #3:** Implement a formal Succession Planning and Leadership Development Program that identifies, mentors, and prepares future leaders across all divisions. This program should include career pathing, targeted training, leadership shadowing, and secondment opportunities tied to the Fire Master Plan implementation timeline and operational growth triggers.

**Suggested completion:** 12-24 months

**Cost:** Cost neutral

**Strategic Objective:** Administration

## Goal #2: Public Education

**Recommendation #4a:** Use the findings of the Community Risk Assessment (CRA), incident data, and geographic analysis to inform the development of annual public fire safety education plans. Programming should be updated each year to reflect emerging risks, demographic shifts, and local trends in fire incidents, smoke alarm compliance, and vulnerable occupancy types.

**Recommendation #4b:** Implement a GIS-based predictive analysis model and develop a participant tracking and evaluation system to monitor the reach and impact of public education programs.

**Suggested completion:** 1- 12 months

**Cost:** None

**Strategic Objective:** Public Education

**Recommendation #5a:** Develop and deliver targeted fire safety programs tailored for vulnerable and equity-deserving populations, incorporating input from community stakeholders, cultural organizations, and social service providers.

**Recommendation #5b:** Leverage community data, GIS mapping, and stakeholder engagement to guide the development of fire safety programming tailored to the needs of specific neighbourhoods and population groups.

**Suggested completion:** 12-24 months

**Cost:** Minimal – may be costs associated with translation services

**Strategic Objective:** Public Education

## Goal #3: Fire Prevention & Code Enforcement

**Recommendation #6:** Utilize predictive analytics using historical data, risk mapping, and response data, identify higher risk areas for targeted code enforcement inspections.

**Suggested completion:** 24-36 months

**Cost:** None – can be built in to work schedules of existing staff.

**Strategic Objective:** Fire Prevention and Code Enforcement.

**Recommendation #7:** Develop and implement a phased-in proactive fire inspection program for all building classifications, targeting properties and occupancies based on risk categorization.

**Suggested completion:** 36-72 months

**Cost:** None. Inspections to be conducted by existing and future staff (see Recommendation #8 below).

**Strategic Objective:** Fire Prevention and Code Enforcement.

**Recommendation #8: Implement a phased expansion of Fire Prevention staffing, aligned with current service deficits.**

**Suggested completion:** 36-72 in line with new fire station development

**Cost:** Cost per fire inspector is \$66,392-\$120,712 (2024 rates). The additional salary cost at the end of the phase-in would be approximately \$482,848 (plus benefits) to the operating budget.

**Strategic Objective:** Fire Prevention and Code Enforcement

## Goal #4: Operations

**Recommendation #11:** Implement a systematic process to monitor and analyze fire incident trends related to high-rise buildings and ARUs, including response frequency, nature of incidents, and resource deployment per event. This information should be integrated into annual operations reviews, staffing and apparatus planning, and targeted training and public education initiatives.

**Suggested completion:** 12-18 months

**Cost:** varies on scope and internal vs external

**Strategic Objective:** Operations

**Recommendation #12:** Continue to regularly update tiered medical response framework through renewed collaboration with Halton Region Paramedic Services, and the MFRS medical director to refine response protocols. Clarify the scope of clinical practice for First Responders and ensure alignment with system-wide changes such as the implementation of MPDS.

**Suggested completion:** 1-12 months then ongoing.

**Cost:** neutral

**Strategic Objective:** Operations

**Recommendation #13:** Maintain formalized service agreements with third-party providers or neighbouring fire departments that possess technician-level capabilities in identified technical rescue disciplines.

**Suggested completion:** 12-24 months

**Cost:** will vary dependent on the agreement and discipline

**Strategic Objective:** Operations

**Recommendation #14a:** Expand the pre-fire planning program to include all buildings identified as risks within the Community Risk Assessment (CRA), ensuring complete coverage of high-priority and high-hazard occupancies.

**Recommendation #14b:** Digitize all pre-plans and integrate them into CAD/GIS systems to allow mobile access for operational staff, with standardized data fields covering standpipes, key boxes, electric vehicle charging stations, photovoltaic arrays, and other critical building information, along with detailed tactical considerations such as attack stair locations, refuge floors, and smoke control systems.

**Recommendation #14c:** Establish defined triggers for post-incident plan updates and other significant changes, and implement a KPI dashboard to track program performance, including percentage of first-due high-risk buildings with current surveys and median survey age. Conduct regular joint reviews between Fire Prevention, Training, and Dispatch divisions to ensure the plans remain accurate and operationally relevant.

**Suggested completion:** 12-60 months

**Cost:** Cost to digitize if external

**Strategic Objective:** Operations

**Recommendation #21:** Identify and implement opportunities to improve assembly time or investigate opportunities (such as new station designs, countdown clocks, etc.) to improve assembly time and implement regular monitoring and reporting of assembly time performance by station, shift, and incident category.

**Suggested completion:** 12-24 months

**Cost:** Varies on scope

**Strategic Objective:** Operations

**Recommendation #22:** Implement a formal concurrent call load monitoring process, using dispatch and incident data analytics to assess call overlap trends by time of day, location, and station impact. This data should be reviewed annually and integrated into resource deployment planning, station siting strategies, and staffing forecasts to determine when new apparatus, personnel, or facility expansion is warranted.

**Suggested completion:** 1-12- months

**Cost:** Varies on scope

**Strategic Objective:** Operations

**Recommendation #23:** MFRS should proceed with the planning, design, and construction of Fire Station 6 within the next 60-72 months.

**Suggested completion:** 60-72 months

**Cost:** Varies on scope

**Strategic Objective:** Operations

**Recommendation #24:** Plan for the establishment of Fire Station 7 as a longer-term initiative beyond the current Fire Master Plan horizon, including preliminary site identification, land acquisition considerations, and early design planning. Construction and commissioning should be anticipated beyond the timeframe of this Plan, with the timing to be reassessed and advanced if growth rates or service demand accelerate in the southeast area.

**Suggested completion:** Beyond 72- months identified in the FMP

**Cost:** Varies on scope

**Strategic Objective:** Operations

**Recommendation #25:** Incorporate phased hiring plans for Station 6 and Station 7 into its 10-year staffing forecast, with annual adjustments reviewed during the Town's budget cycle.

**Suggested completion:** 12-72 months

**Cost:** Wage cost per firefighter \$111,771 (2024) plus benefits

**Strategic Objective:** Operations

**Recommendation #26:** Temporarily staff a second response vehicle at Station 1, using the phased hiring of full-time firefighters between 2026 and 2028, as outlined in the staffing forecast in recommendation 25. This second unit should remain operational until a full-time response vehicle can be relocated to new station 6.

**Suggested completion:** 12-36 months

**Cost:** neutral

**Strategic Objective:** Operations

## Goal #5: Emergency Management

**Recommendation #9:** Develop and implement a formal, municipality-wide Business Continuity Planning (BCP) framework, requiring all Town divisions to create, maintain, and regularly update business continuity plans tailored to their core functions and operational risks.

**Suggested completion:** 12-24 months

**Cost:** varies on scope and internal vs external

**Strategic Objective:** Emergency Management

**Recommendation #10:** Continue to ensure the Emergency Management Program reflects current and emerging threats.

**Suggested completion:** 12-18 months

**Cost:** neutral

**Strategic Objective:** Emergency Management



## Goal #6: Communications

**Recommendation #17a:** Continue to enhance its dispatch operations by advancing workflow efficiency, adopting emerging technologies, and strengthening ongoing staff training initiatives to support high-performance emergency communications.

**Recommendation #17b:** Adopt a two-person dispatch model that clearly delineates the roles of call taker and dispatcher to enhance operational efficiency and reduce alarm processing times.

**Recommendation #17c:** Continue to monitor, analyze, and improve alarm handling performance with the goal of achieving the established benchmark of 64 seconds or less for emergency calls, 90% of the time.

**Suggested completion:** 1-12 months (ongoing)

**Cost:** minimal

**Strategic Objective:** Dispatch

**Recommendation #18a:** Provide for a virtual expansion of dispatch capacity by utilizing the backup centre at Station 2 as a temporary solution.

**Recommendation #18b:** Establish a new purpose-built Communications Centre to support long-term dispatch growth and regional capabilities.

**Suggested completion:** Depending on growth and expansion

**Cost:** To be determined as part of a new station build

**Strategic Objective:** Dispatch

**Recommendation #19a:** Proactively explore opportunities to expand its dispatch service offerings to surrounding fire departments and municipalities through a structured business development and feasibility assessment process.

**Recommendation #19b:** Develop a comprehensive financial model to support the expansion of its Communications Centre and regional dispatch services, utilizing the Hybrid Model (Base Fee + Per-Call or Tiered Add-Ons) as the preferred cost recovery approach.

**Recommendation #19c:** Develop and implement a comprehensive legal and governance framework to guide the expansion of MFRS's Communications Centre services to external municipalities including an enforceable Service Level Agreements (SLAs), formal governance structures, and legal oversight aligned with applicable provincial legislation and risk management standards.

**Suggested completion:** 24-36 months

**Cost:** Cost neutral – staff time

Strategic Objective: Dispatch

## Goal #7: Training & Professional Development

**Recommendation #15:** Complete a thorough analysis of existing training instructor capacity, including course development, face-to face training, remote training, practical and theory assessments and proctoring against the demand for training as outlines in the approved annual training calendar. Additional training officer capacity, whether full-time or part-time may be required to meet the increasing training demands for MFRS.

**Suggested completion:** 36-60 months

**Cost:** Wage (2024) per training officer is \$120,712 plus benefits.

Strategic Objective: Training and Professional Development

**Recommendation #16:** Pursue the establishment of a municipally supported fire training facility with Class B live fire capabilities, either independently or through partnerships with neighbouring municipalities, educational institutions, or third-party partnerships.

**Suggested completion:** Beyond 72 months identified in the FMP

**Cost:** Estimated \$13 million depending on size and scope of project.

**Strategic Objective:** Training and Professional Development

## Goal #8: Facilities, Apparatus & Equipment

**Recommendation #20:** Explore a formal partnership with the Town's Public Works or Transit Departments to secure dedicated or shared space within an existing or future municipal facility for apparatus maintenance, inspections, and mechanical support.

**Suggested completion:** 24-36 months

**Cost:** Costs will vary depending on the need for added infrastructure within the space

**Strategic Objective:** Facilities, Apparatus and Equipment

| Recommendations |                                                                                                                                                                                                                                                                                                                                                               | Months |    |    |    |    |    |    |        |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----|----|----|----|----|----|--------|
|                 |                                                                                                                                                                                                                                                                                                                                                               | 1      | 12 | 24 | 36 | 48 | 60 | 72 | Future |
| Administration  |                                                                                                                                                                                                                                                                                                                                                               |        |    |    |    |    |    |    |        |
| 1a              | Revise the Town of Milton's Establishing and Regulating By-law to formally incorporate Council-approved response performance objectives, clearly differentiating between urban and rural settlement areas to reflect the unique service delivery challenges and capabilities across the municipality.                                                         |        |    |    |    |    |    |    |        |
| 1b              | Develop and adopt a Standard of Cover (SOC) policy that clearly outlines response performance benchmarks, deployment strategies, and staffing requirements across different risk zones and occupancy types.                                                                                                                                                   |        |    |    |    |    |    |    |        |
| 2a              | Phase in 1.5 FTEs for divisional administrative staffing to support internal coordination, program deliver, regulatory compliance, and operational efficiency across all branches of MFRS.                                                                                                                                                                    |        |    |    |    |    |    |    |        |
| 2b              | Create a dedicated management position, such as an Assistant Chief or Division Chief of Composite Operations, responsible for the administration, coordination, and development of the Paid-On-Call firefighter program.                                                                                                                                      |        |    |    |    |    |    |    |        |
| 3               | Implement a formal Succession Planning and Leadership Development Program that identifies, mentors, and prepares future leaders across all divisions. This program should include career pathing, targeted training, leadership shadowing, and secondment opportunities tied to the Fire Master Plan implementation timeline and operational growth triggers. |        |    |    |    |    |    |    |        |

| Recommendations                    |                                                                                                                                                                                                                                                                                                                                                            | Months |    |    |    |    |    |    |        |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----|----|----|----|----|----|--------|
|                                    |                                                                                                                                                                                                                                                                                                                                                            | 1      | 12 | 24 | 36 | 48 | 60 | 72 | Future |
| Public Education                   |                                                                                                                                                                                                                                                                                                                                                            |        |    |    |    |    |    |    |        |
| 4a                                 | Use the findings of the Community Risk Assessment (CRA), incident data, and geographic analysis to inform the development of annual public fire safety education plans. Programming should be updated each year to reflect emerging risks, demographic shifts, and local trends in fire incidents, smoke alarm compliance, and vulnerable occupancy types. |        |    |    |    |    |    |    |        |
| 4b                                 | Implement a GIS-based predictive analysis model and develop a participant tracking and evaluation system to monitor the reach and impact of public education programs.                                                                                                                                                                                     |        |    |    |    |    |    |    |        |
| 5a                                 | Develop and deliver targeted fire safety programs tailored for vulnerable and equity-deserving populations, incorporating input from community stakeholders, cultural organizations, and social service providers.                                                                                                                                         |        |    |    |    |    |    |    |        |
| 5b                                 | Leverage community data, GIS mapping, and stakeholder engagement to guide the development of fire safety programming tailored to the needs of specific neighbourhoods and population groups.                                                                                                                                                               |        |    |    |    |    |    |    |        |
| Fire Prevention & Code Enforcement |                                                                                                                                                                                                                                                                                                                                                            |        |    |    |    |    |    |    |        |
| 6                                  | Utilize predictive analytics using historical data, risk mapping, and response data, identify higher risk areas for targeted code enforcement inspections.                                                                                                                                                                                                 |        |    |    |    |    |    |    |        |
| 7                                  | Develop and implement a phased-in proactive fire inspection program for all building classifications, targeting properties and occupancies depending on risk categorization.                                                                                                                                                                               |        |    |    |    |    |    |    |        |
| 8                                  | Implement a phased expansion of Fire Prevention staffing, aligned with current service deficits.                                                                                                                                                                                                                                                           |        |    |    |    |    |    |    |        |

| Recommendations |                                                                                                                                                                                                                                                                                                                                                                                                                | Months |    |    |    |    |    |    |        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----|----|----|----|----|----|--------|
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                | 1      | 12 | 24 | 36 | 48 | 60 | 72 | Future |
| Operations      |                                                                                                                                                                                                                                                                                                                                                                                                                |        |    |    |    |    |    |    |        |
| 11              | Implement a systematic process to monitor and analyze fire incident trends related to high-rise buildings and ARUs, including response frequency, nature of incidents, and resource deployment per event. This information should be integrated into annual operations reviews, staffing and apparatus planning, and targeted training and public education initiatives.                                       |        |    |    |    |    |    |    |        |
| 12              | Continue to regularly update tiered medical response framework through renewed collaboration with Halton Region Paramedic Services, and the MFRS medical director to refine response protocols. Clarify the scope of clinical practice for First Responders and ensure alignment with system-wide changes such as the implementation of MPDS.                                                                  |        |    |    |    |    |    |    |        |
| 13              | Maintain formalized service agreements with third-party providers or neighbouring fire departments that possess technician-level capabilities in identified technical rescue disciplines.                                                                                                                                                                                                                      |        |    |    |    |    |    |    |        |
| 14a             | Expand the pre-fire planning program to include all buildings identified as risks within the Community Risk Assessment (CRA), ensuring complete coverage of high-priority and high-hazard occupancies.                                                                                                                                                                                                         |        |    |    |    |    |    |    |        |
| 14b             | Digitize all pre-plans and integrate them into CAD/GIS systems to allow mobile access for operational staff, with standardized data fields covering standpipes, key boxes, electric vehicle charging stations, photovoltaic arrays, and other critical building information, along with detailed tactical considerations such as attack stair locations, refuge floors, and smoke control systems.             |        |    |    |    |    |    |    |        |
| 14c             | Establish defined triggers for post-incident plan updates and other significant changes, and implement a KPI dashboard to track program performance, including percentage of first-due high-risk buildings with current surveys and median survey age. Conduct regular joint reviews between Fire Prevention, Training, and Dispatch divisions to ensure the plans remain accurate and operationally relevant. |        |    |    |    |    |    |    |        |

| Recommendations |                                                                                                                                                                                                                                                                                                                                                                                                                                        | Months |    |    |    |    |    |    |        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----|----|----|----|----|----|--------|
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1      | 12 | 24 | 36 | 48 | 60 | 72 | Future |
| Operations      |                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |    |    |    |    |    |    |        |
| 21              | Identify and implement opportunities to improve assembly time or investigate opportunities (such as new station designs, countdown clocks, etc.) to improve assembly time and implement regular monitoring and reporting of assembly time performance by station, shift, and incident category.                                                                                                                                        |        |    |    |    |    |    |    |        |
| 22              | Implement a formal concurrent call load monitoring process, using dispatch and incident data analytics to assess call overlap trends by time of day, location, and station impact. This data should be reviewed annually and integrated into resource deployment planning, station siting strategies, and staffing forecasts to determine when new apparatus, personnel, or facility expansion is warranted.                           |        |    |    |    |    |    |    |        |
| 23              | MFRS should proceed with the planning, design, and construction of Fire Station 6 within the next 60-72months.                                                                                                                                                                                                                                                                                                                         |        |    |    |    |    |    |    |        |
| 24              | Plan for the establishment of Fire Station 7 as a longer-term initiative beyond the current Fire Master Plan horizon, including preliminary site identification, land acquisition considerations, and early design planning. Construction and commissioning should be anticipated beyond the timeframe of this Plan, with the timing to be reassessed and advanced if growth rates or service demand accelerate in the southeast area. |        |    |    |    |    |    |    |        |
| 25              | Incorporate phased hiring plans for Station 6 and Station 7 into its 10-year staffing forecast, with annual adjustments reviewed during the Town's budget cycle.                                                                                                                                                                                                                                                                       |        |    |    |    |    |    |    |        |
| 26              | Temporarily staff a second response vehicle at Station 1, using the phased hiring of full-time firefighters between 2026 and 2028, as outlined in the staffing forecast in recommendation 25. This second unit should remain operational until a full-time response vehicle can be relocated to new station 6.                                                                                                                         |        |    |    |    |    |    |    |        |

| Recommendations      |                                                                                                                                                                                                                                                          | Months |    |    |    |    |    |    |        |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----|----|----|----|----|----|--------|
|                      |                                                                                                                                                                                                                                                          | 1      | 12 | 24 | 36 | 48 | 60 | 72 | Future |
| Emergency Management |                                                                                                                                                                                                                                                          |        |    |    |    |    |    |    |        |
| 9                    | Develop and implement a formal, municipality-wide Business Continuity Planning (BCP) framework, requiring all Town divisions to create, maintain, and regularly update business continuity plans tailored to their core functions and operational risks. |        |    |    |    |    |    |    |        |
| 10                   | Continue to ensure the Emergency Management Program reflects current and emerging threats.                                                                                                                                                               |        |    |    |    |    |    |    |        |
| Communications       |                                                                                                                                                                                                                                                          |        |    |    |    |    |    |    |        |
| 17a                  | Continue to enhance its dispatch operations by advancing workflow efficiency, adopting emerging technologies, and strengthening ongoing staff training initiatives to support high-performance emergency communications.                                 |        |    |    |    |    |    |    |        |
| 17b                  | Adopt a two-person dispatch model that clearly delineates the roles of call taker and dispatcher to enhance operational efficiency and reduce alarm processing times.                                                                                    |        |    |    |    |    |    |    |        |
| 17c                  | Continue to monitor, analyze, and improve alarm handling performance with the goal of achieving the established benchmark of 64 seconds or less for emergency calls, 90% of the time.                                                                    |        |    |    |    |    |    |    |        |
| 18a                  | Provide for a virtual expansion of dispatch capacity by utilizing the backup centre at Station 2 as a temporary solution.                                                                                                                                |        |    |    |    |    |    |    |        |
| 18b                  | Establish a new purpose-built Communications Centre to support long-term dispatch growth and regional capabilities.                                                                                                                                      |        |    |    |    |    |    |    |        |



| Recommendations                     |                                                                                                                                                                                                                                                                                                                                                                                                                           | Months |    |    |    |    |    |    |        |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----|----|----|----|----|----|--------|
|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                           | 1      | 12 | 24 | 36 | 48 | 60 | 72 | Future |
| Communications                      |                                                                                                                                                                                                                                                                                                                                                                                                                           |        |    |    |    |    |    |    |        |
| 19a                                 | Proactively explore opportunities to expand its dispatch service offerings to surrounding fire departments and municipalities through a structured business development and feasibility assessment process.                                                                                                                                                                                                               |        |    |    |    |    |    |    |        |
| 19b                                 | Develop a comprehensive financial model to support the expansion of its Communications Centre and regional dispatch services, utilizing the Hybrid Model (Base Fee + Per-Call or Tiered Add-Ons) as the preferred cost recovery approach.                                                                                                                                                                                 |        |    |    |    |    |    |    |        |
| 19c                                 | Develop and implement a comprehensive legal and governance framework to guide the expansion of MFRS's Communications Centre services to external municipalities including an enforceable Service Level Agreements (SLAs), formal governance structures, and legal oversight aligned with applicable provincial legislation and risk management standards.                                                                 |        |    |    |    |    |    |    |        |
| Training                            |                                                                                                                                                                                                                                                                                                                                                                                                                           |        |    |    |    |    |    |    |        |
| 15                                  | Complete a thorough analysis of existing training instructor capacity, including course development, face-to face training, remote training, practical and theory assessments and proctoring against the demand for training as outlines in the approved annual training calendar. Additional training officer capacity, whether full-time of part-time may be required to meet the increasing training demands for MFRS. |        |    |    |    |    |    |    |        |
| 16                                  | Pursue the establishment of a municipally supported fire training facility with Class B live fire capabilities, either independently or through partnerships with neighbouring municipalities, educational institutions, or third-party partnerships.                                                                                                                                                                     |        |    |    |    |    |    |    |        |
| Facilities, Apparatus and Equipment |                                                                                                                                                                                                                                                                                                                                                                                                                           |        |    |    |    |    |    |    |        |
| 20                                  | Explore a formal partnership with the Town's Public Works or Transit Departments to secure dedicated or shared space within an existing or future municipal facility for apparatus maintenance, inspections, and mechanical support.                                                                                                                                                                                      |        |    |    |    |    |    |    |        |

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## Conclusion

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The Fire Master Plan provides a roadmap of 30 recommendations across the key areas of administration, public education, fire prevention and code enforcement, emergency management, operations, training and professional development, dispatch, and facilities, apparatus & equipment. These recommendations are phased over a 6-year horizon to ensure that MFRS continues to meet legislative requirements while adapting to Milton's rapid growth and evolving risk environment. Many of the initiatives are cost-neutral or incremental, focusing on policy development, improved processes, and strategic staffing enhancements, while others involve longer-term investments in staffing, facilities, apparatus, and communications infrastructure.

By implementing these recommendations, the Town of Milton will be positioned to establish clear service levels, enhance public education, and fire prevention programming, modernize dispatch operations, and strengthen operational performance through new stations, phased staffing, and targeted training. The Plan also emphasizes succession planning, leadership development, and business continuity as essential components of organizational resilience. Collectively, these actions will ensure MFRS maintains its reputation as a professional, dedicated, and adaptable fire service, capable of delivering excellent value to residents while safeguarding community safety well into the future.

Although each recommendation has a corresponding timeframe, it is important to note this FMP needs to be revisited on a regular basis to confirm that the observations and recommendations remain relevant. The recommendations outlined in this FMP will better position MFRS to mitigate and manage community risks, monitor response capabilities and performance, and maintain excellent community relationships and 'value for money.' Notwithstanding operational observations around emergency response performance, achievement of an effective response force and the MFRS is serving the community well.

Finally, our interactions with the Town of Milton staff revealed a highly professional and dedicated organization that is committed to providing the best possible service to the citizens of the Town.

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## SECTION 1

### INTRODUCTION

#### 1.1 Background and Significance

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Community leaders across Canada continue to search for innovative approaches to improve the efficiency and effectiveness of service delivery. Effectiveness refers to the ability to achieve the desired results or outcomes, while efficiency refers to optimizing the use of available resources – whether it is time, money, or effort. The notion of efficiency in service delivery can also be described as ‘doing more for less’ or ‘value for money.’

Elected officials, CAOs, directors and managers are faced with the ongoing challenge of achieving efficient and effective service delivery models. Public safety is often one of the top priorities within most communities, but achieving this goal comes at a relatively high cost. The services charged with achieving this outcome, including police, fire, EMS, and emergency management, are essential components of any community’s social safety net. Service effectiveness is not an option. However, the need for fiscal discretion and to review operational efficiency and effectiveness cannot be ignored. Senior community officials must continue to be vigilant in their search for innovative and sustainable practices and finding the balance between service levels and expenditures to ensure their citizens are getting ‘value for money.’

#### 1.2 Goals and Objectives

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The goal of developing this Fire Master Plan (FMP) is to create a strategic plan by conducting a comprehensive community risk assessment and review the current capabilities of the fire service. The goal of the FMP is to provide a systematic and comprehensive approach to evaluate current response capabilities by identifying and mitigating risks and assist in formulating and communicating strategic directions for the fire service, while highlighting opportunities for improved service delivery. The FMP will also assist in conveying information to the public, staff, and municipal council about what to expect in the municipality’s approach to fire and emergency service planning, service delivery model, policy, and development.

While risks are the basis for triggering response decisions, our analysis also investigated the needs of the community, providing a point of reference upon which future decisions and priorities can be evaluated and implemented. This includes identifying priorities, challenges, and opportunities for the improvement of the delivery of emergency services to the community, businesses, and overall public safety. This plan also considers applicable legislation, industry-leading practices, and standards along with current and anticipated risks to provide unbiased analysis and evidence-based recommendations.

Ultimately, this FMP determines options towards an optimum service delivery model and serves as a ‘blueprint’ for the municipality to be more effective and efficient in the delivery of emergency services through current and future challenges.

### 1.3 Project Scope

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This Fire Master Plan will serve as a comprehensive, strategic framework to guide the delivery and evolution of fire and emergency services over the next 5 to 10 years. Its primary objective is to develop a comprehensive plan to reduce risk and optimize community safety through aligning services with community risk profiles, projected population growth, legislative requirements, and recognized best practices in the fire service industry.

This plan is informed by an in-depth assessment of current response capabilities, utilizing insights from the Community Risk Assessment (CRA) to evaluate the department’s ability to meet present and future service demands. Historical response data, performance trends, and compliance with industry standards will be closely examined to ensure that services are not only responsive but also proactive in mitigating risk and protecting life, property, and the environment.

This strategic roadmap will serve as a foundational tool for Council and senior leadership in prioritizing service enhancements and achieving long-term public safety goals. Key components of the Fire Master Plan include:

- **Demand Zone Analysis:** Evaluate emergency service coverage, response times, and geographic demand to identify gaps and optimize station locations.
- **Comprehensive Service and Program Review:** Assess the effectiveness and efficiency of all fire service divisions, including operations, fire prevention, public education, training, communications and administration.
- **Staffing Model Evaluation:** Review current staffing levels and deployment strategies to ensure appropriate and safe 24/7 coverage aligned with community needs and legislative requirements.
- **Resource Alignment:** Identify opportunities to better align personnel, apparatus, and facilities with current and future service demands.
- **Cost Efficiency and Avoidance Measures:** Explore strategies to reduce operational costs, defer capital expenditures, and enhance financial sustainability without compromising service quality.
- **Evidence-Based Recommendations:** Develop actionable, data-driven recommendations grounded in industry standards, best practices, and community risk to guide strategic decision-making and resource planning.

- **Strategic Investment Planning:** Support long-term capital and operating planning by identifying service improvement priorities and critical infrastructure or staffing needs.
- **Governance and Policy Alignment:** Ensure recommendations align with applicable legislation, municipal priorities, and long-range planning frameworks.

## 1.4 Standards and References

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This plan considers the following references and standards:

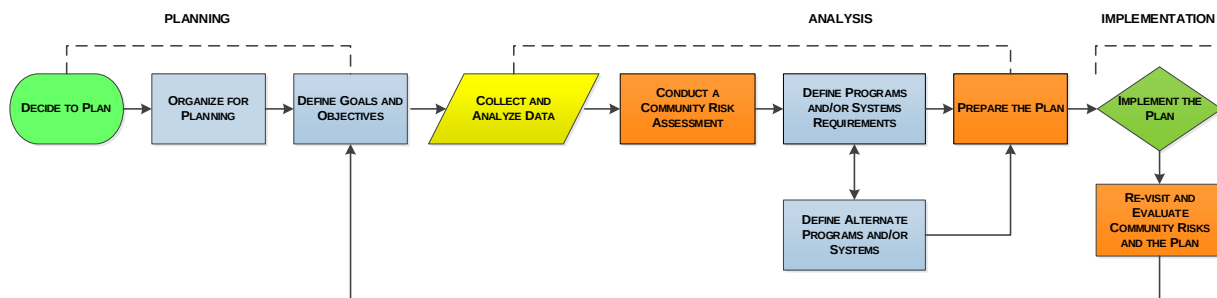
- Commission on Fire Accreditation International
- Canadian Standards Association (CSA)
- Fire Underwriters Survey (FUS)
- Ontario Emergency Management and Civil Protection
- Ontario Fire Protection and Prevention Act
  - O. Reg. 213/07: Ontario Fire Code
  - O. Reg. 378/18: Community Risk Assessments
  - O. Reg. 364/13: Mandatory Inspection – Fire Drill in Vulnerable Occupancy
  - O. Reg. 365/13: Mandatory Assessment of Complaints and Requests for Approval
  - O. Reg. 343/22: Firefighter Certification
- Fire Marshal Directives
- Town of Milton Community Risk Assessment
- Town of Milton Establishing and Regulating Bylaw
- Town of Milton Official Plan
  - Boyne Survey Secondary Plan
  - Trafalgar Secondary Plan
- Town of Milton Asset Management Plan
- Town of Milton Budget Documents
- National Fire Protection Association (NFPA)
- Ontario Occupational Health and Safety Act
- Ontario Building Code
- Underwriters Laboratories (UL/ULC)

## 1.5 Fire Master Plan Process

The following diagram illustrates the process used to complete this plan. A Fire Master Plan is sometimes referred to as a ‘road map’ for the future and used as a guiding document for current and future department leaders and decision-makers.

As outlined in the implementation phase, it is strongly recommended that this plan be reviewed and assessed at least annually, or more frequently in response to significant changes, such as population growth or increased residential and industrial development, that may impact community risk. When feasible, a third-party review and update should be conducted at the five-year mark to provide an objective evaluation of operations and enhance the credibility of the master planning process.

Figure 2: Fire Master Plan Process



## 1.6 Consultative Process

### 1.6.1 Community and Fire Station Tour

The community and station tours focused on the overall footprint, topography, transportation infrastructure of the municipality and the various response zones. Touring the stations provided an opportunity to conduct a general condition and operational functionality assessment on each station.

### 1.6.2 Targeted Interviews

Targeted interviews were conducted with fire service leadership and various Town department managers to gather relevant data and insights. An interview guide was used to conduct the interviews to promote open dialogue about the community, its risks, and general concerns related to municipal operations.

Table 1: Targeted Interview List

| No. | Name             | Job Title                                       |
|-----|------------------|-------------------------------------------------|
| 1   | Peter Gatto      | Fire Chief                                      |
| 2   | Gordon Fowler    | Deputy Fire Chief                               |
| 3   | Matt Townsend    | Deputy Fire Chief                               |
| 4   | Ryan Smith       | Division Chief - Communications                 |
| 5   | Ted Michael      | Division Chief – Fire Prevention                |
| 6   | Shawn Matheson   | Division Chief - Training                       |
| 7   | Gord Harse       | Division Chief - Operations                     |
| 8   | Amanda Robinson  | Supervisor of Administration                    |
| 9   | Steven Reynolds  | District Chief (PT) Operations                  |
| 10  | Rob Gasper       | Director – Facilities, Operations & Environment |
| 11  | Kristene Scott   | Commissioner- Corporate Services                |
| 12  | Janine Gallagher | Director- Human Resources                       |
| 13  | Andy Scott       | Senior Director – Economic Development          |

### 1.6.2.1 Summary of Interviews

The FMP process began with a series of interviews involving MFRS administration, senior fire officers, and select members of the Town of Milton’s senior administration. These interviews provided an opportunity to gather insights on various aspects of MFRS operations. In total, 13 individuals were interviewed.

The feedback collected addressed both general observations about MFRS and specific insights related to each participant’s area of expertise. Overall, there was strong support and commitment expressed toward MFRS. Interviews with MFRS staff emphasized the importance of tailoring programs and standards to meet Milton’s unique needs and circumstances.

A consistent theme throughout the interviews was the need for growth and development across all program areas to ensure the organization remains well-positioned to meet current demands and future challenges.

### Rapid Growth and Evolving Service Needs

The Town of Milton is undergoing significant residential and industrial expansion, including the addition of a post-secondary campus and advanced data centre infrastructure. This growth presents exciting opportunities but also places increasing demands on Milton Fire & Rescue Services (MFRS).



Areas such as medical tiered response and high-rise coverage are emerging as priorities for enhanced service delivery. While public perception of service levels remains high, there is a recognized need to better align resources with community risk and expectations. Leaders consistently emphasized the importance of phased growth planning and risk-informed deployment models to support sustainable service delivery.

### **Staffing and Workforce Development**

Milton's rapid development highlights the importance of strengthening both frontline and administrative staffing. Challenges in recruiting and retaining part-time personnel, coupled with the need for experienced staff, underscore the urgency of investing in workforce development. Current efforts in succession planning are focused on cultivating leadership, emotional intelligence, and internal promotion pathways. Continued emphasis on building project management and supervisory capacity will help ensure long-term organizational resilience.

### **Infrastructure and Facility Optimization**

While MFRS maintains well-equipped apparatus, several facilities are nearing capacity. For example, Station 3 is fully utilized, and maintenance operations are conducted in spaces not originally designed for vehicle servicing. Administrative and logistics areas are limited, and the Communications Centre has reached its physical limits. There is strong support for strategic investment in new stations, joint-use facilities, and maintenance infrastructure, guided by long-term capital planning.

### **Technology and Data Integration**

MFRS has made meaningful progress in adopting new technologies, including upgraded dispatch terminals, SCBA systems, and training platforms like Vector. The transition to NG911 is another positive step. However, opportunities remain to improve data integration and performance tracking. A centralized, customizable system would enhance reporting, analytics, and decision-making across platforms such as FDM and Workday, supporting transparency and continuous improvement.

### **Organizational Culture and Governance**

MFRS benefits from a strong internal culture rooted in adaptability, hands-on training, and commitment to service. To build on this foundation, there is a shared desire to strengthen internal communication, define key performance indicators, and formalize service level expectations. Enhancing governance structures and deepening Council engagement will be essential to aligning policy, leadership development, and strategic direction with the town's evolving needs.

## 1.7 Study Considerations

The following factors that affected both the assessment and effective mitigation of risk were considered and assessed:

### Community-Specific Considerations

- Total geographical area of review
- Population and future growth
- Community risk factors
- Community demographic information
- Development and area structure plans
- Multi-jurisdictional requirements and cooperation
- Current and future development impact on risks and response
- Financial resources and constraints
- Impacts of government legislation
- Bylaws
- Economic factors
- Tourism
- Construction
- Industrial activity
- Utilities
- Retail businesses and other services
- Agriculture
- Buildings and structures concentrating on high-risk demands, including business, assembly occupancies, etc.
- Municipal emergency management plans

### Department-Specific Considerations

- Geographic and physical boundaries for response
- Fire service focused reports previously conducted (2021 Master Plan, 2025 FUS)
- Standards of cover
- Budgets
- Current staff rosters with qualifications
- Fire station locations and other infrastructure
- Department structure
- Service delivery models
- Apparatus and equipment inventory, and future needs
- Building space requirements
- Operation staffing and administrative needs
- Bylaw, policies, and procedures
- Fire prevention & public education
- Emergency core service response
- Health and wellness
- Training and recruitment records and standards
- Succession planning
- Prevention programs such as inspections, education, and enforcement
- Records and data management
- Emergency services standard operating guidelines and procedures

## 1.8 Municipal Comparative Analysis

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An industry peer comparative analysis was conducted as a method of benchmarking the performance of MFRS alongside similar municipalities. The benchmarks included budgets, performance, effectiveness, and efficiencies. While fire and emergency services share the common goal of protecting life and property, each community has unique features influencing how they achieve this objective.

The communities who participated, along with the Town of Milton, included:

- City of Guelph
- Town of Oakville
- City of Burlington
- Town of Halton Hills
- Municipality of Clarington
- Municipality of Chatham-Kent

To develop this municipal comparison review, we used 2020-2024 information collected from each of the participating communities. Recognizing each municipality has unique attributes, such as risk factors, historical decisions, and community profiles, comparing MFRS to that of similar community remains an effective way to identify relative service levels, costs, and trends. The community comparative analysis provides a reference, rather than an operational model, focusing on several benchmarks including budgets, service areas, service, levels, and staffing levels.

Our main criteria for collecting information are:

- Population – Utilizing 2021 Census data for consistency
- Budgets – 2024 reported budgets from municipal websites
- Department size
- Type (full-time, part-time or combination)
- Department staffing

Additional information includes:

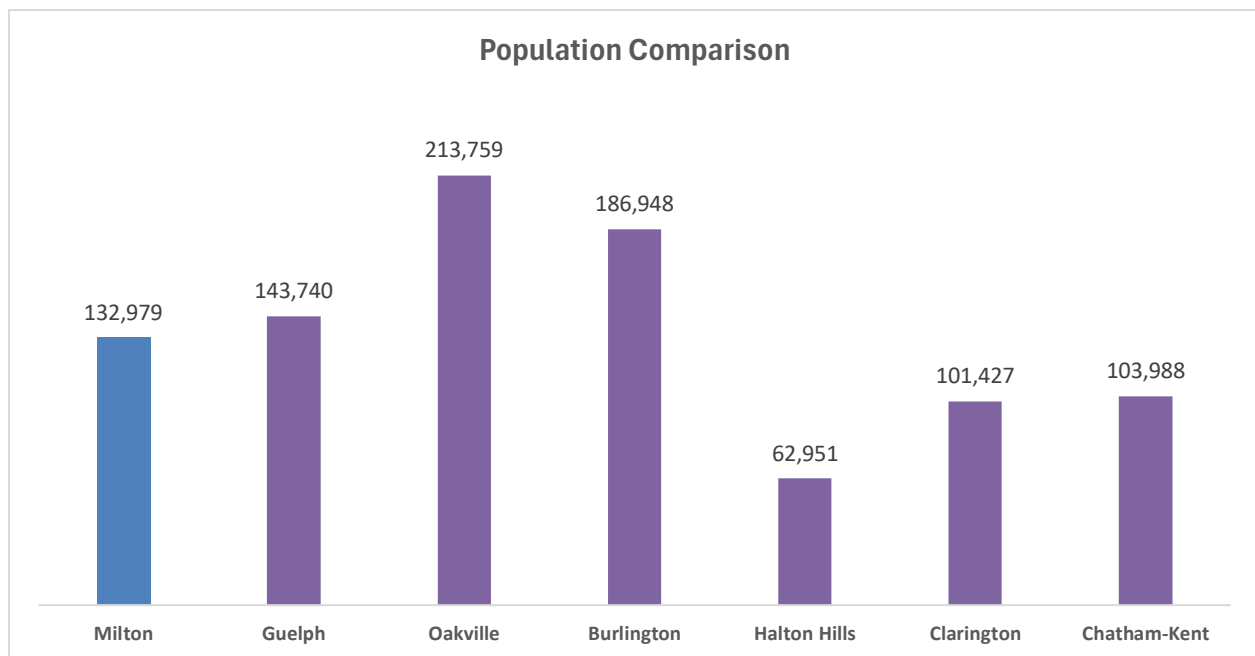
- Number of fire stations
- Call volume
- Call types

*See Appendix C: Community Comparative Analysis Results*

Table 2: Participating in Community Comparatives

| Community                    | Population<br>(2021 Census) | Land Area (km <sup>2</sup> ) | Area of<br>Response (km <sup>2</sup> ) |
|------------------------------|-----------------------------|------------------------------|----------------------------------------|
| Town of Milton               | 132,979                     | 365.50                       | 365.50                                 |
| City of Guelph               | 143,740                     | 79.57                        | 87.22                                  |
| Town of Oakville             | 213,759                     | 138.94                       | 138.94                                 |
| City of Burlington           | 186,948                     | 186.12                       | 186.12                                 |
| Town of Halton Hills         | 62,951                      | 276.81                       | 276.81                                 |
| Municipality of Clarington   | 101,427                     | 610.84                       | 610.84                                 |
| Municipality of Chatham-Kent | 103,988                     | 2,451.90                     | 2,600                                  |

Image 1: Population Comparisons (2021 Census)



### **1.8.1 Community Comparative Analysis Summary**

In 2024, the seven municipalities included in the comparative analysis reported operating budgets ranging from \$69.9 million to \$550 million. The Town of Milton ranks fifth out of seven, with an annual operating budget of \$192.3 million. Similarly, the Milton Fire & Rescue Services (MFRS) ranks fifth in fire department operating budgets, with \$15.6 million, compared to a range of \$10.3 million to \$46.9 million across the surveyed municipalities.

MFRS's budget represents 8.14% of Milton's total operating budget. On a per capita basis, MFRS operates at \$117.79 per resident, the lowest cost among the municipalities analyzed. The average per capita expenditure across the group is \$152.42.

#### **Staffing Model and Operational Capacity**

Milton operates with a lean composite staffing model, particularly in suppression, fire prevention, and support services. The department includes:

- 84 full-time and 70 part-time suppression staff across five stations
- 5 full-time fire prevention officers
- 4 full-time training staff
- 2.5 support staff and 2 full-time mechanics

In contrast, career departments such as Guelph and Oakville employ 147 and 240 full-time suppression staff respectively, reflecting their fully career-based structures. Milton's high reliance on part-time staff presents unique operational and training challenges not typically encountered by career departments.

Fire prevention staffing also lags behind comparable municipalities, with Milton's three full-time officers compared to Guelph's seven and Oakville's twelve, despite similar growth pressures. While training resources are relatively strong, administrative, and mechanical support remains limited. Other municipalities, such as Burlington and Clarington, benefit from broader staffing depth and centralized support services like dispatch and IT.

Milton's staffing approach emphasizes efficiency and incremental growth but may face constraints in sustaining service levels as community demands and risk profiles evolve.

**Call-Volume and Service Capacity**

Milton's total call volume has increased from 1,809 in 2020 to 2,796 in 2024, marking a 55% rise over five years. Despite this growth, Milton's call volume remains significantly lower than more urbanized municipalities such as Oakville (11,854 calls) and Burlington (13,066 calls).

Notably, only 11.4% of Milton's calls in 2024 were for medical response, an unusually lower proportion compared to other similar municipalities where EMS calls typically dominate (over 50% of total volume). This discrepancy may be attributed to differences in tiered medical response protocols or incident classification practices.

Milton responded to only 318 EMS-related calls in 2024, compared to Guelph (5,064), Clarington (801), and Chatham-Kent (628). This limited EMS engagement reflects Milton's ongoing transition toward a full-tiered medical response model. As this transition progresses, EMS call volumes are expected to rise significantly.

**Comparative Limitations**

It is important to note that no standardized framework exists for categorizing fire service incidents. As such, these statistics should be interpreted as general reference points rather than precise comparisons. Variations in organizational structure, service levels, incident classification, and financial systems across municipalities limit the accuracy of direct comparisons. Therefore, this analysis should be viewed as a high-level overview, and direct equivalency is strongly discouraged.

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## SECTION 2

### THE ENVIRONMENT

#### 2.1 Community Overview

---

The Town of Milton is a rapidly growing community in southern area - part of the Halton Region and the Greater Toronto Area (GTA). According to Statistics Canada, Milton had a population of 132,979<sup>3</sup> covering approximately 363.83 km<sup>2</sup>, resulting in a population density of about 365.5 persons per square kilometer.

The community comprises of 25 distinct neighbourhoods, featuring vibrant urban centres, established residential areas, rural landscapes, and industrial zones.

Milton is well-connected by major highways, including Highway 401, which runs east-west through Milton, Highway 407 to the north, and Highway 25 running north-south. Additionally, Milton is served by the Milton line of the GO Transit system, providing convenient commuter train and bus services to Toronto and other areas.

Milton is comprised of 25 distinct neighbourhoods, ranging from urban centres to rural and industrial areas. The town is also situated on the Niagara Escarpment, a UNESCO World Biosphere Reserve, offering rich biodiversity and recreational opportunities such as the Bruce Trail.

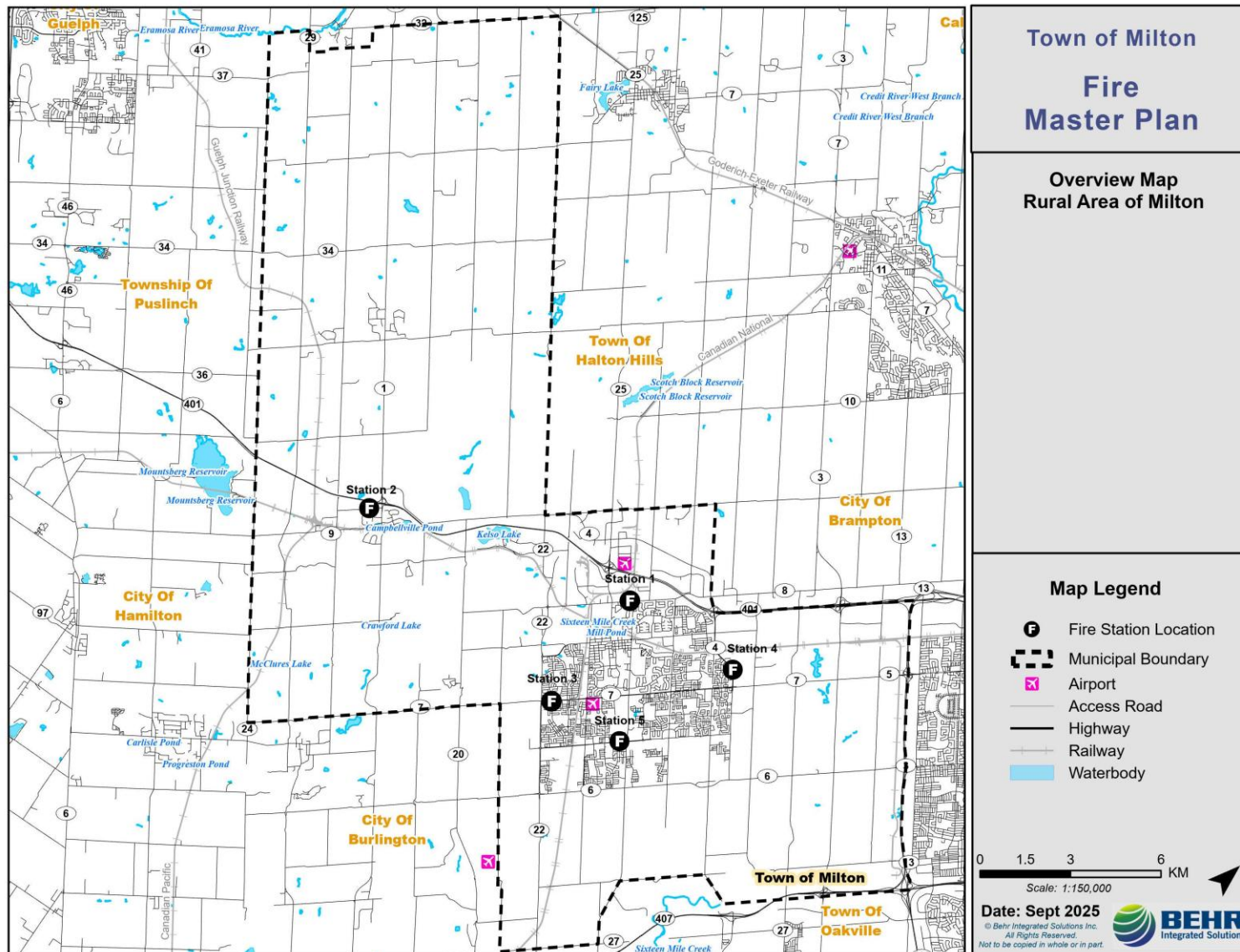
Milton is about 40 kilometres west of Toronto, 27 kilometers southeast of Guelph, 61 kilometers east of Kitchener, and shares a border with the City of Mississauga. This strategic location provides Milton residents with convenient access to a wide range of employment, educational, and recreational opportunities in the Greater Toronto and Hamilton Area.

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<sup>3</sup> <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?DGUIDlist=2021A00053524009&GENDERlist=1&HEADERlist=0&Lang=E&STATISTI Clist=1&SearchText=Milton>



Map 1: Town of Milton Overview



## 2.2 Economic Indicators

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According to the Town of Milton, in 2023, retail trade, manufacturing, professional, scientific, and technical services, and health care are the top contributing industries to Milton's economic base.

According to the Town's Economic Development Annual Report, the number of new businesses increased by 17% in 2023. The Town supported over 3.8 million square feet in new Industrial, Commercial, and Institutional (ICI) expansion and streamlined the process for 9,827,899 square feet of industrial development, either newly constructed or proposed for the Derry Green Corporate Business Park. The Derry Green Business Park continues to progress, with Phase 1 focusing on distribution, logistics, and advanced manufacturing.

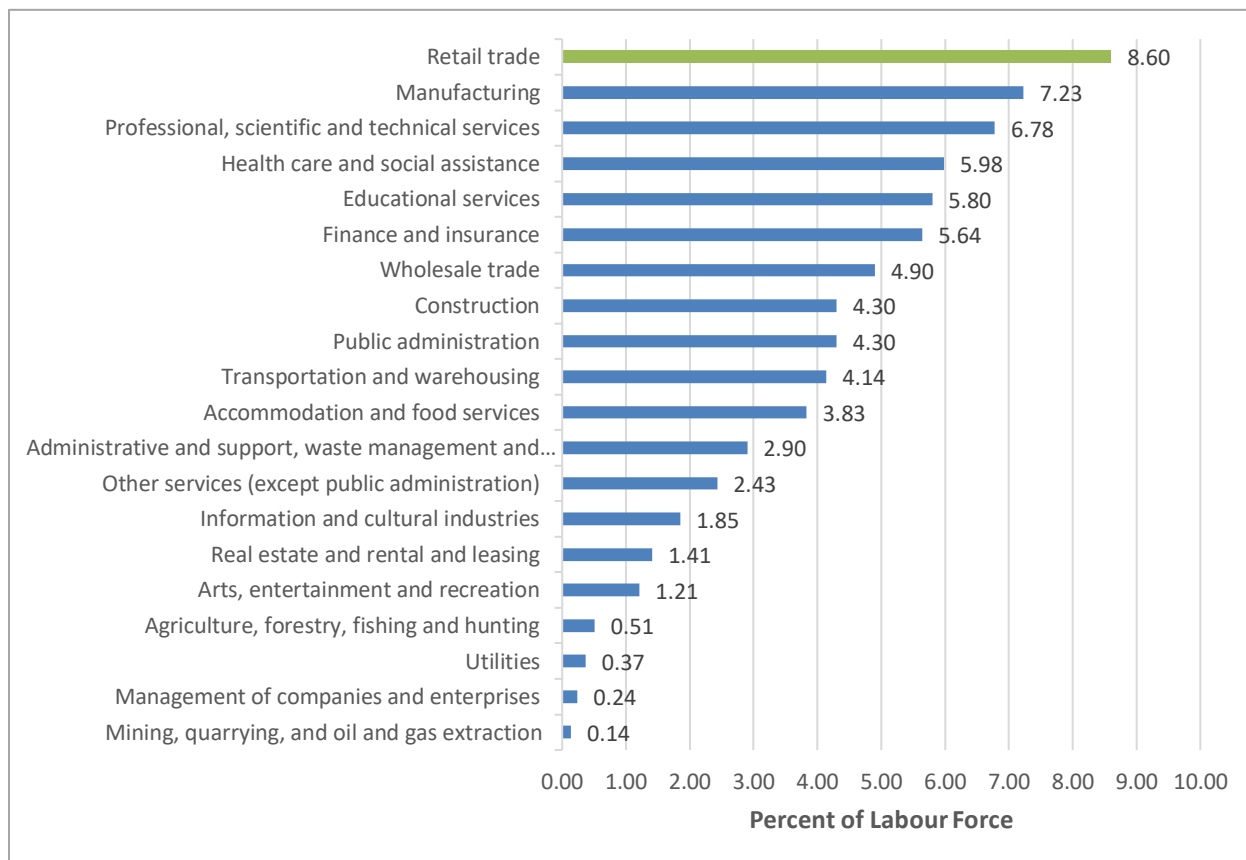
Certain industries, employers, and events contribute significantly to the financial sustainability and economic vitality of a community. A fire or other emergency at key sectors and employment facilities could have major impacts on the local economy and employment.

*Table 3: Milton Major Employers*

| Company                           | Service/Product          | # of Employees | Address                   |
|-----------------------------------|--------------------------|----------------|---------------------------|
| Karmax Heavy Stamping             | Metal Manufacturing      | 900            | 333 Market Drive          |
| Gordon Food Services              | Food Distribution Centre | 800            | 2999 James Snow Parkway N |
| Modatek Systems                   | Vehicle/Metal Stamping   | 600            | 400 Chisholm Drive        |
| Monaghan Mushrooms Ltd.           | Distribution Centre      | 450            | 7345 Guelph Line          |
| Allendale Long Term Care Facility | Health Care/Seniors Care | 300            | 185 Ontario Street S      |
| Loblaw (Real Canadian Superstore) | Grocery                  | 300            | 820 Main Street           |
| Uline Canada Corp                 | Storage/Warehousing      | 300            | 3333 James Snow Parkway   |
| Eaton Industries Ltd              | Equipment Manufacturing  | 250            | 610 Industrial Drive      |
| Vanier Centre for Women           | Correctional Facility    | 250            | 655 Martin Street         |
| Milton District Hospital          | Health Care              | 200            | 725 Bronte Street S       |
| Town of Milton                    | Public Services          | 200            | 150 Mary Street           |
| Walmart                           | Department Store/Retail  | 200            | 1280 Steeles Avenue E     |
| Parker Canada                     | Aerospace Manufacturing  | 200            | 160 Chisholm Drive        |

**Note:** The top industries that contribute to the economic base of the town are summarized in Figure 3.

Figure 3: Economic Sectors (2021)



## 2.3 Growth Projections

### 2.3.1 Overview of Urban Growth Strategy<sup>4</sup>

The Town of Milton is undergoing a significant transformation driven by a carefully phased and intensification-oriented growth strategy. While 71% of the Town's land base in the north and west is not currently contemplated for development, growth is concentrated in the south and east where servicing infrastructure already exists.

Milton's Growth Plan supports the development of mixed-use, transit-oriented communities within identified Secondary Plan areas including Trafalgar, Britannia, the Milton Education Village (MEV), and Walker (Boyne). Together, these plans are projected to accommodate over 130,000 new residents and tens of thousands of jobs over the next 20+ years. This managed approach aligns with Provincial and Regional objectives and hinges on both residential and employment growth to sustain Milton's financial projections and infrastructure investments.

<sup>4</sup> <https://www.milton.ca/en/business-and-development/town-projects.aspx>

## 2.3.2 Secondary Plan Development Areas

Table 4: Secondary Plan Development Areas.

| Secondary Plan Area      | Status            | Target Horizon | Estimated Growth               | Key Milestones                                | Estimated Completion |
|--------------------------|-------------------|----------------|--------------------------------|-----------------------------------------------|----------------------|
| Britannia                | In effect (2025)  | ~2035+         | ~57,500 residents / 9,000 jobs | Tertiary planning, subdivision approvals      | 2025–mid-2030s       |
| Trafalgar / GO Corridor  | In effect (2024)  | 2031+          | ~26,000 residents / 4,000 jobs | GO station, high-density corridor development | Post-2031            |
| Milton Education Village | In early planning | 2031 horizon   | ~25,000 residents (long-term)  | Institutional land use, infrastructure review | Mid-late 2030s       |
| Walker (Boyne Area)      | Active since 2015 | 2025+          | ~25,000 residents              | Ongoing subdivision build-out                 | Through early 2030s  |

## 2.3.3 Building Types and Associated Risks

As Milton’s growth continues through the development of Secondary Plan areas, the associated building types introduce a wide array of fire and emergency service risks. Each plan area is expected to feature a mix of residential, commercial, institutional, and industrial developments, all of which require unique response capabilities.

Table 5: Building Types and Risks

| Plan Area                      | Typical Building Types                                                                  | Primary Risks                                                                  | Special Considerations                                                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Britannia                      | Low to mid-rise residential, commercial, schools, parks                                 | High population density, increased medical calls, structure fires              | Need for community outreach, education, and prevention programming                                                                                   |
| Trafalgar / GO Corridor        | Mid to high-rise mixed-use, transit-oriented buildings                                  | Vertical fire spread, high occupant load, transit incident risks               | Aerial apparatus access, evacuation planning, transit coordination                                                                                   |
| Milton Education Village (MEV) | Academic institutions, research labs, student housing, commercial                       | Laboratory hazards, high occupancy, public assembly risks                      | Pre-incident planning, hazardous material protocols, code compliance                                                                                 |
| Walker (Boyne)                 | Low to medium-density residential, neighbourhood retail, schools                        | Residential fires, medical calls, inspection volume                            | Growth-driven service demand, suburban road access, fire hydrant coverage                                                                            |
| CN Logistics Yard              | Intermodal terminals, warehouses, industrial freight operations, maintenance facilities | Industrial fires, hazardous materials, vehicular collisions, rescue operations | High-risk technical rescue potential (trench, confined space), HAZMAT protocols, mutual aid coordination, emergency access routes for rail incidents |

Table 6: Population and Private Dwellings Change (2001 to 2021)<sup>5</sup>

| Year | Population | % Change | Total Private Dwellings | % Change |
|------|------------|----------|-------------------------|----------|
| 2001 | 31,471     | -1.97    | 10,933                  | 4.37     |
| 2006 | 53,939     | 71.39    | 18,930                  | 73.15    |
| 2011 | 84,362     | 56.40    | 28,049                  | 48.17    |
| 2016 | 110,128    | 30.54    | 34,257                  | 22.13    |
| 2021 | 132,979    | 20.75    | 40,040                  | 16.88    |

<sup>5</sup> Town of Milton Census Profile 2021

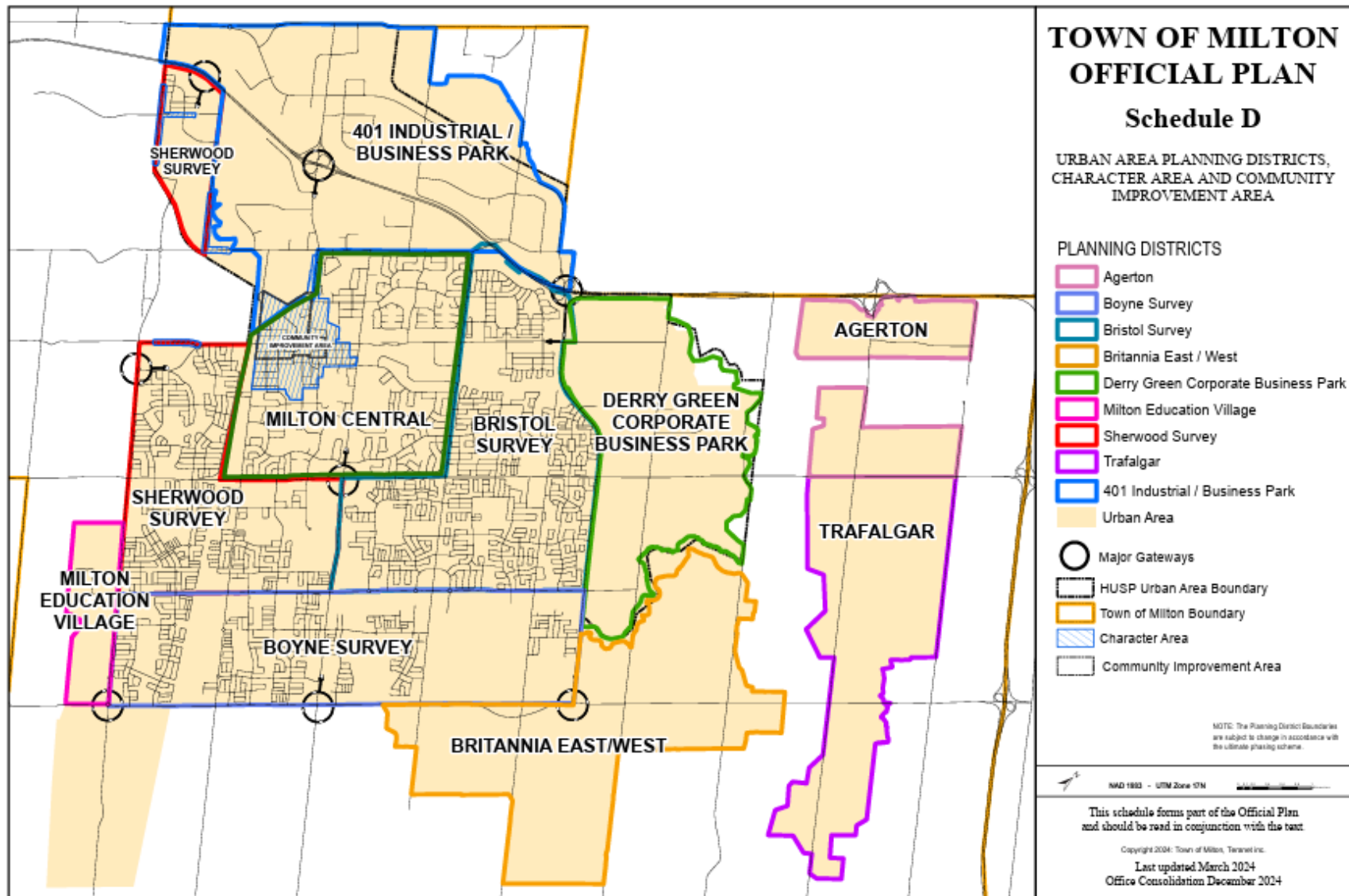
Table 7: Town of Milton 25-year population forecast<sup>6</sup>

| Year | Population | % Change | Total Private Dwellings | % Change |
|------|------------|----------|-------------------------|----------|
| 2021 | 132,979    |          | 41,000                  |          |
| 2026 | 175,490    | 32.0%    | 47,300                  | 15.4%    |
| 2031 | 228,000    | 30.0%    | 54,600                  | 15.4%    |
| 2036 | 278,120    | 22.0%    | 60,800                  | 11.4%    |
| 2041 | 335,260    | 20.5%    | 81,300                  | 33.7%    |
| 2051 | 400,400    | 19.4%    | 93,000                  | 14.4%    |

<sup>6</sup> [https://www.milton.ca/en/business-and-development/official-plan-review.aspx?utm\\_source=chatgpt.com](https://www.milton.ca/en/business-and-development/official-plan-review.aspx?utm_source=chatgpt.com)

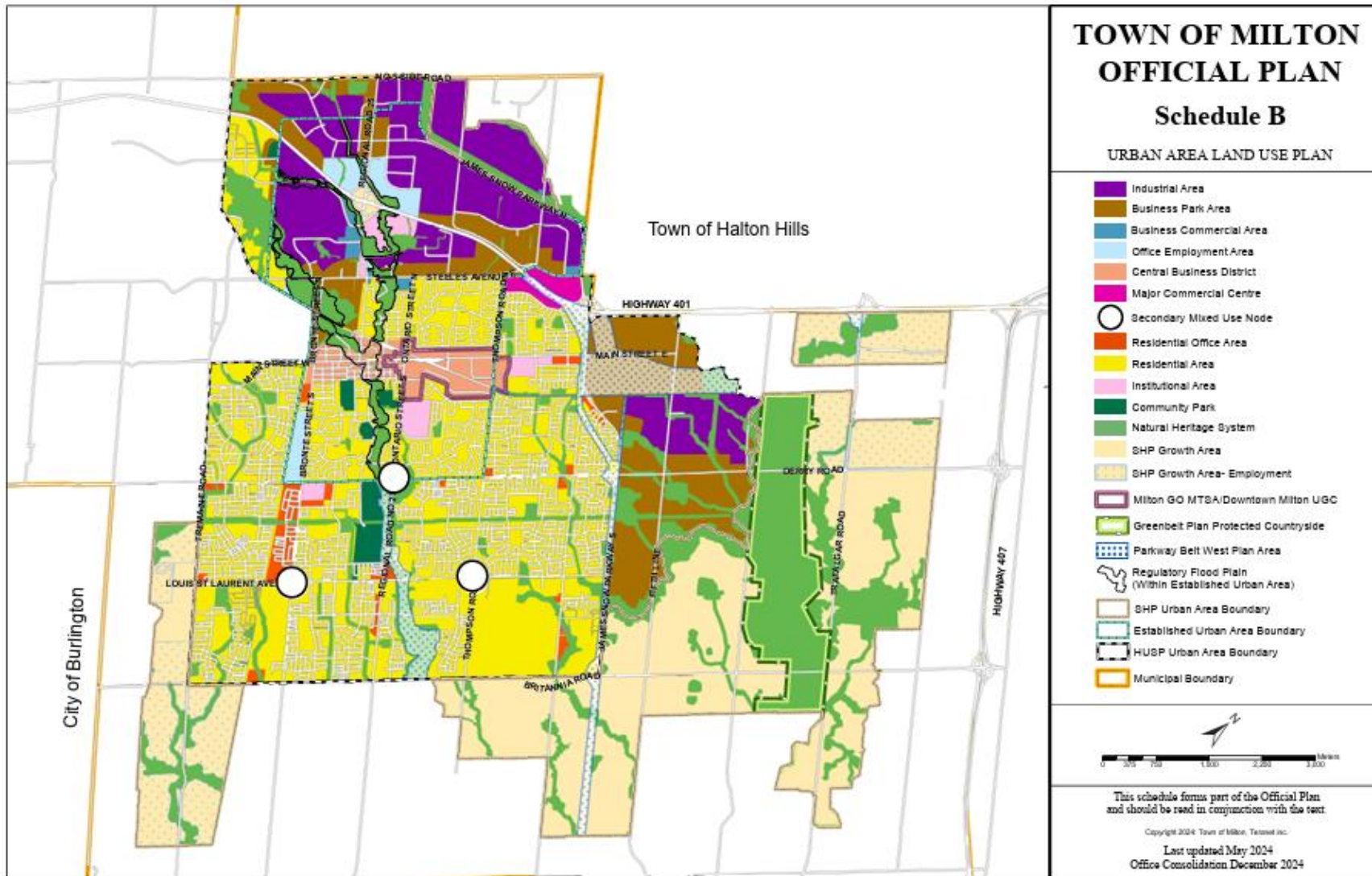


Map 2: Town of Milton Official Plan – Schedule D





Map 3: Town of Milton Official Plan – Schedule B



## 2.4 Key Community Demographics

### 2.4.1 Population Growth

Table 8: Population growth (2016-2021)<sup>7</sup>

| 2021    | 2016    | % Change |
|---------|---------|----------|
| 132,979 | 110,128 | 20.8%    |

### 2.4.2 Average & Median Age

Table 9: Average and Median Age 2021<sup>8</sup>

|             | Total | Male | Female |
|-------------|-------|------|--------|
| Average Age | 35.2  | 34.7 | 35.7   |
| Median Age  | 36.0  | 35.2 | 36.4   |

### 2.4.3 Population Distribution

Table 10: Population Distribution 2021<sup>9</sup>

| Age Range      | Total  | Male   | Female |
|----------------|--------|--------|--------|
| 0 to 14 Years  | 31,980 | 16,375 | 15,600 |
| 15 to 64 Years | 87,770 | 43,655 | 44,120 |
| 65+ Years      | 13,225 | 6,045  | 7,185  |

<sup>7</sup><https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?DGUIDlist=2021A00053524009&GENDERlist=1%2C2%2C3&Lang=E&STATISTIClist=1>

<sup>8</sup><https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?DGUIDlist=2021A00053524009&GENDERlist=1%2C2%2C3&Lang=E&STATISTIClist=1>

<sup>9</sup><https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?DGUIDlist=2021A00053524009&GENDERlist=1%2C2%2C3&Lang=E&STATISTIClist=1>

## 2.4.4 Age Distribution in Percentages

Table 11: Age distribution percentage 2021<sup>10</sup>

| Age Range      | Total | Male  | Female |
|----------------|-------|-------|--------|
| 0 to 14 Years  | 24.7% | 51.6% | 48.4%  |
| 15 to 64 Years | 66.1% | 50.0% | 50.0%  |
| 65+ Years      | 9.2%  | 45.9% | 54.1%  |

## 2.5 Community Risk Assessment

Risk can be managed by either accepting the risk, insuring against damages, or investing in risk prevention and mitigation strategies. Local governments typically employ a combination of these approaches. In general, the risks and management strategies of a community are relative to a municipality's financial capacity, geography, population demographics, fixed assets, critical infrastructure, and overall service delivery.

Conducting a risk assessment is the first step towards establishing a strategic plan to manage community risks based upon local fire department response capabilities. The results are used to assist the municipality in making informed decisions regarding the allocation of limited fire prevention and fire response resources.

Community Risk Assessments are mandated under Ontario Regulation 378/18 and serve as a foundational tool for fire departments to identify, analyze, and prioritize public safety risks. These assessments enable informed decision-making regarding the types and levels of fire protection services provided, ensuring alignment with local risk profiles and community needs. Specifically, the following nine (9) profiles will be reviewed:

1. Geographic profile
2. Building stock profile
3. Critical infrastructure profile
4. Demographic profile
5. Hazard profile
6. Public safety response profile
7. Community services profile
8. Economic profile
9. Past loss and event history profile

The information and data gathered to address each of the profiles will assist in determining and prioritizing risks to public safety in the community and determining the fire protection services to be provided by municipalities to address those risks.

<sup>10</sup><https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?DGUIDlist=2021A00053524009&GENDERlist=1%2C2%2C3&Lang=E&STATISTIClist=1>

Risks were identified using historical response data, hazard risk vulnerability assessments and information from our interviews to develop a risk profile for the community. The evaluation of fire and rescue risks considers both the probability and consequence of emergency event types. The probability of an event is quantified by analyzing historical, current, and projected data. The consequence of the event type or risk is based on an informed assessment of the potential impact on a community should the event occur.

The Community Risk Assessment (CRA) must consider the following:

- The format is approved by the Ontario Fire Marshal by reviewing the nine mandatory profiles.
- The Technical Guideline TG-02-2019: Community Risk Assessment Guideline will be used as guidance in formatting the risk assessment.
- Utilization of the charts as provided in the technical guideline or as a minimum, all the points outlined in the guideline.
- The CRA document will be made readily available if the Ontario Fire Marshal conducts a review of the municipality under the FPPA(Part III, 9. (1)(a)).

### **2.5.1 Factors Contributing to Risk**

As mentioned, every municipality has unique challenges and characteristics contributing to the overall risk profile of the community. Examples of community risks include:

- Fire/rescue service model and response capacity
- Population and demographics
- Population growth rate
- Industry types
- Economy
- Rate of development
- Transportation corridor types
- Topography
- Weather
- Historical response data

## 2.6 Risk Management

All communities require a process to identify and actively manage high-priority risks. The focus of this report is to identify and discuss specific risks and unique community characteristics that contribute to risk, typically managed through fire and life safety education, fire prevention and code enforcement, or fire department response. Image 2 describes the risk management cycle.

*Image 2: Risk Management Cycle Process*



The first step in the risk management process includes the assessment of the probability and consequence of specific risks. The next step is the assessment to identify key risks, which are then evaluated against the current prevention or response strategy to identify potential service gaps. The third step in this cycle includes adjusting fire prevention and response service levels to manage the resources necessary to pre-emptively mitigate or respond as determined by approved service levels. The last step in the cycle is to measure, and report results to key policymakers. This cycle should be repeated periodically to address changes in the risk profile and make thoughtful and informed decisions regarding strategies to manage any changes.

In Canada, local governments are charged with delivering fire and rescue response services for their citizens. Elected officials are the ‘Authority Having Jurisdiction’ (AHJ), who determine the level of service required to manage fire and rescue risks to an acceptable level. The challenge for elected officials lies in determining the best balance between investing in adequate emergency services and accepting a certain level of risk.

## 2.7 Risk Evaluation vs. Service Levels

The evaluation of fire or rescue risks considers both the probability and consequence of emergency event types. The probability of an event is quantified by analyzing historical, current, and projected data. The consequence of the event type or risk is based on an informed assessment of the potential impact on a community should the event occur.

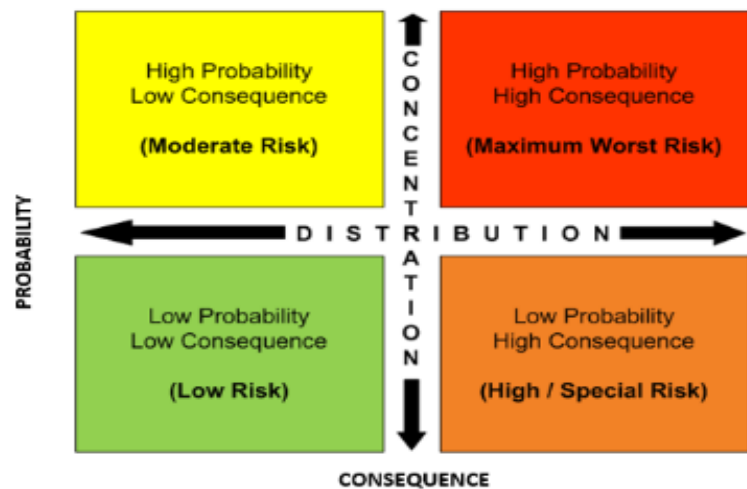
**Probability** – The probability of a risk, or event type, is the determined likelihood that an event will occur within a given time. The probability is quantified by considering the frequency of event type data. An event that occurs daily is highly probable and, therefore, higher risk. An event that occurs only once in a century is assessed as a lower risk as it may never occur.

**Consequence** – There are three types of consequences when considering fire/rescue response requirements:

- **Life safety impact:** Life safety risk for victims and responding emergency personnel are the highest order of consequence when considering the risk associated with specific event types. Events with a high likelihood of injury/death occurring and even a moderate probability of occurring require close examination to ensure adequate resources required to safely rescue or protect the lives of occupants from life-threatening are accessible to respond. Incidents that risk life safety include motor vehicle accidents, extreme weather, flooding, fire, release of hazardous materials, medical emergencies, and all types of rescue situations.
- **Economic impact:** Events with high negative impacts on the local economy are devastating to a municipality. For example, recovering from the fire loss of a large employer's property or key public infrastructure in smaller municipalities can be difficult. Therefore, providing adequate response capacity necessary to manage these types of events must be considered.
- **Environmental impact:** Negative environmental consequences resulting in irreversible or long-term damage to the environment must also be considered in the analysis. Events with risk of negatively impacting water, soil and air quality are also likely to impact life safety as well as the economy and therefore must be considered.

Social and cultural impacts, as experienced with the loss of historic buildings, recreation facilities or non-critical community infrastructure, are considered but do not typically affect how fire department resources are deployed.

Figure 4: Risk Evaluation Matrix





As discussed, the risk evaluation process is used to identify high-priority risks and the appropriate risk management strategy. Where a fire department response is determined to be the most appropriate management strategy, the appropriate services and service levels should be established to manage the risks safely. Elected officials are responsible for determining which services are delivered and setting service level goals. The service level goals determine the necessary concentration and distribution of either fire prevention or emergency response resources to manage the identified risks.

***Distribution*** refers to the number of fixed resources, such as fire stations, and where they are placed throughout the community. Distribution varies depending on factors related to the number of incidents and types of calls for service in the defined area.

***Concentration*** refers to the assembling of resources, such as a specialized workforce and equipment, needed to effectively respond to an incident in each area within the community. It must also identify the availability of additional response resources, including the reliability and time of arrival of a secondary responding unit.

The risk evaluation matrix can be divided into four levels of risk based on the probability and consequence, each with specific implications for the concentration and distribution of resources. It is provided as a reference and context to quantify fire response risks in any municipality. Different quadrants of the risk matrix need different response requirements, which offers examples of categories of types of structural fires and general hazards commonly found in communities. As described above, these risks are categorized by considering the probability and consequence of the fire or hazard. This qualitative analysis is based on experience and expertise and should be completed with input from fire, building and emergency management officials. Every community will have a unique risk inventory contributing to its risk profile.

### 2.7.1 Assigning Risk Level

Once probability and consequence are determined, the level of risk is calculated by multiplying the numerical values for probability and consequence. The relationship between probability and consequence as it pertains to risk levels can be illustrated in a risk matrix (below). In a risk matrix, probability and consequence are defined on separate scales with varying descriptors providing direction on how to assign the probability and consequence of an event. Figure 5 shows the risk matrix utilized in the updated CRA. The purpose of assigning a risk level is to assist in the prioritization of the range of risks that are identified in the CRA.

Figure 5: Risk Matrix Template

| Probability/<br>Consequence | Insignificant<br>1 | Minor<br>10 | Moderate<br>100 | Major<br>1,000 | Catastrophic<br>10,000 |
|-----------------------------|--------------------|-------------|-----------------|----------------|------------------------|
| Almost Certain<br>10,000    | Moderate           | Moderate    | High            | High           | High                   |
| Likely 1,000                | Moderate           | Moderate    | Moderate        | High           | High                   |
| Possible 100                | Low                | Moderate    | Moderate        | Moderate       | High                   |
| Unlikely 10                 | Low                | Low         | Moderate        | Moderate       | Moderate               |
| Rare 1                      | Low                | Low         | Low             | Moderate       | Moderate               |

Where possible, quantitative data was used to inform the risk assignment as described in the rationale in the table. It is important to recognize that with the availability of new or updated data, the probability levels could change or be refined. It should also be recognized that, as identified in OFM T.G.-02-2019, “professional judgment based on experience should also be exercised in combination with historical information to estimate probability levels. Similarly, OFM T.G.-02-2019 acknowledges the role of professional judgment and reviews of past occurrences in determining consequence levels. The rationale provided for both probability and consequence consider information from the CRA’s nine profiles, as OFM T.G.-02-2019 supports consideration of the profiles together to inform decision-making about the provision of fire protection services in the specific municipality/community.

## 2.8 Structural Fire Risk Analysis

It is critical to use careful planning and consider alternative solutions when managing risk because the ability to increase the distribution of resources and add capacity is always limited. Spending substantial amounts of time and resources to manage a risk with low frequency/low consequences will have limited impact and make a minimal improvement to community safety. When planning for fire department response, the planning process includes a detailed review of the frequency of events and their potential consequence(s), to ensure prevention and response efforts maximize life safety and minimize negative consequences for high-priority events.

Municipalities must also account for the distinction between urban/suburban and rural service delivery when planning fire department response. Each presents unique challenges and requires tailored mitigation measures. In rural areas, extended travel times, often exceeding 10–15 minutes, are common, which can limit the ability of fire services to conduct interior offensive operations.



As a result, rural responses may more frequently necessitate a defensive strategy, as fires may have already advanced beyond the point of safe entry. This reality is present in Milton, where response performance varies across urban and rural zones.

The Office of the Fire Marshal (OFM) have developed guidelines to assist municipalities with conducting community risk assessments to inform decisions about the provision of fire protection services, in accordance with Ontario Regulation 378/18 and the Fire Protection Act 1997 (FPPA).

As referenced in O. Reg. 378/18, the building stock profile assessment includes an analysis of the types and uses of building stock in a municipality. Important considerations include the number of buildings of each type, the number of buildings of each use and any building related risks known to the fire department. There are potential fire risks associated with different types and uses of buildings, given the presence or absence of fire safety systems and equipment at the time of construction and maintenance thereafter.

## **2.9 Ontario Building Code Occupancy Classifications: Building Stock Profile**

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The Ontario Building Code (OBC) categorizes buildings by their major occupancy classifications. Each classification has definitions that distinguish it from other occupancy classifications. Using the OBC as the source for defining the occupancy classifications provides a recognized definition and baseline for developing the community risk profile. The OBC major classification groups and divisions are presented in the following table.

Table 12: OBC Major Occupancy Classification

| Group | Division | Description                                                                         |
|-------|----------|-------------------------------------------------------------------------------------|
| A     | 1        | Assembly occupancies intended for the production and viewing of the performing arts |
| A     | 2        | Assembly occupancies not elsewhere classified in Group A                            |
| A     | 3        | Assembly occupancies of the arena type                                              |
| A     | 4        | Assembly occupancies in which occupants gather in the open air                      |
| B     | 1        | Detention occupancies                                                               |
| B     | 2        | Care and treatment occupancies                                                      |
| B     | 3        | Care occupancies                                                                    |
| C     | --       | Residential occupancies                                                             |
| D     | --       | Business and personal services occupancies                                          |
| E     | --       | Mercantile occupancies                                                              |
| F     | 1        | High hazard industrial occupancies                                                  |
| F     | 2        | Medium hazard industrial occupancies                                                |
| F     | 3        | Low hazard industrial occupancies                                                   |

## 2.10 OFM Fire Risk Sub-Model Occupancy Classifications

The Fire Risk Sub-Model developed by the OFM utilizes the major building occupancy classifications (i.e., Group A, B, C, D, E and F) but does not use the detailed division classifications as included in the OBC. This strategy provides the opportunity for further analysis of a specific occupancy group. Subject to any site-specific hazards or concerns, occupancies within a group can be assessed individually and included where required within the scope of the broader community risk assessment.

Analyzing structural fire risk begins by developing an exhaustive inventory of existing building stock and monitoring changes to the inventory. This process should include staff from the planning and development departments, as well as building and fire prevention officers. This provides the fire service with an opportunity to evaluate the Ontario Fire Code requirements in the design, construction, and operation phases of the building.

The building inventory database becomes the foundation of assessing fire risk in the community. This inventory provides a count of all property types, including single and multi-family residential, assembly (including schools, churches, hospitals, personal care homes, etc.), mercantile, commercial, and industrial properties.

Once the inventory is assembled, the fire department response capability is measured against the identified property risks. This simple identification of the high numbers of specific high-risk property types may identify gaps in the current response model, resulting in the reorganization or addition of fire department resources. As building stocks increase, fire departments should continue to monitor response capability and capacity to ensure service levels are maintained.

## **2.11 Town of Milton's Existing Major Building Classification Summary**

An analysis of the Town's major building occupancy types was conducted using data provided by the Municipal Property Assessment Corporation (MPAC). Table 13 summarizes the Town's existing major building occupancy classifications.

The majority of the Town's existing property stock is comprised of Group C - Residential Occupancies (89.65%), representing 37,140 residential units. The second largest occupancy type within the Town is Group F- Industrial Occupancies, accounting for 1.67% of the Town's property stock.

Table 13: Town of Milton Total Existing Property Stock<sup>11</sup>

| OBC Occupancy Classification   | OFM Fire Risk Sub-Model Major Building Classifications | Number of Occupancies | Percentage of Occupancies |
|--------------------------------|--------------------------------------------------------|-----------------------|---------------------------|
| <b>Group A</b>                 | <b>Assembly Occupancies</b>                            | <b>133</b>            | <b>0.32%</b>              |
| <b>Group B</b>                 | <b>Care or Detention Occupancies</b>                   | <b>32</b>             | <b>0.08%</b>              |
| <b>Group C</b>                 | <b>Residential Occupancies - Total</b>                 | <b>37,140</b>         | <b>89.65%</b>             |
| Group C                        | Single-detached                                        | 31,740                | 52.48%                    |
| Group C                        | Semi-detached                                          | 4,932                 | 11.91%                    |
| Group C                        | Row                                                    | 10,307                | 24.88%                    |
| Group C                        | Apartment < 5 Storeys                                  | 133                   | 0.32%                     |
| Group C                        | Apartment > 5 Storeys                                  | 27                    | 0.07%                     |
| Group C                        | Movable Dwellings                                      | 1                     | 0.00%                     |
| <b>Group D</b>                 | <b>Business &amp; Personal Services</b>                | <b>397</b>            | <b>0.96%</b>              |
| <b>Group E</b>                 | <b>Mercantile</b>                                      | <b>253</b>            | <b>0.61%</b>              |
| <b>Group F (all divisions)</b> | <b>Industrial Occupancies</b>                          | <b>690</b>            | <b>1.67%</b>              |
| Division F1 *                  | High Hazard                                            | 4                     | 0.01%                     |
| Division F2 *                  | Medium Hazard                                          | 675                   | 1.63%                     |
| Division F3 *                  | Low Hazard                                             | 11                    | 2.26%                     |
| <b>Other</b>                   | <b>Not classified in OBC- Farm</b>                     | <b>938</b>            | <b>2.26%</b>              |
| <b>Other</b>                   | <b>Not classified in OBC - Government</b>              | <b>1,843</b>          | <b>4.45%</b>              |
| Total                          |                                                        | <b>41,426</b>         | <b>100.00%</b>            |

Consistent with most other municipalities in Canada, Group C - Residential Occupancies represent the most prominent type of building occupancy type in Milton at 89.65%. Standard incident reporting from the OFM<sup>12</sup> indicates that 83.51% of structure fires loss over the five-year period from January 1, 2018, to December 31, 2022, occurred within Group C - Residential Occupancies.

<sup>11</sup> Difference between MPAC and Census occupancy totals is related to MPAC classifications vs Census Groupings

<sup>12</sup> Milton SIR- Municipal Fires: Overview Property Class, Injuries, Cause, Ignition Source (2018-2022)

## 2.12 Potential High-Fire Risk Occupancies

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Potential high fire risk occupancy is another factor for consideration within a Town's building stock. High fire risk can be linked to a combination of factors such as building density (exposures), building age, and construction. Fuel load typically refers to the amount and nature of combustible content and materials within a building. This can include combustible contents, interior finishes as well as structural materials. Combustible content tends to create the greatest potential fire loss risk. Higher fuel loads result in increased fire loss risk due to increased opportunity for ignition and increased fire severity. In many communities, large amounts of fuel load can be contained within a single occupancy, such as a building supply business, within a large multi-unit residential building, or within a historic downtown core.

### 2.12.1 Fuel Load Concerns

The review has identified 70 buildings with potential fuel load concerns. These include buildings involved in auto and auto parts, cannabis processing, food storage, general warehousing, and manufacturing. The buildings may utilize materials such as oxidizers and flammable and combustible liquids and chemicals.

In addition to ensuring compliance with the requirements of the OBC and the OFC, there are operational strategies that a fire service can implement to address fuel load concerns. These include regular fire inspection cycles and pre-planning of buildings of this nature to provide an operational advantage in the event of fire. It should be noted that some of these companies routinely update emergency response plans and share them with the fire services.

## 2.13 Occupancies with Potential High Fire Life-Safety Risk

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Fire risk does not affect all people equally. Those who are at an increased risk of fire injury or fatality are known as vulnerable individuals. In the event of a fire, these individuals may be unable to self-evacuate and/or require assistance in their evacuation efforts.

Identifying the location and number of vulnerable individuals or occupancies within the community provides insight into the magnitude of this demographic within a community.

### 2.13.1 Registered Vulnerable Occupancies

From an occupancy perspective, vulnerable occupancies contain vulnerable individuals who may require assistance to evacuate in the event of an emergency due to cognitive or physical limitations, representing a potential high-life safety risk. As part of its registry of vulnerable occupancies, the OFM defines vulnerable occupancy as any care occupancy, care and treatment occupancy, or retirement home regulated under the Retirement Homes Act.

These occupancies house individuals such as seniors or people requiring specialized care. It is important to note, however, that not all vulnerable individuals live in vulnerable occupancies; for example, some seniors who are vulnerable due to physical limitations can live on their own or in subsidized housing, making them a key demographic to reach.

Ontario Regulation 150/13: Fire Code, which amends Ontario Regulation 213/07: Fire Code, identifies vulnerable occupancies as care, care and treatment and retirement homes. This includes hospitals, certain group homes, seniors' residences, and long-term care facilities. The regulation requires fire service to perform annual inspections, approve and witness fire drill scenarios and file certain information regarding the occupancy with the Fire Marshal's office. A list of the 23 vulnerable occupancies in Milton is presented in Table 14. These include care occupancies, care and treatment occupancies and retirement homes.

*Table 14: Vulnerable Occupancies*

| No. | Property Name                      | Occupancy Type                                         | Location                            |
|-----|------------------------------------|--------------------------------------------------------|-------------------------------------|
| 1   | Milton District Hospital           | Hospital                                               | 725 Bronte Street South             |
| 2   | Allendale Long Term Care           | Long Term Care home                                    | 185 Ontario Street South            |
| 3   | Aspira Martindale Gardens          | Old age/retirement home                                | 45 Martin Street                    |
| 4   | Seasons Milton                     | Old age/retirement home                                | 760 Bronte Street South             |
| 5   | Birkdale                           | Old age/retirement home                                | 611 Farmstead Drive                 |
| 6   | Darling Home for Kids              | Health care facility                                   | 5657 No 15 Side Road                |
| 7   | Ernest C Drury School for the Deaf | Other Educational institution (e.g. special education) | 255 Ontario Street South, Dorm C4   |
| 8   | Ernest C Drury School for the Deaf | Other Educational institution (e.g. special education) | 255 Ontario Street South, Dorm C6   |
| 9   | Ernest C Drury School for the Deaf | Other Educational institution (e.g. special education) | 255 Ontario Street South Building I |
| 10  | Ernest C Drury School for the Deaf | Other Educational institution (e.g. special education) | 255 Ontario Street South Building K |
| 11  | Bob Rumball Group Home             | Group Home                                             | 341 Ontario Street South            |
| 12  | Bob Rumball Group Home             | Group Home                                             | 225 Commercial Street               |
| 13  | Independent Living Halton          | Group Home                                             | 296 Ontario Street North            |
| 14  | Community Living North             | Group Home                                             | 340 Ontario Street South            |
| 15  | Community Living North             | Group Home                                             | 500 Valleyview Crescent             |
| 16  | Bob Rumball Group Home             | Group Home                                             | 10 Laurier Avenue                   |
| 17  | Christian Horizons                 | Group Home                                             | 14413 Sixth Line                    |
| 18  | Bob Rumball Group Home             | Group Home                                             | 931 Toletzka Landing                |
| 19  | Community Living North             | Group Home                                             | 251 Pine Street                     |
| 20  | Community Living North             | Group Home                                             | 348 Wilson Drive                    |
| 21  | Community Living North             | Group Home                                             | 12444 Sixth Line                    |
| 22  | Bob Rumball Group Home             | Group Home                                             | 8830 Boston Church Road             |
| 23  | Bob Rumball Group Home             | Group Home                                             | 11027 Guelph Line                   |

## 2.14 Community Risk Analysis Overview

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The Community Risk Assessment (CRA) for the Town of Milton has identified a series of high-priority risks and key findings that require strategic planning and mitigation through the Fire Master Plan. One of the most significant challenges facing MFRS is the predominance of residential (Group C) occupancies, which comprise nearly 90% of the building stock and account for the vast majority of fire-related injuries, fatalities, and property loss. In Milton, 100% of fire-related fatalities and 85.71% of fire-related injuries occurred in Group C buildings between 2018 and 2022. Contributing factors include a concerning rate of absent or malfunctioning smoke alarms and an aging housing stock, with over 16.5% of structures built prior to the implementation of modern building and fire codes. These risks are further compounded by the introduction of Additional Dwelling Units (ADUs), which increase building occupancy and complexity without adequate pre-incident identification systems.

Milton also faces elevated risk levels associated with its transportation corridors, industrial growth, and vulnerable occupancies. The town is bisected by major highways (401, 407, 25, and the future 413 interchange) and rail infrastructure, which function as dangerous goods routes and contribute significantly to motor vehicle collisions, representing over 92% of all rescue calls and approximately 18% of all responses. Industrial properties, while comprising only 1.65% of the property stock, account for 12.57% of fires and a disproportionate number of injuries and losses, particularly in properties with high fuel loads or buildings over 100,000 sq. ft. Additionally, 23 vulnerable occupancies, including long-term care facilities, require close monitoring due to increased risk to life safety and challenges in evacuation. Heritage properties and high-rise developments also present unique fire suppression challenges due to their design, occupancy, and age.

Demographic and economic trends further influence Milton's risk profile. The growing population includes a high proportion of seniors (10.47%) and children under 14 (22.20%), both considered higher-risk groups in fire safety. Milton also has a large newcomer population, with language diversity necessitating tailored public education and fire prevention messaging. The town has experienced a 28% increase in emergency call volume from 2018 to 2022, driven by development in the Derry Green Corporate Business Park and broader residential expansion.



The Community Risk Assessment (CRA) identified a range of pressures that influence the delivery of fire protection services in Milton, including factors related to population growth, changing demographics, built environment complexity, and geographic response challenges. The Fire Master Plan responds to these findings by providing the Town with a data-driven, risk-informed framework that supports proactive decision-making. Through clearly defined goals and strategic recommendations, the Plan guides improvements in resource deployment, public education, fire prevention, and operational readiness to ensure the fire service remains aligned with the community's evolving needs and risk profile.

The Town's Hazard Identified Risk Assessment (HIRA) was updated in 2023, indicating that Milton has complied with its legislative requirements. As a component of the risk assessment and risk analysis process, the top risks in Milton were identified. The HIRA assigned likelihood and consequence levels to a list of hazards based on the potential for impacts to people, property, and the environment. As a result of this analysis, the top hazards in the Town include the following:

- Infectious Disease
- Electrical Energy
- Winter Weather
- Cyber Attack
- Chemical
- High Wind
- Tornado
- Rail, Light Rail or Subway
- Road and Highway

In addition to the overall highest risks to the community, certain events pose an increased risk specific to firefighting. The risk to firefighting responders to the most hazardous events are identified below, as well as the most hazardous events they may encounter that pose a specific risk to them and their ability to respond.

## 2.15 Impacts of Hazards on Fire Protection Services

To better understand the risks of hazards as they pertain to fire protection services, the hazards have been assessed to identify possible impacts on fire protection services (excluding fire/explosion). Many of the potential impacts are not unique to a jurisdiction. The results of this review, as they pertain to the hazards in the Town, are presented in the following table.

Table 15: Impacts of Hazards on Fire Protection Services

| Hazard             | Possible Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Infectious disease | <p><b>Overall Impact</b><br/>Medically vulnerable persons are at risk. Increased use of non-recyclable PPE for staff. Critical infrastructure must be maintained with planning for staffing and acquisition of critical supplies.</p> <p><b>Fire Services</b><br/>Epidemic or pandemic breakout can present significant challenges to first responders causing potential fire service workplace absenteeism, and an increased demand for medical response and supplies as was illustrated during COVID 19. Fire services currently take on a large number of medical calls. PPE was severely limited and supply chain issues for all equipment impacted operations. In many cases planned programming related to inspections and public education had to be delayed or modified.</p> |
| Electrical Energy  | <p><b>Overall Impact</b><br/>Threat of exposure fire to homes and businesses. Large-scale evacuations may be possible, with many people displaced. Evacuations with little notice may occur. Potential for damages and loss. Damage to the environment. Many larger industrial properties in the town.</p> <p><b>Fire Services</b><br/>May require mutual aid support. May not be equipped (with enough people or apparatus) to extinguish fire as it expands. May require specialized resources.</p>                                                                                                                                                                                                                                                                                |
| Winter weather     | <p><b>Overall Impact</b><br/>Above ground power lines could be impacted along with road treatments, debris clearing, salt gravel or other road treatment supplies. Increase in call volume due to vehicular incidents, rescues.</p> <p><b>Fire Services</b><br/>Depending on the severity of the debris on roads and downed power lines, access to various sections of the road network could be limited to fire service response delaying emergency response times. Interruptions to communication towers could impact fire service communications.</p>                                                                                                                                                                                                                             |
| Cyber Attack       | <p><b>Overall Impact</b><br/>Privacy/data breach of public and/or town. Inability to perform administrative functions.</p> <p><b>Fire Services</b><br/>Breaches to major infrastructure could result in injury or fatalities. Breaches to databases could impede dispatch, record keeping and investigations. Breaches could result in financial loss.</p>                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Hazard                    | Possible Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chemical                  | <p><b>Overall Impact</b><br/>Serious injury or fatality. Possible secondary emergencies such as fire or explosion when chemicals mixed with air, water, or other agents. Could require small- or large-scale evacuation of homes, businesses, school etc.</p> <p><b>Fire Services</b><br/>Depending on the severity and type of release, could pose secondary risk to firefighters on-scene. Must have proper knowledge of chemical release. May not be able to access the scene until proper back-up arrives or have proper information.</p>                                                        |
| Tornado High Wind         | <p><b>Overall Impact</b><br/>Above ground power lines could impact buildings or roads and winds could take down communication towers. Life safety risk, in particular to vulnerable population. Multiple areas of damage</p> <p><b>Fire Services</b><br/>Depending on the severity of the debris on roads and downed power lines, access to various sections of the road network could be limited to fire service response delaying emergency response times. Interruptions to communication towers could impact fire service communications. Multiple locations requiring additional resources.</p> |
| Rail/Light Rail or Subway | <p><b>Overall Impact</b><br/>Threat to life safety, may require evacuation. Impact to road network and environment.</p> <p><b>Fire Services</b><br/>Pose secondary threat of fire or explosion to responders. Requires support from rail owners. May require securing a large scene and additional support from mutual aid partners.</p>                                                                                                                                                                                                                                                             |
| Roadway/highway emergency | <p><b>Overall Impact</b><br/>Threat to life safety. Impact to road network, downed power lines and vehicular fires.</p> <p><b>Fire Services</b><br/>Pose secondary threat to responders of fire or explosion. Delayed response in accessing scene. May require support for high number of injuries/fatalities and/or rescues.</p>                                                                                                                                                                                                                                                                    |

### **2.15.1 Fire Underwriters Survey (FUS)**

The Fire Underwriters Survey (FUS) provides a national standard for assessing a community's ability to prevent and respond to fires. Its results are used by over 90% of Canadian property and casualty insurers to help determine insurance rates.

Two main grading systems are applied:

- Public Fire Protection Classification (PFPC): A scale from 1 (best) to 10 (no recognized protection) for commercial, industrial, institutional, and multi-family properties.
- Dwelling Protection Grade (DPG): A scale from 1 (best) to 5 (no recognized protection) for detached homes and small residential dwellings.

FUS grades affect both insurance costs and community resilience. A higher grade (lower number) not only leads to lower insurance premiums for property owners but also reflects a municipality's investment in staffing, training, water supply, apparatus, and fire prevention programs. It also provides municipalities with a benchmarking tool to guide future fire service planning, capital investments, and staffing decisions.

Recent Milton FUS Review:

The most recent assessment confirmed that Milton has enhanced its fire protection capacity since the last review, resulting in an improved community rating.

Enhancements contributing to the upgraded rating include:

1. Hiring of 12 new full-time firefighters, a dedicated Fire Prevention Officer, and a Platoon Chief.
2. Faster response times to emergencies through strengthened staffing and coverage.
3. Expanded fire prevention inspections and pre-incident planning programs.
4. Improved rural water supply delivery through tanker shuttle operations.
5. Ongoing training, equipment maintenance, and operational readiness improvements.

This improved rating may help reduce insurance premiums and other insurance-related costs. Residents and businesses are encouraged to contact their insurance providers to learn more about potential savings.

These investments highlight Council's commitment to ensuring Milton Fire & Rescue Services keeps pace with growth, maintains service standards, and continues to enhance safety and quality of life for the community.

## **2.15.2 Fire Station Response Demand Zone**

The Town of Milton is recognized as an urban centre with a rural component situated in the northwest area of the municipality. Fire protection services are delivered primarily by full-time firefighters, with support from part time firefighter personnel who respond to emergencies in rural areas and supplement response efforts in the urban core when needed. The Town's emergency response model reflects a growing community with diverse risks and varying population densities. To evaluate and enhance response performance, this section will reference established industry best practices related to the organization, deployment, and staffing of fire suppression and emergency medical operations. These benchmarks provide a framework for assessing Milton Fire & Rescue Services' ability to deliver effective, timely, and scalable emergency response across both urban and rural areas.

Under the Fire Protection and Prevention Act the municipality through their Council has the responsibility to set the level of service to be provided by the Fire Department. This is typically identified through an up to date Establishing and Regulating (E&R) By-law.

The Town of Milton's current Establishing and Regulating (E&R) By-law No. 072-2025 formally outlines the creation, authority, and core responsibilities of Milton Fire & Rescue Services (MFRS). The by-law provides a governance framework for the department, delegating powers to the Fire Chief, and summarizing the types of services to be delivered, such as fire suppression, fire prevention, medical assist, and emergency management. Schedule A of the by-law further details these service categories, helping to define the department's organizational mandate and structure. The by-law reflects the Town's continued commitment to delivering fire protection services in accordance with the Fire Protection and Prevention Act (FPPA), 1997.

While the by-law outlines general service levels, it does not include any Council-approved response performance benchmarks. Key performance indicators such as alarm processing time, turnout time, travel time, total response time, and Effective Response Force (ERF) assembly time are not referenced. This absence makes it difficult to assess operational effectiveness, track progress toward performance goals, or align service delivery with recognized standards. Additionally, the by-law does not differentiate response expectations between urban and rural areas, an important consideration given Milton's rapid growth and geographic diversity.

To support transparency, accountability, and long-term planning, the Town of Milton should consider amending its Establishing and Regulating By-law to incorporate Council-approved response performance objectives. These should reflect the realities of both urban and rural response zones, align with industry best practices, and be supported by data from the CRA and operational performance metrics. Including such benchmarks within the by-law will improve public confidence, provide a clearer framework for operational planning, and ensure that future service expansion is strategically and fiscally aligned with community needs.

**Observation # 1:** The Town of Milton continues to experience rapid growth and diversification in both its built form and population distribution. Milton Fire & Rescue Services (MFRS) operates under a composite staffing model, utilizing both full-time and Paid-On-Call (POC) firefighters to deliver fire protection and emergency services across the municipality. While the current Establishing and Regulating By-law outlines core services and organizational authority, it does not include Council-approved response performance objectives or operational benchmarks that guide deployment, staffing, or service delivery expectations. This lack of formalized performance standards limits the department's ability to consistently evaluate service levels, communicate performance outcomes, or plan future resource needs based on measurable targets. Additionally, the absence of a Standard of Cover (SOC) policy constrains MFRS's ability to strategically align its resources with community risk, land use patterns, and evolving service demands.

**Recommendation #1a:** Revise the Town of Milton's Establishing and Regulating By-law to formally incorporate Council-approved response performance objectives, clearly differentiating between urban and rural settlement areas to reflect the unique service delivery challenges and capabilities across the municipality.

**Suggested completion:** 6-12 months

**Recommendation #1b:** Develop and adopt a Standard of Cover (SOC) policy that clearly outlines response performance benchmarks, deployment strategies, and staffing requirements across different risk zones and occupancy types.

**Suggested completion:** 6-12 months

**Cost:** Neutral

**Strategic Objective** - Administration

***Rationale:*** Formalizing response performance objectives within the Establishing and Regulating By-law ensures that MFRS operates under clearly defined and Council-endorsed service expectations. Differentiating between urban and rural areas recognizes the operational realities of a mixed-service municipality, where geography, infrastructure, and staffing models influence the ability to respond effectively. Without these distinctions, it becomes difficult to measure performance accurately, justify future investments, or maintain public trust in service equity.

The development of a Standard of Cover (SOC) policy complements the by-law by providing a detailed, risk-informed framework for resource deployment and staffing. An SOC allows the fire department to align its operational planning with the unique risks presented by high-density developments, rural properties, high-rise structures, and vulnerable populations. It also supports continuous improvement by establishing benchmarks against which the department can monitor performance and plan phased service enhancements. Together, these tools strengthen strategic planning, improve transparency with Council and the public, and ensure that emergency services remain scalable and responsive as the Town continues to grow.

***Note:*** Technical and specialized rescue operations are based on the likelihood that fire services will respond to such incidents. Personnel must be trained to at least the awareness level to effectively assess the situation, conduct a proper size-up, and request the appropriate additional resources.

The Fire Chief should review these annually to determine if the current level is appropriate to deal with the needs and circumstances identified.

## 2.16 Water Infrastructure

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Water supply is a critical infrastructure that is essential for firefighting. Having access to the Town's water delivery systems is critical to service delivery. Milton is serviced by a system of water mains maintained by Halton Region. The majority of the regional water is obtained from Lake Ontario and the remainder from underground wells.

Treated surface water originating from Lake Ontario is delivered from South Halton and pumped to the Steeles Avenue Water Tower. The groundwater supply is derived from two well fields: Kelso and Walker's Line. The Kelso well field consists of four wells that pump raw water to the Kelso Water Treatment Plant. The treated water is then conveyed to the Milton Reservoir and subsequently flows by gravity into the distribution system. The Walker's Line well field includes one production well, where water is disinfected with chlorine and pumped to the Milton Surge Tank, located near 12th Side Road, from which it also flows by gravity into the distribution system. The entire treatment and distribution subsystem is operated and monitored through a Supervisory Control and Data Acquisition (SCADA) system, which is staffed 24 hours per day, seven days a week to ensure continuous operation and water quality assurance<sup>13</sup>.

Alternate water supply sources, particularly in rural or un-serviced areas, are critical to maintaining effective fire suppression capabilities. These may include access to ponds, streams, cisterns, and other non-municipal water sources, as well as the deployment of fire suppression apparatus equipped with portable water tanks. This equipment supports MFRS's Fire Underwriters Survey (FUS), recognized tanker shuttle operation certification, which enables a continuous and sustained water supply to the fire scene in the absence of municipal hydrants. Achieving FUS recognition for tanker shuttle capability has assisted in improving insurance grading and demonstrate the municipality's preparedness to address fire risk in rural areas.

In areas where a reliable municipal water supply is not present, it is essential for the fire service to develop and maintain a formal water servicing strategy or site-specific rural water supply plans to ensure that firefighting water needs can be met effectively. The Town of Milton participates in the Halton Region Mutual Aid Plan and has the ability to request support from neighbouring fire departments for tanker shuttle operations or additional apparatus when local resources are insufficient. There is also a specific fire protection agreement with Halton Hills for the North Milton area. These collaborative arrangements strengthen the Town's capacity to respond to rural fire incidents where water supply may be a limiting factor.

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<sup>13</sup> <https://www.halton.ca/Repository/2024-Drinking-Water-Systems-Flow-Summary-Report>



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## SECTION 3

### DEPARTMENT PROFILE

#### 3.1 Department Overview

Modern fire departments have evolved into a critical component of a community's social safety net. Whereas early fire departments were historically established specifically to combat structure fires that, at the time, were often devastating, today, fire departments are also called upon to respond to medical emergencies, technical rescues, and dangerous goods releases, often working together with other response agencies. Fire services also provide fire safety education programs and ensure fire codes are complied with to reduce risks. As a result, fire departments must be properly structured, adequately resourced and equipped to deliver these services safely and competently.

Milton Fire & Rescue Services (MFRS) has a proud history of service that dates back to 1857, when the community established its first Fire Brigade Hook and Ladder Company. Over time, the department evolved in response to technological advancements and community needs, including the notable 1917 acquisition of a retrofitted McLaughlin Buick fire apparatus and the installation of Canada's first telephone-based firefighter alert system. The department transitioned from a volunteer model to a composite service, blending career and part-time personnel, as population growth and urban expansion increased demands on emergency response capabilities.

Today, MFRS operates as a composite fire service from five fire stations, ensuring coverage of both urban and rural areas of the municipality. The department is comprised of approximately 180 personnel, including full-time and part-time firefighters, fire prevention officers, training staff, communications technicians, apparatus maintenance and administrative support. MFRS delivers a broad range of services including fire suppression, emergency medical response, technical rescue, water and ice rescue, hazardous materials response, fire prevention and inspections, and public education initiatives. The department maintains fire service agreements with neighbouring municipalities including Halton Hills, Oakville, Burlington, and Mississauga, enhancing operational flexibility and coverage during large-scale or simultaneous incidents. The MFRS is established and guided through by-law 072-2025 "Being a By-law to Establish and Regulate the Fire Department".

The Town of Milton has developed the 2023-2027 Strategic Plan<sup>14</sup>. The plan outlines the Mission to *"Provide excellent and sustainable municipal services to foster a vibrant and inclusive community where residents thrive, businesses flourish and nature is cherished."*

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<sup>14</sup><https://www.milton.ca/en/town-hall/strategic-plan.aspx>

The Strategic Plan outlines five strategic themes, Invest in People, Innovate in Technology & Process, Quality Facilities & Amenities, Connected Transit & Mobility, and Planned Community Growth, that collectively shape the municipality's vision for sustainable development, inclusive service delivery, and community resilience. Each theme is supported by targeted strategic imperatives that guide policy development, operational planning, and long-term capital investment. These themes serve as an important framework within which Milton Fire & Rescue Services (MFRS) aligns its objectives, programs, and service delivery strategies.

This Fire Master Plan has been developed to support and advance the Town's corporate strategic priorities through the lens of fire protection and emergency services. The goals and recommendations contained within this plan reflect a commitment to optimizing community safety through workforce sustainability, technological innovation, infrastructure investment, risk-informed service delivery, and adaptive growth planning.

The following Corporate strategic themes and imperatives have impact on the MFRS and this Master Plan

1. Invest in People - Imperatives:
  - **Develop and execute a plan to attract, retain, and nurture a skilled, diverse, and resilient workforce.**
  - **Ensure staffing strategies align with evolving community needs, service delivery requirements, and Council's vision to make Milton an employer of choice.**
2. Innovate in Technology & Process - Imperatives:
  - **Identify services and programs ripe for digitization or modernization.**
3. Quality Facilities & Amenities - Imperatives:
  - **Create a funding and investment roadmap for the consistent maintenance and operation of Town-owned facilities and assets.**
  - **Optimize utilization through effective planning and service-level benchmarking to guide future investment needs.**
4. Planned Community Growth - Imperatives:
  - **Finalize a new Official Plan reflecting strategic growth priorities.**
  - **Focus development around priority areas such as the Uptown GO Station precinct, Civic Precinct, Milton Education Village, Trafalgar, Britannia, and Agerton.**

### 3.1.1 Strategic Priorities

This updated Fire Master Plan (FMP) is designed to serve as a strategic roadmap for the Town of Milton, guiding Council, and senior administration in making informed decisions about fire protection services over the next five-year planning horizon. The planning framework outlined in this document is grounded in legislative compliance, operational analysis, and recognized best practices in the fire service sector.

A key component of this FMP is the identification of strategic priorities, foundational principles that will inform future resource allocation, policy development, and operational enhancements. These strategic priorities are intended to align fire protection services with community risk, support long-term sustainability, and deliver maximum public value.

#### 1. Risk-Informed Service Delivery

Ensure the ongoing application of the Community Risk Assessment (CRA) to identify and evaluate fire safety risks across the municipality. This assessment will guide the development of targeted goals, objectives, and service levels aligned with community fire life safety needs and legislative responsibilities.

#### 2. Strengthening the First Two Lines of Defence

Optimize the use of public education and fire prevention, supported by the enforcement of fire safety standards and the Fire Code. These proactive measures are essential to reducing fire risk and enhancing community resilience through a comprehensive fire protection approach.

#### 3. Sustainable and Value-Driven Services

Prioritize strategies that enhance the long-term sustainability of fire protection and emergency services. Focus on delivering the most effective and efficient levels of service to ensure fiscal responsibility and maximize value for the community.

### 3.1.2 Program Area Goals

In support of the strategic priorities established in this Fire Master Plan, Milton Fire & Rescue Services (MFRS) has defined a series of program-specific goals to guide the development, delivery, and continuous improvement of fire protection services. These goals provide the operational foundation to achieve a risk-informed, prevention-focused, and sustainable service model. They ensure that fire protection and emergency response services are aligned with the community's evolving risk profile, legislative obligations, growth trends, and resource realities.

Each goal reflects a core program area within MFRS and supports the implementation of the Town's Community Risk Assessment (CRA), enhances the first two lines of defence through education and prevention, and promotes the long-term effectiveness and efficiency of service delivery. These program area goals are designed to direct internal planning, budget development, staffing strategies, and performance measurement across the department and serve as the basis for future actions and recommendations.

**Goal # 1: Administration**

Enhance administrative efficiency and support systems to ensure the seamless operation and sustainability of programming initiatives, maintain key operational activities, and maintain the appropriate resources to provide support to identified programs.

**Goal #2: Public Education**

Develop and implement fire safety education campaigns that targets risks identified in the CRA to raise awareness about fire prevention, the importance of fire safety practices, and what to do in an emergency.

**Goal #3: Fire Prevention and Code Enforcement**

Implement a program for proactive fire safety inspections for residential, commercial, and public buildings to ensure compliance with fire prevention codes, identify fire hazards, and encourage timely maintenance and repairs to non-compliant issues.

**Goal #4: Operations**

Provide emergency response services that reflect the community's identified risks, growth projections, and operational realities. Services will be delivered with a focus on health and safety, industry best practices, and a commitment to efficiency, effectiveness, and long-term value for the community.

**Goal #5: Emergency Management**

Strengthen its capacity to prepare for, respond to, and recover from all types of emergencies. Through coordinated planning, training, and inter-agency collaboration, the Service will enhance community resilience, safeguard life and property, and support continuity of operations across a broad range of hazards.

**Goal #6: Communications**

Maintain and enhance a technologically advanced communications system that supports the operational needs of a growing community. By adopting industry-leading practices, scalable technologies, and robust dispatch protocols, the Service will ensure timely, accurate, and resilient emergency communications that enhance firefighter safety and improve overall service delivery.

**Goal #7: Training**

Deliver a progressive and sustainable training program aligned with the services authorized in its Establishing and Regulating By-law. The program will integrate current firefighting practices, safety standards, and emerging technologies to ensure personnel are equipped with the competencies needed to respond safely and effectively to evolving risks and service demands.

**Goal #8: Facilities, Apparatus, and Equipment**

Ensure that apparatus and equipment are available in the appropriate quantity, maintained in a ready and reliable state, that align with operational requirements. Through robust preventative maintenance and asset management practices, the Service will support safe, effective, and efficient emergency response across the community.

## 3.2 Administration

**Goal #1:** Enhance administrative efficiency and support systems to ensure the seamless operation and sustainability of programming initiatives. Maintain key operational activities and maintain the appropriate resources to provide support to identified programs.

A fire department's employees are its most valuable asset. Emergency services are often delivered under difficult and stressful circumstances, with little room for error. Fire departments must be adequately resourced with staff, equipment, and training to be effective in delivering highly technical services to achieve service excellence. As a result, considerable effort is warranted to ensure that only highly committed, team-oriented, and physically able employees are recruited, trained, retained, and supported.

An effective organizational structure must promote and support strong, effective leadership, sound business management and continuity, and effective communication with opportunities for staff development.

The Town of Milton Human Resources Department (HR) partners with the municipality's departments to assist with achieving their human resources goals and objectives.

Functions provided include:

- Employee & Labour Relations
- Recruitment
- Disability Management
- Training & Development
- Employee & Family Assistance Program
- Compensation & Benefits
- Health and Safety and Wellness
- Return to Work Program

The HR staff is responsible for the legality of all departments in the corporation and works together with the MFRS administration to assist with providing consistent delivery of fire services, including:

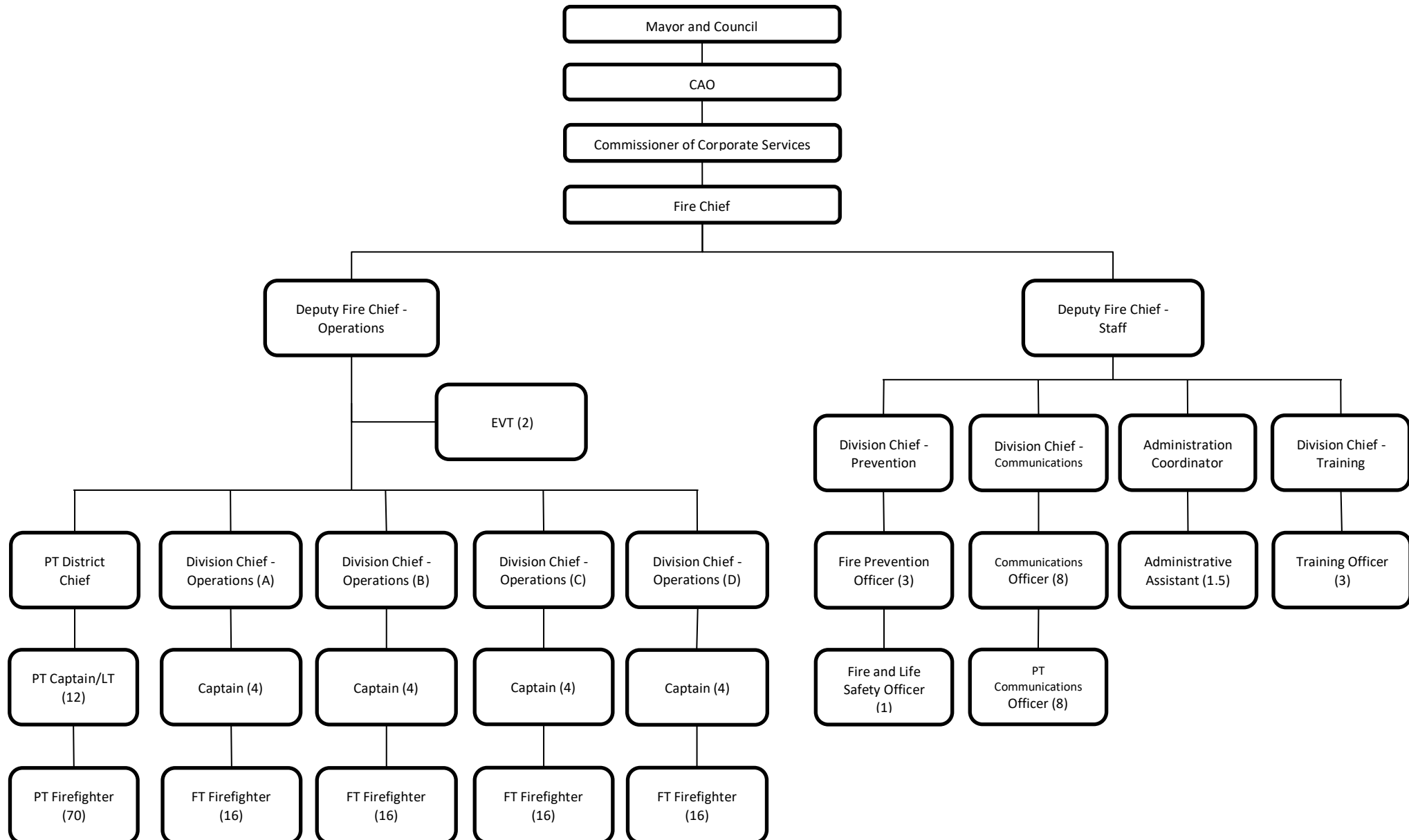
- Benefits administration
- Collective Agreement oversight and compliance
- Workplace WSIB requirements
- Respectful workplace compliance
- Other corporate responsibilities relating to corporate employees

In addition to these core responsibilities, the Human Resources (HR) staff play a vital role in facilitating ongoing communication among departments, ensuring that all policies, procedures, and compliance standards are not only met, but also clearly understood across the organization. Impacts of corporate policies and labour decisions on all departments should be considered, including the fire services. This collaborative approach fosters an environment where staff at every level are empowered to work safely and productively, with a strong emphasis on mutual respect and support. Future opportunities for further involvement by Human Resources staff with MFRS are in the areas of change management and succession planning. Succession planning in particular is an issue with the growth of the department and the development of new supervisory roles that may be difficult to fill internally as job descriptions are developed and evolve over time.

### **3.2.1 Department Leadership, Management and Operations**

MFRS administrative responsibilities, management and leadership are provided by the Fire Chief and two Deputy Fire Chiefs through to the Division Chiefs and officers (see Figure 6). A clear understanding and acceptance of each position's role in leadership, along with effective management, is key to a safe and effective fire service. Leadership, done in a consistent and professional manner, transcends the entire organization. This creates a cohesive, resilient, value-based organization that embraces change as part of day-to-day work.

Figure 6: Milton Fire & Rescue Service Organization Chart





Effective leadership and management start at the top of an organization to guide it towards success. With increasing pressure to find value for money, elected officials are continuously looking for ways to increase the value for money proposition for their citizens. Department managers are challenged to maintain or increase services while avoiding service cost increases. This environment generates the need for communities to adopt more business-like approaches for delivering public safety services. Managers of fire and emergency services are required to develop private sector-like business practices such as:

- Developing performance measures and objectives for core services including emergency response, fire prevention, public education and health and safety.
- Regularly monitoring and reviewing performance; and
- Ensuring value for service.

Fire department leaders must adopt a business-like approach to leading and managing their departments. Along with their municipality's senior administration, they need to be proactive and examine all aspects of their service delivery to continually look for innovation in efficiency and effectiveness.

The following theoretical figure suggests how to allocate leadership time to effectively operate a fire department, scan for improvement opportunities and implement system improvements.

Figure 7: Fire Service Time Management Examples

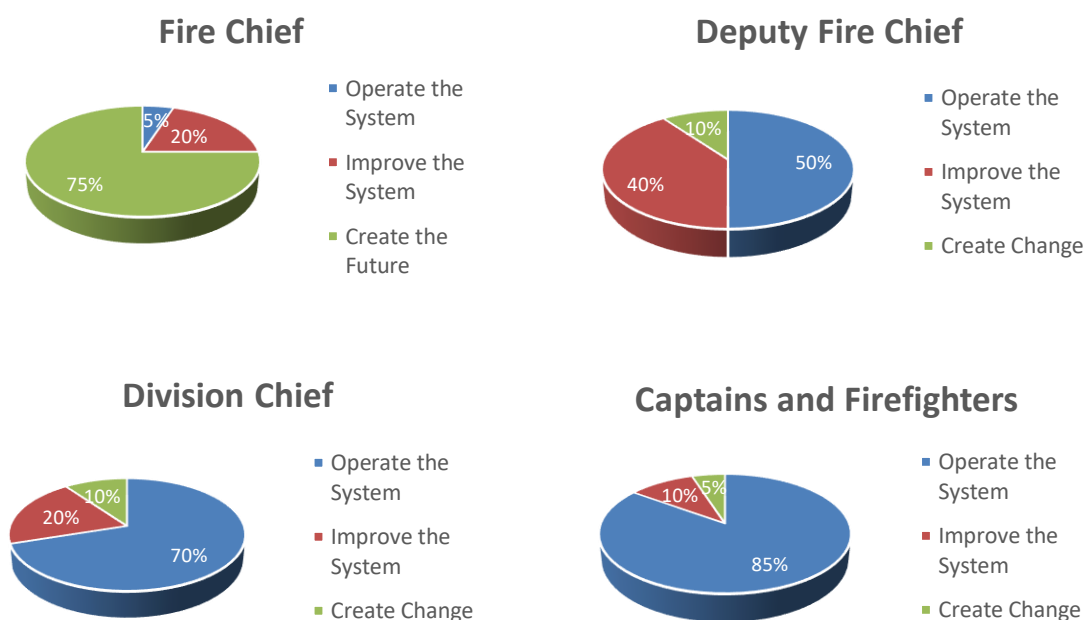


Figure 7 illustrates two important points:

1. The amount of time allocated to operating, improving, and identifying strategy varies at different levels in the organization.
2. Senior leadership positions in MFRS must retain the capacity to identify and implement change.

The MFRS Fire Chief is responsible for the overall management of the MFRS consistent with the Fire Department Establishing and Regulating By-law. Duties captured in this by-law include (but are not limited to):

- Legislative duties as mandated by the Province of Ontario Fire Protection and Prevention Act 1997 (FPPA).
- Reporting through the Chief Administrative Officer (CAO) to Council for proper administration and operation of the fire department.
- For preparing, implementing, and maintaining a departmental fire service plan and program for the Corporation consistent with the Master Fire Plan.
- The preparation and delivery of an annual budget for approval and exercising control over the approved budget.
- Determining and establishing qualifications and appointing members and administrative support staff of the department.
- Developing and implementing general orders, policies, procedures, rules and regulations for the proper administration and efficient operation of the Fire department and the effective management of Fire Protection Services for the Corporation, and for the prevention, control and extinguishment of fires, the protection of life and property and the management of emergencies.
- Administer and enforce the Fire Bylaw and other corporate bylaws respective fire protection services and to administer and enforce of all general orders, policies, procedures, rules, and regulations of the department made under the by-law.
- Provide all the powers, rights and duties assigned to a fire chief under the FPPA.
- Liaise with the Office of the Fire Marshal of Ontario or other office, organization as required by Council, and with any union representing firefighters.
- Develop and implement automatic aid, mutual aid and other negotiated fire protection and emergency service agreements within the Corporation's borders and/or within the municipal borders of adjoining municipalities.

The MFRS Deputy Fire Chiefs are the second ranking officers of the Fire Department and act on behalf of the Fire Chief in case of absence or vacancy in the office of Fire Chief. The MFRS Fire Chief may delegate some of the Fire Chief's responsibilities to the Deputy Chiefs for the effective and efficient management of the fire department.

The leadership team appears sufficient in competency and structure to deliver the high level of leadership required for a fire service. The administrative positions (Fire Chief and Deputy Fire Chiefs) have core responsibilities detailed within their respective job descriptions that allows for an appropriate division of work given the increased demands resulting from legislative requirements, managing a growing 24/7 operations, and the growth in the community and the MFRS organization.

Many departments managing full-time services are moving to three or more managers to allow for a balance of workload and ensure a strategic focus is maintained for the growth and advancement of the organization. Maintaining a three-manager model allows for shared on-call responsibilities, enhances succession planning, and supports adaptability to evolving legislative requirements.

It is extremely important that the leadership within MFRS continue to work closely as a team. A highly functioning team is one that understands each person's roles and responsibilities and brings their skills together in a collaborative manner to lead the organization in achieving their vision, mission, and goals. Therefore, it is important to ensure that accurate and updated job descriptions are made available and respected for each team member to promote role clarity.

Traits of a high-performing team include:

- Trust
- Strong communication
- Transparency
- Collaboration
- Support
- Clarity
- Adaptive
- Reflective

Leadership is a function of all members of MFRS. Chief officers to firefighters contribute to the leadership required to achieve service excellence in a fire department. Day-to-day MFRS leadership is the responsibility shared with each chief officer, station, training, and fire prevention officer. These positions play a critical role in leading, managing, and mentoring MFRS staff. These roles are crucial in ensuring all services are aligned with department policy, as well as being the critical link in the chain of command between staff and administration. Within the current MFRS organizational structure, it is imperative that the administration continues to work closely to provide direction and support while allowing for engagement, including constructive feedback.

## **Administrative Support**

As MFRS continues to expand its service delivery model, the administrative demands on the organization have grown significantly. Program areas such as fire prevention, training, communications, emergency planning, and dispatch are increasingly complex, and data driven. New technologies, including digital inspection systems, computer-aided dispatch (CAD), and learning management platforms, also generate additional administrative workload. The composite nature of the department, with a large part time firefighter component, adds further scheduling, payroll, and documentation responsibilities that require consistent and dedicated support.

Currently, MFRS operates with only 2.5 full-time equivalent (FTE) administrative staff, including the Supervisor of Administration. This staffing level has not kept pace with operational and organizational growth. As divisions scale their programs and internal reporting becomes more demanding, there is growing pressure on both administrative and uniformed personnel to manage routine tasks such as data entry, scheduling, records management, and internal communication. These limitations reduce departmental efficiency and force senior officers to divert time from their core strategic responsibilities. Inadequate administrative support can also delay program implementation, reduce internal responsiveness, and challenge the department's ability to meet evolving service and compliance requirements.

To address these pressures, MFRS should transition the existing part-time administrative support role to a full-time position and phase in one additional full-time administrative FTE, bringing the total complement to 4.0 FTEs. This phased approach provides a cost-effective solution that will strengthen divisional operations, reduce administrative burdens on operational staff, and ensure timely and accurate program execution. By reallocating routine support tasks to dedicated personnel, MFRS can optimize its use of senior leadership and front-line resources, enhancing both internal capacity and service quality as the community and department continue to grow.

MFRS officers, fire prevention staff and firefighters are responsible for the delivery of most front-line operational services. They are the primary point of interaction between a fire department and someone in crisis or the public. Their leadership is exhibited by their professionalism and commitment to service excellence. Although their influence may be limited to their immediate coworkers, their role in forming public perceptions regarding the value and support of their services is critical.

Finally, the importance of maintaining a team atmosphere across the department and commitment to common goals cannot be overstated. Fire officers, fire prevention and training staff, including firefighters, often work in isolation from the administration. This heightens the need for leadership positions, including all chiefs and officers, to communicate frequently and bridge perceived gaps regarding commitment to mission and service excellence. Despite the varying roles and responsibilities assigned to administration, officer ranks, and the most junior staff, the characteristics of a successful team should be promoted at every level in the organization.

**Observation #2:** MFRS is operating within a growing and increasingly complex service environment, with expanding responsibilities across all divisions including Training, Fire Prevention, Dispatch, and Emergency Management. At the same time, the department continues to rely on a growing composite staffing model, with Part time firefighters playing a critical role in maintaining response capacity, particularly in support of rural coverage and surge operations.

While Milton Fire & Rescue Services (MFRS) has continued to advance its operational capabilities in response to community growth and increasing service demands, there is now an opportunity to strengthen its administrative and management support systems to better align with this progress. As divisional responsibilities expand, so too do the expectations for coordination, documentation, program delivery, and internal communication. Supporting functions such as training administration, fire prevention scheduling, data reporting, and emergency planning require additional resources to ensure continued efficiency and responsiveness. Furthermore, the part time firefighter program would benefit from dedicated leadership to enhance engagement, training consistency, and operational readiness. Proactively investing in administrative and managerial capacity will position MFRS to sustain high service standards, support its staff effectively, and ensure scalable service delivery as the community continues to grow.

**Recommendation # 2a:** Phase in 1.5 FTEs for divisional administrative staffing to support internal coordination, program deliver, regulatory compliance, and operational efficiency across all branches of MFRS.

**Suggested completion:** 12-36 months

**Cost:** Annual cost of \$55,115 - \$68,894 / FTE (2024 rates) plus benefits. Net increase \$82,673 - \$103,341 (plus benefits).

**Strategic Objective:** Administration

**Recommendation #2b:** Create a dedicated management position, such as an Assistant Chief or Division Chief of Composite Operations, responsible for the administration, coordination, and development of the Paid-On-Call firefighter program.

**Suggested completion:** 24-36 months

**Cost:** Annual cost of \$139,713 (2024 rates) plus benefits

**Strategic Objective:** Administration

***Rationale:** Administrative and managerial personnel provide critical support functions that enable the smooth operation of front-line services. As divisional mandates broaden, whether through new inspection targets, enhanced training programming, dispatch service expansion, or emergency planning obligations, there is a corresponding need for enhanced administrative infrastructure. Investing in administrative and supervisory staff improves internal coordination, supports data management and reporting, strengthens policy development, and allows for proactive planning. Expanding this capacity will ensure that MFRS can deliver high-quality services, maintain regulatory compliance, and sustain operational efficiency as Milton's fire protection needs continue to evolve.*

### 3.2.2 Staffing Complement

MFRS is led by the Fire Chief reporting to the CAO and Council. The MFRS administration is comprised of the Fire Chief, and two Deputy Fire Chiefs supported by a dedicated Administrative Coordinator and 1.5 Administrative Assistants.

MFRS maintains a regular staffing complement of approximately 180 full-time and part-time personnel, organized into six key divisions and functions: Operations, Fire Prevention, Communications, Training, Administration, and Apparatus & Equipment Maintenance.

The Administration Division, located at Fire Station 3 (Headquarters), operates Monday through Friday, and supports the department's leadership, clerical, budgeting, and logistical coordination functions. The Fire Prevention Division, also based at Station 3, includes a Division Chief, three Fire Prevention Officers, and one Fire and Life Safety Educator. They operate on a standard 40-hour work week and are responsible for inspections, code enforcement, public education, and fire investigations.

The Training Division, based at Fire Station 1 (the Fire Training Centre), provides ongoing training and professional development for suppression personnel. Staff in this division work a 40-hour week, with flexibility based on course delivery and operational demand.

The Operations Division comprises full-time fire suppression staff working out of Stations 1, 3, 4, and 5. These firefighters work 24-hour shifts on a rotating platoon schedule, balancing to an average of 42 hours per week over a four-week cycle. Part-time (paid-on-call) firefighters are assigned to Stations 1, 2, and 3 and are activated for support during escalated incidents or peak demand. They are alerted via the MFRS Dispatch Centre and report directly to their assigned station.

The Communications Division consists of one Division Chief, eight full-time Communication Technicians, and five to eight part-time technicians. Staff operate a primary Communications Centre located at Station 3, providing emergency call handling and dispatch services for MFRS and potentially for future partner municipalities. The team supports 24/7 operations and plays a critical role in inter-agency coordination, call triage, and resource deployment.

MFRS maintains an in-house Apparatus and Equipment Maintenance team, which currently includes two certified Emergency Vehicle Technicians (EVTs). This team is responsible for the maintenance, repair, testing, and certification of all front-line and reserve emergency vehicles and related equipment. Operations are primarily conducted at Station 1, which has a designated maintenance bay.

The established suppression staffing per platoon between the four fire stations is 20, including 4 Captains and 16 firefighters. Interview results have indicated each platoon regularly operates at the established minimum suppression staffing of 16 on each platoon.

Minimum staffing levels result in a minimum of front-line apparatus being staffed. Emergency incidents that require a full response of apparatus and personnel may quickly consume all on-duty resources. The use of the part time firefighter structure allows for additional resources for larger incidents and station coverage during busy periods.

### 3.2.2.1 Operations Staffing Ratio

Typical staffing ratios for 1 full-time equivalent (FTE) 24/7 position range from 4.9 to 5.5 FTE positions but are dependent upon the respective labour contract entitlements for scheduled absences, vacation, lieu time, sick leave, etc. In addition, deployments, off-shift training, regional requirements, or secondments need to be applied to the calculation. As shown in Table 16, utilizing the above-mentioned staffing calculation should provide the basis for calculating the MFRS staffing ratio. The staffing ratio determines the number of firefighters required to sustain a Minimum Duty Strength (MDS) per FTE on a 24/7 basis. Operational response requirements for critical tasks and the ERF are not considered in the staffing ratio.

Table 16: Milton Fire & Rescue Services Staffing Ratio Calculation

|    | Description                                                                                                | Hours        |
|----|------------------------------------------------------------------------------------------------------------|--------------|
| 1  | Availability required per firefighter, in hours                                                            | <b>2184</b>  |
| 2  | Total yearly coverage required per 4 ff, in hours (one apparatus)                                          | <b>8736</b>  |
| 3  | Sick time certified, in hours per FF                                                                       | 80           |
| 4  | Annual vacation time in hours per FF                                                                       | 264          |
| 5  | Lieu time in hours per FF                                                                                  | 168          |
| 6  | WSIB, STD, LTD in hours per FF                                                                             | 36           |
| 7  | Bereavement                                                                                                | 8            |
| 8  | Unavailable for duty in hours <b>(sum Line 3 to Line 7)</b>                                                | <b>556</b>   |
| 9  | Avg availability per FF in hours <b>(Line 1 minus Line 8)</b>                                              | <b>1628</b>  |
| 10 | Staffing ratio required per 4 firefighters <b>(Line 2/Line 9)</b>                                          | <b>5.37</b>  |
| 11 | # FF minimum staff required on duty to staff apparatus <b>(MFRS current/proposed – added two stations)</b> | <b>16/24</b> |
| 12 | Min. ff assigned per platoon to ensure minimum staffing maintained <b>((Line 10/4) X Line 11)</b>          | 21.48/32.22  |
| 13 | Rounded to the next full FTE count                                                                         | <b>22/33</b> |



### 3.2.3 Mission, Vision, and Values

A mission statement declares concisely the purpose of an organization, why it exists and how it provides service. A vision statement offers insight into where the department strives to be in the future. Values are the beliefs and principals that drive the organization forward. In some cases, a fire service may align with their municipality's mission and vision or build upon those with fire service specific statements.

The Town of Milton Mission, Vision and Strategic Themes were captured from the Town of Milton Strategic Plan. At the Town of Milton, the strategic plan creates a shared vision that guides the work of Council and staff to meet the needs of an evolving community for the current term of Council (2023-2027) as well as for the longer-term future (2051).

#### ***Town of Milton Mission Statement***

*We provide excellent and sustainable municipal services to foster a vibrant and inclusive community where residents thrive, businesses flourish and nature is cherished.*

#### ***Town of Milton Practical Vision for 2023-2027***

*By 2027, Milton will have laid the foundation for its future as a diverse and welcoming community defined by higher densities enabled by transit.*

*This foundation will include transit system advancements, prioritized infrastructure, quality facilities and a diverse housing stock in varied neighbourhoods where people can live and work close to nature.*

*The Town will maintain its appeal and character for residents and employers while adjusting services, operations, and development to reflect evolving resident preferences, demographics, and growth.*

#### ***Town of Milton Strategic Themes***

- 1. Invest in People - We will invest in a more permanent, balanced, and highly skilled workforce required for Vision 2051, making the Town of Milton an employer of choice where diverse and talented staff are able to offer superior service and productivity in a period of rapid change.*
- 2. Innovate in Technology and Process - We will focus substantial investments in technology, process improvements and meaningful partnerships to improve customer service, embed sustainable practices and create a foundation for flattening long-term costs.*

3. *Quality Facilities and Amenities - We will deploy adequate and consistent resources to maintain, operate and intensify the use of parks, facilities, and other Town-owned assets, improving resident safety and quality of place.*
4. *Connected Transit and Mobility - We will accelerate investments in Milton-owned transit assets, so these connect to other services, increase transit ridership, and help pedestrians and cyclists navigate our community defined by smart density, placemaking, mobility and economic development.*
5. *Planned Community Growth - We will plan and build infrastructure that supports the changing needs of our community as we prepare for a future with higher density, mixed-use neighbourhoods that offer an excellent quality of life.*

MFRS future development is determined by the department's master plan, which provides a long-range strategic planning framework to guide their priorities and objectives.

### **3.2.4 Command Structure**

Effective emergency services operations rely on a clearly defined command structure to ensure safe, coordinated, and efficient incident management. A recognized incident command system supports the following outcomes:

- Clear identification of the lead agency (fire, police, EMS, or other)
- Maintenance of appropriate span-of-control over all resources
- Interoperability with allied and responding agencies
- Defined tactical objectives and operational benchmarks
- Standardized communication protocols
- Enhanced situational awareness and overall scene safety

MFRS employs the Blue Card Command System, an industry-recognized incident command framework that aligns with NFPA 1561 – Standard on Emergency Services Incident Management System and Command Safety. All MFRS suppression staff receive training in the principles of the Incident Command system, which provides a scalable and adaptable approach to managing all-hazards emergency responses. The system is fully implemented across the organization and is applied at all incidents, allowing for seamless expansion or contraction of command roles based on the size and complexity of the event. The Blue Card system also ensures compatibility with unified command structures and facilitates integration with external emergency management agencies when required.

### **3.2.5 Remuneration, Recruitment, Selection, Retention, Promotion**

#### **3.2.5.1 Remuneration**

The Town of Milton is committed to recruiting the best candidates possible. Competitive salaries and benefits are offered to all their full-time positions. The municipality maintains a Collective Agreement with the unionized fire work force that details working conditions and compensation for its employees. This Collective Agreement is between the Corporation of the Town of Milton and the Milton Professional Firefighters Association.

Most employer-employee issues are handled through discussion up to and including the grievance procedures stipulated in the Collective Agreement. Competitive salaries, benefits and working conditions for each position is negotiated and form part of the Collective Agreement. The MFRS Fire Chief and Deputy Chiefs' working conditions, remuneration and other terms of conditions of employment are determined by the CAO and approved by Council.

#### **3.2.5.2 Recruitment**

Recruitment is a key function of all emergency service agencies. The community places a tremendous amount of faith in their fire department personnel, trusting them to provide the highest level of service when the public is most vulnerable. As such, the process used to select personnel should be very comprehensive.

Experience within the emergency services industry has shown that relaxing the requirements for entry-level positions is not the answer for recruiting an employee. Instead, most departments have had the greatest success when qualified applicants are encouraged to apply. This process often involves targeted advertising and promotional campaigns aimed at demonstrating the benefits, as well as the personal satisfaction of becoming part of the fire service. The expected requirements for residency, required training, and attendance must be clearly explained early in the process. Existing staff should be encouraged to participate in any such campaign.

MFRS, like other fire services in North America, trains, maintains, and equips its firefighters and fire prevention/inspection staff to the recognised standards for the services being delivered. As this requires substantial investment in both financial and resource commitments, recruit selection should be carefully managed.

The process for recruiting applicants for vacant positions is established. Full time firefighter positions are recruited from part time employees, which results in a higher rate of turnover for part time staff. Job postings, including minimum requirements and process, are listed on the municipal website. Most interview participants suggested that MFRS recruiting efforts were successful in attracting quality applicants. Hiring full time staff from the part time complement ensures that skills are adequately assessed prior to hire but may also limit the municipality from attracting the best staff available.

Our review of the recruitment process, along with interviews results indicates that the recruiting processes for career firefighters and fire prevention/inspectors have generally been successful in identifying excellent candidates. More recently, there has been a need to recruit from external sources as internal candidates for some positions are limited or non-existent. Efforts geared to succession planning may assist in developing internal staff for officer positions that they may not feel ready to take or are unwilling to pursue due to lack of understanding of roles and responsibilities.

Vacancies are uncommon in the MFRS. Opportunities typically occur as firefighters, inspectors, and training officers are promoted into the officer or chief ranks as positions become vacant or are newly created. Available positions are posted internally and on the Town of Milton website for external hires with a defined opening and closing application submission period.

### **3.2.6 Selection and Training for New Staff**

#### **3.2.6.1 Firefighters**

MFRS has comprehensive selection processes for recruit firefighter positions. After submitting their application and meeting the minimum qualifications, candidates are required to move through a multi-stage process. Applications are only accepted when there is an open competition, and candidates who meet all the initial requirements begin the following process:

- Completed applications and supporting documentation must meet all the minimum qualifications.
- Candidates are encouraged to attend an orientation session prior to submitting an application.

- Once the complete application package is received by HR and reviewed by HR and senior fire staff, the candidate may be selected to continue the process, which includes:
  - Take aptitude screening test
  - Pass an occupational physical assessment and acrophobia test
  - Attend an interview
  - Submit supporting documentation

Following selection, all part time staff are required to participate in four months of training before a gradual introduction to responding to incidents over the following eight-month period before they are able to respond fully. The minimum qualifications for all MFRS firefighters include:

- Be a Canadian citizen or have legal entitlement to work in Canada.
- Be a resident of Milton to apply.
- Have a high school graduation diploma (OSSD) or academic equivalent.
- Be able to understand and communicate in English under stress.
- Have an Ontario class G driver's licence and a good driving record (provide a recent drivers abstract within 30 days).
- Submit a Criminal Records Check with Vulnerable Sector Screening.
- We also recommend that you:
  - Have a CPR and First Aid certificate.
  - Have an Ontario class D driver's licence with Z air brake endorsement.
  - Are capable of handling intense and sustained physical activity.

### **3.2.6.2 Fire Inspector, Fire and Life Safety Officer and Training Officer**

The Collective Agreement provides language for the posting and selection process for Fire Inspector, Fire and Life Safety Educator and Training Officer positions. Vacancies are internally posted to MFRS personnel who can apply if they meet the minimum qualifications. If there are no qualified internal candidates, positions are posted externally.

Career full-time employee retention is not generally an issue for MFRS. Retirement, promotions, and attrition are the most common reasons for vacancies. Resignations are more common in part time ranks as candidates depart for full time opportunities in other municipalities. Unanticipated retirements or resignations can result in significant challenges to maintaining a sufficient pool of staff in each position that may also impact service delivery and budgets.

### **3.2.7 Promotions and Advancement**

The selection and/or promotional process for administrative positions is filled through a competitive process and appointment. Promotion eligibility for positions from probationary firefighter to unionized Captain's rank and above is contained in the Collective Agreement between the Town of Milton and the Milton Professional Firefighters' Association.

### **3.2.8 Succession Planning**

MFRS is entering a period of growth and development. As the Town continues to expand, MFRS is proactively positioning itself to meet emerging demands by investing in its people and enhancing leadership capacity. Many of the current supervisory and management roles have been filled through internal promotions, showcasing the department's commitment to nurturing talent from within. This organic approach provides a strong foundation upon which to build a more structured and forward-thinking succession planning program, one that ensures leadership continuity, enhances operational readiness, and supports a positive workplace culture.

The addition of Platoon Chiefs, internal promotion of Captains, and the utilization of Division Chiefs reflects the department's depth of commitment and operational experience. However, as these leaders transition into new roles, the need for intentional leadership development and mentorship becomes more apparent. Succession planning offers an opportunity to strengthen the leadership pipeline by equipping future leaders with the tools, confidence, and competencies required for success. With strong public support, a collaborative internal culture, and a motivated workforce, MFRS is well-positioned to introduce a tailored leadership development framework that is both motivated and achievable.

A formal succession planning initiative would establish clear pathways for advancement and prepare staff to take on increasingly complex roles across all divisions and sections. This could include leadership coaching, project management training, exposure to policy development, and mentorship opportunities with senior officers. Structured development opportunities ensure that as the department grows, both in staffing and scope of services, it can rely on a confident and capable leadership team that reflects MFRS's values, commitment to excellence, and community-focused mission.

With additional fire stations, enhanced technical response capabilities, and potential expanded dispatch functions on the horizon, now is an ideal time to invest in people. A strong leadership team will be essential to guide operational staff, support emerging service models, and manage the complexity of an all-hazards environment. By embedding succession planning into its long-term strategy, MFRS can ensure that leadership transitions are smooth, future challenges are met with confidence, and organizational knowledge is retained and passed forward. This investment in leadership will support the department's ability to adapt, innovate, and deliver the high level of service the Milton community has come to expect.

**Observation #3:** MFRS is undergoing rapid growth, with internal promotions filling many key leadership roles. While this speaks to the strength of internal talent, it has also created challenges for newly promoted officers, particularly in Operations, who are still developing their leadership skills, project management capacity, and confidence in decision-making. This transition has been especially difficult due to the limited availability of formal training, mentorship, and structured succession pathways. Additionally, many current leaders were promoted from within and may not have had the opportunity to fully prepare for their new responsibilities, resulting in a noticeable performance gap and reliance on informal peer support.

Further compounding the issue is a hesitancy among staff to pursue leadership roles. This is often due to fear of leaving their crews, lack of clarity about the responsibilities of management roles, and limited visibility into advancement opportunities. The absence of a formal succession planning framework places strain on existing leadership, makes workforce planning reactive rather than strategic, and increases the risk of burnout among middle managers. With continued organizational growth, added service pressures, and the introduction of new fire stations and disciplines, MFRS must prepare its future leaders through intentional planning and structured development.



**Recommendation #3:** Implement a formal Succession Planning and Leadership Development Program that identifies, mentors, and prepares future leaders across all divisions. This program should include career pathing, targeted training, leadership shadowing, and secondment opportunities tied to the Fire Master Plan implementation timeline and operational growth triggers.

**Suggested completion:** 12-24 months

**Cost:** Cost neutral

**Strategic Objective:** Administration

***Rationale:** A structured succession plan will provide MFRS with the tools to ensure stable and sustainable leadership as the organization expands. By proactively preparing internal candidates for future leadership roles, the department can ensure smoother transitions, maintain service continuity, and enhance confidence among both operational staff and senior leaders. This approach also supports a healthy workplace culture by reducing the stress of reactive promotions and increasing transparency in career progression. It empowers personnel to see a future in the organization and understand what is required to advance. Moreover, as MFRS activates new facilities (e.g., Station 6 and 7), expands technical disciplines, and considers broader responsibilities such as regional dispatching, having a confident, capable leadership team is essential. Succession planning ensures the department is not only prepared to respond to operational needs, but also to lead strategically, manage projects, and mentor others, key capabilities that will define MFRS's success over the next decade. This investment in people will be critical to building resilience, managing change, and delivering on the Town of Milton's broader service expectations.*

### 3.2.9 Health and Wellness

The active pursuit of employee health and wellness is extremely important to an organization. The benefits may include but not limited to:

1. Early recognition and treatment of illness
2. Reduction in absenteeism due to short/long-term illness
3. Decreased injuries during normal duties
4. Decreased workers' safety and insurance board (WSIB) premiums
5. Increased employee career longevity
6. Improved work/life balance



The Collective Agreement contains language for the provision of benefits for:

- Accident or occupational illness incurred in the performance of employee duties through Workplace Safety and Insurance Act of Ontario.
- Sick leave allowance
- Hospital-Medical Insurance
- Group Life Insurance
- Accidental Death and Dismemberment/Line of Duty Death
- Health Care Spending Account (for retirees)
- Bereavement Leave
- Pregnancy and Parental Leave

MFRS has an established Occupational Health and Safety committee with representation from administration, the Association, and part-time staff, with a multi-site agreement in place. Health and wellness initiatives are in place and standard operating policies and guidelines are established to ensure safe practices and procedures are followed.

MFRS has updated the existing fire stations where possible with the health and safety of their staff a priority, including exhaust extrication systems, PPE gear extractors, laundry facilities, fitness areas and equipment, and other measures to mitigate potential health and safety risks to staff.

The mental health of first responders is an issue that has garnered considerable attention over the past 10 years. As identified in the International Association of Firefighters Wellness-Fitness Initiative Manual<sup>15</sup>, “a firefighter’s work is characterized by long hours, shift work, disruptions in sleep patterns, sporadic high intensity situations, strong emotional involvement, life and death decisions and exposure to extreme human suffering.” Over time, this type of work can impose considerable stress on some individuals.

The Town of Milton provides health and wellness programs for its employees, including an Employee and Family Assistance Program. A separate EAP program is available to fire staff related to trauma care. Group benefits are included in the collective agreement for full-time career firefighters. Workers’ compensation benefits are in place through the provincial Workplace Safety Insurance Bureau (WSIB).

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<sup>15</sup> Joint Labor Management Wellness-Fitness Initiative, 4<sup>th</sup> Edition, p.48

An effective health and wellness program tailored around the demands of a firefighter takes a holistic approach, including physical and emotional fitness. These programs should promote regular fitness assessments and support, injury protection and early detection of occupational illness such as cardio and cancer screening. An excellent resource for the key concepts of an effective firefighter health and wellness program is in the IAFF Joint Labor Management Wellness-Fitness Initiative, 4th Edition. Properly outfitted fitness rooms allow opportunities for staff to maintain the strength and cardiovascular necessary to meet the demands of their positions.

Recognizing the unique challenges and programs available for the mental and physical wellbeing of firefighters, an industry-specific health and wellness program implemented and available to all firefighters is an important component within the core services of the department. There are many new opportunities provided at a provincial level, including programs like Warrior Health<sup>16</sup> that allow for low cost/ no cost services to be accessed by a fire service.

### **3.2.10 Policies, Procedures, and Guidelines**

Emergency response is dynamic, where split-second decisions are made to protect the lives of the public and their fellow responders. Therefore, the safe and effective operation of the fire service must have an industry-specific set of policies, procedures, and guidelines. Policies will outline expectations, while procedures are the accepted ways of adhering to these policies.

SOGs are a set of documented expectations for staff to follow to achieve a desired goal during an emergency event. SOGs are considered at emergency scenes where there is some flexibility on how activities are conducted, considering the safety of the public and emergency responders. SOPs, however, are formal policies that specify a course of action, thereby ensuring efficiency, predictability, consistency, and safety for all staff, including firefighters operating on the fireground. The Ontario OHSA is the foundational document by which a strong internal responsibility system is established in the workforce. The employer has the ultimate responsibility for the health and safety of all workers in the workplace; however, every employee has the responsibility to adhere to policies, procedures and guidelines that are meant to keep them, their coworkers, and the worksite safe.

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<sup>16</sup> <http://warriorhealth.ca/>

A critical tool in the employer's scope of responsibility is the establishment of approved policies, procedures, and guidelines. All these documents must be appropriate for the situation, vetted, approved, and documented. It is the employer's responsibility to develop, institute and establish compliance. The employees have a right to know about potential hazards in the workplace, a right to participate, and in certain circumstances, a right of refusal.

MFRS has a comprehensive list of standard operating policies and guidelines for emergency and non-emergency operations.

### 3.3 Fire Public Education Services

**Goal #2:** Develop and implement fire safety education campaigns that targets risks identified in the CRA to raise awareness about fire prevention, the importance of fire safety practices, and what to do in an emergency.

The *Fire Protection and Prevention Act* require, at minimum, that fire services “establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention” and “provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.”

Public education programs and active involvement in the community are important efforts that inform and engage citizens to think about fire safety and risk reduction. Fire safety is everyone's responsibility, which is why it is critical that everyone plays a role in keeping themselves and others safe through prevention, detection, and escape.

Milton Fire & Rescue Services provides a range of fire safety programs in an effort to modify the behaviors and attitudes of individuals regarding fire safety.

MFRS has identified a number of activities to support fire safety education in the community, including the following programs available for booking through the Fire and Life Safety Educator:

- In-Person and Virtual Classroom Visits
- Station Tour (Kindergarten-Grade 12)
- Fire Truck/ Firefighter Visit (Kindergarten-Grade 6)
- Home Hazard House (Grade 3 & 4)
- On Your Own at Home (Grade 7 & 8)
- What's Cooking for Teens (Grade 9-12)
- Fire Safety with Older Adults
- Fire Safety for Tenants/Landlords
- Fire Safety for Newcomers LINC or ESL

The following public education events have been held over the past three years:

| Public Education Events    | 2022 | 2023 | 2024 |
|----------------------------|------|------|------|
| Community Event            | 17   | 26   | 58   |
| Fire Drill                 | 14   | 19   | 24   |
| Cooking for Teens          |      | 1    |      |
| Emergency Preparedness     |      |      | 6    |
| Fire Extinguisher Training | 8    | 21   | 16   |
| Fire Prevention Week       | 5    | 2    |      |
| Fire Safety Talk           | 2    | 8    | 11   |
| Grade 3 Program            | 17   | 17   |      |
| Grades 7 & 8 Program       | 21   | 48   | 72   |
| School Visit               | 1    | 1    | 19   |
| Station Tour               | 14   | 29   | 25   |
| Tapp-C                     | 1    |      |      |
| Truck Visit                | 11   | 68   | 46   |
| Total                      | 111  | 240  | 277  |

**Note:** In 2024, MFRS reached a total of 24,588 through the public education programs offered.

MFRS has a single Fire and Life Safety educator to develop and deliver all of the public education programs offered by the service. Staffing is augmented through the use of on-duty firefighters, who assist in offering programs such as residential smoke and CO alarm programs (as well as some fire inspection activities). With continued limited staffing, fire suppression staff trained in NFPA 1035 – Standard for Fire and Life Safety Educator are better able to assist in effectively delivering fire safety education programs. As additional programs recommended in this section are developed, MFRS will need to evaluate staffing levels to determine the point at which additional dedicated Fire and Life Safety Educators are required.

MFRS also has a strategic communications and marketing plan to assist the department to improve awareness, educate the public, and promote programs and services. The intent is to raise awareness and keep MFRS staff, partners, local communities, and other stakeholders informed of activities, plans, key messages, and progress towards achieving MFRS’s business goals.

The strategic communications and marketing plan provides a framework to actively encourage two-way communication and constructively use the comments and feedback received from staff, partners, communities, and other stakeholders.

The recent Community Risk Assessment identified 15 risks of moderate or high levels and 22 key findings. From the CRA, MFRS can structure and prioritize public education programs on the risks identified, including targeting smoke alarm safety in all residential homes. One of the most significant challenges facing MFRS is the predominance of residential (Group C) occupancies, which comprise nearly 90% of the building stock and account for the vast majority of fire-related injuries, fatalities, and property loss.

Alarming, 100% of fire-related fatalities and 85.71% of fire-related injuries occurred in Group C buildings between 2018 and 2022. Contributing factors include a concerning rate of absent or malfunctioning smoke alarms and an aging housing stock, with over 16.5% of structures built prior to the implementation of modern building and fire codes. These risks are further compounded by the introduction of Additional Dwelling Units (ADUs), which increase building occupancy and complexity without adequate pre-incident identification systems.

The following statistics are drawn from the 2024 CRA report:

- Residential occupancies represent 89.65% of the existing building stock, with 52.48% of those being single-detached homes.
- Over the period from January 1, 2018- December 31, 2022, the Town of Milton experienced a total of 183 structure fires with 67.21 (123) of these fires occurring in Group C-Residential Occupancies, contributing to 83.51% of the total fire loss.
- Over a five-year period from January 1st, 2018, to December 31st, 2022, the Town of Milton reported that in 10.83% of fires responded to, there was no smoke alarm present. Incidents where a smoke alarm was present but failed to operate accounted for 13.33%.

**Observation #4:** Milton Fire & Rescue Services (MFRS) currently delivers general fire safety education across the community; however, the program is not formally guided by a documented annual plan that aligns with risk data, incident trends, or demographic shifts. Findings from the Community Risk Assessment (CRA) highlight specific patterns, such as higher fire loss in Group C residential occupancies, inconsistent smoke alarm compliance, and rising concerns around Additional Dwelling Units (ADUs), that should directly inform public education priorities. Additionally, while MFRS collects some program participation data, it lacks a centralized system to track, evaluate, or adapt programming based on geographic impact, community risk, or audience engagement.

**Recommendation #4a:** Use the findings of the Community Risk Assessment (CRA), incident data, and geographic analysis to inform the development of annual public fire safety education plans. Programming should be updated each year to reflect emerging risks, demographic shifts, and local trends in fire incidents, smoke alarm compliance, and vulnerable occupancy types.

**Recommendation #4b:** Implement a GIS-based predictive analysis model and develop a participant tracking and evaluation system to monitor the reach and impact of public education programs.

**Suggested completion:** 1-12 months

**Cost:** None

**Strategic Objective:** Public Education

**Rationale:** *Developing a data-informed annual public education plan ensures that fire safety outreach is targeted, relevant, and responsive to evolving community needs. By incorporating findings from the CRA, incident response data, and demographic analysis, MFRS can more effectively allocate resources to address emerging risks and improve fire safety outcomes. Updating the plan annually ensures responsiveness to trends such as population growth, shifts in building stock, and recurring fire causes, while reinforcing a performance-based approach to community risk reduction.*

*Implementing a GIS-based predictive analysis model and participant tracking system will further enhance the department's ability to evaluate the reach, equity, and effectiveness of its fire safety programs. These tools will allow MFRS to identify underserved areas, measure outcomes, and ensure accountability by linking public education investments to risk reduction results. A modernized, data-driven approach not only supports strategic planning but strengthens transparency and improves the department's ability to demonstrate public value through measurable community impact.*

Demographic and economic trends further influence Milton's risk profile. The growing population includes a high proportion of seniors (10.47%) and children under 14 (22.20%), both considered higher-risk groups in fire safety. Milton also has a large newcomer population, with language diversity necessitating tailored public education and fire prevention messaging.

**Observation #5:** Milton's growing, and diverse population presents both opportunities and challenges for fire prevention and public education. With nearly 40% of residents identifying as newcomers, 10% above the provincial average, and a wide range of languages spoken in the community, there are evident cultural, linguistic, and socioeconomic barriers that may impact fire safety awareness, particularly among vulnerable and equity-deserving populations. Additionally, Community Risk Assessment data shows that fire-related injuries, fatalities, and property loss are disproportionately concentrated in specific residential areas and building types, including Group C occupancies and areas with Additional Dwelling Units (ADUs). At present, MFRS does not have a formalized framework that combines demographic insights, GIS risk mapping, and stakeholder feedback to guide public education efforts. As a result, education and outreach programs may not be fully aligned with the unique needs and risks faced by specific neighbourhoods or populations.

**Recommendation #5a:** Develop and deliver targeted fire safety programs tailored for vulnerable and equity-deserving populations, incorporating input from community stakeholders, cultural organizations, and social service providers.

**Recommendation #5b:** Leverage community data, GIS mapping, and stakeholder engagement to guide the development of fire safety programming tailored to the needs of specific neighbourhoods and population groups.

**Suggested completion:** 12-24 months

**Cost:** Minimal – may be costs associated with translation services

**Strategic Objective:** Public Education



**Rationale:** To effectively reduce fire risk and improve safety outcomes, MFRS must develop and deliver public education programs that are responsive to the unique needs of vulnerable and equity-deserving populations. Partnering with cultural organizations, community stakeholders, and social service providers allows the department to co-design fire safety messaging that is culturally appropriate, linguistically accessible, and sensitive to the lived experiences of those most at risk. Tailored education efforts can build trust, improve engagement, and help bridge critical knowledge gaps, particularly among seniors, newcomers, low-income families, and residents of multi-unit or high-density housing.

By leveraging community risk data, GIS mapping, and neighbourhood-level engagement, MFRS can prioritize public education efforts where they are needed most, targeting areas with high fire call volumes, absent or malfunctioning smoke alarms, or significant growth in Additional Dwelling Units (ADUs). This data-driven approach ensures that limited resources are deployed strategically, with a focus on impact, equity, and measurable outcomes. Integrating evidence-based planning with collaborative outreach strengthens the department's ability to prevent fires, reduce injuries and fatalities, and build a more resilient, informed community.

### 3.4 Fire Prevention

**Goal #3:** Implement a program for proactive fire safety inspections for residential, commercial, and public buildings to ensure compliance with fire prevention codes, identify fire hazards, and encourage timely maintenance and repairs to non-compliant issues.

#### 3.4.1 Fire Prevention Services Overview

As departments increase their emphasis on fire prevention activities, communities see a reduction in fire-related losses. In Ontario alone, deaths caused by fire have been reduced over the last 70-75 years from 354 deaths reported in 1956 to 111 deaths reported in 2024. Although difficult to directly measure, effective fire prevention programs reduce fire-related deaths and property loss proportionately to the resources committed. Data collection and analysis will determine the effectiveness of these programs and their impact on the overall reduction of losses.

MFRS relies on the Fire Chief, Deputy Fire Chiefs, the Division Chief of Fire Prevention, and the Fire Prevention Officers as assistants to the Fire Marshal to carry out all directives required within the Fire Protection and Prevention Act, 1997, to the municipality. The FPPA regulations for public education and fire prevention and the projected growth for the Town emphasize the need to ensure appropriate capacity for fire prevention services.



The ability to meet legislative requirements, service expectations, and public safety requirements, relies on the fire service having adequate resources to meet the needs, circumstances, and requirements. MFRS is currently under-resourced to meet the demands. With anticipated growth and a recommended approach to targeted public education, proactive inspection and code enforcement programs, additional staff will be required to be phased in.

Additionally, all Fire Prevention staff must be trained and certified to the appropriate NFPA standards, including NFPA 1031 Fire Inspector Level 2 (level 2 due to the scope of inspection work required), NFPA 1033 Fire Investigator and NFPA 1035 Fire and Life Safety Educator.

### **3.4.2 Fire Code Inspection Services**

Modern building codes, including life safety design and operating requirements, are key components of risk management. Cyclical fire inspection programs for high-risk buildings ensure these systems continue to function throughout the life of the building. This is especially important for high occupancy and special purpose buildings such as apartment buildings, hospitals, seniors housing and schools.

While the benefits of an effective fire prevention program are sometimes difficult to fully quantify, the reduction of fire deaths and injuries in Ontario following the implementation and enforcement of modern building and fire codes illustrates the value. These services are fundamental elements of a broader community fire reduction and life safety strategy. Fire inspections are critical services in identifying fire hazards and maintaining life safety systems. MFRS provides inspection as required under Ontario Regulation 365/13 – Mandatory Assessment of Complaints and Requests for Approval for complaints and requests and Ontario Regulation 364/13 – Mandatory Inspection - Fire Drill in Vulnerable Occupancy.

Fire services should establish service level standards that allow the department to set clear expectations to the public, Council, and staff. Fire prevention and life safety activities and programs industry best practices are outlined in NFPA 1730 and through the Fire Underwriters Survey (FUS). Municipalities should examine these levels based on needs and circumstances and examine the identified risks within the community.

MFRS's current inspection frequency rate, standards for inspections set out by NFPA and FUS is outlined in Table 17. This table also includes the recommended inspection frequency that is considered appropriate for the Town of Milton. This recommended inspection schedule will require additional resources to be added to the staffing complement of the Fire Prevention Division. Additional resources required are detailed in Appendix F, and included in recommendation #8, below.

Table 17: Fire Prevention Inspections Frequency Levels

| OBC Building Class | MFRS Current                                                                                                               | NFPA 1730  | FUS           | MFRS Recommendation |
|--------------------|----------------------------------------------------------------------------------------------------------------------------|------------|---------------|---------------------|
| A                  | Schools completed every 2 years, balance of assemblies inspected on complaint/request or required by licensing             | 12-months  | 6-months      | 24-months           |
| B                  | 12-months                                                                                                                  | 12- months | 6-months      | 12-months           |
| C                  | Currently not on an inspection cycle. Home Safe Home program is done annually, inspections completed on request/ complaint | 12-months  | 6-months      | 12-months           |
| D                  | Request/ complaint                                                                                                         | 36-months  | 12-<br>months | 36-months           |
| E                  | Request/ complaint                                                                                                         | 36-months  | 12-<br>months | 36-months           |
| F                  | Request/ complaint                                                                                                         | 24-months  | 6-months      | 24-months           |
| F - Division 1     | New program in 2025, planning for 12-months                                                                                | 12-months  | 3-months      | 12-months           |

In addition to established standards for inspections cycles, municipalities may consider their community risk assessment, such as historical fire data. Predictive analytics and GIS-based risk mapping can be used to identify and inspect properties with higher-risk before incidents take place.

**Observation #6:** Milton Fire & Rescue Services (MFRS) currently conducts fire inspections based on complaint-driven or scheduled cycles, but lacks a formal, risk-based inspection model that prioritizes properties based on fire history, occupancy type, or known vulnerabilities. The Community Risk Assessment and incident response data reveal that a disproportionate number of structure fires, injuries, and fatalities occur in specific property types, particularly Group C residential occupancies, older buildings, and areas with Additional Dwelling Units (ADUs). Despite this, inspection efforts are not systematically focused on these higher-risk zones. Predictive analytics, when combined with historical incident data and GIS-based risk mapping, present a clear opportunity to proactively identify and inspect higher-risk properties before incidents occur.

**Recommendation #6:** Utilize predictive analytics using historical data, risk mapping, and response data, identify higher risk areas for targeted code enforcement inspections.

**Suggested completion:** 24-36 months

**Cost:** None – can be built in to work schedules of existing staff.

**Strategic Objective:** Fire Prevention and Code Enforcement.

***Rationale:** Adopting a predictive, risk-based approach to code enforcement aligns with best practices in fire prevention by directing limited inspection resources to where they can have the greatest impact. Utilizing historical data, risk mapping, and incident trends allows MFRS to prioritize inspections in areas with elevated fire risk, including properties with past violations, vulnerable occupancies, and buildings constructed before modern codes. This proactive strategy enhances public safety, improves code compliance, and reduces fire loss by addressing hazards before they escalate. Moreover, targeted inspections support transparency and accountability, by linking inspection outcomes to community risk profiles, ensuring that prevention efforts are both equitable and data driven.*

**Observation #7:** MFRS currently conducts inspections through a combination of complaint-based and scheduled activities but does not yet operate under a comprehensive risk-based inspection model aligned with provincial guidance. As identified in the Community Risk Assessment, certain occupancies, such as care facilities, schools, assembly occupancies, and multi-unit residential buildings, represent higher risk due to occupant vulnerability, complexity of evacuation, or history of code compliance issues. Industrial properties with high fuel loads and large building footprints present additional challenges. While these occupancies require greater inspection frequency and oversight, lower-risk properties may be appropriately addressed through longer, compliance-adjusted cycles.

Despite clear needs, fire prevention staffing and resources have historically limited MFRS's ability to implement a full-scale proactive inspection program. However, with the availability of property data, incident history, and GIS-based risk mapping, the department has begun and is well-positioned to continue a phased roll-out over a 3–5-year period, allowing alignment with staffing capacity and municipal growth. This approach supports a realistic and scalable implementation strategy while maximizing public safety returns on investment.

**Recommendation #7:** Develop and implement a phased-in proactive fire inspection program for all building classifications, targeting properties and occupancies based on risk categorization.

**Suggested completion:** 36-72 months

**Cost:** None. Inspections to be conducted by existing and future staff (see Recommendation #8 below).

**Strategic Objective:** Fire Prevention and Code Enforcement.

**Rationale:** *A phased, risk-based inspection program enables MFRS to prioritize fire prevention efforts where the risk to life safety, property, and community resilience is greatest, while ensuring a manageable workload for existing and future Fire Prevention Officers. Aligning the program with the Office of the Fire Marshal's Risk-Based Compliance Model, ensures regulatory consistency and supports targeted enforcement based on objective data, including occupancy type, compliance history, and past incident patterns. This method promotes transparency, improves accountability, and ensures resources are applied efficiently. Integrating medium and low-risk occupancies into extended inspection cycles, allows MFRS to balance risk management with operational capacity, reducing administrative burden while maintaining oversight. As the program scales over time, phased implementation allows for evaluation, refinement, and staffing adjustments, ensuring the initiative remains sustainable and effective. Ultimately, this strategy supports a modern, data-driven approach to fire prevention that enhances safety, reduces loss, and strengthens public confidence in the fire service.*

**Observation #8:** MFRS is currently experiencing service gaps in its Fire Prevention Division, driven by increasing call volumes, growing building stock, and rising demand for inspections, code enforcement, and public education. With ongoing residential intensification, the emergence of Additional Dwelling Units (ADUs), and the continued expansion of institutional, commercial, and industrial development, the workload for Fire Prevention Officers (FPOs) is expected to increase significantly over the coming decade. Present staffing levels are insufficient to support proactive inspection cycles, timely follow-up on violations, and meaningful public education engagement across high-risk occupancies.

To address these service deficits and plan for future demand, a phased-in expansion of FPO positions is necessary. This includes the addition of four full-time Fire Prevention Officers (in line with new fire station development, with two staff being assigned to each new station) to support an equitable and sustainable workload. These staffing projections should be formally integrated into MFRS's 10-year staffing and operating budget forecasts, allowing the Town to align prevention resources with community growth, risk, and legislative requirements. Office space and vehicle allocations should also be built into plans for new fire station development recommended by this Master Plan.

**Recommendation #8:** Implement a phased expansion of Fire Prevention staffing, aligned with current service deficits.

**Suggested completion:** 36-72 months, in line with new fire station development

**Cost:** Cost per fire inspector is \$66,392-\$120,712 (2024 rates). The additional salary cost at the end of the phase-in would be approximately \$482,848 (plus benefits) to the operating budget.

**Strategic Objective:** Fire Prevention and Code Enforcement

***Rationale:** Expanding Fire Prevention staffing in a phased, planned manner ensures MFRS can deliver a comprehensive, risk-based fire prevention program in alignment with the Office of the Fire Marshal's Risk-Based Compliance Model. Additional Fire Prevention Officers will enable the department to increase inspection frequency for high-risk occupancies, improve response to complaints and violations, and deliver more targeted public education to vulnerable populations and high-risk neighbourhoods. This supports community safety and reduces the likelihood of significant fire loss, injuries, or fatalities. Integrating FPO staffing projections into long-term financial planning provides transparency and fiscal responsibility, allowing the Town to gradually build capacity without abrupt operational or budgetary impacts. This proactive approach also strengthens MFRS's ability to meet future service level expectations, legislative mandates, and the demands of a rapidly expanding municipality. A properly resourced Fire Prevention Division is critical to maintaining a balanced approach across all three lines of defense: public education, prevention, and emergency response.*

### 3.4.2.1 Additional Residential Units (ARUs)

An Additional Residential Unit (ARU), also called an Additional Dwelling Unit (ADU), is a small, fully equipped living space on the same property as the main house. It can be inside the main house, like a basement apartment, or in a separate building on the lot. ARUs can be part of detached houses, semi-detached houses, semi-link houses, or townhouses in Milton. ARUs are also referred to as additional dwelling units, secondary suites, accessory units, basement apartments, coach houses, laneway houses, garden suites, tiny homes, granny flats, in-law apartments or nanny suites.

ARUs help increase housing options and make homes more affordable. They allow property owners to create extra living spaces for renters or family members. This supports a range of housing needs, including affordable rental housing and multi-generational living.

Milton Town Council approved amendments to the Official Plan and Zoning By-law to permit up to three ARUs on a lot containing a detached house, semi-detached house, or townhouse in the urban areas. As such, up to four residential units in total are now permitted on a residential lot with municipal water and sewage services. The amendments came into effect on June 25, 2024.

On April 1, 2025, the Town established a new registration program for ARUs to record critical emergency response information for Fire and Rescue Services, ensuring the safety of ARU occupants and overall compliance with municipal regulations and zoning by-laws for ARUs.

When dealing with ARUs, it is essential to consider fire safety measures, particularly related to inspections and fire safety education. The increase in approval of these units may require additional staffing to ensure compliance with fire safety regulations, both at the approval stage and on an ongoing basis. Furthermore, ARUs might necessitate extra resources or considerations during emergency fire suppression responses. Staffing considerations for MFRS related to growth in the approval of ARUs should be reviewed on an ongoing basis, with reference to Recommendations 6-8.

### **3.4.3 New Developments Plan Reviews**

The building division circulates new development, and construction plans to the fire service for review and comments. In 2024, MFRS completed examination of building plans, blueprints and drawings for new building construction and site inspections of same for 89 sites. It appears the relationship between MFRS, and the building division is strong and very positive.

Having MFRS review new developments and construction plans provides MFRS staff with the knowledge of new developments that are planned and details on unique and potential risks with new buildings. Providing comments aligns MFRS with their building division counterparts and ensures continuity with OBC and OFC once the building becomes occupied. It will be important to ensure staffing levels continue to support this important work as Milton grows and develops in the future.

### 3.4.4 Fire Cause and Origin Services

All fires in Ontario causing injury, death and property loss are to be investigated for origin, cause and circumstances under the Fire Protection and Prevention Act, 1997. The FPO has direct oversight of the fire investigations program and oversees scheduling, equipment needs and reporting of investigations. The fire investigations in Milton are conducted by the FPOs. Annually the FPOs conduct between 12-16 investigations.

Standard operating guideline FP-001-SOG provides instruction and procedures for managing investigations of a fire incident and maintaining scene security including safe working practices and general duties of fire investigators. Any fires that do not meet the criteria for notifying a Fire Prevention Officer are investigated by the on-scene incident commander.

MFRS has appropriate guidelines and training/certification for conducting investigations, documentation, notification of appropriate agencies and the use of protective equipment.

## 3.5 Emergency Management

**Goal #5:** Strengthen its capacity to prepare for, respond to, and recover from all types of emergencies. Through coordinated planning, training, and inter-agency collaboration, the Service will enhance community resilience, safeguard life and property, and support continuity of operations across a broad range of hazards.

Under the Emergency Management and Civil Protection Act (EMCPA), all municipalities in Ontario are required to maintain a comprehensive emergency management program to safeguard the health, safety, and welfare of residents and property during emergencies. The Town of Milton fulfills this obligation through a municipally led program overseen by a dedicated Community Emergency Management Coordinator (CEMC), who works in coordination with the Fire Chief and senior leadership across Town departments.

Milton's Emergency Management Program is guided by the Town's Emergency Response Plan, a Council-approved document that provides the operational framework for mitigating, responding to, and recovering from emergencies. The plan outlines the roles and responsibilities of municipal departments, establishes activation protocols, and ensures alignment with the Province of Ontario's Incident Management System (IMS). This alignment supports consistent response coordination and role clarity during incidents of varying size and complexity.



The CEMC, under the oversight of the Municipal Emergency Management Program Committee (MEMPC), is responsible for the administration, maintenance, and annual review of the Emergency Management Program. This includes the coordination of staff training, emergency exercises, plan revisions, and compliance with the annual requirements of Emergency Management Ontario (EMO). The Fire Chief of MFRS plays a central role in this structure, acting as the designated lead for fire and rescue services within the municipal framework.

The Town's Municipal Emergency Control Group (MECG) is the primary decision-making body during municipal emergencies and includes representation from MFRS, and senior municipal officials. The MECG is activated under the authority of the mayor or designate, who holds the statutory power to declare a municipal emergency. During such events, MFRS provides operational coordination and public safety support while maintaining essential fire and rescue services.

MFRS plays a critical role in emergency preparedness and response, especially in incidents involving fires, hazardous materials, structural collapses, transportation emergencies, and other public safety threats. The department ensures readiness through ongoing multi-agency training, tabletop exercises, and full-scale simulations that test interoperability with regional and provincial partners. These exercises validate response capabilities and strengthen organizational preparedness across all Town departments.

The Emergency Operations Centre (EOC) can be activated physically or virtually, depending on the nature and severity of the event. The Town has designated EOC locations, as well as alternate sites, to ensure the continuity of operations. Activation of the EOC enables centralized coordination of response functions and resource allocation, allowing MFRS and other departments to manage real-time priorities and maintain situational awareness.

The growing complexity of hazards in Milton, such as extreme weather, rail and highway incidents, infrastructure failures, and large public gatherings, requires that the Town's Emergency Management Program remain current, scalable, and adaptable. As the Town's population continues to grow and urbanize, MFRS will play an increasingly integral role in integrated emergency planning, with a particular focus on high-density areas and vulnerable populations.

MFRS personnel regularly support emergency planning initiatives by participating in MEMPC meetings, contributing to hazard identification and risk assessments (HIRA), and maintaining operational readiness through specialized training and certification in IMS and emergency response leadership. This ensures that the department is not only a response agency but also a key planning stakeholder.

In addition to emergency response coordination, the Town's Emergency Management Program must also prioritize business continuity planning to ensure the uninterrupted delivery of critical services during and after an emergency. As municipal operations become more interconnected and dependent on digital systems, disruptions to infrastructure, staffing, or communications can have cascading impacts across departments. MFRS, as a 24/7 essential service, plays a central role in supporting continuity of operations for both emergency and non-emergency functions. This includes maintaining backup systems for dispatch and incident reporting, identifying alternate work locations for critical staff, and ensuring access to essential supplies and communications. As part of its partnership with the CEMC and other Town departments, MFRS should continue to support the development and testing of business continuity plans that align with its operational risks and ensure resilience in the face of increasingly complex emergencies.

In summary, MFRS is an essential partner in the Town of Milton's Emergency Management Program. Its ongoing leadership and operational capabilities ensure that the Town can respond effectively to emergencies and maintain the safety and well-being of residents during times of crisis.

**Observation #9:** As Milton continues to grow in population, complexity, and service demands, its municipal operations are increasingly reliant on integrated systems, digital infrastructure, and interdepartmental coordination. While the Town maintains an Emergency Management Program and designated Emergency Operations Centre (EOC) protocols, there is currently no formal, division-specific business continuity planning framework to guide individual departments in maintaining critical services during disruptions. In the event of a natural disaster, cyber incident, infrastructure failure, or prolonged staffing shortage, the absence of structured continuity plans may lead to delays in service recovery, gaps in public safety delivery, or prolonged operational outages.

**Recommendation #9:** Develop and implement a formal, municipality-wide Business Continuity Planning (BCP) framework, requiring all Town divisions to create, maintain, and regularly update business continuity plans tailored to their core functions and operational risks.

**Suggested completion:** 12-24 months

**Cost:** Varies on scope and internal vs external

**Strategic Objective:** Emergency Management

**Rationale:** Establishing a formal BCP framework will improve organizational resilience, minimize service disruptions during emergencies, and support the Town's ability to protect residents, staff, infrastructure, and critical information. Divisional-level plans ensure that each department proactively identifies its essential services, critical staff roles, technology dependencies, and recovery strategies in the face of unplanned events. For MFRS and other first-response departments, continuity planning is essential to sustaining life safety operations, communications, and incident command functions during prolonged or complex emergencies. A coordinated municipal BCP framework also aligns with public sector best practices and provincial emergency management expectations, reinforcing the Town's capacity to recover quickly and effectively while maintaining public trust.

**Observation #10:** Milton's Emergency Management Program has traditionally focused on conventional hazards, but the community's rapid growth and changing environmental conditions now require a broader, more dynamic approach. Emerging climate-related threats, including increased frequency of flooding, extreme heat events, wildland-urban interface (WUI) fires, and severe storms, pose escalating risks to public safety, infrastructure, and continuity of operations. Concurrently, urban-specific threats such as high-rise evacuations, infrastructure failures, rail and highway incidents involving dangerous goods, and mass gatherings are becoming more prominent as the town densifies and diversifies.

Despite foundational planning, the current program would benefit from more integrated use of GIS-based HIRA tools, enabling real-time spatial analysis and risk modeling to better evaluate and prepare for evolving hazards. Without proactive updates, the Emergency Management Program risks falling out of alignment with community needs and provincial expectations for risk-based emergency planning.

**Recommendation #10:** Continue to ensure the Emergency Management Program reflects current and emerging threats.

**Suggested completion:** 12-18 months

**Cost:** Neutral

**Strategic Objective:** Emergency Management

***Rationale:** Milton's Emergency Management Program has traditionally focused on conventional hazards, but the community's rapid growth and changing environmental conditions now require a broader, more dynamic approach. Emerging climate-related threats, including increased frequency of flooding, extreme heat events, wildland-urban interface (WUI) fires, and severe storms, pose escalating risks to public safety, infrastructure, and continuity of operations. Concurrently, urban-specific threats such as high-rise evacuations, infrastructure failures, rail and highway incidents involving dangerous goods, and mass gatherings are becoming more prominent as the town densifies and diversifies.*

*Despite foundational planning, the current program would benefit from more integrated use of GIS-based HIRA tools, enabling real-time spatial analysis and risk modeling to better evaluate and prepare for evolving hazards. Without proactive updates, the Emergency Management Program risks falling out of alignment with community needs and provincial expectations for risk-based emergency planning.*

## 3.6 Operations

**Goal #4:** Provide emergency response services that reflect the community's identified risks, growth projections, and operational realities. Services will be delivered with a focus on health and safety, industry best practices, and a commitment to efficiency, effectiveness, and long-term value for the community.

### 3.6.1 Structural Firefighting

Fire department resources must be appropriately aligned with the most probable risks within a community. Structural fire suppression involves a broad spectrum of coordinated tactics used to control and extinguish fires arising from various sources, including electrical faults, cooking incidents, heating equipment, and arson. In the Town of Milton, single-family dwellings represent the predominant building stock and thus present the most frequent type of structural fire risk. While fires in these structures are confined to one or two properties and are categorized as low to moderate in overall risk, they remain one of the leading causes of fire-related deaths, injuries, and property loss in Canada.

Though structural fires represent a small percentage of MFRS's overall incident volume, just 1.6% of total emergency responses from 2020 to 2024, they demand a disproportionately high level of preparedness, training, and operational resources. These types of incidents require rapid coordination, sufficient personnel, and specialized equipment to ensure both effective incident resolution and the safety of firefighters and occupants. MFRS personnel are trained to the National Fire Protection Association (NFPA) 1001 Level I and II standards, as mandated by provincial regulations, ensuring all frontline responders possess the requisite competencies for structural fire suppression.

Structural firefighting is inherently complex and time sensitive. Operations requiring entry into a structure for fire control or rescue demand that multiple critical tasks, such as fire attack, search and rescue, ventilation, water supply, and incident command, be conducted concurrently. NFPA 1710 establishes best practice benchmarks for the deployment of personnel and apparatus to meet the operational needs of structural firefighting in a safe and effective manner. For MFRS, achieving these benchmarks requires an Effective Response Force (ERF) assembled from multiple stations to carry out these concurrent tasks without delay. If the appropriate number of personnel is not available upon arrival, life safety operations may be delayed, increasing risks to both occupants and firefighters.

To meet these demands, MFRS maintains a modern and well-equipped fleet of fire suppression apparatus, complemented by a team of full time and part time firefighters trained in structural firefighting tactics and rescue procedures. The current deployment model involves crews responding from the closest fire station using the appropriate apparatus, supported by additional units from other stations to assemble the full ERF as defined in NFPA 1710. This model is designed to optimize response coverage and maximize the department's capacity to respond to structure fires within recognized performance benchmarks.

Ensuring the department has the adequate number of trained personnel and the necessary apparatus to perform critical fireground tasks simultaneously is essential to both public safety and firefighter survivability. As Milton continues to grow in both population and built form, ongoing investments in staffing, training, and equipment will be required to ensure MFRS maintains its ability to meet structural firefighting demands in alignment with community risk and national standards.

### **3.6.2 High-Rise and Multi-Unit Residential Firefighting Operations**

Fire suppression operations in high-rise and multi-unit residential buildings present unique challenges to Milton Fire & Rescue Services (MFRS). High-rise structures, typically defined under the Ontario Building Code (OBC) and Ontario Fire Code (OFC) as buildings with floor levels exceeding 18 metres (59 feet) above grade or six storeys, demand specialized strategies due to their height, complexity, and occupant load. Fire behavior in tall buildings is heavily influenced by vertical air movement and the “chimney effect,” where smoke and heat travel upwards, potentially compromising multiple floors in a short time. The need for vertical response, transporting personnel, hose lines, and equipment up stairwells, delays intervention and increases risk to both occupants and firefighters. These operations require increased staffing to complete critical tasks such as stairwell control, fire attack, search and rescue, ventilation, and firefighter accountability.

Evacuation from high-rise buildings also introduces operational complexity. Limited stairwell capacity, lack of occupant familiarity with emergency procedures, and malfunctioning communication systems can impede safe egress. In many high-rise buildings, “shelter-in-place” strategies are employed, relying on properly compartmentalized units, and working communication systems to protect occupants during an emergency. These strategies are only effective when supported by robust public education, functioning life safety systems, and diligent fire code enforcement. Ensuring all required OBC- and OFC-mandated systems are installed and maintained, such as fire-rated stairwells, sprinkler and standpipe systems, smoke control systems, and firefighter elevators, is essential to occupant and responder safety.

While high-rise buildings introduce operational challenges, modern buildings constructed to current OBC and OFC standards are safer. These buildings incorporate advanced life safety features, including automatic sprinklers, compartmentation, fire detection systems, and smoke control systems that mitigate fire spread and improve the conditions for both evacuation and firefighting. However, as these systems age or are poorly maintained, risk can increase significantly. Therefore, regular inspections, enforcement, and public education campaigns remain essential, even in buildings built to current code.

Milton's building stock is undergoing transformation as the community intensifies its urban core. As of 2024, the Town has 24 existing high-rise buildings, with an additional 36 either under construction or planned. These structures are primarily concentrated in Milton's urban centre and signal a broader shift toward vertical residential and mixed-use development. In parallel, the introduction of Additional Residential Units (ARUs), following changes to the Planning Act under Bill 23, permits the development of multiple units within single-detached, semi-detached, and townhouse dwellings. This change is expected to significantly increase the number and diversity of residential units in the community, particularly in established neighbourhoods.

Multi-unit residential buildings, both low-rise and high-rise, bring distinct fire protection challenges. Shared egress routes, interconnected systems, complex floor layouts, and the potential for rapid fire spread between units require a coordinated, multifaceted response. Firefighters must often manage simultaneous suppression, ventilation, and rescue operations under difficult conditions. Additionally, older buildings and unauthorized dwelling units may lack adequate fire separation, smoke alarms, or access for fire apparatus, compounding risk during emergency response. As more ARUs and informal conversions emerge, MFRS must remain proactive in identifying, inspecting, and preparing for these higher-risk occupancies.

Current residential building stock data from 2021 illustrates the evolving landscape. Single-detached dwellings represent 58.5% of homes in Milton, followed by row houses (27.8%) and semi-detached homes (13.3%). Apartment buildings comprise less than 1% of the total, far below Ontario's provincial averages. However, with infill development, secondary plan buildouts, and increasing demand for affordable housing, this ratio is expected to change significantly. This densification will likely lead to increased call volumes in higher-risk structures, longer operational durations, and heightened staffing demands for MFRS.



To address these trends, MFRS must continue to invest in firefighter training, inspection programs, pre-incident planning, and fire prevention initiatives tailored to multi-unit and high-rise residential occupancies. Building relationships with property managers and enforcing fire code compliance will help reduce risk. As Milton transitions toward greater density and vertical growth, aligning operational capabilities with the town's evolving residential profile will be essential to maintaining public safety and effective emergency response. A forward-looking, risk-informed approach will ensure that MFRS remains ready to meet the complex demands of high-rise and multi-unit firefighting in the years ahead.

**Observation #11:** Milton's housing landscape is undergoing a significant transformation, marked by a rise in Accessory Residential Units (ARUs) as part of the Town's broader intensification and affordability strategy. Recent zoning and planning amendments, aligned with Ontario's More Homes Built Faster Act, have facilitated the development of secondary suites, basement apartments, and detached garden suites within established neighbourhoods.

While this trend enhances housing diversity and density, it also presents distinct fire safety and operational challenges. Many ARUs are retrofitted into older single-detached homes, often featuring limited access, restricted egress routes, and inconsistent code compliance. These conditions can complicate fireground operations, prolong search and rescue efforts, and increase occupant vulnerability, particularly when units are concealed from the street or lack adequate fire separations and detection systems.

Currently, Milton Fire & Rescue Services (MFRS) does not have a dedicated system to track, categorize, or analyze incidents specific to ARUs. These calls are embedded within general residential response data, making it difficult to isolate ARU-related risks, incident frequency, or staffing implications. As the number of ARUs continues to grow, especially in older suburban areas and intensifying urban nodes, this data gap limits the department's ability to accurately assess workload impacts and emerging risk patterns.

**Recommendation #11:** Implement a systematic process to monitor and analyze fire incident trends related to high-rise buildings and ARUs, including response frequency, nature of incidents, and resource deployment per event. This information should be integrated into annual operations reviews, staffing and apparatus planning, and targeted training and public education initiatives.

**Suggested completion:** 12-18 months

**Cost:** Varies on scope and internal vs external

**Strategic Objective:** Operations



**Rationale:** *Implementing a systematic process for tracking ARU-related incidents alongside the trends in high-rise and ARU settings will enable MFRS to make evidence-based decisions that improve service delivery and operational readiness. By analyzing the frequency, severity, and characteristics of incidents, such as the number of apparatuses required, staffing time on scene, and nature of occupant rescues, the department can identify recurring patterns, emerging risks, and capacity gaps. These insights are critical to informing annual operating reviews, shaping deployment models, and supporting the development of future staffing forecasts, particularly as Milton's vertical growth continues and housing densification accelerates in established neighbourhoods.*

*Incorporating these data-driven findings into broader fire service planning also supports the alignment of training programs, inspection priorities, and public education efforts with real-world risk. For example, if analysis reveals a concentration of kitchen fires in ARUs or prolonged response times in high-rise incidents, MFRS can respond by tailoring fire prevention messaging, expanding building-specific training, or revisiting apparatus placement strategies. Ultimately, a robust monitoring process will ensure that MFRS remains agile, risk-informed, and capable of maintaining effective response standards across a rapidly changing urban and residential environment.*

### 3.6.3 Medical Assist

Medical assist is a valuable core service provided by Milton Fire & Rescue Services (MFRS) as part of its all-hazards emergency response model. Although medical incidents accounted for 7.24% of total call volume from 2020 to 2024, they represent a growing area of operational demand. Notably, medical/resuscitator calls more than tripled during this period, increasing from 80 in 2020 to 318 in 2024. These calls often involve life-threatening conditions, such as cardiac arrest, overdose, or severe respiratory distress, where MFRS's rapid response, enabled by its strategically located fire stations, can provide immediate life-saving intervention before the arrival of paramedic services. Early intervention during these time-sensitive events significantly improves patient outcomes and aligns with MFRS's mission of protecting life and property.

MFRS operates under a medical response framework in collaboration with Halton Region Paramedic Services. In July 2025, this collaboration was further strengthened through the adoption of a fully tiered medical response agreement. This formalized and modernized the medical response criteria used by MFRS, clearly defining the medical incident types that trigger a fire department response.

These include cardiac arrest, opioid overdose, seizures, unconscious patients, severe allergic reactions, and respiratory compromise. The agreement ensures that fire resources are dispatched only to medically critical calls, maintaining capacity for fire suppression and other emergency responsibilities while continuing to deliver rapid, effective patient care when minutes matter most.

The implementation of the Medical Priority Dispatch System (MPDS) at the Central Ambulance Communications Centre (CACC) also plays a pivotal role in MFRS's tiered response model. MPDS enables dispatchers to apply medically validated triage algorithms during 9-1-1 calls, assigning priorities based on symptom severity and risk to life. This system ensures consistency, reduces unnecessary fire department responses to low-acuity events, and helps optimize resource allocation across the EMS system. Through integration with MPDS, MFRS aligns its dispatch protocols with best practices and enhances inter-agency coordination with paramedic services.

All front-line MFRS firefighters are certified in First Responder care, including CPR, AED use, oxygen therapy, and basic trauma management. From 2020 to 2024, MFRS administered CPR 120 times and used defibrillators in 11 incidents, highlighting the critical life-saving role fire personnel play in medical emergencies. The department also has a designated Medical Director who provides oversight and delegation for medical interventions such as defibrillation and intranasal naloxone administration, ensuring clinical accountability and alignment with provincial medical standards.

As Milton continues to grow and diversify, the demand for fire-based medical response is expected to increase. The adoption of the tiered agreement and integration with MPDS reflect a proactive approach by MFRS to evolve its medical response capabilities in step with best practices and community need. Ongoing medical training, clinical oversight, performance monitoring, and collaboration with regional EMS partners will ensure that MFRS continues to deliver timely, high-quality medical care while balancing its broader emergency response responsibilities.

**Observation #12:** Milton Fire & Rescue Services (MFRS) plays an increasingly vital role in the delivery of frontline medical care as part of its all-hazards emergency response model. While medical incidents represent a smaller percentage of total call volume (7.24% from 2020–2024), the sharp increase in high-acuity medical/resuscitator calls, tripling over a four-year period, demonstrates a growing community reliance on fire-based medical response. MFRS often supports ambulance services, initiating critical interventions that can significantly impact patient outcomes. The department currently operates under a tiered response agreement with Halton Region Paramedic Services, supported by a designated medical director who ensures clinical oversight and regulatory compliance. However, the evolving nature of emergency medical dispatch, particularly with the phased implementation of the Medical Priority Dispatch System (MPDS), necessitates a review and update of the existing framework to reflect new triage algorithms, local response trends, and the expanding capabilities of First Responders.

**Recommendation #12:** Continue to regularly update tiered medical response framework through renewed collaboration with Halton Region Paramedic Services, and the MFRS medical director to refine response protocols. Clarify the scope of clinical practice for First Responders and ensure alignment with system-wide changes such as the implementation of MPDS.

**Suggested completion:** 1-12 months then ongoing.

**Cost:** Neutral

**Strategic Objective:** Operations

***Rationale:** Updating the tiered medical response agreement is essential to maintaining clinical effectiveness, operational efficiency, and alignment with system-wide improvements in emergency medical services. As MPDS refines how incidents are prioritized and dispatched, clear protocols are needed to ensure MFRS is mobilized only when fire-based intervention provides a measurable benefit to patient outcomes. A collaborative review involving Halton Region Paramedic Services and the MFRS medical director will allow for evidence-based adjustments to the call types that trigger fire response, while also clarifying the clinical scope of practice for MFRS personnel. This ensures that firefighters are deployed appropriately, equipped with current medical directives (e.g., naloxone or EpiPen administration), and trained to meet evolving expectations. Such an update supports system sustainability, enhances patient care, and reinforces MFRS's role as a proactive, high-performing partner in regional emergency medical services.*

### 3.6.4 Hazardous Materials/Dangerous Goods Response

Hazardous materials (hazmat) incidents, including those involving dangerous goods, present complex and high-risk challenges to emergency responders, the public, and the natural environment. These incidents range in severity from minor fuel spills to large-scale chemical releases and transportation-related events. While infrequent, the potential consequences of these occurrences are significant. The Town of Milton's Hazard Identification and Risk Analysis (HIRA) classify chemical incidents as having an unlikely likelihood score, paired with a medium consequence rating, resulting in an overall high-risk classification. This elevated risk is primarily driven by the potential for major spills occurring on provincial highways, rail corridors, waterways, and within residential neighbourhoods. As such, the response capabilities of Milton Fire & Rescue Services (MFRS) must reflect both the community's risk profile and nationally recognized response standards.

The Community Risk Assessment identified 70 properties within Milton as having a potentially high fuel load, increasing their fire risk and potential exposure during hazardous materials incidents. In addition, Milton is intersected by multiple designated dangerous goods transportation routes, including Highways 401, 407, and 25, where large volumes of hazardous materials are transported regularly. The Guelph Junction Railway operates rail lines through rural, urban, and environmentally sensitive areas of the municipality, including areas near farmland and water bodies, with cargo that includes dangerous goods. The proposed development of a new intermodal rail facility in south Milton is expected to bring increased rail traffic, storage capacity, and a corresponding increase in hazmat-related risk exposure.

Response competencies for hazardous materials incidents are governed by NFPA 1072: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents, which outlines three service levels: awareness, operations, and technician. MFRS currently operates at the operations-level, which equips personnel to perform defensive actions such as damming, diking, absorption, and scene control using personal protective equipment (PPE). Firefighters at this level can support rescue and containment activities within the hot zone and are trained to establish decontamination zones to protect personnel and the public. These competencies enable MFRS to take immediate, measured actions that help prevent escalation until more advanced support arrives.

The technician level, which involves offensive operations to contain or neutralize hazardous material releases, requires specialized hazmat suits, technical tools, and advanced training. Due to the significant financial and logistical requirements associated with this level of service, technician response is typically provided by large metropolitan departments or contracted third-party providers. In the event of a large-scale or complex hazardous materials incident, MFRS would activate established mutual aid agreements and request support from the Ontario Fire Marshal's (OFM) Provincial Hazmat Response Team or other external agencies equipped for technician-level operations.

Between 2020 and 2024, MFRS responded to 632 public hazard incidents, many of which were directly or indirectly related to hazardous materials. These included 237 carbon monoxide (CO) presence calls, 71 natural gas leaks, 28 fuel spills, and 92 events involving downed or arcing power lines. The department also responded to a toxic chemical spill and multiple ruptured water or steam line incidents, each of which carried unique operational and safety considerations. While most incidents were minor in scale, they underscore the importance of maintaining a strong operational-level hazmat response capability, supported by regular training, risk monitoring, and coordination with external partners.

Although MFRS does not maintain a dedicated hazmat unit or provide technician-level service, it plays a critical role as the initial responder for hazardous materials incidents in Milton. Continued investment in training, equipment, and inter-agency coordination will ensure that MFRS remains capable of protecting residents, property, and the environment in alignment with its risk profile. The department's current service level reflects a balanced, responsible, and scalable approach appropriate to Milton's size, growth trajectory, and operational priorities.

Table 18: Public Hazard Incidents 2020-2024

| Public Hazard                    | 132 | 120 | 163 | 92 | 125 | 632 |       |
|----------------------------------|-----|-----|-----|----|-----|-----|-------|
| CO incident, CO present          | 47  | 33  | 61  | 42 | 54  | 237 | 37.5% |
| Gas Leak - Miscellaneous         | 1   | 0   | 0   | 0  | 2   | 3   | 0.5%  |
| Gas Leak - Natural Gas           | 15  | 17  | 19  | 11 | 9   | 71  | 11.2% |
| Gas Leak - Propane               | 2   | 3   | 1   | 1  | 0   | 7   | 1.1%  |
| Gas Leak - Refrigeration         | 0   | 0   | 0   | 1  | 1   | 2   | 0.3%  |
| Other Public Hazard              | 9   | 8   | 14  | 13 | 12  | 56  | 8.9%  |
| Power Lines Down, Arcing         | 24  | 24  | 23  | 7  | 14  | 92  | 14.6% |
| Public Hazard call false alarm   | 10  | 6   | 6   | 1  | 3   | 26  | 4.1%  |
| Public Hazard no action required | 8   | 3   | 4   | 6  | 11  | 32  | 5.1%  |
| Ruptured Water, Steam Pipe       | 8   | 17  | 25  | 5  | 10  | 65  | 10.3% |
| Spill- Gasoline or Fuel          | 6   | 7   | 7   | 3  | 5   | 28  | 4.4%  |
| Spill - Miscellaneous            | 2   | 2   | 3   | 1  | 4   | 12  | 1.9%  |
| Spill - Toxic Chemical           | 0   | 0   | 0   | 1  | 0   | 1   | 0.2%  |

### 3.6.5 Technical Rescue Services

Technical rescue operations often involve low frequency but high-risk events that require specialized knowledge, equipment, and training to ensure rescuer safety and incident success. These events may include motor vehicle extrications, confined space incidents, industrial entrapments, high-angle rope rescues, and water or ice rescues. Due to the complexity and infrequency of these incidents, fire departments must invest heavily in structured training programs, routine equipment maintenance, and a certification process to ensure operational readiness and responder safety. Maintaining technical rescue competencies requires a deliberate and sustained commitment, even when actual call volumes remain low.

Milton Fire & Rescue Services (MFRS) is responsible for a broad range of rescue operations within the municipality. Like many composite fire services, MFRS faces challenges associated with maintaining technical proficiency in low-frequency, high-risk disciplines. Currently, MFRS provides:

- **Awareness-level responses** for trench and Urban Search and Rescue (USAR) scenarios, and

- **Technician-level responses** in confined space, vehicle extrication, rope rescue, ice/water rescue, and machinery entrapments.

According to Standard Incident Reporting (SIR) data from the Ontario Office of the Fire Marshal, MFRS responded to 2,194 rescue-related calls between 2020 and 2024. Of these, 1,955 calls (89.1%) were vehicle collisions, and 76 calls (3.5%) involved vehicle extrications. Other notable incidents included 66 elevator related incidents, 10 low-angle rescues, 6 high angle rescues, and 6 water rescues. These statistics demonstrate that the majority of MFRS's rescue operations fall within the scope of its existing certifications and training. However, ongoing growth in Milton's industrial sector brings increasing risk for machinery entrapments and confined space incidents, scenarios that may exceed current capacity without further investment in specialized training.

MFRS must assess the evolving risk landscape and balance operational readiness with resource availability. Specialized rescue training typically requires a minimum of 40 hours of hands-on instruction, followed by formal certification and annual skills maintenance. As such, any future expansion of technical rescue services should be approached through a phased implementation strategy, prioritizing disciplines with the highest risk-to-frequency ratio. Consideration must also be given to firefighter workload, instructor availability, equipment costs, and the capacity of the organization to sustain long-term competency across multiple disciplines.

To support future service delivery goals, MFRS should continue to strengthen inter-agency coordination with local and regional partners capable of providing technician-level response for less frequent, high-consequence incidents. The department is well-positioned to meet the current technical rescue demands of the community; however, further enhancements may be warranted as the town's population and industrial footprint continue to expand. Clear operational guidelines, ongoing investment in technical rescue training, and alignment with NFPA standards will ensure that MFRS continues to deliver safe, efficient, and scalable technical rescue services into the future.



Table 19: 2020-2024 Rescue response incidents:

| Call Type                      | 2020 | 2021 | 2022 | 2023 | 2024 | Total | Total % |
|--------------------------------|------|------|------|------|------|-------|---------|
| Rescue                         | 309  | 356  | 510  | 505  | 514  | 2194  |         |
| Animal Rescue                  | 2    | 3    | 3    | 0    | 2    | 10    | 0.5%    |
| Commercial Industrial Accident | 0    | 0    | 0    | 0    | 4    | 4     | 0.2%    |
| High Angle Rescue              | 0    | 1    | 3    | 2    | 0    | 6     | 0.3%    |
| Home/Residential Accident      | 1    | 3    | 2    | 1    | 2    | 9     | 0.4%    |
| Low Angle Rescue               | 3    | 2    | 4    | 0    | 1    | 10    | 0.5%    |
| Other Rescue                   | 0    | 1    | 6    | 6    | 5    | 18    | 0.8%    |
| Persons Trapped in Elevator    | 11   | 13   | 12   | 13   | 17   | 66    | 3.0%    |
| Rescue False Alarm             | 0    | 1    | 0    | 1    | 0    | 2     | 0.1%    |
| Rescue No Action Required      | 5    | 11   | 10   | 3    | 2    | 31    | 1.4%    |
| Vehicle Collision              | 269  | 312  | 452  | 461  | 461  | 1955  | 89.1%   |
| Vehicle Extrication            | 16   | 8    | 18   | 16   | 18   | 76    | 3.5%    |
| Water Ice Rescue               | 1    | 0    | 0    | 0    | 0    | 1     | 0.0%    |
| Water Rescue                   | 1    | 1    | 0    | 2    | 2    | 6     | 0.3%    |

### 3.6.6 Motor Vehicle Rescue

Motor vehicle collisions (MVCs) continue to be a significant incident type requiring a comprehensive and coordinated emergency response. These incidents can involve complex hazards to both victims and responders, including entrapment, fire, hazardous materials, and unstable vehicle conditions. Vehicle extrication is a specialized technical operation that requires extensive training, specialized equipment, and precise coordination with police and ambulance services to ensure safe and effective incident management. External factors such as weather conditions, traffic volume, and roadway design further influence the severity of these incidents and the ability of responders to manage the scene safely.



Modern vehicles introduce new risks that increase the complexity of MVC response. Firefighters must consider features such as multiple-stage airbags, high-voltage battery systems in electric and hybrid vehicles, fuel cells, and advanced structural reinforcements that can impede extrication efforts. Additionally, incidents involving commercial vehicles or transport trucks may include dangerous goods, increasing the risk to responders and requiring advanced hazard assessment, containment, and potential decontamination efforts. As such, all MFRS personnel receive training in accordance with NFPA 1001 and NFPA 1006 standards to safely and effectively manage MVC and extrication scenarios.

Over the five-year period from 2020 to 2024, MFRS responded to 1,955 vehicle collisions, accounting for 89.1% of all rescue-related calls. An additional 76 calls (3.5%) were classified as vehicle extrications, requiring specialized stabilization, and cutting tools. These incidents are categorized under the broader “Rescue” incident type, which collectively represented 2,194 total responses, or 19.54% of the department’s total call volume. High-speed regional and provincial roadways that run through and around the Town of Milton, including Highway 401 and key arterial corridors, create zones of elevated risk and require rapid response and resource deployment. MVCs on these roadways can present hazardous conditions for all responders due to traffic, visibility, and environmental conditions.

The MFRS deployment model includes dispatching fire pumpers, squads, tankers, and/or rescue units to vehicle collisions, depending on the nature of the call. These responses are highly dynamic and may require a full range of tactical interventions including scene safety management, fire suppression, patient care, vehicle stabilization, and mechanical extrication.

In many cases, firefighters must operate in high-stress, time-critical environments while maintaining safety for themselves, victims, and bystanders. Inter-agency coordination with Halton Regional Police Service, Halton Paramedic Services, and provincial highway authorities is essential to manage these scenes effectively and return traffic corridors to normal operation.

As the Town of Milton continues to grow in both population and transportation infrastructure, the volume and complexity of MVCs is expected to rise. MFRS’s continued investment in technical rescue training, fleet capabilities, and collaborative emergency planning with partner agencies is essential to ensuring public safety and maintaining operational readiness. These investments will support the department’s ability to mitigate the risks associated with vehicle collisions and provide timely, effective, and safe emergency response to all roadway incidents within the municipality.

### **3.6.7 Surface Ice and Water Rescue**

Milton Fire & Rescue Services (MFRS) currently delivers surface water and ice rescue services at the technician level, as defined by the NFPA 1006 and 1670 standards. These technical rescue disciplines are high-risk and low frequency in nature, requiring rigorous training, proper equipment, and clearly defined operational procedures to ensure firefighter and public safety. The importance of maintaining high standards in these areas was underscored by the May 2017 Coroner's Inquest into the death of a firefighter during an ice rescue training exercise. The inquest recommended that all "ice/cold/swift water rescue services" training be reviewed and paused until the jury's recommendations were fully addressed. It also drew a critical distinction between surface water rescue and swift water rescue, with only the former being within the scope of MFRS's currently authorized service levels.

In response to Communiqué 2017-06 from the Ontario Office of the Fire Marshal and Emergency Management (OFMEM), municipalities were advised to reassess the delivery of specialized rescue services and confirm alignment with their respective Establishing and Regulating By-law. In line with this guidance, MFRS has formally identified surface water and ice rescue at the technician level in its Establishing and Regulating By-law. It is important to note that MFRS does not provide swift water rescue services, which involve significantly different environmental conditions and response requirements. The department's operational posture remains focused on shore-based, controlled interventions in line with its staffing, training, and risk profile.

As part of this service, MFRS maintains teams of firefighters on each platoon who are trained, certified, and equipped to conduct surface and ice rescue operations.

To ensure safety and consistency, all in-water and on-ice rescue operations are conducted as "shore-based" rescues, meaning firefighters are tethered to shore at all times using purpose-designed rescue lines. This procedure is aligned with OFM recommendations and serves to mitigate the risk to responders during both training and live incidents.

### **3.6.8 High/ Low Angle Rope Rescue**

Milton Fire & Rescue Services (MFRS) currently provides high and low angle rope rescue services at the technician level, in alignment with the competencies and training requirements outlined in NFPA 1670 – Chapter 5: Rope Rescue Operations, and NFPA 1006 – Chapter 5: Rope Rescue Technician Level. This level of service ensures that MFRS is capable of responding to complex rope-based rescue scenarios, including incidents that involve terrain features such as cliffs, embankments, ravines, and other elevated or vertical hazards.

The Community Risk Assessment (CRA) identified several geographic features within the Town of Milton that contribute to rope rescue risk, particularly the Niagara Escarpment and a variety of conservation areas that attract high volumes of residents and visitors. These areas present varying degrees of risk due to recreational activities such as rock climbing, hiking, and boating.

The analysis of the 2020–2024 response data indicates that MFRS responded to 16 rope rescue-related incidents over the five-year period. Senior staff confirm that a large proportion of these calls occurred in escarpment terrain, validating the need for technician-level rope rescue capability.

To support continued delivery of this service, it is recommended that MFRS maintain its technician-level rope rescue capability and ensure that all personnel assigned to these functions are trained, evaluated, and certified in accordance with NFPA 1006 and 1670 standards. Rope rescue training should be conducted on a recurring basis, with documented skill evaluations and scenario-based practice to ensure operational readiness. As the community continues to expand into areas with increased vertical terrain and recreational use, this service remains essential to MFRS’s ability to protect life and safety during complex rescue operations.

### **3.6.9 Machine Rescue Operations**

Milton Fire & Rescue Services (MFRS) currently maintains technician-level certification for machinery rescue operations, as defined under NFPA 1006 – Technical Rescuer Professional Qualifications and NFPA 1670 – Operations and Training for Technical Search and Rescue Incidents. Machinery rescue involves the disentanglement and extrication of persons who have become trapped in or under mechanical equipment. These incidents may involve industrial machinery, agricultural equipment, conveyor systems, powered tools, or other mechanical devices used in commercial, industrial, or residential settings.

Examples of typical machinery rescue incidents include victims trapped in conveyor belts, augers, press machines, manufacturing equipment, or heavy-duty cutting and compacting devices. While these incidents are low in frequency, they can result in severe trauma, life-threatening injuries, or fatalities. Time-sensitive intervention is often required to prevent further harm, necessitating advanced knowledge of mechanical systems, stabilization techniques, and the use of specialized extrication tools.

The skill sets required for machinery rescue closely overlap with those used in other technical disciplines such as vehicle extrication, which MFRS provides at a technician level. This overlap makes machinery rescue a practical and cost-effective component of the department's technical rescue portfolio. The training and tools used for patient disentanglement in vehicular settings can often be applied effectively to industrial entrapments, allowing MFRS to maintain operational readiness across multiple rescue scenarios without duplicating resources or increasing burden on staff.

As Milton continues to experience significant growth in its industrial and commercial sectors, including manufacturing, warehousing, and logistics facilities, the likelihood of machinery-related incidents may increase. These occupancies often house large-scale, complex machinery and processes that pose elevated risks for worker entrapment or injury. Maintaining technician-level capability ensures that MFRS is adequately prepared to respond to such emergencies in a safe and effective manner. Given the current industrial expansion and incident potential, sustaining the existing service level is both appropriate and proactive.

MFRS should continue to invest in machinery rescue training through annual skill refreshers, scenario-based exercises, and close coordination with local industries to understand the specific risks and machinery types present within the community. This forward-looking approach will help ensure MFRS remains aligned with industry standards and capable of meeting emerging response demands tied to Milton's evolving industrial landscape.

### **3.6.10 Confined Space and Trench Rescue**

Under Ontario Regulation 632/05 – Confined Spaces, made under the Occupational Health and Safety Act, a confined space is defined as a fully or partially enclosed space not designed for continuous human occupancy and where atmospheric hazards may occur due to its design, contents, or associated work.

The regulation places specific obligations on employers, including the requirement to establish on-site rescue procedures when workers are exposed to confined space risks. Importantly, there is no provincial mandate for municipalities in Ontario to deliver confined space or trench rescue services through their fire departments. However, fire services like MFRS are often the first to arrive at such emergencies and must be prepared to assess, secure, and stabilize these complex and hazardous scenes.

Although confined space and trench rescues are low-frequency events, they are extremely high-risk due to factors such as limited access, hazardous atmospheres, the potential for secondary collapse, and specialized equipment needs.

With the ongoing expansion of Milton's industrial and construction sectors, including residential subdivisions, commercial facilities, and public infrastructure, the risk of encountering these scenarios is increasing. Trench rescues, which involve collapsed excavations or ditches, often overlap in hazard profile with confined spaces, particularly when atmospheric risks or structural instability are involved.

Currently, MFRS maintains technician-level capabilities for confined space rescue. This enables trained personnel to safely assess hazards, secure the scene, and conduct limited non-entry rescue operations using specialized retrieval systems and atmospheric monitoring equipment. Operations-level responders are trained to work in support of technician-level teams and can manage perimeter control, ventilation, communication, and standby duties. These capabilities align with the requirements outlined in NFPA 1006 – Technical Rescuer Professional Qualifications and NFPA 1670 – Standard on Operations and Training for Technical Search and Rescue Incidents at the operations tier.

In contrast, MFRS maintains awareness-level training for trench rescue. This ensures that all frontline staff are able to recognize trench collapse hazards, secure the scene, and initiate appropriate notifications while preventing unauthorized entry. This level of service is consistent with industry best practices for departments that do not regularly encounter trench incidents or lack the volume to justify advanced certification and equipment investment. Awareness-level training focuses on hazard identification, isolation, initial scene management, and support of incoming technical rescue teams when necessary.

To ensure a scalable and sustainable response model, MFRS should continue to maintain partnerships with Mississauga Fire & Emergency Services to access technician-level trench rescue where needed.

This formalized service contract will continue to ensure technician support is available for high-risk trench incidents without overextending MFRS's internal resources. This dual-tiered approach, operation-level for confined space, awareness-level for trench, ensures that MFRS remains a capable first responder agency while appropriately managing training burdens, equipment costs, and operational risk.

### 3.6.11 Structural Collapse Response

In the event of a structural collapse MFRS will most likely be the first emergency service on scene. As such, the department must be prepared to secure the site, assess hazards, initiate scene control, and implement appropriate life-safety measures while awaiting specialized resources. Structural collapses may result from explosions, natural disasters, building failures, or construction-related incidents. While not considered high-frequency events, they are high-impact and can require extensive coordination and technical capabilities to manage effectively.

Over the past decade, several Ontario municipalities including Mississauga, Caledon, London, and Hamilton, have experienced structural collapse incidents that required extended operations and specialized resources. In these cases, support was provided through the Ontario Heavy Urban Search and Rescue (HUSAR) program, operated by the Office of the Fire Marshal (OFM). The increase in complex urban infrastructure and vertical growth in Ontario communities has prompted fire services to revisit their response capabilities for structural collapse scenarios.

Given the low probability but high consequence nature of these events, it is recommended that MFRS maintain an awareness-level capability for structural collapse response, in accordance with NFPA 1670 – Chapter 6: Structural Collapse Rescue Operations, and that all suppression personnel be trained to the awareness level as defined in NFPA 1006 – Chapter 6: Structural Collapse Rescue. This training equips responders to identify collapse risks, secure perimeters, manage hazards, support evacuation and initial triage, and recognize when higher-level response resources are required. Awareness-level training ensures a safe and effective initial response while allowing for rapid transition to more advanced operations when necessary.

In alignment with Fire Marshal's Communiqué 2016-05, MFRS should also pursue fire service agreements or memorandums of understanding with neighbouring departments or regional partners that offer operations- or technician-level collapse response.

Additionally, MFRS should maintain formal awareness of and access to the provincial HUSAR program coordinated through the Provincial Emergency Operations Centre (PEOC). When necessary, access to HUSAR resources can be coordinated through the local fire coordinator under the Mutual Aid Plan, ensuring rapid deployment of technical rescue support in the event of a large-scale structural failure.

As Milton continues to grow in population and density, including the development of multi-storey residential and commercial structures, the likelihood and potential complexity of structural collapse incidents may increase. MFRS's current approach, grounded in awareness-level readiness and provincial coordination, provides a practical, scalable, and fiscally responsible model for ensuring community protection from this type of high-risk emergency. Ongoing training, scenario-based exercises, and inter-agency planning will support operational readiness and alignment with provincial best practices.

**Observation #13:** MFRS currently maintains awareness-level capabilities for several technical rescue disciplines, including trench rescue and urban search and rescue response. However, technician-level training, equipment, and staffing requirements for these specialties are resource-intensive and require ongoing investment to maintain operational readiness and regulatory compliance. Given the frequency and complexity of such incidents in Milton's current risk profile, the demand does not presently justify the standalone development of full technician-level teams within MFRS. As the Town's industrial base, urban density, and infrastructure expand, the potential for technical rescue incidents will increase, necessitating access to more advanced capabilities.

**Recommendation #13:** Maintain formalized service agreements with third-party providers or neighbouring fire departments that possess technician-level capabilities in identified technical rescue disciplines.

**Suggested completion:** 12-24 months

**Cost:** Will vary dependent on the agreement and discipline

**Strategic Objective:** Operations



**Rationale:** Formalizing service agreements with neighbouring fire departments or third-party providers allows MFRS to access specialized technical rescue capabilities such as confined space entry, rope rescue, trench rescue, and hazardous materials mitigation, without bearing the full cost and operational burden of developing these competencies in-house. Maintaining technician-level proficiency requires significant investments in equipment, ongoing certification, scenario-based training, and 24/7 staff availability. By partnering with regional providers that already possess these capabilities, the Town can ensure timely, expert-level response to low-frequency but high-risk incidents while maintaining cost efficiency and operational focus on core services.

In addition, these formalized agreements improve clarity and coordination during joint responses by establishing roles, responsibilities, cost recovery expectations, and communications protocols in advance of an emergency. This proactive approach strengthens interoperability and eliminates ambiguity during critical incidents, ensuring a more seamless and effective multi-agency deployment. It also positions MFRS to participate in reciprocal support arrangements, enhancing regional resilience and resource optimization. As Milton continues to grow, formal partnerships will help close existing service gaps while supporting the Town's commitment to providing safe, reliable, and scalable emergency services across all risk profiles.

### 3.6.12 Pre-Emergency Planning

Pre-fire planning is a cornerstone of operational readiness: it improves size-up, speeds decision-making, and reduces risk to civilians and firefighters by giving crews building-specific intelligence before they arrive. MFRS guideline frames pre-incident information ("Tactical Surveys") as a defined process to gather key data that support effective incident management and protection of life and property. The guideline's stated purpose and introduction emphasize preparedness and familiarization so crews can operate strategically and tactically when it matters most.

MFRS currently applies this program to high- and low-rise residential buildings, with a clear scope and common definitions to keep expectations consistent. Roles and responsibilities are assigned. The Division Chief of Operations oversees the program, Company Officers review surveys with crews, and all firefighting personnel are expected to understand the information for buildings in their first-in areas. The Training Division provides instruction on how to complete surveys, ensuring crews are prepared before or during the first site visit.



A defined process guides assignment, submission, and quality control: surveys are assigned to Company Officers by first-response area, submitted digitally for review, and resubmitted if changes are required. The guideline also connects field observations to prevention by directing officers to report Fire Code violations and seek support from Prevention/Training when systems are unfamiliar, reinforcing a feedback loop between operations and code compliance.

For access and currency, approved surveys are stored on the Town network (“Tactical Survey Final” folder) and a hardcopy is kept in the cab of every front-line apparatus. Annual updates, including site visits by first-in crews, are mandated. Company Officers must confirm updates and forward revised surveys for approval, ensuring pre-plans remain accurate and available at the point of use.

MFRS has begun incorporating vulnerable occupancies, large buildings, and structures with high fire loads into its pre-fire planning program. Moving forward, the program should be expanded to include any building identified as a risk within the Community Risk Assessment (CRA). Pre-plans should be digitized for mobile access and integrated with CAD/GIS systems, to enhance accessibility and situational awareness. Industry best practices recommend standardized data fields such as standpipes, key boxes, electric vehicle charging stations, and photovoltaic arrays, along with detailed tactical considerations including attack stair locations, refuge floors, and smoke control systems.

Additional improvements could include establishing triggers for post-incident plan updates and implementing a KPI dashboard to track program performance (e.g., percentage of first-due high-risk buildings with current surveys, median survey age). Regular joint reviews involving Fire Prevention, Training, and Dispatch would strengthen coordination, ensuring pre-fire plans remain accurate, comprehensive, and adaptable to Milton’s evolving-built environment.

**Observation #14:** Milton Fire & Rescue Services (MFRS) has made progress in strengthening its pre-fire planning program by incorporating vulnerable occupancies, large buildings, and structures with high fire loads. This expansion has enhanced operational preparedness for high-risk incidents. However, the current scope does not yet include all buildings identified as risks through the Community Risk Assessment (CRA), potentially leaving gaps in tactical readiness for certain occupancies. Pre-plans remain in a mixed format, limiting real-time accessibility and integration with operational systems such as CAD and GIS. In addition, the existing process does not yet fully standardize building data fields, tactical considerations, or establish automated triggers for updates following significant incidents or changes in building configuration.

**Recommendation #14a:** Expand the pre-fire planning program to include all buildings identified as risks within the Community Risk Assessment (CRA), ensuring complete coverage of high-priority and high-hazard occupancies.

**Recommendation #14b:** Digitize all pre-plans and integrate them into CAD/GIS systems to allow mobile access for operational staff, with standardized data fields covering standpipes, key boxes, electric vehicle charging stations, photovoltaic arrays, and other critical building information, along with detailed tactical considerations such as attack stair locations, refuge floors, and smoke control systems.

**Recommendation #14c:** Establish defined triggers for post-incident plan updates and other significant changes, and implement a KPI dashboard to track program performance, including percentage of first-due high-risk buildings with current surveys and median survey age. Conduct regular joint reviews between Fire Prevention, Training, and Dispatch divisions to ensure the plans remain accurate and operationally relevant.

**Suggested completion:** 12-60 months

**Cost:** Cost to digitize if external

**Strategic Objective:** Operations

**Rationale:** Expanding and modernizing MFRS's pre-fire planning program will close identified risk gaps, improve situational awareness, and enhance operational decision-making. Including all CRA-identified risks ensures that firefighters have the information they need for a broad range of incident types, including those involving emerging hazards. Digitizing pre-plans and integrating them with CAD/GIS systems will improve access during emergencies, reduce time spent on scene gathering basic building information, and support a coordinated, efficient response. Standardizing data fields and tactical considerations will ensure consistency across all plans, improving interoperability and clarity for crews regardless of assignment. Post-incident update triggers will keep plans current, while a KPI dashboard will provide a measurable way to monitor program performance and prioritize updates. Regular cross-divisional reviews will ensure the program evolves alongside Milton's growing and changing built environment, sustaining its value as a critical operational tool.

### 3.6.13 Mutual Aid and Other Service Agreements

Fire departments across Ontario, including Milton Fire & Rescue Services (MFRS), recognize that large-scale emergencies can quickly exceed the capabilities of any single municipality, particularly those with limited staffing, apparatus, or specialized resources. While MFRS is equipped to manage a wide range of emergency incidents, certain low-frequency but high-consequence events, such as multiple-alarm structure fires, hazardous materials incidents, or complex rescues, necessitate access to additional support. To address this need, mutual aid and automatic aid agreements play a critical role in expanding emergency response capacity and ensuring continuity of operations during significant or concurrent incidents.

Mutual aid agreements are formal arrangements between fire departments to provide assistance across jurisdictional boundaries when requested. These agreements support collaborative response efforts when local resources are insufficient to manage an emergency independently. Assistance under mutual aid may include personnel, fire suppression equipment, and specialized services such as technical rescue or hazardous materials response. Requests for aid are made on an as-needed basis, and responding departments will provide support if they have the available capacity. Unlike automatic aid, mutual aid is not pre-assigned or guaranteed and depends on the discretion and availability of the responding agency.

Automatic aid agreements, by contrast, provide for a predetermined response arrangement whereby a neighboring fire department is automatically dispatched to certain incidents within the Town of Milton. This is particularly beneficial in areas where a bordering municipality can provide a faster or more effective response based on proximity or specialized capabilities. These agreements enhance the speed and effectiveness of the initial response, improve coverage in remote or high-risk areas, and support critical intervention during time-sensitive emergencies.

In Ontario, the Office of the Fire Marshal (OFM) administers a provincial Mutual Aid Plan (MAP) to ensure consistency and coordination among municipal fire services.

Each geographic area in the province is assigned a fire coordinator responsible for organizing and maintaining the local MAP, which is designed to support standardized procedures for inter-agency cooperation during emergencies. The plan promotes an efficient and scalable approach to resource deployment, with the goal of minimizing loss of life, property damage, and environmental impact through coordinated efforts among fire departments and other emergency partners.

The Town of Milton is an active participant in the Halton Region Mutual Aid Plan, which facilitates collaboration among neighboring fire departments within the region. In addition, MFRS maintains fire protection agreements with Mississauga Fire and Emergency Services and Halton Hills Fire Department to support emergency coverage along Milton's eastern and northeastern boundaries. In the event that an incident escalates beyond local and regional capacity, MFRS may request additional support through the Provincial Emergency Operations Centre (PEOC), enabling access to specialized provincial resources coordinated by OFMEM.

These agreements ensure that MFRS can provide timely, effective service to the community during complex or large-scale events while maintaining operational continuity. As Milton continues to grow in population, infrastructure, and risk complexity, these mutual and automatic aid agreements will remain a vital component of the Town's emergency response system. Ongoing collaboration, joint training, and regular updates to service agreements will ensure that the community is well-supported during all levels of emergency response.

## 3.7 Training & Professional Development

**Goal #7:** Deliver a progressive and sustainable training program aligned with the services authorized in its Establishing and Regulating By-law. The program will integrate current firefighting practices, safety standards, and emerging technologies to ensure personnel are equipped with the competencies needed to respond safely and effectively to evolving risks and service demands.

### 3.7.1 Training Overview

Training and competency development are essential and ongoing activities for all contemporary fire departments. A prepared and competent workforce reduces risk and safely optimizes service delivery. An effective workforce training program aligns the growth and development of personnel to the organization's mission and goals.

The MFRS Training Section consists of a Division Chief of Training and three (3) full-time Training Officers. These four (4) personnel typically work a forty (40) hour work week; however, the Training Division operates on a flexible scheduling model to support the diverse training needs of both full-time and part-time firefighters. Each Training Officer works either five 8-hour shifts or four 10-hour shifts per week, and the team collectively adjusts its schedule to accommodate evening and weekend training sessions for the part-time firefighter cohort. To further support training delivery, MFRS also utilizes adjunct instructors, primarily Lieutenants from the suppression division, who assist with delivering core competency and specialized training programs. This flexible and integrated approach ensures consistent training across all ranks and staffing models within the department.

The Training Section is responsible for the following:

- Develop and coordinate the delivery of all training programs to MFRS staff.
- Manage the overall training environment.
- Assist in assessing the performance of personnel by setting, administering, and marking examinations, attending emergency incidents, evaluating practical skills, and providing feedback.
- Monitor and evaluate ongoing training programs.
- Research and evaluate policies, procedures, techniques, and equipment.
- Maintain training records and prepare comprehensive reports.
- Maintain training manuals and reference materials.
- Assist in the promotional processes.
- Maintain equipment as assigned and assist with the research, design and acquisition of new apparatus and equipment.

The closing of the brick-and-mortar Ontario Fire College has put a greater focus on regional training, resulting in formal and informal regional partnerships being developed throughout Ontario under the purview of the Office of the Fire Marshal. MFRS training utilizes in-house training and regional training, as necessary.

The Ontario Firefighter Certification regulation filed April 14, 2022, and enacted on July 1, 2022, introduces mandatory minimum certification standards for firefighters that align with fire protection services being provided. This regulation will help ensure firefighters have consistent training according to the level of service set by a municipality supporting firefighter and public safety.

Training and education program activities are identified by assessing the Knowledge, Skills, and Abilities (KSAs) needed for the firefighters to perform their duties as outlined in the department's SOGs and procedures. When firefighters are competently trained and possess the KSAs for the services they are expected to provide, they reduce risk and increase their safety and the safety of the public they serve. All training programs should be measured against and tailored to the core services and identified risk assessments for the community.

Meeting the training needs of a fire service is a very important and demanding portfolio. The scheduling of instructors, facilities and participants is a daunting task to ensure safe and consistent training while not negatively impacting MFRS operational capacity.

MFRS conducts scheduled and ad hoc training sessions for the delivery of core competency and related training consistent with the requirements established by the OFM certification and curriculum. MFRS typically trains two (2) times per week and the odd Saturday. MFRS training syllabus utilizes the International Fire Service Training Association (IFSTA) Resource One Learning Management System to provide direction and resources for training. MFRS training is provided through various methods, including:

- Theoretical classroom and/or online modules.
- Simulation lab.
- Practical training while on-duty and/or off-duty.
- A combination of methods for proficiency and/or certification.

MFRS has identified areas to conduct training within each station. There is a classroom including a simulation lab and practical training area at fire station 1 to conduct both classroom and practical evolutions for core suppression skills, technical rescue, pump operations, and auto extrication. MFRS has been able to use some vacant land within the community that they have been able to utilize for training and practice for ice, water, and rope rescue as well as pump testing. This allows the opportunity to ensure that MFRS staff are conducting annual maintenance training on core competencies and other disciplines for the level of service being delivered.

Live fire training (recruit and current staff) requires the staff to travel outside the community, presently utilizing the Garry W. Morden Centre Class A burn tower in Mississauga.

It was identified through the interviews and observations that the staff has confidence in the Training Division and the training that is being delivered, although capacity of both staff resources and training facilities is a concern as the demands for required training will undoubtedly increase for both existing and new hires.

### **3.7.2 Industry Recommended Qualifications**

NFPA certification standards represent industry best practices. Position profiles and associated KSAs should prepare staff to competently provide the services necessary to address the risks in their community.

Many of the NFPA standards have been incorporated as mandatory in O. Reg 343/22 Firefighter Certification, enforced under the Fire Protection and Prevention Act, 1997. The regulation requires every municipality and every fire department to ensure that its firefighters, including all staff, perform the duties defined in the regulation.

Further, organizational size and structure will often change the breadth of tasks and competencies required by specific positions. For example, large career fire departments tend to have a higher degree of specialization for senior positions and less need for senior officers to be directly involved in fire suppression or rescue operations. In contrast, smaller volunteer POC or paid-per-call volunteer department senior officers will lead or be directly involved in fire suppression and rescue operations.

The following Table 20 lists NFPA standards offered as a general guideline for NFPA training standards aligned with most fire department positions.



Table 20: NFPA Professional qualification standards by position

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <p><u>Fire Chief Deputy Chiefs NFPA 472 Dangerous Goods Operations</u></p> <ul style="list-style-type: none"> <li>- NFPA 1001 Firefighter (Level 2)</li> <li>- NFPA 1002 Pump Operator</li> <li>- NFPA 1021 Fire Officer (Level 2)</li> <li>- NFPA 1041 Instructor (Level 1)</li> <li>- NFPA 1403 Standard on Live Fire Training Evolutions</li> <li>- NFPA 1521 Incident Safety Officer</li> </ul> <p><u>Captains and Lieutenants</u></p> <ul style="list-style-type: none"> <li>- NFPA 472 Dangerous Goods Operations*</li> <li>- NFPA 1001 Firefighter (Level 2) *</li> <li>- NFPA 1002 Pump Operator*</li> <li>- NFPA 1021 Fire Officer (Level 1) *</li> <li>- NFPA 1041 Instructor (Level 1)</li> <li>- NFPA 1403 Standard on Live Fire Training Evolutions</li> <li>- NFPA 1521 Incident Safety Officer*</li> </ul> <p><u>Safety Officer</u></p> <p>NFPA 1521 Incident Safety Officer*</p> <p><u>Firefighter</u></p> <ul style="list-style-type: none"> <li>- NFPA 472 Dangerous Goods Operations*</li> <li>- NFPA 1001 Firefighter (Level 1) *</li> <li>- NFPA 1002 Driver/Pump Operator*</li> <li>- NFPA 1006 Vehicle extrication Level 1*</li> </ul> | <p><u>Pump Operator</u></p> <ul style="list-style-type: none"> <li>- NFPA 472 Dangerous Goods Operations</li> <li>- NFPA 1001 Firefighter (Level 1)</li> <li>- NFPA 1002 Driver/Pump Operator*</li> <li>- NFPA 1002 Aerial Operator</li> <li>- NFPA 1006 Vehicle extrication Level 1</li> </ul> <p><u>Training Officer</u></p> <ul style="list-style-type: none"> <li>- NFPA 1041 Instructor (Level 1) *</li> <li>- All Qualifications required to instruct firefighters and recruits*</li> <li>- NFPA 1403 Standard on Live Fire Training Evolutions</li> </ul> <p><u>Fire Inspector/Fire Investigator</u></p> <ul style="list-style-type: none"> <li>- <u>NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plans Examiner*</u></li> <li>- <u>NFPA 1033 Standard for Professional Qualifications for Fire Investigator*</u></li> <li>- <u>NFPA 1035 Standard for Professional Qualifications for Public Fire and Life Safety Educator*</u></li> </ul> <p><i>* Indicates mandatory qualifications under O. Reg 343/22</i></p> |
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The role of the Office of Fire Marshal (OFM) is to provide leadership and expertise on fire safety and promote changes to minimize the impact of fire and other public safety hazards on people, property, and the environment in Ontario. The OFM provides guidance and leadership to municipal fire departments in required training, including the certification regulation to ensure mandatory minimum certification standards for firefighters that align with fire protection services being performed. The summary of the regulation required qualifications are found in 4.11.9 Appendix E:, which describes the minimum certification standards for the various fire protection services and the compliance timeline.

A fire departments ability to effectively deliver the necessary training to both existing firefighters and new fire recruits relies on an effective system of planning, preparation, and delivery. MFRS maintains a calendar of training that reaches out 4-5 years for core competency and certification training needs, evaluated, and adjusted each calendar year as needed. This process is completed in coordination with administration and suppression staff through identification of needs and identified gaps in training requirements.

The current training staff works a Monday – Thursday or Friday schedule during normal day shift hours. Opportunities to facilitate Training Officer led training outside those hours is limited. The availability of training officers to provide training to suppression staff is significantly impeded during times of recruit training.

**Observation #15:** Technical rescue and other specialized operations require dedicated training officers with the appropriate certifications, operational experience, and subject-matter expertise to deliver effective training in each discipline. MFRS provides emergency response across several technical rescue disciplines that are high-risk but low frequency, making it essential that training be delivered by personnel with advanced competency and credibility in each area. At the same time, training officers must balance these specialized needs with the broader training obligations of the service, including recruit development, officer progression, apparatus and driver operations, and maintenance of core competencies. To meet this demand, MFRS may need to designate lead instructors for specific disciplines, drawing from full-time training staff, qualified suppression personnel, or external resources. Additionally, a core of supplemental instructors will be required to support practical training evolutions and ensure realistic scenario-based training.

MFRS currently develops an annual training calendar to forecast training requirements for the year ahead and into the foreseeable future. Maintaining a critical focus on the department's capacity to meet these requirements, including resource allocation, instructional hours, and delivery methods, is essential to ensuring effective training delivery. Consideration must also be given to the standard Monday–Friday work schedule of training officers, and the additional instructional hours required outside of normal shifts to support on-shift training and technical disciplines. Without adjustments to training officer resources and instructional capacity, the department risks falling short of meeting both its core and specialized training objectives as operational demands continue to grow.

**Recommendation #15:** Complete a thorough analysis of existing training instructor capacity, including course development, face-to face training, remote training, practical and theory assessments and proctoring against the demand for training as outlines in the approved annual training calendar. Additional training officer capacity, whether full-time or part-time may be required to meet the increasing training demands for MFRS.

**Suggested completion:** 36-60 months

**Cost:** Wage (2024) per training officer is \$120,712 plus benefits.

**Strategic Objective:** Training and Professional Development

**Rationale:** MFRS is simultaneously onboarding larger cohorts for Stations 6 and 7, maintaining a composite workforce with significant numbers under five years' experience, and sustaining several high-risk/low-frequency technical rescue disciplines, conditions that materially elevate the quantity, complexity, and cadence of training. A structured analysis that compares available instructor capacity (full-time training officers plus qualified on-shift instructors) against the approved annual training calendar is therefore essential to prevent training from becoming a bottleneck. This review should account for the full workload of course design and updating, lesson planning, e-learning development, face-to-face delivery, remote facilitation, live-fire and practical evolutions, equipment/prop logistics, facility booking, theory and practical assessments, proctoring, documentation and signoffs, and after-action improvements, across both weekday and off-shift hours. By quantifying true instructional hours required per curriculum and discipline, instructor-to-learner ratios, and the throughput needed for mandatory certifications, probationary progression, officer development, apparatus/driver training, and technical rescue proficiency, the department can identify gaps and risks to safety, compliance, and operational readiness. The findings will inform a right-sized model, e.g., designating discipline lead instructors, expanding the instructor cadre, and, where warranted, adding full-time or part-time training officer capacity, to ensure consistent, standardized delivery across all platoons and sustain readiness as service demands grow.

**Observation #16:** Milton Fire & Rescue Services currently relies on their fire training facility located at station 1 for the majority of core competency training requirements, supplemented by utilizing a vacant parcel of land within the community and limited training resources in each of the individual fire stations. These facilities lack any live fire capabilities, relying instead on external training grounds such as those in Mississauga. Access to these facilities is limited, often constrained by scheduling, cost, and availability, which restricts the department's ability to deliver consistent live fire training for both new recruits and existing staff. As Milton continues to grow and add new stations and personnel, the current fire training area at Station 1 reliance on third-party facilities will become increasingly unsustainable, particularly given the increasing demands for high-risk, low-frequency scenario training, mandatory certification maintenance, and NFPA-aligned skills development.

The absence of a comprehensive local live fire training facility also impacts training flexibility and operational readiness. Firefighters must travel off-site to complete this critical training component, which disrupts daily staffing, adds logistical complexity, and limits the department's ability to conduct spontaneous or shift-based practical exercises. With an expanding department and growing urban complexity, a locally available comprehensive training centre that includes a live fire component would offer significant operational, logistical, and financial benefits.

Live fire training opportunities have evolved from historic utilization of local buildings that were designated for destruction and given the local fire department to light them on fire and practice their fire suppression activities. This practice had proven extremely dangerous to the firefighters as it lacked controls to otherwise unpredictable fire behaviour. Thankfully, this practice is not utilized any longer and transitioned to burn towers that are either fueled by class A or Class B burn materials.

Class A burn buildings typically constructed with concrete or steel are fueled by ordinary combustibles like wood, straw, and normal furniture found in homes. Class A burn towers, while providing firefighters the ability to practice live fire scenarios in a controlled environment, have downfalls such as the ability to conduct limited burn evolutions, the requirement to have an inventory of class A burn materials on site, and most importantly the need to expose firefighters to the dangers of smoke particulates that have proven to be significant health concerns to these exposures.

Modern Fire burn facilities have increasingly moved to Class B live fire systems that utilize propane or natural gas that provide a cleaner burning, less toxic, and efficient training environment that can simulate all phases and environments of a structure fire including flashover in a controlled environment. Class B burn facilities allow for considerable flexibility and increased practice on specific live fire scenarios.

**Recommendation #16:** Pursue the establishment of a municipally supported fire training facility with Class B live fire capabilities, either independently or through partnerships with neighbouring municipalities, educational institutions, or third-party partnerships.

**Suggested completion:** Beyond 72 months identified in the FMP

**Cost:** Estimated \$13 million depending on size and scope of project.

**Strategic Objective:** Training and Professional Development

***Rationale:** A municipally supported fire training facility with a live fire training component would provide Milton with a long-term, scalable solution to meet its training needs, ensuring that all staff have timely access to live fire scenarios and skill development opportunities. Such a facility would support firefighter safety, improve compliance with mandatory training standards, and enhance the department's overall operational effectiveness. In-house training infrastructure would also allow for greater control over curriculum delivery, increased training frequency, and stronger alignment with Milton-specific risks, such as high-rise, industrial, and residential fire scenarios.*

*Pursuing this initiative in collaboration with neighbouring municipalities, post-secondary institutions, or private sector partners could help reduce capital and operating costs while maximizing regional training opportunities. A shared or multi-purpose facility could also generate additional revenue streams and strengthen inter-agency coordination. As Milton continues its transformation into a larger urban centre, investing in a local live fire training facility is a proactive step toward ensuring long-term public safety and professional excellence within the fire service.*

### 3.8 Emergency Communications (Dispatch)

**Goal #8:** Maintain and enhance a technologically advanced communications system that supports the operational needs of a growing community. By adopting industry-leading practices, scalable technologies, and robust dispatch protocols, the Service will ensure timely, accurate, and resilient emergency communications that enhance firefighter safety and improve overall service delivery.

The Milton Fire & Rescue Services (MFRS) Communications Centre is housed at Fire Headquarters/Station 3 and forms a vital part of the department's emergency response infrastructure. It is responsible for fire dispatch, emergency call-taking, radio communications, and after-hours call management for other municipal departments. Oversight is provided by the Division Chief of Communications, who reports to the Deputy Fire Chief of Staff. Responsibilities include managing and maintaining the department's radio infrastructure, dispatch systems, pagers, and supporting communication technologies.

Under the Town of Milton's Establishing and Regulating By-law, MFRS is authorized to provide fire dispatching and after-hours municipal call-taking services. These responsibilities encompass both emergency and non-emergency matters, including public inquiries and municipal service complaints.

### **3.8.1 Communications Centre Staffing**

The Communications Centre is staffed by eight full-time and six part-time Communications Technicians, with a minimum of one Technician on duty at all times. MFRS aims to meet NFPA 1225 (formerly 1221) staffing best practices, which recommend two communicators per shift to manage concurrent calls, breaks, and complex events. The department has taken steps toward compliance, with two Technicians now staffed per shift during peak times and part-time personnel filling gaps during leave coverage.

Supervision is provided during weekday business hours by the Division Chief of Communications. However, no supervisor is formally assigned for after-hours coverage. A Standard Operating Policy should be developed to outline escalation procedures and supervisory support during evenings, weekends, or high-risk scenarios, ensuring operational continuity and compliance with occupational health and safety regulations.

### **3.8.2 Performance Benchmarks**

In alignment with NFPA 1225 and NFPA 1710, MFRS has adopted a performance benchmark of 64 seconds or less, 90% of the time, for emergency alarm processing. Historical data from 2020 to 2024 indicates notable improvements, with the 90th percentile alarm handling time decreasing from 176 seconds to 131 seconds. These improvements support efforts to reduce total response times. Additional analysis is provided in Section 4.5.1: Alarm Handling.

### **3.8.3 Training and Certification**

Communications Technicians at MFRS perform both emergency call-taking and dispatching duties. Staff are trained and certified to NFPA 1061 (Standard for Public Safety Telecommunications Personnel) at Communicator Levels I and II. Training is delivered in-house and through online programs provided by the Association of Public-Safety Communications Officials (APCO). In accordance with Ontario Regulation 344/22 under the Fire Protection and Prevention Act, all fire communications staff must achieve NFPA 1061 certification. MFRS is actively working with the Office of the Fire Marshal (OFM) to meet this requirement.

### **3.8.4 Policies, Procedures, and Operations**

Operational knowledge in the Communications Centre has traditionally relied on informal training and mentorship. MFRS must prioritize the development and implementation of formal Standard Operating Guidelines (SOGs) to support consistency and operational excellence. These should address all key functions, including radio communications, emergency call-handling, dispatch workflows, and escalation procedures, and be integrated into the Communications Technician training program.

### **3.8.5 Communications Infrastructure**

MFRS operates on the Halton Region APCO Project 25-compliant digital radio network, utilizing Motorola MCC7500 consoles, Zetron paging encoders, and NICE recording software to log radio and phone traffic. The department's CAD system, integrated with the FDM Records Management System, is nearing end-of-life and lacks functionality such as automated station notifications. Sentinel FM provides AVL capabilities, and GETAC tablets in front-line apparatus are not CAD-linked. To enable integration with Ontario's simultaneous notification initiative, MFRS must prioritize the replacement of the CAD system within the next two years.

### **3.8.6 Next Generation 911 (NG-911)**

The Canadian Radio-television and Telecommunications Commission (CRTC) has mandated the transition to NG-911 for all Public Safety Answering Points (PSAPs), including secondary PSAPs like MFRS. NG-911 introduces advanced communication capabilities, such as video, photo, and text transmission, along with real-time medical data sharing, which enhance situational awareness and operational response. MFRS must continue coordinating with Halton Regional Police (the primary PSAP) and technology vendors to align implementation efforts. The system is anticipated to be operational by November 2025.

### **3.8.7 Feasibility for the Expansion of Milton Fire & Rescue Services Communications Centre**

The feasibility review evaluates the potential for Milton Fire & Rescue Services (MFRS) to expand its Communications Centre operations and provide fire dispatch services to other municipalities. The review assesses the Centre's existing infrastructure, staffing, and systems; identifies gaps; and outlines options for expansion including virtual, shared, or purpose-built models. It also considers financial implications, legal and governance frameworks, and operational risks. The goal is to establish whether expansion is viable, financially responsible, and aligned with the Town's long-term strategic vision for public safety modernization and regional collaboration.



### **3.8.7.1 Current State and Operational Context**

MFRS currently operates its Communications Centre out of Station 3, with responsibility for fire call-taking, dispatching, and after-hours emergency municipal calls. The Centre handles approximately 2,800 calls annually and is staffed 24/7 by two Communications Technicians per shift (late 2025). Technicians also coordinate with Halton Region Police, CACC, Halton Region Paramedics, and utilities.

The Town has identified an opportunity to consider offering fire dispatch services to external fire departments. The intent is to leverage MFRS's capabilities and offset fixed costs through cost recovery models. However, infrastructure constraints, including the current footprint of the existing communications centre, staffing levels, and outdated CAD systems must be addressed before expansion is feasible.

### **3.8.7.2 Objectives of the Feasibility review**

The key objectives of this review are:

- To determine if the Communications Centre has the capacity to expand to a multi-jurisdictional model.
- To identify infrastructure, staffing, and technological limitations that would impede expansion.
- To develop financial models and legal frameworks for cost recovery and service agreements.
- To recommend whether, how, and under what conditions MFRS should pursue expansion.

### **3.8.7.3 Physical Capacity**

The current Communications Centre has served MFRS effectively to date; however, its physical capacity is approaching its limit. While a third dispatch workstation has been strategically positioned within the Division Chief of Communications' office to provide flexibility during periods of increased call volume, using this station for frontline dispatch operations reduces the Division Chief's ability to offer real-time supervision and strategic oversight. Although the existing facility at Station 3 is well-utilized, further expansion would require extensive reconfiguration and may not be practical within the current footprint. These space limitations present an opportunity to proactively plan for a purpose-built Communications Centre that will accommodate future growth, support evolving technology requirements, and enhance operational resilience.



#### **3.8.7.4 CAD and Communications Technology**

The Centre operates a legacy CAD platform that lacks interoperability for multi-agency dispatch, has limited automation, and is not fully NG-911 compliant. Apparatus tablets (GETAC) are not fully CAD-integrated, and radio systems require modernization to support simultaneous multi-department paging.

#### **3.8.7.5 Staffing and Supervision**

The Communications Centre is currently staffed by a dedicated team of eight full-time and six part-time Communications Technicians who manage emergency call handling and dispatch functions. This staffing model has supported service delivery effectively under current call volumes and operational requirements. At present, supervisory support is provided through the Division Chief of Communications as needed.

Looking ahead, as Milton's population continues to grow and expansion to other fire services increase, there may be a need to reassess staffing requirements to maintain response performance and dispatch resilience. Across the industry, planning assumptions typically recommend one dispatcher per 2,000–3,000 calls annually, a ratio that provides a general benchmark for future planning. Should expansion occur, whether through increased call volume, broader dispatch responsibilities, or the addition of a backup or purpose-built centre, the potential need for 2–4 additional full-time equivalents (FTEs), as well as a formal supervisory role, may emerge. These additions would support quality assurance, staff development, and operational oversight while ensuring the Centre continues to meet the Town's evolving public safety needs.

#### **3.8.7.6 Future Demand and Workload Projections**

With a current call volume of approximately 2,800 fire-related incidents annually, MFRS Communications Centre is presently operating well within its capacity. Industry planning assumptions suggests that one dispatcher can effectively manage 2,000 to 3,000 calls per year, depending on the complexity and duration of incidents. With two dispatchers on duty during peak shifts, MFRS is positioned to absorb moderate call volume increases without compromising service quality.

Based on current staffing and system capabilities, MFRS could feasibly expand its dispatch operations to support 1–2 small neighbouring departments, provided the combined total call volume remains within the range of 4,000 to 6,000 calls annually. This range would maintain alignment with best practice staffing ratios and allow the existing dispatch to continue delivering timely and effective communications support.

However, any expansion beyond this threshold would require a reassessment of staffing models and operational workflows. To ensure long-term scalability and resiliency, MFRS should begin planning for incremental enhancements, such as float dispatchers, advanced scheduling systems, and after-hours supervisory coverage, which would enable the Centre to maintain high performance while accommodating future growth in call volume or service area. This proactive approach ensures MFRS remains well-positioned to deliver high-quality dispatch services across a broader footprint.

### 3.8.7.7 Gap Analysis

Table 21: Gap Analysis Summary

| Category            | Current Capability                    | Expansion Requirement                    | Identified Gap                                              |
|---------------------|---------------------------------------|------------------------------------------|-------------------------------------------------------------|
| Facility Capacity   | 2 desks, no expansion room            | 3 – 5 desks; redundancy, break out space | Physical space inadequate                                   |
| CAD & RMS           | Single jurisdiction, basic automation | Multi jurisdiction, automated dispatch   | Needs full replacement                                      |
| Staff Supervision   | No after-hours supervisor             | 24/7 supervisory coverage                | Requires new staffing position                              |
| NG-911 Readiness    | Partial                               | Full NG-911 by 2025                      | Requires completed NG-911 upgrades per the current schedule |
| Cost Recovery Model | Internal budget                       | SLA-based external billing               | Model needs to be developed                                 |

### 3.8.7.8 Expansion Options

#### ***Option 1: Maintain Status Quo***

- Continue providing service to Milton only.
- No capital investment or risk exposure.
- Limits long-term opportunities for shared services.

#### ***Benefits of Maintaining Status Quo:***

- No immediate capital or operational expenditure required.
- Maintains focus on internal service levels and core responsibilities.
- Avoids risks associated with inter-municipal agreements and service failures.
- Simplifies staffing, oversight, and governance.
- No need for CAD or facility upgrades in the short term.

#### ***Challenges of Maintaining Status Quo:***

- Missed opportunity to generate revenue through external dispatch contracts.
- Does not address CAD upgrade requirements or system lifecycle risks.

#### ***Option 2: Virtual Expansion Model (within the existing Station 3 or from Station 2)***

Virtual dispatch refers to a decentralized dispatching model in which fire dispatch services are provided from multiple networked locations, rather than solely from a single centralized communications centre. In the context of MFRS, virtual dispatch would involve:

- Add secure, networked remote dispatch within the existing station 3 or from the back-up centre at Station 2.
- Requires CAD modernization, VPNs, communications redundancy, and SOPs.
- Provides scalable capacity and improved disaster recovery.
- Reduces the opportunity for in person situational awareness.

#### ***Benefits of Virtual Dispatch:***

- Enables service expansion without needing a new facility.
- Improves resiliency and redundancy for disaster recovery.
- Supports interoperability across jurisdictions.
- Offers phased, scalable implementation.
- Can reduce capital costs compared to purpose-built centres.

*Challenges of Virtual Dispatch:*

- Increased IT complexity and reliance on secure networking infrastructure.
- Difficult to supervise remote staff and ensure consistent performance.
- Higher exposure to cybersecurity risks.
- Potential delays in communication or coordination during high-demand incidents.
- Requires consistent training and standardized SOPs across remote locations.
- May lack physical redundancy (e.g., power, connectivity) at remote pods.
- Reduced situational awareness compared to a centralized control room during major events.

***Option 3: New Purpose-Built Facility***

- Construct a new fire dispatch (New Station 6) and communications hub.
- Supports multi-department dispatching, scalable long-term use.
- Significant capital cost.

*Benefits of a Purpose-Built Facility:*

- Provides dedicated space designed specifically for modern fire communications and multi-agency dispatch.
- Enables scalability to accommodate long-term growth in service area and call volume.
- Offers optimal physical redundancy (power backup, server rooms, HVAC) for continuity of operations.
- Enhances dispatcher collaboration, team communication, and supervision in a centralized environment.
- Improves overall service reliability and credibility when pursuing partnerships or shared services.
- Easier to integrate ergonomic design, soundproofing, and high-efficiency systems (LEED or Net-Zero).

*Challenges of a Purpose-Built Facility:*

- High initial capital cost for land, design, and construction.
- Requires long planning and approval timelines (e.g., 3–5 years).
- Operational disruption may occur during transition or technology migration.
- Staffing and technology investment must be in place in parallel to facility build.
- Potential political or interdepartmental delays if joint use or cost-sharing is involved.

### **3.8.7.9 Financial Considerations**

The financial implications of expanding MFRS's Communications Centre are significant and multifaceted. Capital investment would be required for physical infrastructure upgrades or the construction of a purpose-built facility. These costs may include design, construction, equipment, and permitting. Additional investment would be necessary to modernize the Computer-Aided Dispatch (CAD) system, integrate AVL, enable NG-911 readiness, and support remote or multi-jurisdictional dispatch capabilities.

From an operational standpoint, ongoing expenses would include the salaries and benefits of newly hired Communications Technicians and supervisory staff, training costs, and support services such as IT and maintenance. The addition of client municipalities would also increase call volume, requiring scalable staffing and scheduling solutions to maintain service levels.

A comprehensive cost recovery framework would be essential to ensure financial sustainability. Potential models could include per-call fees, tiered service agreements, or flat-rate contracts, each with varying levels of complexity and equity. Consideration must also be given to how capital contributions, onboarding costs, and shared technology infrastructure would be allocated among participating agencies. A phased approach may allow for pilot testing with one or two external clients before committing to major capital expenditures.

The Town should also explore opportunities for grant funding through provincial or federal programs focused on public safety, digital infrastructure, or climate-resilient facility development. This would help offset upfront costs and reduce the long-term financial burden on taxpayers while enhancing regional emergency response capacity.

### **3.8.7.10 Financial Model Options for Dispatch Cost Recovery**

To support long-term financial sustainability and fairness across partner municipalities, several cost recovery models may be considered. Each has advantages and limitations depending on scale, service levels, and administrative capacity.

### 1. Per-Call Billing Model

In this model, each municipality is billed based on the number of emergency incidents dispatched annually. This is the most common and scalable model in Ontario and aligns costs with actual usage.

- Pros:
  - Fair and transparent: municipalities pay only for what they use.
  - Scalable to small and large departments.
  - Encourages efficient call handling and service utilization.
- Cons:
  - Requires accurate and timely call tracking/reporting.
  - Revenue may fluctuate based on annual call volume.
  - Higher administrative complexity (monthly or quarterly reconciliation).

### 2. Flat-Fee (Fixed Annual Rate) Model

Each municipality pays a predetermined, fixed amount annually, regardless of call volume. This model simplifies budgeting and is easier to administer.

- Pros:
  - Predictable for both MFRS and the client municipality.
  - Minimal administration.
  - Easier to implement in early stages of service expansion.
- Cons:
  - Inequitable for clients with significantly different call volumes.
  - May result in overpayment or underpayment relative to usage.
  - Less incentive to reduce unnecessary dispatches.

### 3. Tiered Service Level Model

Clients are billed based on the level of service requested (e.g., basic dispatch, dispatch + after-hours call handling, data analytics). Each tier has a distinct cost.

- Pros:
  - Flexible: municipalities can choose the level of service that meets their needs.
  - Incentivizes service upgrades or optional features (e.g., priority paging, public alerting).
  - Aligns cost with service complexity.

- Cons:
  - Requires robust service level tracking and defined deliverables.
  - More complex to administer and explain to stakeholders.

#### 4. Cost-Sharing / Pooled Operations Model

Multiple municipalities jointly fund a shared dispatch service based on agreed-upon formulas (e.g., population, call volume, assessed value). This model promotes regional collaboration and long-term capital planning.

- Pros:
  - Encourages regionalization and shared investment.
  - Supports stable staffing and capital planning.
  - Can include shared facility or CAD costs.
- Cons:
  - Requires strong governance and formalized cost-sharing agreements.
  - May lead to disputes over proportional contributions.
  - Needs clear mechanisms for new entrants or withdrawals.

#### 5. Hybrid Model (Base Fee + Per-Call or Tiered Add-Ons)- (PREFERRED)

Combines elements of fixed and variable pricing, for example, a base annual fee plus a per-call charge or fee for additional services.

- Pros:
  - Balances predictability and fairness.
  - Allows for customization while ensuring core cost recovery.
  - Can evolve with service expansion.
- Cons:
  - Moderate administrative effort.
  - Requires transparent metrics and enforcement of service agreements.

### 3.8.7.11 Legal and Governance Framework

Expanding MFRS's Communications Centre to provide services to external municipalities introduces several legal and governance considerations. At the forefront is the need for robust and enforceable Service Level Agreements (SLAs). These contracts must clearly define the scope of services, performance benchmarks, reporting obligations, billing structures, and terms for dispute resolution. SLAs must also outline liability frameworks, indemnification clauses, and protocols for service interruption.

Governance arrangements will need to be structured in a way that protects the Town of Milton's interests while offering clarity and transparency to partner agencies. It is essential to ensure that the core mandate of providing dispatch services to the Town of Milton is not compromised by the addition of new clients. Provisions for priority response, workload monitoring, and service performance audits should be embedded in all agreements.

Legal review should be conducted in close consultation with municipal lawyers and insurance providers, to address issues of data privacy, cybersecurity, and compliance with applicable provincial regulations, including the Municipal Act and legislation governing emergency services. This is particularly critical given the sensitive nature of 911 communications and the introduction of NG-911 standards.

As the Communications Centre transitions toward a regional or multi-jurisdictional model, formal structures such as a Dispatch Advisory Committee may be required. These bodies can provide, operational input, and collaborative decision-making, helping to align service expectations and resolve issues constructively. Regular reporting to Town Council and the CAO will ensure accountability and transparency throughout the expansion process.

### **3.8.7.12 Risk Identification and Mitigation**

#### *Key Risks:*

- Service degradation to Milton residents.
- Technology implementation delays or failures.
- Inadequate cost recovery or budgeting.
- Staffing shortages or training gaps.

#### *Mitigation Strategies:*

- Phased implementation with clear service benchmarks.
- Investment in backup systems and site redundancy.
- Continuous monitoring and quarterly SLA reviews.
- Recruitment and onboarding plans aligned with growth.

### **3.8.7.13 Strategic Recommendations**

- Initiate a CAD replacement project aligned with NG-911 standards.
- Conduct a costed business case including capital, staffing, and facility options.
- Engage with potential client municipalities to define needs and intent.
- Develop a financial model and SLA framework for Council approval.
- Evaluate temporary dispatch pod or hybrid solutions for near-term growth.



| Cost Recovery Model                     | Description                                             | Pros                                                                                                            | Cons                                                                                                                  | Typical Use Case                                             |
|-----------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Per-Call Billing                        | Fee charged per dispatched call                         | <ul style="list-style-type: none"> <li>- Easy to administer</li> <li>- Scales with service demand</li> </ul>    | <ul style="list-style-type: none"> <li>- Unpredictable revenue</li> <li>- May discourage call sharing</li> </ul>      | Small to mid-size departments with variable call volume      |
| Flat Annual Fee                         | Fixed annual rate regardless of calls                   | <ul style="list-style-type: none"> <li>- Predictable budget</li> <li>- Simplifies billing</li> </ul>            | <ul style="list-style-type: none"> <li>- May over/undercharge without accurate baseline</li> </ul>                    | Low-volume departments or long-term clients                  |
| Tiered/Sliding Scale                    | Rate based on predefined call volume tiers              | <ul style="list-style-type: none"> <li>- Scales fairly with demand</li> <li>- Ensures cost recovery</li> </ul>  | <ul style="list-style-type: none"> <li>- Slightly more complex to administer</li> </ul>                               | Medium to large departments with known volume ranges         |
| Proportional Cost-Sharing               | Customer pays % based on share of total call volume     | <ul style="list-style-type: none"> <li>- Equitable</li> <li>- Promotes collaboration</li> </ul>                 | <ul style="list-style-type: none"> <li>- Requires detailed tracking</li> <li>- Annual recalibration needed</li> </ul> | Joint service delivery or regional partnerships              |
| Service Contract + Capital Contribution | Annual fee plus share of capital/system upgrade costs   | <ul style="list-style-type: none"> <li>- Supports long-term planning</li> <li>- Funds infrastructure</li> </ul> | <ul style="list-style-type: none"> <li>- Higher entry cost for smaller partners</li> </ul>                            | Multi-year agreements with shared infrastructure investment  |
| Regional Cooperative Agreement          | Shared dispatch under a formal board or joint agreement | <ul style="list-style-type: none"> <li>- Shared governance</li> <li>- Eligibility for joint grants</li> </ul>   | <ul style="list-style-type: none"> <li>- Legal and administrative complexity</li> </ul>                               | Regional models seeking cost-efficiency and resiliency       |
| One-Time Onboarding Fees                | Initial setup, training, and system integration         | <ul style="list-style-type: none"> <li>- Recovers upfront integration costs</li> </ul>                          | <ul style="list-style-type: none"> <li>- Must be clearly defined in contract</li> </ul>                               | All new clients onboarding to an existing dispatch operation |

**Observation #17:** As Milton continues to grow and call volumes rise, the demands placed on MFRS's dispatch system are increasing in both frequency and complexity. Current dispatch operations are functional, but performance data reveals that alarm processing times have room for improvement, particularly in meeting the industry benchmark of processing emergency calls within 64 seconds, 90% of the time. Workflow analysis indicates that a single-dispatcher model may limit efficiency during peak periods, as it requires personnel to handle simultaneous tasks of call intake and dispatching. The absence of functional specialization may contribute to slower alarm handling times and increased stress during high call volumes or complex incidents.

**Recommendation #17a:** Continue to enhance its dispatch operations by advancing workflow efficiency, adopting emerging technologies, and strengthening ongoing staff training initiatives to support high-performance emergency communications.

**Recommendation #17b:** Adopt a two-person dispatch model that clearly delineates the roles of call taker and dispatcher to enhance operational efficiency and reduce alarm processing times.

**Recommendation #17c:** Continue to monitor, analyze, and improve alarm handling performance with the goal of achieving the established benchmark of 64 seconds or less for emergency calls, 90% of the time.

**Suggested completion:** 1-12 months then ongoing

**Cost:** Minimal

**Strategic Objective:** Dispatch

**Rationale:** To meet growing service demands and maintain high standards of emergency response, MFRS should continue enhancing its dispatch operations through targeted investments in workflow improvements, staff training, and technology. Implementing a two-person dispatch model, separating call-taking and dispatch functions, will streamline operations, reduce processing delays, and improve dispatcher focus and accuracy. Further, leveraging emerging technologies such as upgraded CAD systems, AVL integrations, and performance analytics tools will support timely, data-driven decision-making. These changes will contribute to meeting alarm processing benchmarks and bolster overall system resilience, ensuring that MFRS continues to deliver prompt and effective emergency services to the community.

**Observation #18:** As call volumes increase and the Town of Milton continues to urbanize, the demand on MFRS's dispatch services has grown correspondingly. The current dispatch infrastructure, while functional, is limited in its scalability and long-term sustainability. In particular, the existing Communications Centre is not equipped to handle future operational growth, expanded service agreements, or increasing technological requirements. While the Station 2 backup dispatch center offers a short-term redundancy solution, it is not designed to operate as a full-scale, high-performance dispatch facility over the long term.

**Recommendation #18a:** Provide for a virtual expansion of dispatch capacity by utilizing the backup centre at Station 2 as a temporary solution.

**Recommendation #18b:** Establish a new purpose-built Communications Centre to support long-term dispatch growth and regional capabilities.

**Suggested completion:** Depending on growth and expansion

**Cost:** To be determined as part of a new station build

**Strategic Objective:** Dispatch

***Rationale:** A phased approach to expanding dispatch capacity is essential to maintaining operational reliability and service continuity. Utilizing the Station 2 backup dispatch site offers an immediate and cost-effective way to augment capacity, enhance redundancy, and provide operational relief during upgrades or high-demand scenarios. However, to ensure long-term success and to meet future regional or multi-agency dispatching needs, a purpose-built Communications Centre should be developed. This facility would accommodate advanced technologies, support additional staffing, and provide the physical space and infrastructure needed for a resilient and modern emergency communications hub. It would also align with broader regional interoperability goals and ensure MFRS remains future ready.*

**Observation #19:** Milton Fire & Rescue Services is currently operating a fully functional Communications Centre that effectively supports local fire dispatch and after-hours municipal response. However, infrastructure constraints, such as physical space limitations, a legacy CAD system, and lack of 24/7 supervisory coverage, restrict the Centre’s ability to scale operations. Despite these challenges, the Centre has demonstrated strong operational performance, which presents a unique opportunity to expand services regionally. The Town of Milton has identified growing interest from nearby municipalities in shared or outsourced dispatch models, and MFRS is well-positioned to serve as a regional dispatch leader with appropriate planning and investment. Existing technological gaps, financial sustainability, and legal governance must be addressed before multi-jurisdictional expansion can be pursued responsibly.

**Recommendation #19a:** Proactively explore opportunities to expand its dispatch service offerings to surrounding fire departments and municipalities through a structured business development and feasibility assessment process.

**Recommendation #19b:** Develop a comprehensive financial model to support the expansion of its Communications Centre and regional dispatch services, utilizing the Hybrid Model (Base Fee + Per-Call or Tiered Add-Ons) as the preferred cost recovery approach.

**Recommendation #19c:** Develop and implement a comprehensive legal and governance framework to guide the expansion of MFRS’s Communications Centre services to external municipalities including an enforceable Service Level Agreements (SLAs), formal governance structures, and legal oversight aligned with applicable provincial legislation and risk management standards.

**Suggested completion:** 24-36 months

**Cost:** Cost neutral – staff time if done internally. \$50,000 to \$100,000 depending on scope if outside legal or consultants are required.

**Strategic Objective:** Dispatch

***Rationale:*** Proactively exploring dispatch service expansion aligns with the Town's strategic goals for modernization, regional collaboration, and financial sustainability. A structured business development process, including stakeholder engagement, a costed business case, and phased implementation, ensures that expansion is based on validated demand and operational feasibility. Utilizing the Hybrid Model for cost recovery offers a flexible, equitable, and scalable approach that balances predictability for partner agencies with Milton's need for cost recovery.

*This model enables customization based on service complexity and helps offset rising operational costs without overcommitting local tax revenues.*

*Furthermore, the creation of a comprehensive legal and governance framework is essential for long-term viability and accountability. Well-defined Service Level Agreements (SLAs), clear risk allocation, data privacy protections, and dispute resolution mechanisms, are critical to mitigate liability and maintain service quality. A formal governance structure, such as a Dispatch Advisory Committee, can enhance transparency, align expectations, and foster cooperative decision-making. By adopting this multifaceted approach, MFRS can ensure that regional dispatch expansion strengthens local service delivery, promotes public safety, and positions the Town of Milton as a leader in municipal emergency communications.*

## 3.9 Capital Assets

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### 3.9.1 Fire Stations

Fire station/s have a long history going back to the late 17<sup>th</sup> century when organized fire services were first organized. Typically, early fire stations housed simple fire pumps, facilities for the horses that pulled the fire pumps and living quarters for firefighters. Today's fire stations are typically used to store modern firefighting apparatus and equipment as well as living quarters for firefighters in many cases for 24 hours a day, 7 days a week.

Modern fire stations are designed with functionality, efficiency, and health and safety in mind. These facilities are strategically located to ensure optimal emergency response times and are built to accommodate larger and heavier fire apparatus. In addition to operational needs, contemporary fire stations integrate environmental and occupational health considerations into their design, including dedicated decontamination areas, separate zones for contaminated gear (hot zones) and clean areas (cold zones), proper ventilation systems, and wellness amenities to support firefighter health and resilience.

#### 3.9.1.1 Fire Stations Overview and Assessments

The Town of Milton operates five fire stations through Milton Fire & Rescue Services. These stations are strategically located to serve both urban and rural areas of the community. An overview of the MFRS fire stations and an assessment of what are considered necessary amenities for a fully functional fire station are detailed.

| Station 1 |                                                                                                                                                                                                                                                                              |                |   |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---|
| Address:  | 405 Steeles Avenue                                                                                                                                                                                                                                                           |                |   |
| Use:      | Fire & Rescue Response and Training Centre                                                                                                                                                                                                                                   |                |   |
| Bays:     | 4 (Drive-through)                                                                                                                                                                                                                                                            | Unit Capacity: | 5 |
| Comments: | Built in 1977, the building includes three apparatus bays and a large training room that can be divided to accommodate smaller training rooms. Mechanical repair is also located in the 4 <sup>th</sup> bay used by two EVT mechanics. Recent renovations were done in 2019. |                |   |



Table 22: Station 1 Overview

| Item | Description                                                          | Yes | No | Comments                                               |
|------|----------------------------------------------------------------------|-----|----|--------------------------------------------------------|
| 1    | Site security                                                        | ✓   |    | Mag Lock System                                        |
| 2    | Adequate parking for staff and visitors                              | ✓   |    |                                                        |
| 3    | Internet and intranet connectivity                                   | ✓   |    |                                                        |
| 4    | Adequate space for training – training props, hydrant                | ✓   |    |                                                        |
| 5    | Back-up power supply                                                 | ✓   |    |                                                        |
| 6    | Fire Chiefs' office                                                  |     | ✓  | See Station 3                                          |
| 7    | Deputy's Chief's offices                                             |     | ✓  | See Station 3                                          |
| 8    | Emergency management office                                          |     | ✓  | See Station 5                                          |
| 9    | Administrative support office/space                                  |     | ✓  | See Station 3                                          |
| 10   | Training room / meeting room                                         | ✓   |    |                                                        |
| 11   | Office security                                                      | ✓   |    |                                                        |
| 12   | Dorm rooms                                                           | ✓   |    |                                                        |
| 13   | Day use area                                                         | ✓   |    |                                                        |
| 14   | Kitchen                                                              | ✓   |    |                                                        |
| 15   | Fitness / wellness area                                              | ✓   |    |                                                        |
| 16   | Firefighter men's and ladies' bathrooms and showers                  | ✓   |    |                                                        |
| 17   | Space to safely garage and do minor maintenance on vehicles          | ✓   |    | Major repairs done in one of the bays by EVT mechanics |
| 18   | Hose drying area                                                     | ✓   |    |                                                        |
| 19   | Small equipment storage and maintenance room                         | ✓   |    |                                                        |
| 20   | Air filling station room complete with proper ventilation            | ✓   |    |                                                        |
| 21   | Industrial washer and dryer room                                     | ✓   |    | Extractor, industrial washer, and dryer                |
| 22   | Bunker gear storage room complete with proper drying and ventilation | ✓   |    |                                                        |
| 23   | Consumables storage room                                             | ✓   |    |                                                        |
| 24   | Sufficient workstations                                              | ✓   |    |                                                        |
| 25   | Sufficient supervisor space                                          | ✓   |    |                                                        |
| 26   | Breakout or quiet room                                               | ✓   |    |                                                        |
| 27   | Public and Staff Washrooms                                           | ✓   |    |                                                        |
| 28   | Locker room                                                          | ✓   |    |                                                        |
| 29   | Proper interior Lighting                                             | ✓   |    |                                                        |



| Station 2 |                                                                                                                                              |                |   |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------|---|
| Address:  | 2665 Reid Side Road                                                                                                                          |                |   |
| Use:      | Fire & Rescue                                                                                                                                |                |   |
| Bays:     | 3                                                                                                                                            | Unit Capacity: | 2 |
| Comments: | Built in 2003, this facility is primarily used by the part-time firefighter response and is shared with the Halton Regional Police Services. |                |   |



Table 23: Station 2 Overview

| Item | Description                                                          | Yes | No | Comments                                         |
|------|----------------------------------------------------------------------|-----|----|--------------------------------------------------|
| 1    | Site security                                                        | ✓   |    | Mag-Lock System                                  |
| 2    | Adequate parking for staff and visitors                              | ✓   |    |                                                  |
| 3    | Internet and intranet connectivity                                   | ✓   |    |                                                  |
| 4    | Adequate space for training – training props, hydrant                |     | ✓  | Training done at Station 1                       |
| 5    | Back-up power supply                                                 | ✓   |    |                                                  |
| 6    | Fire Chiefs' office                                                  |     | ✓  | See Station 3                                    |
| 7    | Deputy's Chief's offices                                             |     | ✓  | See Station 3                                    |
| 8    | Emergency management office                                          |     | ✓  | See Station 5                                    |
| 9    | Administrative support office/space                                  |     | ✓  | See Station 3                                    |
| 10   | Training room / meeting room                                         | ✓   |    | Major training is done at Station 1              |
| 11   | Office security                                                      | ✓   |    |                                                  |
| 12   | Dorm rooms                                                           |     | ✓  |                                                  |
| 13   | Day use area                                                         | ✓   |    |                                                  |
| 14   | Kitchen                                                              | ✓   |    |                                                  |
| 15   | Fitness / wellness area                                              | ✓   |    |                                                  |
| 16   | Firefighter men's and ladies' bathrooms and showers                  | ✓   |    |                                                  |
| 17   | Space to safely garage and do minor maintenance on vehicles          | ✓   |    | Major repairs done at Station 1 by EVT mechanics |
| 18   | Hose drying area                                                     | ✓   |    |                                                  |
| 19   | Small equipment storage and maintenance room                         | ✓   |    |                                                  |
| 20   | Air filling station room complete with proper ventilation            | ✓   |    |                                                  |
| 21   | Industrial washer and dryer room                                     | ✓   |    | Extractor, industrial washer, and dryer          |
| 22   | Bunker gear storage room complete with proper drying and ventilation | ✓   |    |                                                  |
| 23   | Consumables storage room                                             | ✓   |    |                                                  |
| 24   | Sufficient workstations                                              | ✓   |    |                                                  |
| 25   | Sufficient supervisor space                                          | ✓   |    |                                                  |
| 26   | Breakout or quiet room                                               |     | ✓  |                                                  |
| 27   | Public and Staff Washrooms                                           |     | ✓  |                                                  |
| 28   | Locker room                                                          | ✓   |    |                                                  |
| 29   | Proper interior Lighting                                             | ✓   |    |                                                  |

| Station 3 |                                                                                                                                                                                                     |                |   |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---|
| Address:  | 610 Savoline Blvd.                                                                                                                                                                                  |                |   |
| Use:      | Fire & Rescue Response and Administration                                                                                                                                                           |                |   |
| Bays:     | 3                                                                                                                                                                                                   | Unit Capacity: | 4 |
| Comments: | Built in 2012, this facility is home to Fire Administration, Fire Prevention/Public Education and Support Services along with part-time and full-time firefighter staff 24 hrs./day, 7 days a week. |                |   |



Table 24: Station 3 Overview

| Item | Description                                                          | Yes | No | Comments                                         |
|------|----------------------------------------------------------------------|-----|----|--------------------------------------------------|
| 1    | Site security                                                        | ✓   |    | Mag-Lock System                                  |
| 2    | Adequate parking for staff and visitors                              | ✓   |    |                                                  |
| 3    | Internet and intranet connectivity                                   | ✓   |    |                                                  |
| 4    | Adequate space for training – training props, hydrant                | ✓   |    |                                                  |
| 5    | Back-up power supply                                                 | ✓   |    |                                                  |
| 6    | Fire Chiefs' office                                                  | ✓   |    |                                                  |
| 7    | Deputy's Chief's offices                                             | ✓   |    |                                                  |
| 8    | Emergency management office                                          |     | ✓  | See Station 5                                    |
| 9    | Administrative support office/space                                  | ✓   |    |                                                  |
| 10   | Training room / meeting room                                         | ✓   |    | Major training is done at Station 1              |
| 11   | Office security                                                      | ✓   |    |                                                  |
| 12   | Dorm rooms                                                           | ✓   |    |                                                  |
| 13   | Day use area                                                         | ✓   |    |                                                  |
| 14   | Kitchen                                                              | ✓   |    |                                                  |
| 15   | Fitness / wellness area                                              | ✓   |    |                                                  |
| 16   | Firefighter men's and ladies' bathrooms and showers                  | ✓   |    |                                                  |
| 17   | Space to safely garage and do minor maintenance on vehicles          | ✓   |    | Major repairs done at Station 1 by EVT mechanics |
| 18   | Hose drying area                                                     | ✓   |    |                                                  |
| 19   | Small equipment storage and maintenance room                         | ✓   |    |                                                  |
| 20   | Air filling station room complete with proper ventilation            | ✓   |    |                                                  |
| 21   | Industrial washer and dryer room                                     | ✓   |    | Extractor, industrial washer, and dryer          |
| 22   | Bunker gear storage room complete with proper drying and ventilation | ✓   |    |                                                  |
| 23   | Consumables storage room                                             | ✓   |    |                                                  |
| 24   | Sufficient workstations                                              | ✓   |    |                                                  |
| 25   | Sufficient supervisor space                                          | ✓   |    |                                                  |
| 26   | Breakout or quiet room                                               | ✓   |    |                                                  |
| 27   | Public and Staff Washrooms                                           | ✓   |    |                                                  |
| 28   | Locker room                                                          | ✓   |    |                                                  |
| 29   | Proper interior Lighting                                             | ✓   |    |                                                  |

| Station 4 |                                                                                                                               |                |   |
|-----------|-------------------------------------------------------------------------------------------------------------------------------|----------------|---|
| Address:  | 405 James Snow Parkway South                                                                                                  |                |   |
| Use:      | Fire & Rescue Response                                                                                                        |                |   |
| Bays:     | 2                                                                                                                             | Unit Capacity: | 3 |
| Comments: | Built in 2010, this facility is staffed by full-time firefighters 4 hrs./day, 7 days a week that support Milton's urban core. |                |   |



Table 25: Station 4 Overview

| Item | Description                                                          | Yes | No | Comments                                         |
|------|----------------------------------------------------------------------|-----|----|--------------------------------------------------|
| 1    | Site security                                                        | ✓   |    | Mag Lock System                                  |
| 2    | Adequate parking for staff and visitors                              | ✓   |    |                                                  |
| 3    | Internet and intranet connectivity                                   | ✓   |    |                                                  |
| 4    | Adequate space for training – training props, hydrant                | ✓   |    | Major training done at Station 1                 |
| 5    | Back-up power supply                                                 | ✓   |    |                                                  |
| 6    | Fire Chiefs' office                                                  |     | ✓  | See Station 3                                    |
| 7    | Deputy's Chief's offices                                             |     | ✓  | See Station 3                                    |
| 8    | Emergency management office                                          |     | ✓  | See Station 5                                    |
| 9    | Administrative support office/space                                  |     | ✓  | See Station 3                                    |
| 10   | Training room / meeting room                                         | ✓   |    | Major training is done at Station 1              |
| 11   | Office security                                                      | ✓   |    |                                                  |
| 12   | Dorm rooms                                                           | ✓   |    |                                                  |
| 13   | Day use area                                                         | ✓   |    |                                                  |
| 14   | Kitchen                                                              | ✓   |    |                                                  |
| 15   | Fitness / wellness area                                              | ✓   |    |                                                  |
| 16   | Firefighter men's and ladies' bathrooms and showers                  | ✓   |    |                                                  |
| 17   | Space to safely garage and do minor maintenance on vehicles          | ✓   |    | Major repairs done at Station 1 by EVT mechanics |
| 18   | Hose drying area                                                     | ✓   |    |                                                  |
| 19   | Small equipment storage and maintenance room                         | ✓   |    |                                                  |
| 20   | Air filling station room complete with proper ventilation            | ✓   |    |                                                  |
| 21   | Industrial washer and dryer room                                     | ✓   |    | Extractor, industrial washer, and dryer          |
| 22   | Bunker gear storage room complete with proper drying and ventilation | ✓   |    |                                                  |
| 23   | Consumables storage room                                             | ✓   |    |                                                  |
| 24   | Sufficient workstations                                              | ✓   |    |                                                  |
| 25   | Sufficient supervisor space                                          | ✓   |    |                                                  |
| 26   | Breakout or quiet room                                               |     | ✓  |                                                  |
| 27   | Public and Staff Washrooms                                           |     | ✓  |                                                  |
| 28   | Locker room                                                          | ✓   |    |                                                  |
| 29   | Proper interior Lighting                                             | ✓   |    |                                                  |



| Station 5 |                                                                                               |                |   |
|-----------|-----------------------------------------------------------------------------------------------|----------------|---|
| Address:  | 7825 Louis St. Laurent Avenue                                                                 |                |   |
| Use:      | Fire & Rescue Response                                                                        |                |   |
| Bays:     | 3                                                                                             | Unit Capacity: | 3 |
| Comments: | Built in 2021, this facility is staffed by full-time firefighters 24 hrs./day, 7 days a week. |                |   |



Table 26: Station 5 Assessment

| Item | Description                                                          | Yes | No | Comments                                                   |
|------|----------------------------------------------------------------------|-----|----|------------------------------------------------------------|
| 1    | Site security                                                        | ✓   |    | Mag Lock System                                            |
| 2    | Adequate parking for staff and visitors                              | ✓   |    |                                                            |
| 3    | Internet and intranet connectivity                                   | ✓   |    |                                                            |
| 4    | Adequate space for training – training props, hydrant                |     | ✓  | Major training done at Station 1                           |
| 5    | Back-up power supply                                                 | ✓   |    |                                                            |
| 6    | Fire Chiefs' office                                                  |     | ✓  | See Station 3                                              |
| 7    | Deputy's Chief's offices                                             |     | ✓  | See Station 3                                              |
| 8    | Emergency management office                                          | ✓   |    | Designated Primary EOC, Alternate EOC located at Town Hall |
| 9    | Administrative support office/space                                  | ✓   |    | See Station 3                                              |
| 10   | Training room / meeting room                                         | ✓   |    | Major training is done at Station 1                        |
| 11   | Office security                                                      | ✓   |    |                                                            |
| 12   | Dorm rooms                                                           | ✓   |    |                                                            |
| 13   | Day use area                                                         | ✓   |    |                                                            |
| 14   | Kitchen                                                              | ✓   |    |                                                            |
| 15   | Fitness / wellness area                                              | ✓   |    |                                                            |
| 16   | Firefighter men's and ladies' bathrooms and showers                  | ✓   |    |                                                            |
| 17   | Space to safely garage and do minor maintenance on vehicles          | ✓   |    |                                                            |
| 18   | Hose drying area                                                     | ✓   |    |                                                            |
| 19   | Small equipment storage and maintenance room                         | ✓   |    |                                                            |
| 20   | Air filling station room complete with proper ventilation            | ✓   |    |                                                            |
| 21   | Industrial washer and dryer room                                     | ✓   |    | Extractor, industrial washer, and dryer                    |
| 22   | Bunker gear storage room complete with proper drying and ventilation | ✓   |    |                                                            |
| 23   | Consumables storage room                                             | ✓   |    |                                                            |
| 24   | Sufficient workstations                                              | ✓   |    |                                                            |
| 25   | Sufficient supervisor space                                          | ✓   |    |                                                            |
| 26   | Breakout or quiet room                                               | ✓   |    |                                                            |
| 27   | Public and Staff Washrooms                                           | ✓   |    |                                                            |
| 28   | Locker room                                                          | ✓   |    |                                                            |
| 29   | Proper interior Lighting                                             | ✓   |    |                                                            |



### 3.9.2 Apparatus and Equipment

**Goal #9:** Ensure that apparatus and equipment are available in the appropriate quantity, maintained in a ready and reliable state, that align with operational requirements. Through robust preventative maintenance and asset management practices, the Service will support safe, effective, and efficient emergency response across the community.

Fire apparatus and emergency vehicles are typically the largest asset expenditures for any fire department. Purchasing and managing these assets requires strong fiscal responsibility to endure public and local government scrutiny. Currently, MFRS has considerable monies invested in vehicles and equipment.

#### 3.9.2.1 NFPA Standards for Fire Apparatus

NFPA has developed standards to assist a fire service with the design, maintenance, inspection, testing, life cycling, and dispersal for their fire apparatus. Fire departments may choose to adopt these standards or utilize them as a reference in their own standards and practices.

##### NFPA 1901: Standard for Automotive Fire Apparatus

The NFPA 1901 standard defines the requirements for new automotive fire apparatus and trailers, designed to be used under emergency conditions to transport personnel and equipment and to support the suppression of fires and mitigation of hazardous conditions. This standard recommends that fire apparatus should respond to first alarms for the first 15 years of service, with the expectation that they perform as designed 95% of the time. For the next five years, it should be held in reserve for use at large fires or used as a temporary replacement for-of-service first line apparatus.

##### NFPA 1911: Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Emergency Vehicles

The NFPA 1911 standard defines the minimum requirements for establishing an inspection, maintenance, and testing program. Also included are guidelines for emergency vehicle refurbishment and retirement.

The Underwriters Laboratory of Canada utilizes many of the provisions within these NFPA standards which are referenced by Fire Underwriters Survey (FUS) for determining fire insurance ratings for a community.

For example, it follows the life cycle program with the exception that it may award full credit for a fire apparatus older than 15 years, but not more than 20 years, in remote locations only if the piece of equipment is deemed in excellent condition and all necessary upgrades are done. The value of the additional credit in this case, which is only a portion of the total grading for a final FUS rating, may well be overshadowed by the cost of maintaining an older unit. In addition, the NFPA 1901: Standard for Automotive Fire Apparatus recommends the following:

#### **D.1 General**

*To maximize firefighter capabilities and minimize the risk of injuries, it is important that fire apparatuses be equipped with the latest safety features and operating capabilities.*

*In the last 10 to 15 years, much progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus. Apparatuses more than 15 years old might include only a few of the safety upgrades required by the recent editions of the NFPA fire department apparatus standards or the equivalent Underwriters Laboratories of Canada (ULC) standards. Because the changes, upgrades, and fine-tuning to NFPA 1901 have been truly significant, especially in safety, fire departments should seriously consider the value (or risk) to firefighters of keeping fire apparatus more than 15 years old in first line service. It is recommended that apparatus more than 15 years old that have been properly maintained and that are still in serviceable condition be placed in reserve status; be upgraded in accordance with NFPA 1912; and incorporate as many features as possible of the current fire apparatus standard (See Section D3 of Standard). This will ensure that, while the apparatus might not totally comply with the current editions of the automotive fire apparatus standards, many of the improvements and upgrades required by the current editions of the standards are available to the firefighters who use the apparatus. Apparatuses that were not manufactured to the applicable NFPA fire apparatus standards or that are over 25 years old should be replaced.*

### 3.9.2.2 Underwriters Laboratories of Canada

Current Underwriters Laboratories of Canada (ULC<sup>17</sup>) and NFPA 1901: Standard for Automobile Firefighting Apparatus Standards recommend using apparatus on the front line for up to 15 years, then as a backup for another four to five years. Of course, this timeline is dependent on the frequency of use, scheduled maintenance, and budgets. As indicated in Table 27, some emergency vehicles' life cycles can be extended due to low usage or serviceable condition. A leading practice is to have a complete condition survey conducted to determine if there is usable life cycle remaining. This condition survey must consider the NPFA and FUS standards along with the maintenance and cost records of the respective vehicle.

Table 27: Fire Apparatus Service Schedule (Fire Insurance Grading)

| Apparatus Age (Yrs.)                                                                                                                                                                                                                                 | Major Cities <sup>3</sup> | Medium Sized Cities <sup>4</sup>             | Small Communities <sup>5</sup> and Rural Centres               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------------|----------------------------------------------------------------|
| 0 – 15                                                                                                                                                                                                                                               | First Line Duty           | First Line Duty                              | First Line Duty                                                |
| 16-20                                                                                                                                                                                                                                                | Reserve                   | 2 <sup>nd</sup> Line Duty                    | First Line Duty                                                |
| 20-25 <sup>1</sup>                                                                                                                                                                                                                                   | No Credit in Grading      | No Credit in Grading or Reserve <sup>2</sup> | No Credit in Grading or 2 <sup>nd</sup> Line Duty <sup>2</sup> |
| 26-29 <sup>1</sup>                                                                                                                                                                                                                                   | No Credit in Grading      | No Credit in Grading or Reserve <sup>2</sup> | No Credit in Grading or Reserve <sup>2</sup>                   |
| 30+                                                                                                                                                                                                                                                  | No Credit in Grading      | No Credit in Grading                         | No Credit in Grading                                           |
| <sup>1</sup> All listed fire apparatus 20 years of age and older are required to be service tested by recognized testing agency on an annual basis to be eligible for grading recognition (NFPA 1071).                                               |                           |                                              |                                                                |
| <sup>2</sup> Exceptions to age status may be considered in a small to medium sized communities and rural centers conditionally, when apparatus condition is acceptable, and apparatus successfully passes required testing.                          |                           |                                              |                                                                |
| <sup>3</sup> 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 kilometer; AND a total population of 100,000 or greater.        |                           |                                              |                                                                |
| <sup>4</sup> 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 kilometer; and/or a total population of 1,000 or greater. |                           |                                              |                                                                |
| <sup>5</sup> Small Communities are defined as an incorporated or unincorporated community that has: no populated areas with densities that exceed 200 people per square kilometer; AND does not have a total population of more than 1,000.          |                           |                                              |                                                                |

<sup>17</sup> Underwriters Laboratories of Canada (ULC) is an independent product safety testing, certification, and inspection organization. [www.canada.ul.com](http://www.canada.ul.com)

### 3.9.2.3 Fire Apparatus Design and Procurement

Fire apparatus is designed and tendered based on the unique requirements of the fire service and the community needs that it serves. With the design, tender and procurement processes typically taking two to three years or longer as well as with the expected life cycles of these apparatus of 20 years or more, it is important that decisions accurately reflect the immediate needs and those in the future.

### 3.9.2.4 Fire Apparatus Maintenance and Repair

In Ontario, all fire apparatus with a gross weight, registered gross weight, or manufacturers gross vehicle weight rating exceeding 4500 kilograms must be inspected on an annual basis in accordance with regulations made under the Highway Traffic Act. These vehicles are required to display an inspection sticker as evidence of compliance with this requirement.

Daily driver inspections for commercial vehicles are a requirement under the Act. Fire vehicles are not included in this requirement, however, most fire departments in Ontario mandate, at minimum, daily inspections either at the beginning of a shift or post-trip.

A sound and reliable preventative maintenance program is a vital component of the overall fleet management process, ensuring each piece operates reliably, safely, and effectively while assisting in making it to the anticipated life cycle. Poor maintenance scheduling or neglect of required checks and repairs can lead to accidents, breakdowns, and life safety issues. A fire apparatus pre-maintenance program should consist of the following components:

- Trip inspections (daily, pre-trip, post-trip).
- Regular preventative maintenance scheduling.
- Annual preventative maintenance comprehensive check.

MFRS currently manages the maintenance, repair, testing, and certification of all heavy emergency vehicles in-house through two certified Emergency Vehicle Technicians (EVTs). These technicians are responsible for maintaining a growing fleet of front-line and reserve apparatus, ensuring compliance with National Fire Protection Association (NFPA) standards and applicable provincial safety regulations. The EVT team plays a critical role in sustaining the operational readiness of fire apparatus and safeguarding firefighter and public safety. Routine and preventive maintenance tasks, including pump testing, annual inspections, brake servicing, and minor repairs, are performed by the EVTs, who have demonstrated a high level of technical competence and commitment to the reliability of MFRS's fleet.

Currently, the EVT's conduct most maintenance activities out of Station 1, where one bay has been allocated for apparatus servicing. However, this space was not originally designed as a dedicated vehicle maintenance facility, and its limitations have become increasingly apparent as the fleet and service demands grow. The bay lacks sufficient clearance, appropriate equipment such as vehicle lifts or pits designed for heavy vehicles, and adequate space for safely working on multiple apparatus simultaneously. The current setup also restricts workflow efficiency and can create operational delays when apparatus require unscheduled repairs or longer service times. The constrained workspace increases safety risks for EVT personnel and limits the department's capacity to conduct more complex repairs in-house.

As MFRS continues to expand its fleet in response to community growth and intensification, the limitations of the current maintenance arrangement are becoming a significant operational concern. Without a purpose-built or upgraded maintenance facility, the department faces increasing risk of delayed apparatus availability, overreliance on costly external repairs, and compromised safety or compliance. Addressing the current state of apparatus maintenance through infrastructure improvements or a future centralized logistics and maintenance hub should be considered a strategic priority in long-range planning efforts. This will ensure the sustainability of the in-house maintenance model and support the safe, reliable delivery of emergency services across Milton.

**Observation #20:** Milton Fire & Rescue Services (MFRS) currently performs most of its apparatus maintenance in-house using two full-time mechanics who operate within limited and suboptimal space, specifically a bay at Station 1 not originally designed for mechanical work. As the fleet grows in size and complexity to support future stations and staffing expansions, the current setup is increasingly insufficient for safe, efficient, and scalable maintenance operations. Additionally, the lack of a dedicated facility poses challenges in storing parts, performing multi-vehicle servicing, and conducting repairs without interrupting operational space.

Public Works and Transit Departments within the Town already operate facilities with the infrastructure necessary to support vehicle servicing, including high bays, specialized tooling, and vehicle lifts. Exploring a formal partnership with these departments presents a viable opportunity to secure shared or dedicated maintenance space, reduce duplication of infrastructure, and create a more efficient and collaborative municipal approach to fleet management.

**Recommendation #20:** Explore a formal partnership with the Town's Public Works or Transit Departments to secure dedicated or shared space within an existing or future municipal facility for apparatus maintenance, inspections, and mechanical support.

**Suggested completion:** 24-36 months

**Cost:** Costs will vary depending on the need for added infrastructure within the space

**Strategic Objective:** Facilities, Apparatus, and Equipment

***Rationale:** A formalized partnership with Public Works or Transit could provide MFRS with access to purpose-built, professionally equipped facilities for heavy vehicle maintenance and inspections without requiring a standalone capital investment in the near term. Shared use of municipal assets supports cross-departmental efficiency and cost savings by leveraging existing space, utilities, and mechanical resources already in place or planned for expansion.*

*This approach would also enhance safety and workflow for MFRS mechanics, improve preventative maintenance scheduling, and potentially allow for expanded support services (e.g., fabrication, diagnostics, lift inspections). In the long term, co-locating or integrating fire apparatus maintenance into a centralized fleet facility would contribute to better asset management, streamlined procurement processes, and alignment with broader municipal operational planning. It represents a fiscally responsible and operationally sound solution to supporting MFRS's growing fleet and service delivery needs.*

### 3.9.2.5 Fire Apparatus Replacement and Dispersal

MFRS operates a diverse and modern fleet of emergency response apparatus designed to meet the operational demands and risk profiles of the Town of Milton. As of the 2024 Asset Management Plan, the service operates 36 vehicles with a total asset value of \$20,349,236.00. Of these, 16 are classified as heavy apparatus, including 7 pumpers, 2 rescues, 3 aerials, 3 tankers, and 1 air/light unit. These vehicles are strategically located across MFRS's five stations, with each unit assigned to fulfill specific roles based on the risk and needs of their designated response areas. In addition to frontline vehicles, the department operates a fleet of light emergency and support vehicles used by administrative staff, fire inspectors, training officers, and maintenance personnel.

All frontline emergency vehicles, with the exception of four aging support units, are rated in good or very good condition. Apparatus assignments consider a range of operational requirements such as structural firefighting, vehicular extrication, water supply, technical rescue, and elevated fire attack. The current configuration aligns with the Town's population growth, urban development patterns, and fire risk profile, and ensures that the community is equipped with the necessary resources to manage all-hazards response.

MFRS maintains a ten-year capital replacement plan for its fleet, guided by manufacturer recommendations, NFPA standards, operational workload, and asset condition. This replacement strategy ensures that frontline and reserve units remain service-ready, safe, and cost-effective. Heavy apparatus is generally scheduled for replacement on a 10–12-year cycle for frontline use, with an additional 5 years of service in a reserve capacity where feasible. Apparatus nearing the end of their service life are assessed for continued reliability, potential refurbishment, and alignment with updated safety and performance standards.

Apparatus replacement decisions are informed by several key metrics, including original acquisition cost, current condition, historical maintenance expenses, anticipated replacement cost (adjusted for inflation), and salvage value. NFPA 1911 recommends that properly maintained apparatus over 15 years be moved to reserve status, with replacement at or before 25 years. FUS credit scoring also considers apparatus age and condition, which can impact community insurance ratings. MFRS recognizes that vehicles assigned to busier stations are subject to accelerated wear and may require earlier replacement or reassignment to lower-call-volume locations.



As of this review, MFRS's heavy apparatus fleet is in overall good condition, but there are opportunities to further refine the replacement lifecycle. The current lack of a digital fleet management system limits data-driven optimization of lifecycle timing. Implementing such a system would allow MFRS to better evaluate costs of ongoing maintenance versus replacement, support improved budgeting accuracy, and ensure the timely acquisition of new units. Additionally, the Town should continue to maintain an adequate pool of reserve apparatus, including pumpers, tankers, and aerials, to provide operational flexibility during periods of maintenance, major incidents, or mechanical failure. The existing commitment to the ten-year capital plan reflects the Town of Milton's long-term vision for sustainable asset management and continued public safety excellence.

The lifespan of apparatus varies depending on its type and use, along with regular maintenance and testing standards. Fire services typically designate a lifecycle to each piece of apparatus and other emergency vehicles and contribute to a capital reserve fund to ensure enough funds are available when the replacement is needed.

Through careful analysis the optimal replacement year can be determined. The table below shows an example of an apparatus purchased in 2014 with a 20–21-year replacement timeline. Assumptions need to be determined for a particular piece of apparatus to consider the type of factors above, as well as requirements for the replacement apparatus to meet the needs for the next 20 plus years. Annual reserve contributions should be made to ensure sufficient funds are available at the time of anticipated replacement.



Table 28: Fire Apparatus Life Cycle Cost Projection Example

| Period | Year | Replacement cost | Based on % | Difference between original vs replacement | Depreciated value |
|--------|------|------------------|------------|--------------------------------------------|-------------------|
| 0      | 2014 | \$375,415.05     |            | \$0.00                                     | \$375,415.05      |
| 1      | 2015 | \$386,677.50     | 3.0%       | \$11,262.45                                | \$300,332.04      |
| 2      | 2016 | \$398,277.83     | 3.0%       | \$22,862.78                                | \$240,265.63      |
| 3      | 2017 | \$410,226.16     | 3.0%       | \$34,811.11                                | \$192,212.51      |
| 4      | 2018 | \$422,532.95     | 3.0%       | \$47,117.90                                | \$153,770.00      |
| 5      | 2019 | \$485,912.89     | 15.0%      | \$110,497.84                               | \$123,016.00      |
| 6      | 2020 | \$558,799.82     | 15.0%      | \$183,384.77                               | \$98,412.80       |
| 7      | 2021 | \$642,619.79     | 15.0%      | \$267,204.74                               | \$78,730.24       |
| 8      | 2022 | \$684,390.08     | 6.5%       | \$308,975.03                               | \$62,984.19       |
| 9      | 2023 | \$728,875.44     | 6.5%       | \$353,460.39                               | \$50,387.36       |
| 10     | 2024 | \$776,252.34     | 6.5%       | \$400,837.29                               | \$40,309.88       |
| 11     | 2025 | \$826,708.74     | 6.5%       | \$451,293.69                               | \$32,247.91       |
| 12     | 2026 | \$880,444.81     | 6.5%       | \$505,029.76                               | \$25,798.33       |
| 13     | 2027 | \$937,673.72     | 6.5%       | \$562,258.67                               | \$20,638.66       |
| 14     | 2028 | \$998,622.51     | 6.5%       | \$623,207.46                               | \$16,510.93       |
| 15     | 2029 | \$1,063,532.98   | 6.5%       | \$688,117.93                               | \$13,208.74       |
| 16     | 2030 | \$1,132,662.62   | 6.5%       | \$757,247.57                               | \$10,566.99       |
| 17     | 2031 | \$1,206,285.69   | 6.5%       | \$830,870.64                               | \$10,000.00       |
| 18     | 2032 | \$1,284,694.26   | 6.5%       | \$909,279.21                               | \$10,000.00       |
| 19     | 2033 | \$1,368,199.39   | 6.5%       | \$992,784.34                               | \$10,000.00       |
| 20     | 2034 | \$1,457,132.35   | 6.5%       | \$1,081,717.30                             | \$10,000.00       |

Figure 8: Fire Apparatus Life Cycle Cost Projection Example

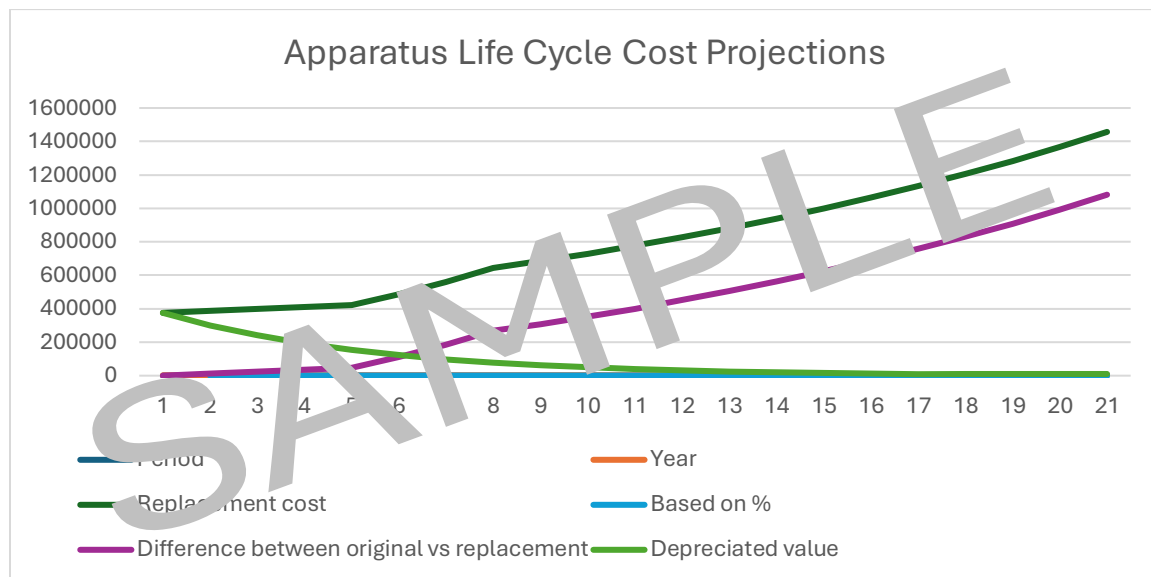


Table 28 and Figure 8 show that the monies put into the replacement reserve fund are close to the projected replacement cost in year 15 and require additional contributions to extend past. Note the following key points:

- Five-year increase to replacement cost from 15-20 years = \$393,599.37
- Five-year decrease in depreciation value from 15-20 years = \$3,208.74
- Total increased costs to retain apparatus for additional 5 years (15-20) = \$396,808.11
- Additional contributions to reserve fund \$79,361.62
- Difference between 20 and 15 years is \$1,447,132.35 - \$1,050,324.24 = - \$396,808.11 or an additional \$2,335.00 of contribution per year

A fire service that utilizes a similar process as above, taking into consideration local conditions to determine the optimal replacement time for each major piece of apparatus, will be able to accurately ensure sufficient funds are available when required.

### 3.9.2.6 Apparatus and Emergency Vehicle Fleet Inventory

MFRS, through the Town of Milton, owns and maintains 16 heavy apparatus (7 pumpers, 2 rescues, 3 aerials, 3 Tankers, 1 Air/Light Unit ) and a number of light emergency vehicles which are primarily housed at the stations 1,2 and 3. Each piece of apparatus is assigned to a fire station has specific roles in anticipation of the risks in their response zone. The light vehicles are utilized by administration, fire inspectors/investigators, maintenance, and training staff.

MFRS inventory of apparatus and equipment is modern and well maintained. A detailed table of the current heavy apparatus fleet is in Table 29 below.

*Table 29: MFRS Apparatus and Planned Life Cycle*

| No. | Unit Location | Unit No. | Unit Type    | Year Built | Life Expectancy | Est Replacement |
|-----|---------------|----------|--------------|------------|-----------------|-----------------|
| 1   | Station 1     | S401     | Pumper       | 2016       | 15-years        | 2031            |
| 2   | Station 1     | R401     | Rescue       | 2003       | 18-years        | 2021            |
| 3   | Station 1     | T401     | Tanker       | 2020       | 16-years        | 2036            |
| 4   | Station 1     | A401     | Aerial       | 2006       | 20-years        | 2026            |
| 5   | Station 1     | P401     | Pumper       | 2010       | 15-years        | 2025            |
| 6   | Station 2     | P402     | Pumper       | 2010       | 15-years        | 2025            |
| 7   | Station 2     | T402     | Tanker       | 2020       | 16-years        | 2036            |
| 8   | Station 3     | P403     | Pumper       | 2021       | 15-years        | 2036            |
| 9   | Station 3     | A403     | Aerial       | 2013       | 20 years        | 2033            |
| 10  | Station 3     | AL403    | Rescue       | 2005       | 18-years        | 2023            |
| 11  | Station 3     | T403     | Tanker       | 2020       | 16-years        | 2036            |
| 12  | Station 4     | P404     | Pumper       | 2021       | 15-years        | 2036            |
| 13  | Station 4     | P450     | Pumper-Spare | 2015       | 15-years        | 2030            |
| 14  | Station 4     | P451     | Tanker-Spare | 2010       | 16-years        | 2026            |
| 15  | Station 5     | A405     | Aerial       | 2020       | 20-years        | 2040            |
| 16  | Station 5     | R405     | Rescue       | 2007       | 18-years        | 2025            |

### **3.9.3 Ancillary Equipment**

Equipment needed for field response operations, such as vehicle extrication tools, hand tools and blowers, etc. are current and appropriate for the needs of MFRS. The ancillary equipment is designed and maintained to meet the department's current core service, goals, and objectives. MFRS Equipment has various replacement cycles depending on equipment type. As the response needs change or grow, additional equipment to match the service must be considered.

### **3.9.4 Personal Protective Equipment**

MFRS personnel are supplied with NFPA, NIOSH and CSA approved personal protective equipment (PPE), including turnout (bunker gear), gloves, helmets, boots and any specialized gear for specific rescue and EMS operations. MFRS utilizes a third-party vendor for cleaning and maintenance programs in compliance with NFPA 1971: Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting for the health and safety of their firefighters.

The PPE provided is current, appropriate, and designed to meet the department's safety goals and objectives.

### **3.9.5 Specialized Operations Equipment**

Effective and efficient response to an incident requires equipment designed for a specific purpose. MFRS responds with specialized equipment to incidents involving motor vehicles and ice and water rescue. This equipment is typically kept on the apparatus or in-hall in anticipation of the known risks in each response zone.

MFRS equipment currently meets the goals and objectives of the department. There were concerns expressed through the surveys that there was a shortage of equipment to completely outfit the spare/backup apparatus.

## SECTION 4

### RESPONSE PERFORMANCE AND CAPABILITIES

#### 4.1 Response Performance

---

MFRS provides emergency response across a geographically diverse municipality that includes densely populated urban neighbourhoods, growing suburban corridors, and expansive rural and agricultural lands. This variability in development patterns, road infrastructure, and risk types requires MFRS to adopt a differentiated approach to response performance standards—one that is realistic, risk-informed, and service-level appropriate across all zones.

Response performance is commonly measured in three key phases: dispatch handling time, crew assembly time, and travel time to the incident location. The ability to meet performance benchmarks is influenced by multiple local factors including station proximity, traffic conditions, road connectivity, staffing model, apparatus availability, and water supply infrastructure. Recognizing that a one-size-fits-all model does not reflect the operational realities in Milton, MFRS must consider separate urban and rural performance standards that align with industry best practices and the unique risks of each service area.

This section provides an overview of relevant industry standards and provincial legislation related to fire department response performance in Ontario. This section also includes a detailed analysis of the trends in incident types occurring within MFRS' response performance.

##### 4.1.1 Urban Response Performance Standards

In Milton's urban service areas, MFRS applies a high-performance response model based on rapid turnout and travel benchmarks that reflect the dense infrastructure and availability of firefighting resources. These areas typically benefit from full-time staffing, strategically located fire stations, interconnected road networks, and comprehensive municipal hydrant systems. Urban response standards prioritize fast intervention for incidents where time is critical to life safety, such as structure fires, medical emergencies, and alarm activations in high-occupancy or high-rise buildings.

MFRS should aim to deploy a full initial response to high-risk incidents within established target times, while also tracking performance at the 90th percentile to ensure consistent service delivery. Travel time expectations in these areas are within 5-6 minutes from station to scene, with additional focus placed on maintaining effective response force (ERF) assembly, particularly in multi-unit incidents. Continued monitoring of turnout and travel times, as well as enhancements to dispatch and pre-fire planning systems, support a robust and efficient response model in urban environments.

Suggested Urban Performance Response Standards, include:

- Alarm Processing time: 64 seconds (time the phone is answered until the tones are activated)- 90th percentile.
- Turnout Time: 80 seconds (time tones are set to the time truck radios on the air) - 90th percentile.
- Travel time: 300 seconds (time truck radios on air to the time initial truck arrives on scene) - 90th percentile.
- Total Response time (initial): 444 seconds (time the phone is answered until the time the initial truck arrives on scene) - 90th percentile.
- Effective Response Force: 624 seconds (time phone is answered until the time 3 apparatus are on scene) - 90th percentile.

#### **4.1.2 Rural Response Performance Standards**

Rural areas within Milton present distinct challenges that impact response performance, including greater distances between stations and incidents, limited road access, and reduced municipal water infrastructure. In recognition of these conditions, MFRS has developed a rural response standard that emphasizes flexibility, risk-based prioritization, and staged deployment strategies. Rather than matching urban performance timelines, rural response models focus on achieving effective and reliable intervention while balancing operational feasibility.

All stations assigned to rural coverage are equipped with specialized apparatus including tankers, and portable water systems to support operations in areas without hydrants. Paid-on-call firefighters are also integrated into rural deployment to support incident and concurrent call coverage. MFRS response planning in rural zones should include pre-fire planning, critical infrastructure mapping, and prioritization of life safety, with performance expectations adjusted to reflect the realities of these operating environments. These tailored standards help ensure equitable service delivery across all parts of the municipality while supporting public confidence and firefighter safety.

Suggest Rural Response Performance Standards, include:

- Alarm Processing time: 64 seconds (time the phone is answered until the tones are activated)- 90th percentile.
- Turnout Time (FT staff): 80 seconds (time tones are set to the time truck radios on the air) - 90th percentile.
- Turnout Time (PT Staff): 720 seconds (12 minutes) – 90<sup>th</sup> percentile
- Travel time: 720 seconds (time truck radios on air to the time initial truck arrives on scene) - 90th percentile.
- Total Response time (FT staff): 864 seconds (time the phone is answered until the time the initial truck arrives on scene) - 90th percentile.
- Total Response Time (PT staff) 1440 seconds (24 minutes) – 90<sup>th</sup> percentile
- Effective Response Force: 1,080 seconds (time phone is answered until the time 3 apparatus are on scene) - 90th percentile.

## 4.2 Industry Leading Practices and Standards

### 4.2.1 National Fire Protection Association (NFPA) Standards

The most widely accepted standards for the fire service are developed by the National Fire Protection Association (NFPA). Established in 1986, "the NFPA is a self-funded non-profit organization devoted to eliminating death, injury, property, and economic loss due to fire, electrical, and related hazards" (NFPA, 2021)." The NFPA has developed over 300 consensus-based codes and standards designed to improve fire department effectiveness and firefighter safety. NFPA research is applied in establishing industry benchmarks for fire department operations, training, and equipment. Many of these standards form the basis of and are referenced throughout the Ontario Fire Protection and Prevention Act, 1997, and related firefighting regulations and guidelines under the Ontario Occupational Health and Safety Act, R.S.O. 1990.

The NFPA has conducted considerable research in developing standards that reflect the primary value of life-safety in emergency response for responders and victims. The standard addressing fire department operational performance and service levels is NFPA 1710: Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments. This standard provides the framework for fire department emergency response performance analysis, which will be discussed further in this section. Additionally, NFPA 1201: Standard for Providing Emergency Services to the Public outlines several practices for establishing and managing an effective and efficient fire service, including governance, organizational structure, planning, and resource deployment.

## 4.2.2 Ontario Regulatory Framework Regarding Community Fire Safety

Ontario municipalities are required to provide a public education and fire safety program, but they may or may not elect to do so by establishing a fire department. The *Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4* states the following:

*“Municipal responsibilities*

*2(1) Every municipality shall,*

*(a) establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and*

*(b) provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.*

*Methods of providing services*

*(2) In discharging its responsibilities under subsection (1), a municipality shall,*

*(a) appoint a community fire safety officer or a community fire safety team; or*

*(b) establish a fire department.”*

If a fire department is established, municipalities are required to meet the numerous requirements regarding fire department equipment, training and certification standards identified in the regulations of this act and the *Occupational Health and Safety Act, R.S.O. 1990*. Many of these requirements are based on NFPA standards. However, municipalities are not required to provide specific services or meet the service level standards identified in NFPA 1710. The response time goals and the number of required firefighters to respond, as identified in NFPA 1710, are considered industry-leading practices but are not mandated.

Establishing service types and associated service levels is the responsibility of the authority having jurisdiction (AHJ). For most municipalities, the AHJ is the municipal council. Formalizing service types and service levels in policy is also considered a best practice. Fire department service types and service levels are typically established to mitigate identified community risks. However, service levels should also be achievable and affordable.

The Centre for Public Safety Excellence and the International Association of Fire Chiefs developed a "standard of cover" framework to support the process of establishing fire department service types and service levels. It is a comprehensive process for identifying community risks, assessing fire department capability, and establishing appropriate emergency response service levels to mitigate community risks. The outcome of this process results in a standard of cover policy, including service level recommendations for approval by the AHJ.



## 4.3 Incident Types and Frequency Analysis

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Fire and rescue services typically have access to large amounts of incident and response data. Incident data can be used and reported for several purposes. Incident type and frequency data are used to analyze department activity levels and identify trends in demand for fire services. The breadth of services provided by modern fire services is often surprising. Fire departments have evolved from responding primarily to fires to responding to a broad range of public service and emergency incidents, becoming a critical component of a community's social safety net.

Incidents are commonly evaluated at two different times during an emergency. First, the 911 call taker evaluates the information provided by the caller to categorize the incident to be dispatched. This category can determine the initial number of resources assigned to the incident, including firefighters, apparatus, and automatic aid from neighboring fire stations. A second categorization occurs after the incident is resolved, based on what was occurring on the scene or the actions taken. In Ontario, Incident Response Types must be reported through the provincial Standard Incident Reporting (SIR) system using predetermined codes and reporting procedures. These SIR Response Types are further grouped into common descriptors and subtotaled to provide aggregated fire data provincially. These types and categories are particularly useful when examining compliance with NFPA standards, the total number of resources on scene, and community risks.

Five years of SIR response data provided by the MFRS was analyzed. The data includes all incidents from January 2020 to December 2024. Incident data is aggregated into broader categories and more specific incident categories. For example, all types of fire incidents, including structural, vehicle, and non-structural/garbage fires, are combined into a single category. This differentiation is made to provide varying levels of information, as stakeholder reporting, and information needs vary depending on their level of interest in MFRS activities.

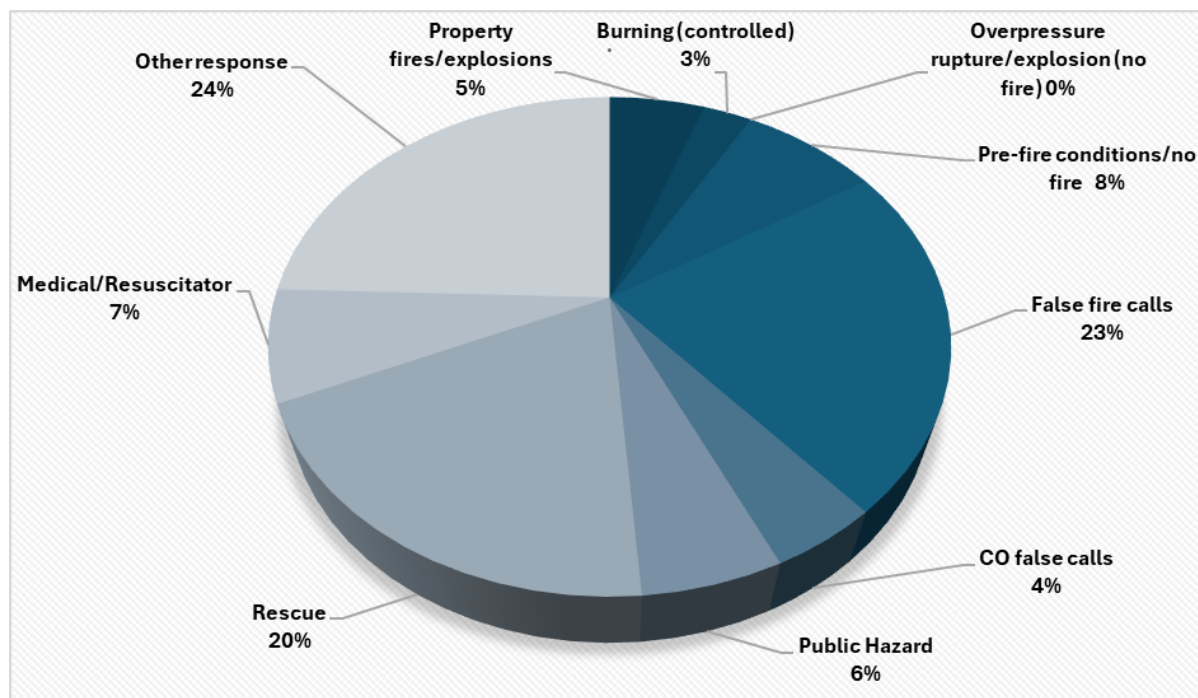
### 4.3.1 Unique Incidents

Table 30 identifies all unique incidents that occurred within the municipal boundary, categorized by their SIR Response Type. This analysis provides an overview of the types of emergencies that the fire department responded to, along with the reported incident types and their respective frequencies. It excludes mutual aid responses which fall outside the Milton municipal boundary.

Table 30: Unique Response Types within Milton (2019 to 2023)

| Incident Subcategory                     | 2020         | 2021         | 2022         | 2023         | 2024         | Total        | Total %     |
|------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| Property fires/explosions                | 113          | 122          | 133          | 130          | 111          | 609          | 5.42%       |
| Burning (controlled)                     | 85           | 57           | 46           | 65           | 58           | 311          | 2.77%       |
| Overpressure rupture/explosion (no fire) | 0            | 1            | 0            | 1            | 2            | 4            | 0.04%       |
| Pre-fire conditions/no fire              | 81           | 88           | 182          | 224          | 296          | 871          | 7.76%       |
| False fire calls                         | 554          | 630          | 587          | 458          | 324          | 2553         | 22.74%      |
| CO false calls                           | 116          | 137          | 88           | 72           | 81           | 494          | 4.40%       |
| Public Hazard                            | 132          | 120          | 163          | 92           | 125          | 632          | 5.63%       |
| Rescue                                   | 309          | 356          | 510          | 505          | 514          | 2194         | 19.54%      |
| Medical/Resuscitator                     | 80           | 121          | 120          | 174          | 318          | 813          | 7.24%       |
| Other response                           | 339          | 306          | 472          | 661          | 967          | 2745         | 24.45%      |
| <b>Total</b>                             | <b>1,809</b> | <b>1,938</b> | <b>2,301</b> | <b>2,382</b> | <b>2,796</b> | <b>11226</b> | <b>100%</b> |

Figure 9: Percent of Incidents by Subcategory (2020 to 2024)



### 4.3.2 Unique Incidents by Sub-Category

Table 31 identifies all unique incidents occurring within the municipal boundary listed by sub-category. This analysis provides a specific overview of the types of emergencies that the fire department was dispatched to and their respective frequency.

Table 31: Incidents by sub-categories (2020-2024)

| Call Type                                        | 2020         | 2021         | 2022         | 2023         | 2024         | Total         | Total %       |
|--------------------------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|
| A. Structure Fire                                | 33           | 33           | 45           | 39           | 22           | 172           | 1.53%         |
| B. Other Fire                                    | 4            | 7            | 3            | 5            | 1            | 20            | 0.18%         |
| C. Vehicle Fire                                  | 29           | 24           | 32           | 33           | 45           | 163           | 1.45%         |
| D. No Loss Fire                                  | 7            | 8            | 9            | 6            | 10           | 40            | 0.36%         |
| E. No Loss Fire (Excluded)                       | 40           | 50           | 44           | 47           | 33           | 214           | 1.91%         |
| F. Non-Fire Call                                 | 1,696        | 1,816        | 2,168        | 2,252        | 2,685        | 10,617        | 94.58%        |
| <b>Total</b>                                     | <b>1,809</b> | <b>1,938</b> | <b>2,301</b> | <b>2,382</b> | <b>2,796</b> | <b>11,226</b> | <b>100%</b>   |
| <b>Non-Fire Call Breakdown</b>                   |              |              |              |              |              |               |               |
| <b>Burning Controlled</b>                        | <b>85</b>    | <b>57</b>    | <b>46</b>    | <b>65</b>    | <b>58</b>    | <b>311</b>    | <b>2.77%</b>  |
| Authorized controlled burning complaint          | 31           | 20           | 17           | 21           | 12           | 101           | 32.48%        |
| Open Air Burning/unauthorized controlled burning | 54           | 37           | 29           | 44           | 46           | 210           | 67.52%        |
| <b>CO False Fire Calls</b>                       | <b>116</b>   | <b>137</b>   | <b>88</b>    | <b>72</b>    | <b>81</b>    | <b>494</b>    | <b>4.40%</b>  |
| CO false alarm - equipment malfunction           | 88           | 97           | 56           | 48           | 52           | 341           | 69.03%        |
| CO false alarm - perceived emergency             | 28           | 40           | 32           | 24           | 29           | 153           | 30.97%        |
| <b>False Fire Calls</b>                          | <b>554</b>   | <b>630</b>   | <b>587</b>   | <b>458</b>   | <b>324</b>   | <b>2553</b>   | <b>22.74%</b> |
| Alarm System Equipment Accidental Activation     | 161          | 163          | 130          | 106          | 59           | 619           | 24.25%        |
| Alarm System Equipment Malfunction               | 197          | 201          | 204          | 172          | 132          | 906           | 35.49%        |
| Human - Accidental                               | 41           | 82           | 90           | 72           | 57           | 342           | 13.40%        |
| Human - Malicious                                | 10           | 14           | 42           | 22           | 11           | 99            | 3.88%         |
| Human - Perceived Emergency                      | 105          | 100          | 79           | 30           | 17           | 331           | 12.97%        |
| Other False Fire Call                            | 40           | 70           | 42           | 56           | 48           | 256           | 10.03%        |

### 4.3.3 Unique Incidents – Medical/Resuscitator Calls

Table 32 identifies all medical/resuscitator incidents occurring within the municipal boundary listed by sub-category. This analysis provides a specific overview of the types of medical/resuscitator emergencies that the fire department was dispatched to and their respective frequency.

Table 32: Non-Fire Call Breakdown by Sub-Category - Medical (2020 to 2024)

| Call Type                                    | 2020 | 2021 | 2022 | 2023 | 2024 | Total | Total %      |
|----------------------------------------------|------|------|------|------|------|-------|--------------|
| Medical/Resuscitator Call                    | 80   | 121  | 120  | 174  | 318  | 813   | <b>7.24%</b> |
| Accident or illness                          | 3    | 11   | 6    | 11   | 53   | 84    | 10.33%       |
| Alcohol or Drug Related                      | 3    | 2    | 1    | 8    | 13   | 27    | 3.32%        |
| Asphyxia, respiratory Condition              | 3    | 0    | 0    | 2    | 6    | 11    | 1.35%        |
| Burns                                        | 1    | 0    | 2    | 3    | 3    | 9     | 1.11%        |
| Chest Pains or Suspected Heart Attack        | 1    | 0    | 2    | 2    | 4    | 9     | 1.11%        |
| CPR administered                             | 21   | 25   | 17   | 33   | 24   | 120   | 14.76%       |
| Defibrillator Used                           | 1    | 1    | 3    | 2    | 4    | 11    | 1.35%        |
| Electric Shock                               | 0    | 1    | 0    | 0    | 1    | 2     | 0.25%        |
| Medical aid not required on arrival          | 3    | 7    | 10   | 24   | 67   | 111   | 13.65%       |
| Medical Resuscitator call false alarm        | 2    | 3    | 1    | 2    | 4    | 12    | 1.48%        |
| Medical Resuscitator call no action required | 15   | 20   | 26   | 32   | 49   | 142   | 17.47%       |
| Other Medical Resuscitator Call              | 7    | 11   | 12   | 28   | 55   | 113   | 13.90%       |
| Oxygen Administered                          | 1    | 1    | 3    | 3    | 8    | 16    | 1.97%        |
| Seizure                                      | 1    | 1    | 0    | 2    | 1    | 5     | 0.62%        |
| Traumatic Shock                              | 0    | 0    | 1    | 0    | 1    | 2     | 0.25%        |
| Vital Signs Absent, DOA                      | 18   | 38   | 36   | 22   | 25   | 139   | 17.10%       |

#### 4.3.4 Unique Incidents – Other Response/Overpressure & Rupture Calls

Table 33 identifies all other response incidents occurring within the municipal boundary listed by sub-category. This analysis provides a specific overview of the types of other emergencies and overpressure/rupture incidents that the fire department was dispatched to and their respective frequency.

Table 33: Non-Fire Call Breakdown by Sub-Category – Other Response/Overpressure (2020 to 2024)

| Call Type                                               | 2020 | 2021 | 2022 | 2023 | 2024 | Total | Total %       |
|---------------------------------------------------------|------|------|------|------|------|-------|---------------|
| Other Response                                          | 339  | 306  | 472  | 661  | 967  | 2745  | <b>24.45%</b> |
| Assistance not required by other agencies               | 73   | 75   | 83   | 90   | 113  | 434   | 15.81%        |
| Assist other agencies                                   | 21   | 33   | 16   | 27   | 44   | 141   | 5.14%         |
| Assistance to Police                                    | 14   | 13   | 16   | 16   | 14   | 73    | 2.66%         |
| Assisting other Fire Department (Automatic Aid)         | 3    | 2    | 1    | 0    | 0    | 6     | 0.22%         |
| Assisting other Fire Department (Mutual Aid)            | 0    | 4    | 2    | 0    | 2    | 8     | 0.29%         |
| Assisting other Fire Department (Other)                 | 0    | 1    | 0    | 0    | 1    | 2     | 0.07%         |
| Cancelled on Route                                      | 42   | 30   | 42   | 27   | 57   | 198   | 7.21%         |
| Illegal Grow Operation (no fire)                        | 0    | 0    | 0    | 1    | 0    | 1     | 0.04%         |
| Incident Not Found                                      | 31   | 22   | 33   | 26   | 50   | 162   | 5.89%         |
| Other Public Service                                    | 91   | 62   | 216  | 378  | 511  | 1258  | 45.71%        |
| Other Response                                          | 64   | 64   | 63   | 96   | 175  | 462   | 16.79%        |
| Overpressure Rupture/explosion (no fire)                | 0    | 1    | 0    | 1    | 2    | 4     | <b>0.04%</b>  |
| Overpressure Rupture (no fire-steam boilers, hot water) | 0    | 1    | 0    | 1    | 1    | 3     | 75.0%         |
| Overpressure-gas pipe (no fire)                         | 0    | 0    | 0    | 0    | 1    | 1     | 25.0%         |

### 4.3.5 Unique Incidents – Pre-Fire Conditions/Public Hazard Calls

Table 34 identifies all pre-fire conditions and public hazard incidents occurring within the municipal boundary listed by sub-category. This analysis provides a specific overview of the types of pre-fire conditions and public hazard emergencies that the fire department was dispatched to and their respective frequency.

*Table 34: Non-Fire Call Breakdown by Sub-Category – Pre-Fire Condition/Public Hazard (2020 to 2024)*

| Call Type                               | 2020 | 2021 | 2022 | 2023 | 2024 | Total | Total %      |
|-----------------------------------------|------|------|------|------|------|-------|--------------|
| Pre-Fire Conditions (no fire)           | 81   | 88   | 182  | 224  | 296  | 871   | <b>7.76%</b> |
| Fireworks (no fire)                     | 8    | 0    | 2    | 0    | 0    | 10    | 1.15%        |
| Lightning (no fire)                     | 1    | 0    | 1    | 1    | 0    | 3     | 0.34%        |
| Other (cooking, toasting, smoke, steam) | 18   | 25   | 92   | 150  | 200  | 485   | 55.68%       |
| Other pre-fire conditions (no fire)     | 16   | 27   | 35   | 28   | 31   | 137   | 15.73%       |
| Overheat (no fire- mechanical devices)  | 23   | 20   | 30   | 16   | 43   | 132   | 15.15%       |
| Pot on Stove                            | 15   | 16   | 22   | 29   | 22   | 104   | 11.94%       |
| Public Hazard                           | 132  | 120  | 163  | 92   | 125  | 632   | <b>5.63%</b> |
| CO incident, CO present                 | 47   | 33   | 61   | 42   | 54   | 237   | 37.68%       |
| Gas Leak - Miscellaneous                | 1    | 0    | 0    | 0    | 2    | 3     | 0.48%        |
| Gas Leak - Natural Gas                  | 15   | 17   | 19   | 11   | 9    | 71    | 11.23%       |
| Gas Leak - Propane                      | 2    | 3    | 1    | 1    | 0    | 7     | 1.11%        |
| Gas Leak - Refrigeration                | 0    | 0    | 0    | 1    | 1    | 2     | 0.32%        |
| Other Public Hazard                     | 9    | 8    | 14   | 13   | 12   | 56    | 8.86%        |
| Power Lines Down, Arcing                | 24   | 24   | 23   | 7    | 14   | 92    | 14.56%       |
| Public Hazard call false alarm          | 10   | 6    | 6    | 1    | 3    | 26    | 4.11%        |
| Public Hazard no action required        | 8    | 3    | 4    | 6    | 11   | 32    | 5.06%        |
| Ruptured Water, Steam Pipe              | 8    | 17   | 25   | 5    | 10   | 65    | 10.28%       |
| Spill- Gasoline or Fuel                 | 6    | 7    | 7    | 3    | 5    | 28    | 4.43%        |
| Spill - Miscellaneous                   | 2    | 2    | 3    | 1    | 4    | 12    | 1.90%        |
| Spill - Toxic Chemical                  | 0    | 0    | 0    | 1    | 0    | 1     | 0.16%        |

### 4.3.6 Unique Incidents – Rescue Calls

Table 35 identifies all rescue incidents occurring within the municipal boundary listed by sub-category. This analysis provides a specific overview of the types of rescue emergencies that the fire department was dispatched to and their respective frequency.

Table 35: Non-Fire Call Breakdown by Sub-Category - Rescue (2020 to 2024)

| Call Type                      | 2020 | 2021 | 2022 | 2023 | 2024 | Total | Total % |
|--------------------------------|------|------|------|------|------|-------|---------|
| Rescue                         | 309  | 356  | 510  | 505  | 514  | 2194  | 19.54%  |
| Animal Rescue                  | 2    | 3    | 3    | 0    | 2    | 10    | 0.46%   |
| Commercial Industrial Accident | 0    | 0    | 0    | 0    | 4    | 4     | 0.18%   |
| High Angle Rescue              | 0    | 1    | 3    | 2    | 0    | 6     | 0.27%   |
| Home/Residential Accident      | 1    | 3    | 2    | 1    | 2    | 9     | 0.41%   |
| Low Angle Rescue               | 3    | 2    | 4    | 0    | 1    | 10    | 0.46%   |
| Other Rescue                   | 0    | 1    | 6    | 6    | 5    | 18    | 0.82%   |
| Persons Trapped in Elevator    | 11   | 13   | 12   | 13   | 17   | 66    | 3.01%   |
| Rescue False Alarm             | 0    | 1    | 0    | 1    | 0    | 2     | 0.09%   |
| Rescue No Action Required      | 5    | 11   | 10   | 3    | 2    | 31    | 1.41%   |
| Vehicle Collision              | 269  | 312  | 452  | 461  | 461  | 1955  | 89.11%  |
| Vehicle Extrication            | 16   | 8    | 18   | 16   | 18   | 76    | 3.46%   |
| Water Ice Rescue               | 1    | 0    | 0    | 0    | 0    | 1     | 0.05%   |
| Water Rescue                   | 1    | 1    | 0    | 2    | 2    | 6     | 0.27%   |

### 4.3.7 Incident Types Analysis

The following observations regarding unique incident types within Milton were noted.

#### Call Volume Trend:

- There is a consistent year-over-year increase in total incidents, with a 55.7% growth from 2020 (1,809) to 2024 (2,816).

**Top 3 Incident Types:**

- Other response (24.4%) – largest single category, nearly 1 in 4 calls.
- False fire calls (22.7%) – high volume, suggesting need for continued public education or alarm system monitoring.
- Rescue (19.5%) – steady increase, may reflect urban growth or aging demographics.

**Emerging Trends:**

- Pre-fire conditions/no fire jumped significantly between 2021 (88) and 2024 (296), a 236% increase, potentially reflecting better detection/reporting or changes in risk.
- Medical/resuscitator calls more than tripled from 2020 to 2024, showing growing integration with medical response or changing community health needs.

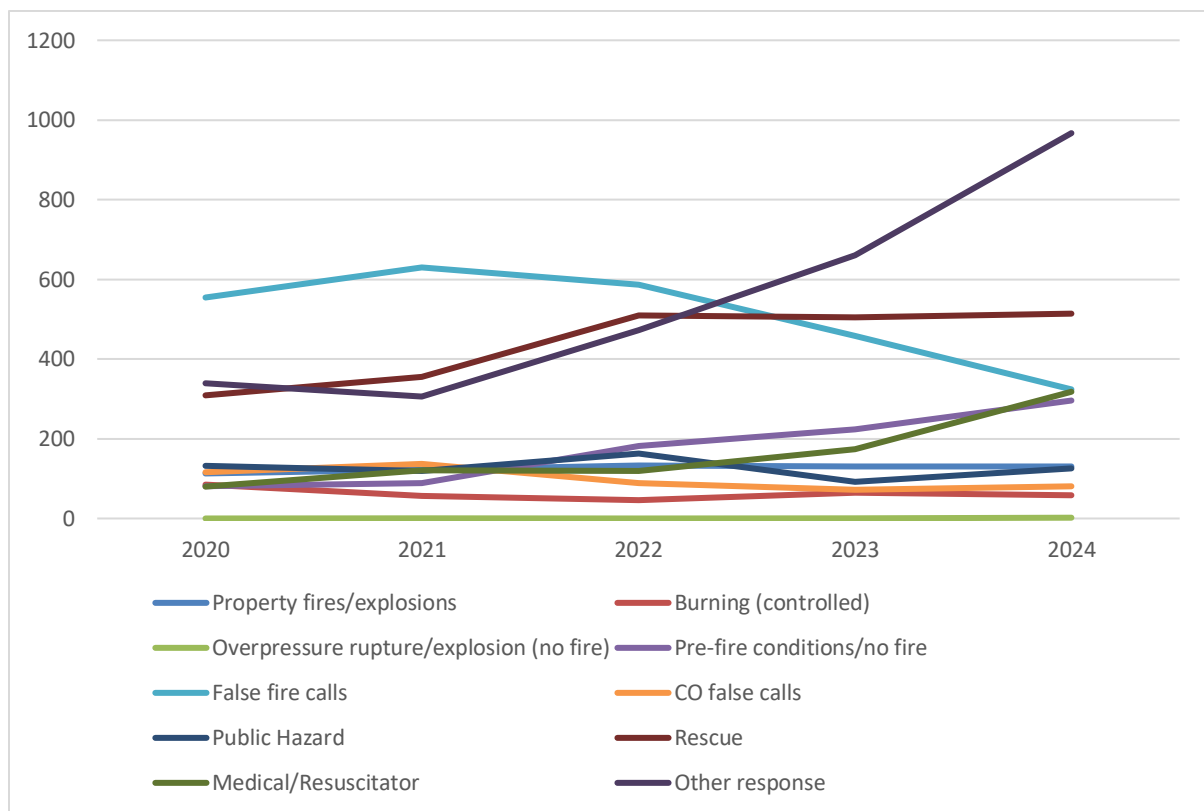
**Key Observations:**

- False Fire Calls totaled 2,553 incidents, with the largest contributors being alarm equipment malfunctions (906 calls, 35.5%) and accidental activations (619 calls, 24.2%), while human-related causes, including accidental (342), perceived emergency (331), and malicious (99), accounted for over 30% combined, emphasizing the need for targeted public education and improved alarm maintenance practices.
- Rescue-related incidents totaled 2,194 calls, with vehicle collisions (89%) as the dominant subcategory, followed by vehicle extrications (3.5%) and elevator rescues (3%), while all other specialized rescues (e.g., water, high angle, industrial) comprised less than 5% collectively.
- Other Response and Overpressure incidents totaled 2,753 calls, with the majority stemming from public service calls (1,258 calls), non-required assistance (434), and cancelled enroute (198), while actual overpressure events were extremely rare (8 total), indicating most calls were non-emergency support or low-acuity service demands.
- Pre-Fire Conditions and Public Hazard incidents totaled 1,503 calls, with the leading subcategories being cooking-related smoke/steam (485 calls), CO presence (237 calls), and mechanical overheating (132 calls), while gas leaks, power line issues, and pot-on-stove incidents made up the remainder, highlighting a strong need for public education and proactive hazard mitigation.



- Medical/Resuscitator incidents totaled 813 calls, with key subcategories including CPR administered (120 calls), DOA/Vital Signs Absent (139), and a rising number of non-actionable calls (265 combined), indicating a growing medical response role for the fire service, often involving high-acuity cases, and increasing instances where no intervention was required.

Figure 10: Unique Incidents by Incident Type (2020 to 2024)



## 4.4 Incident Frequency Analysis

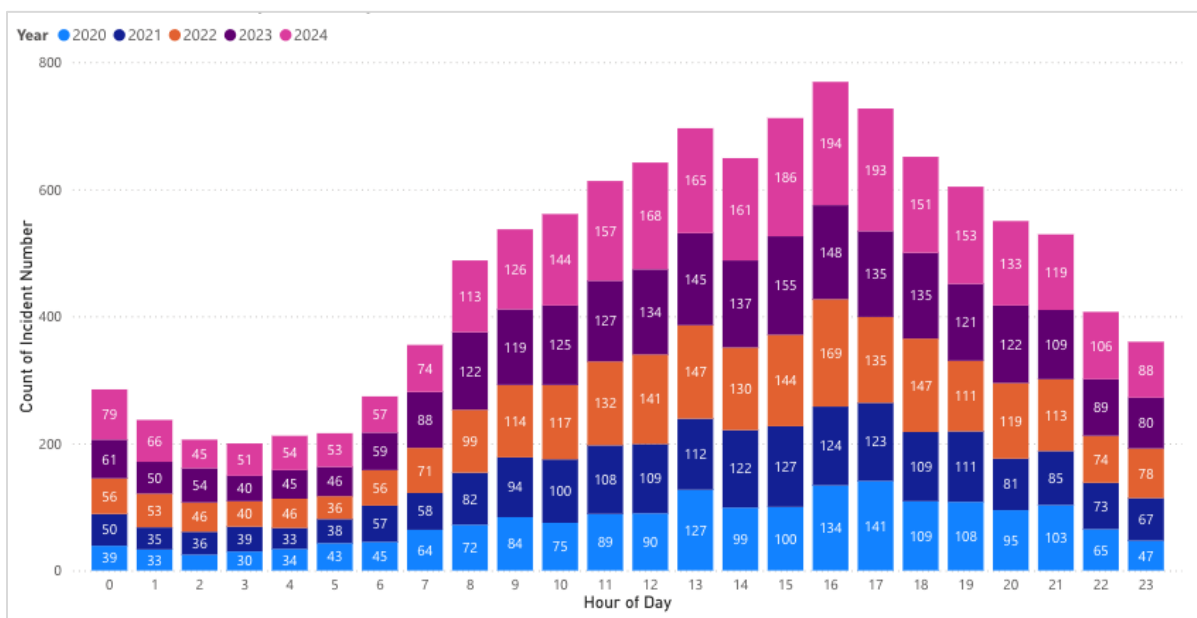
Analyzing the frequency of fire incidents by time of day and day of the week is essential for optimizing operational readiness and improving public safety outcomes. Understanding when incidents most commonly occur enables fire services to strategically allocate resources and staff to meet demand. For instance, identifying peak periods, such as evenings or weekends, allows departments to adjust shift schedules, ensure adequate apparatus availability, and reduce response times. This analysis also supports data-driven decisions around pre-positioning resources in anticipation of high-call volumes, enhancing the department's ability to respond quickly and effectively.

Beyond operations, temporal analysis of fire incidents informs prevention and education strategies. Recognizing patterns, such as increased residential fires during early morning cooking hours or late-night fires linked to smoking or alcohol use, enables targeted outreach efforts tailored to specific times and behaviors. It also contributes to predictive risk modeling, helping identify periods of elevated danger and proactively reduce fire occurrence. Moreover, data on timing trends can be used to justify budget requests, inform policy changes, and guide long-term planning, making it a critical component of both reactive and preventative fire service strategies.

#### 4.4.1 Incidents by Time of Day

The time incidents occur is useful in identifying periods of peak and lower demand for services. Typically, demand for emergency services is lowest in the early hours of the morning. The horizontal axis in Figure 11 begins with 0 hours (12 a.m. – 1 a.m.) and ends at 23 hours (11 p.m. to 12 p.m.).

Figure 11: Incidents by Time of Day (2020 to 2024)



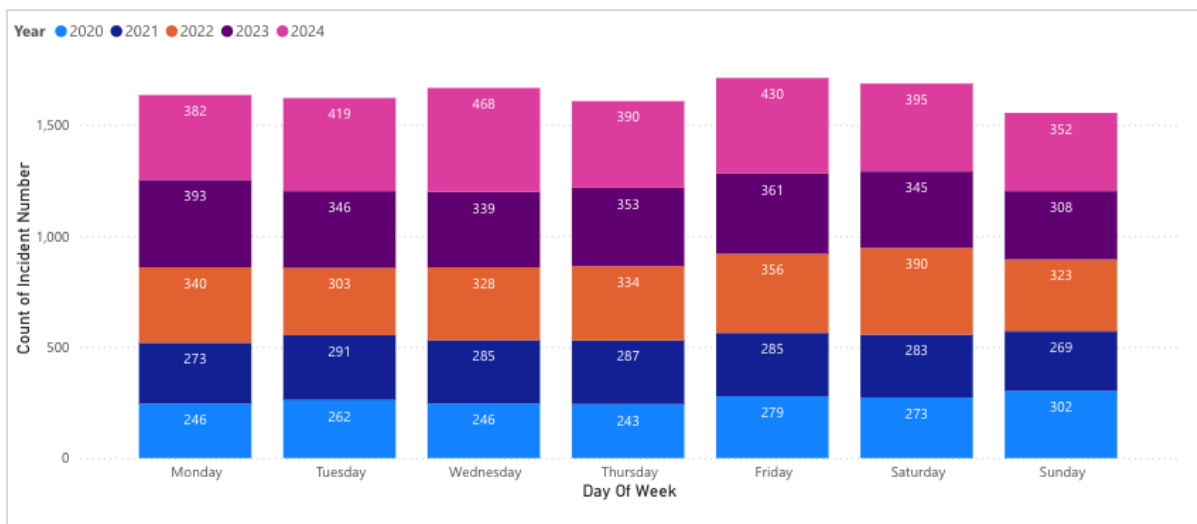
The following observations regarding the time incidents occurred were noted:

- Incident volume begins to significantly increase from 07:00, with a sharp rise from 08:00 to 12:00, suggesting increased activity as the community becomes more active during work and school hours.
- The busiest period for incidents is between 12:00 (noon) and 18:00, peaking at 16:00, with the highest overall total count.
- The quietest time for incidents is between 01:00 and 06:00.
- The number of incidents plateaued between 1 p.m. and 5 p.m.

## 4.4.2 Incidents by Day of the Week

Analyzing the frequency of incidents on different days can reveal patterns that may indicate periods of increased demand or potential strain on MFRS. Figure 12 presents the incident data from 2020 to 2024.

Figure 12: Incidents by Day of the Week (2020 to 2024)



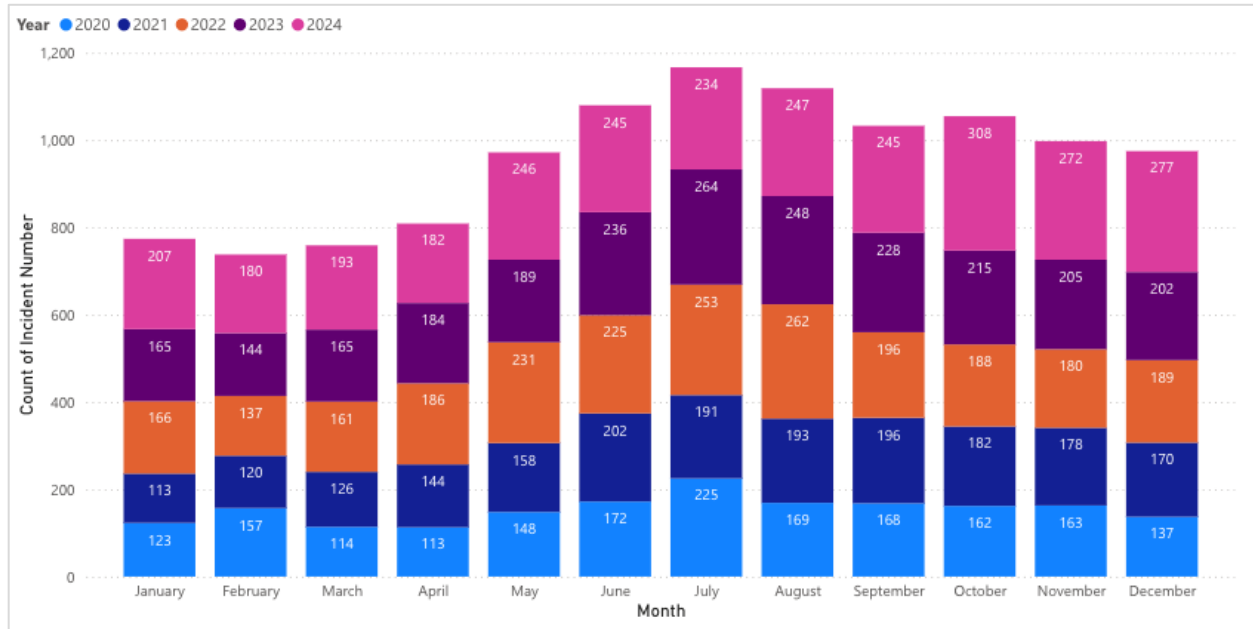
The following observations were noted in service demands for different days of the week:

- Incident counts are balanced Monday through Friday, with only slight variations, implying a steady operational demand throughout the workweek.
- Friday has the highest total incident count, consistently strong across all five years. This may reflect a combination of end-of-week activity, increased traffic, social events, and workplace incidents.
- Sunday shows the lowest incident volume, particularly in 2021 and 2023.

## 4.4.3 Incidents by Month of the Year

Understanding which months see higher or lower incident volumes can help the MFRS optimize resource allocation and preparedness. Figure 13 presents the incident data from 2020 to 2024.

Figure 13: Incidents by Month of the Year (2020 to 2024)



The following observations were noted in service demands for different months of the year:

- July and August consistently show the highest number of incidents, with totals surpassing 1,000 in 2023 and 2024. This reflects increased outdoor activities, travel, and higher risk of fire-related or medical incidents during the summer months.
- February and March have the lowest incident volumes, with total monthly counts under 750. These months typically involve fewer outdoor activities and more consistent daily routines, reducing incident triggers.
- October through December remains moderately active, with counts similar to, or higher than, early spring months, influenced by:
  - Holiday-related incidents.
  - Heating-related calls.
  - Slippery weather conditions.

## 4.5 Response Performance

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The following sections provide an analysis of the response performance of MFRS. The response performance goals applied in the analysis are identified in the NFPA 1710 standard. Five years of consistent response data provided by MFRS were analyzed, covering all incidents from January 2020 to December 2024. Incident data is aggregated into broader categories and more specific incident categories. For example, all types of fire incidents, including structural, vehicle, and non-structural/garbage fires, are combined into a single category. This differentiation is made to provide varying levels of information, as stakeholder reporting, and information needs vary depending on their level of interest in MFRS activities.

### 4.5.1 Intervention Time

Total intervention time is the elapsed time between the incident occurring and when incident management begins. This includes the discovery of the incident and the initiation of the emergency response system, typically by calling 911. From a community perspective, this time segment can be partially managed by implementing cyclical life-safety system inspections and promoting residential fire alarms and sprinkler systems.

Once the 911 call is made, the emergency response system is engaged to manage the incident and minimize its impact. Simplified, the system is composed of an emergency dispatching center and the first responding agency. Although many of the requests for service may not require urgent intervention, when it does, the main purpose of this system is to respond and manage the incident as quickly and safely as possible. As a result, the time taken to gather relevant caller and incident information (alarm processing time), notify first responders, prepare them for response (assembly time), and drive to the incident (travel time) are all critical elements of an effective response. These time segments are the focus of this section and are key indicators of total response time performance.

Total response time is the best indicator of how the entire system is functioning. It also reflects the experience of the person making the 911 call. System performance can be managed and improved by implementing best practices and supporting technologies. As a result, total response time performance should be monitored and reported to the authority having jurisdiction (AHJ) regularly. The causes of significant changes in response time performance should be identified and discussed with the AHJ.

Incident management time is variable and depends on the type of incident and the resources required to manage it safely. Fire department resource availability is determined by the concentration (how many and what types of resources there are in one station) and distribution (where those resources are located relative to the incident) of fire department equipment and firefighters. Resource requirements are based on community risks.

An adequately resourced response system should provide an effective response force (ERF) to safely manage commonly known risks as effectively and efficiently as possible. It is important to note that in rural response zones, travel times are inherently longer due to distance and limited road networks, while the overall call volume is typically lower than in urban and suburban areas. This creates a different service delivery dynamic, where longer travel times must be factored into planning, and response strategies may require adaptation to ensure that life safety and property conservation objectives are achieved.

Figure 14 provides an overview of the incident intervention timeline from NFPA 1710. The definitions and descriptions of the actions taken in each time segment are provided below. It should be noted that the continuum will see increased travel times for Rural areas of the municipality.

Figure 14: Incident Intervention Continuum (Urban Area)

| Notification                                            | Intervention Time        |                                       |             |                   |
|---------------------------------------------------------|--------------------------|---------------------------------------|-------------|-------------------|
| Incident Discovery and 911 Call                         | Alarm Processing         | Assembly / Chute Time                 | Travel Time | Set-up            |
| Time unknown<br>(Time varies with every incident)       | 64 Seconds               | 80 Seconds Fire<br>60 seconds medical | 240 Seconds | May vary by event |
| Time indirectly manageable                              | Time directly manageable |                                       |             |                   |
| <div><div></div><div>Time Values</div><div></div></div> |                          |                                       |             |                   |

**Discovery:** The time between the start of the emergency incident and when a person or an engineered system detects the incident.

**Emergency 911 Call:** The time taken to dial 911 and notify the 911 call center of the need for emergency services.

**Alarm Answering:** This time segment begins when the 911 call is dialed and ends when the call is answered by the 911 call center.

**Alarm Processing:** This time segment begins when the 911 call is answered and ends with the notification of firefighters. It is the time taken to extract the necessary information from the 911 caller to allow the proper response to be initiated.

**Assembly Time:** This time segment begins when dispatch notifies the firefighters and ends when the vehicle leaves the station for response. Time is required for firefighters to dress in proper personal protective equipment (PPE) and safely egress the station.

**Travel Time:** This time segment begins when an apparatus leaves the station or otherwise begins the response to the scene of the emergency and ends when the assigned vehicle arrives on scene and is a function of distance and the speed traveled.

**Total Response Time (Common Definition):** This time segment begins when the 911 call is answered and ends when the first apparatus capable of commencing incident management arrives.

**Total Response Time (NFPA 1710 Definition):** This time segment begins when the 911 call is answered and ends when the first apparatus capable of commencing incident management arrives and initiates action to control the incident. Identified as Intervention Time in Figure 14.

**Setup Time:** The time it takes (on-site) to evaluate the necessary actions, position the required resources, and commence the intervention. In the case of a fire, completing size-up, assigning the necessary tasks, and deploying resources can provide delays on the scene. A well-trained crew can minimize these delays while providing a safe, successful response.

#### 4.5.2 Performance Standards

Industry best practices for urban and suburban fire services have established performance benchmarks for emergency response that include alarm answering, dispatch processing, crew assembly (or chute time), and travel time. These benchmarks serve as a foundation for developing service level objectives and performance measurement for career-staffed fire departments. In addition to time-based targets, best practices also outline the number of personnel and apparatus required to safely and effectively manage various types of fire, rescue, and medical emergencies.

While industry benchmarks do not prescribe exact standards for total response times of the first arriving apparatus or the full alarm assignment, a commonly accepted interpretation aggregates target performance times for alarm handling, assembly, and travel. This results in an inferred goal of 6 minutes and 39 seconds for the arrival of the first fire suppression unit capable of initiating intervention, and 10 minutes and 39 seconds for the arrival of the full complement of resources needed to safely manage a working structure fire or equivalent emergency, both 90% of the time.

Table 36: Industry Performance Standards

| Time Segment                               | , Industry Benchmarks (90 <sup>th</sup> Percentile) |
|--------------------------------------------|-----------------------------------------------------|
| Alarm processing                           | 64 seconds                                          |
| Assembly                                   | 80 seconds                                          |
| Travel (first arriving)                    | 240 seconds (4 minutes)                             |
| Travel (full alarm)                        | 480 seconds (8 minutes)                             |
| First arriving engine with 4 firefighters  | 384 seconds (6 minutes, 39 seconds) *               |
| Full alarm assignment with 16 firefighters | 624 sec/90 <sup>th</sup> Percentile*                |

*\*These benchmarks are derived from the sum of the time segments and are widely used as inferred industry targets.*

These timeframes aim to minimize intervention time, which is defined as the elapsed time from when the fire department is notified of an emergency to when effective emergency operations begin at the scene. This is a critical metric in determining the success of a fire service's response capacity. Delays in intervention time may have significant consequences, including:

- Reduced survivability for individuals trapped in fire or medical emergencies.
- Increased property loss or structural damage.
- Higher insurance premiums for property owners.
- Stricter limitations on building design and fire protection requirements.
- Negative impacts on local economic development and business continuity.

In evaluating fire department performance, it is important to assess two core elements: initial response time (first unit on scene capable of initiating intervention) and effective response force (ERF) assembly time, which reflects the department's total capacity to manage larger or escalating incidents. These two metrics serve as key indicators of a department's operational readiness and overall system resilience. The following section analyzes the department's current ability to meet these benchmarks.



## 4.6 Emergency Response Performance Analysis

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The time segments identified in Section 4.6 are recorded by the dispatching service, capturing individual response timestamps throughout an incident. The timestamps are recorded by the dispatching agency and used to compile a complete history for all responding emergency vehicles to every incident.

Examples of typical incident timestamps include:

- Incident begins
- Station or firefighter notification
- Apparatus responding
- Apparatus arrived
- Loss stopped
- Leaving scene
- Returned to station

The response performance analysis for MFRS focuses on emergency responses from 2020 to 2024. The timestamps are used to calculate alarm processing time, assembly time, travel time, and total response time. Emergency response performance information can be used by the fire chief and senior administration for several purposes, including but not limited to:

- Monitoring response efficiency and effectiveness
- Reporting response performance to the community and elected officials
- Evaluating effectiveness and compliance with national and provincial codes
- Evaluating effectiveness and compliance with council policies and local bylaws
- Identifying improvement strategies
- Developing or modifying service level standards
- Planning for future resource needs (operational and capital)

Historically, fire departments typically reported their average performance. Average performance can be misleading as it is only achieved approximately 50% of the time but can be skewed in small data sets with large outliers. Contemporary fire and emergency services report 80<sup>th</sup> or 90<sup>th</sup> percentile performance times to provide a more precise representation of response reliability depending on whether they are a volunteer or career fire department.

Emergency response time analyses typically begin with the timestamp identifying the point at which the 911 call is answered by the primary service answering point (PSAP). Halton Regional Police Service (HRPS) is the PSAP. Fire department related calls are then transferred to the MFRS dispatch centre. All requests for service provided by MFRS are dispatched by the communications team within the MFRS dispatch centre. The 911 call time captured by the PSAP was not included in the available data. As a result, all the emergency response time segments in this analysis begin with the timestamp identifying when the alarm processing was started by the MFRS dispatch center.

It should be noted, however, that the reliability of the data provided has proven to be inconsistent due to several factors. These include challenges in distinguishing between full-time and part-time staffed vehicles, as well as inaccuracies in dispatch handling times, which affect both the dispatching and turnout time components of response. In addition, out-of-date dispatching programs and software have further impacted data accuracy and consistency. As a result, while the performance analysis provides important insights, caution should be taken in interpreting the results until data capture and dispatch systems are modernized.

Accordingly, while the subsequent sections have been developed for general review purposes to assist in providing high-level data and identifying trends, they cannot be fully relied upon to provide a precise measure of organizational performance. These results should be interpreted with caution and supplemented with improved data collection practices and modernized dispatching technologies in order to establish a more accurate and reliable baseline for performance monitoring in the future.

#### **4.6.1 Alarm Handling**

Alarm handling time is typically the cumulative time taken for alarm answering and alarm processing in the dispatching process. The initial timestamp available for identifying the alarm answering time in the PSAP was not available. Therefore, only alarm processing was analyzed. Alarm processing time begins when the alarm is answered, and call evaluation begins, ending when the fire department is dispatched.

Industry standards state that alarm answering shall be completed within 15 seconds and alarm processing within 64 seconds, both 90% of the time for the highest priority events where significant property loss or imminent threat to life exists. Alarm handling performance is manageable by implementing best practice processes, supporting technologies, and continuous improvement programs.

This benchmark should be monitored to ensure alarm handling is as efficient as possible to achieve optimal total response time performance. However, non-emergency requests for service, identifying rural addressing and remote locations, and callers requiring language translation, TTY, or Text-To-911 services may delay the interrogation time required to gather the appropriate information for first responders. Standards allow for additional time and set a 90-second target for these situations. No data was available to identify these scenarios as part of the analysis.

Table 37 provides a summary of alarm processing times, including analysis at the 90th percentiles and compliance percentage to industry standards for both Fires/Explosions and All Incidents. It should be noted, however, that the reliability of the underlying data is limited due to factors such as outdated dispatching software, inconsistent time-stamping practices, and challenges distinguishing between full-time and part-time staffed vehicles. As a result, while the table highlights performance trends, the results should be considered high-level indicators to guide continuous improvement rather than precise measures of alarm processing performance.

As identified in Section 3, the transition to NG-911, implementation of modernized dispatching software, and the staffing of two dedicated dispatchers on duty are expected to provide significant improvements to both service delivery and data accuracy. These changes will enhance the ability to capture consistent, reliable timestamps, strengthen performance monitoring, and contribute to faster and more effective emergency responses.

*Table 37: Alarm Processing Times (90th percentile)*

| Alarm Processing*                                     | 2020 | 2021 | 2022 | 2023 | 2024 | 5-Year |
|-------------------------------------------------------|------|------|------|------|------|--------|
| False Incidents                                       | 174  | 174  | 155  | 121  | 103  | 152    |
| Fire / Explosion                                      | 161  | 141  | 163  | 160  | 134  | 159    |
| Other Responses                                       | 205  | 213  | 181  | 181  | 150  | 180    |
| Hazardous Materials Responses                         | 176  | 171  | 179  | 195  | 153  | 182    |
| Medical                                               | 60   | 82   | 113  | 105  | 92   | 94     |
| Rescue                                                | 97   | 94   | 117  | 126  | 109  | 111    |
| All Incidents (90th percentile)                       | 176  | 171  | 162  | 154  | 131  | 159    |
| NFPA 64 sec 90th compliance for fire /explosion calls | 26%  | 28%  | 27%  | 38%  | 48%  | 34%    |
| NFPA 64 sec 90th compliance for all incidents         | 50%  | 48%  | 46%  | 47%  | 56%  | 50%    |

The following observations regarding alarm processing performance were noted:

- All incident types show a general decline in processing time over the five-year period.
- All incidents (90th percentile) dropped from 176 sec (2020) to 131 sec (2024), a 25% improvement.
- Fire/Explosion incidents improved from 161 sec (2020) to 134 sec (2024).
- False incidents showed a notable improvement, from 174 sec down to 103 sec, a 41% decrease, the most significant improvement among categories.
- Fire/Explosion compliance improved from 26% in 2020 to 48% in 2024.
- All incidents compliance increased from 50% to 56%, peaking in 2024.

#### 4.6.2 Assembly Time

Assembly time is measured from the point of fire department notification until the first responding fire/rescue apparatus has responded. For career staff, assembly time is typically much shorter as it is limited to moving toward the fire engine, putting on their bunker gear, and getting into the vehicle.

Assembly time performance should be monitored and reported to firefighting crews regularly. Best practice benchmarks identify a 90<sup>th</sup> percentile assembly time standard of 80 seconds for career firefighters, which can be difficult to achieve. Attention to station design, activities within a station, and firefighter awareness can all help to improve performance and optimize response times. Table 38 identifies 90<sup>th</sup> percentile assembly times for incident types. This analysis is for the first unit enroute to the incident only.

Table 38: Assembly Performance by Incident Type (in seconds) \*

| Incident Type                                                      | 2020 | 2021 | 2022 | 2023 | 2024 | 5-Year |
|--------------------------------------------------------------------|------|------|------|------|------|--------|
| False Incidents                                                    | 176  | 183  | 174  | 179  | 164  | 175    |
| Fire / Explosion                                                   | 157  | 158  | 159  | 166  | 160  | 160    |
| Other Responses                                                    | 168  | 184  | 176  | 191  | 169  | 176    |
| Hazardous Materials                                                | 170  | 170  | 190  | 191  | 179  | 183    |
| Medical                                                            | 115  | 136  | 157  | 144  | 132  | 138    |
| Rescue                                                             | 117  | 143  | 145  | 145  | 139  | 142    |
| All Incidents (90 <sup>th</sup> percentile)                        | 166  | 173  | 168  | 175  | 161  | 169    |
| NFPA 1710 - 80 sec 90 <sup>th</sup> compliance (excluding medical) | 25%  | 17%  | 21%  | 15%  | 18%  | 19%    |
| NFPA 1710 -60 sec 90 <sup>th</sup> compliance for medicals         | 28%  | 17%  | 21%  | 15%  | 18%  | 19%    |

\* Medical call turnout is measured at 60 seconds

Table 39 presents the assembly times in seconds for each s platoon from 2020 to 2024, categorized into all incidents with an 80-second target.

*Table 39: Assembly time by full-time shifts (in seconds)*

| Shift         | 2020 | 2021 | 2022 | 2023 | 2024 | 5-Year | % met |
|---------------|------|------|------|------|------|--------|-------|
| Suppression A | 154  | 155  | 161  | 159  | 148  | 155    | 20%   |
| Suppression B | 193  | 188  | 157  | 172  | 160  | 174    | 17%   |
| Suppression C | 155  | 195  | 180  | 198  | 178  | 184    | 15%   |
| Suppression D | 149  | 178  | 168  | 178  | 162  | 170    | 20%   |
| Total         | 169  | 178  | 168  | 178  | 162  | 170    | 18%   |
| % met         | 24%  | 17%  | 20%  | 15%  | 17%  | 18%    |       |

The following key observations regarding assembly time were noted:

**Overall Assembly Time Trends (All Incidents):**

- The average assembly time (90th percentile) across all incidents is 169 seconds, Times have remained consistently high across all five years, with no significant year-over-year improvement, indicating a systemic issue in assembly speed.
- More than double the best practice benchmark of 80 seconds (non-medical).

**Non-medical incidents (target: 80 seconds at 90th percentile):**

- Only 15% to 25% of calls met the standard across the years.
- Average compliance: 19% – far below the expected 90th percentile benchmark.

**Medical incidents (target: 60 seconds at 90th percentile):**

- Similarly low compliance, ranging from 15% to 28%, averaging 19%.

**By Shift:**

- No shift consistently meets the best practice benchmarks.
- Suppression C is the weakest performer, requiring targeted review of procedures, station readiness, or potential staffing or training deficiencies.
- Wide variations between shifts (up to 30 seconds) suggest inconsistent operational discipline or readiness culture across crews.

**Observation #21:** Milton Fire & Rescue Services' (MFRS) current assembly time performance significantly exceeds industry-recognized benchmarks for both medical and non-medical incidents. Over the five-year period from 2020 to 2024, the department's 90th percentile assembly time averaged 169 seconds for all incidents, more than double the benchmark of 80 seconds for non-medical emergencies and 60 seconds for medical calls. Across all stations and shifts, compliance with these targets has remained consistently low, with an average of just 18–19% of incidents meeting the expected benchmarks. This indicates systemic delays in personnel readiness, equipment boarding, or procedural consistency, which can undermine overall response performance and operational effectiveness.

It should also be noted that the data available for this analysis lacks strong accuracy due to limitations in dispatch software, reporting systems, and the ability to distinguish between full-time and part-time staffed vehicles. As such, these findings should be considered high-level observations intended to support continuous improvement rather than definitive measures of organizational performance.

**Recommendation #21:** Identify and implement opportunities to improve assembly time or investigate opportunities (such as new station designs, countdown clocks, etc.) to improve assembly time and implement regular monitoring and reporting of assembly time performance by station, shift, and incident category.

**Suggested completion:** 12-24 months

**Cost:** Varies on scope

**Strategic Objective:** Operations

***Rationale:** Improving assembly time performance is one of the most cost-effective ways to enhance total response time without immediate increases in apparatus or station infrastructure. The wide range in performance across stations and shifts demonstrates that targeted interventions can yield tangible improvements. Factors such as station layout, workflow design, shift culture, turnout gear placement, and situational readiness directly influence assembly times. Incorporating technologies like countdown timers, pre-alert systems, and optimized station design can enhance alert-to-enroute intervals.*

*Establishing a formal monitoring and reporting program will also foster accountability and encourage continuous improvement. By tracking performance by station, shift, and incident category, MFRS leadership can identify bottlenecks, tailor training, and recognize high-performing teams. This data should be integrated into regular performance reviews and used to support operational planning, firefighter coaching, and facility upgrades. Ultimately, focusing on assembly time aligns with MFRS's strategic goals of improving response reliability and firefighter effectiveness, particularly as call volumes and community expectation continue to grow.*

#### 4.6.3 Travel Time Performance

Travel time is measured from the point a fire/rescue apparatus leaves the fire station until it arrives at the incident address/location. Travel time is a function of the incident's distance from the fire station and the speed traveled to the incident. It can be managed to a certain extent in larger municipalities with multiple demand zones and stations. These larger departments can distribute fire resources in the most optimal response locations in the demand zones.

Travel time should be monitored over time to assess whether additional resources are required in different locations to maintain desired service levels. Industry standards identify a first-arriving travel time performance goal of 240 seconds, 90% of the time, for career fire stations. This standard is most frequently applied to urban and suburban developments. In low-density urban and suburban developments, primarily large lot single residential properties, this travel time performance can be challenging to achieve. MFRS's travel time performance mirrors industry standards. To conduct a travel time analysis, travel time was collected for the first arriving unit that was not a command vehicle and compared across incidents.

*Table 40: Travel Performance by incident type- Town-wide (in seconds)*

| Incident Type       | 2020 | 2021 | 2022 | 2023 | 2024 | 5-Year |
|---------------------|------|------|------|------|------|--------|
| False Incidents     | 517  | 543  | 539  | 445  | 408  | 502    |
| Fire / Explosion    | 701  | 647  | 678  | 648  | 634  | 670    |
| Medical             | 440  | 382  | 372  | 418  | 420  | 417    |
| Other Responses     | 602  | 632  | 600  | 546  | 545  | 577    |
| Hazardous Materials | 562  | 607  | 584  | 579  | 477  | 587    |
| Rescue              | 678  | 728  | 752  | 664  | 723  | 713    |
| All Incident Types  | 599  | 622  | 627  | 557  | 545  | 590    |

*Table 41: Travel Performance by incident type urban area (in seconds)*

| Incident Type                          | 2020 | 2021 | 2022 | 2023 | 2024 | 5-Year |
|----------------------------------------|------|------|------|------|------|--------|
| False Incidents                        | 500  | 571  | 530  | 451  | 406  | 522    |
| Fire / Explosion                       | 530  | 567  | 500  | 432  | 406  | 458    |
| Medical                                | 364  | 398  | 454  | 379  | 401  | 440    |
| Other Responses                        | 650  | 555  | 604  | 498  | 504  | 530    |
| Hazardous Materials                    | 630  | 670  | 458  | 516  | 512  | 546    |
| Rescue                                 | 462  | 568  | 578  | 581  | 452  | 541    |
| All Incident Types                     | 548  | 551  | 540  | 498  | 462  | 517    |
| Percentage met 240 seconds - Fire      | 55%  | 41%  | 49%  | 46%  | 53%  | 50%    |
| Percentage met 240 seconds - All Calls | 31%  | 40%  | 40%  | 44%  | 48%  | 42%    |



MFRS met a 4-minute travel time in the Urban areas 39% of the time over a 5-year period. Trending shows that the overall travel time is decreasing year over year. This should continue to be monitored for increases which may be a result of increased demands. These increased demands may occur as growth occurs further out from the responding station, concurrent call load is increasing, requiring apparatus outside of the station zone to respond as the primary unit, or due to growth and corresponding traffic congestion, resulting in longer times to get to the incident.

The following observations regarding travel times in the Urban Area were noted:

Travel times remain well above the best practice travel time benchmark of 240 seconds (4 minutes) across all incident types. The 5-year average for all incidents in the Urban area at the 90th percentile is 517 seconds, which is over double the recommended travel time. Travel times improved in 2023 and 2024 across almost all categories:

- False Incidents dropped from 700s in 2021 to 406s in 2024.
- Fire/Explosion improved slightly from 789s in 2020 to 690s in 2024.
- Rescue times remain high with minimal year-over-year improvement.

There is a positive upward trend in meeting best practice travel time targets, improving from 31% in 2020 to 48% in 2024. However, more than half of incidents still exceed the standard, indicating operational challenges in achieving target response times.

It is important to note that these travel time results are derived from datasets that contain known accuracy limitations, including inconsistent dispatch records, outdated software, and challenges differentiating between full-time and part-time staffed vehicles. As such, these findings should be interpreted as high-level indicators to guide continuous improvement, rather than precise measures of operational performance.

The northwest rural area of Milton is serviced primarily by Station 2, which is staffed by part-time personnel, and by full-time crews from Station 1 and Station 3. In practice, Stations 1 and 3 are the first units to arrive on scene due to the lengthy assembly times for part-time firefighters, which can exceed twelve minutes before apparatus can leave Station 2. Incident volume in this rural section of the municipality is lower than in the urban core. However, given the extended travel times from full-time stations, tactical fire operations in rural settings often shift from an aggressive interior attack to a defensive exterior strategy. This reality underscores the importance of fire prevention, public education, and self-preparedness measures such as working smoke alarms, early detection, and residential escape planning.

#### 4.6.4 Total Response Time

Total response time is measured from the point at which the 911 call is answered to the point at which the first arriving firefighting apparatus arrives. The industry best practice implies a response time performance goal of 384 seconds (excluding alarm answering time) for the first arriving fire apparatus in urban areas (see Section 4.5.2).

Table 42 identifies the total response time for the incident categories. Total response time includes alarm processing, assembly, and travel time segments. Additionally, compliance with the implied industry best practice was measured.

*Table 42: 90th Percentile Response Performance (in seconds)*

| Incident Type                               | 2020 | 2021 | 2022 | 2023 | 2024 | 5-Year | %   |
|---------------------------------------------|------|------|------|------|------|--------|-----|
| False Incidents                             | 788  | 801  | 781  | 663  | 618  | 756    | 32% |
| Fire / Explosion                            | 924  | 890  | 944  | 842  | 819  | 890    | 24% |
| Medical                                     | 583  | 539  | 557  | 628  | 579  | 580    | 52% |
| Other Responses                             | 846  | 886  | 825  | 797  | 773  | 821    | 17% |
| Hazardous Materials                         | 834  | 881  | 907  | 798  | 733  | 836    | 13% |
| Rescue                                      | 809  | 929  | 938  | 852  | 898  | 895    | 36% |
| All Incidents (90 <sup>th</sup> percentile) | 823  | 851  | 834  | 785  | 770  | 810    | 28% |
| 384 second compliance                       | 27%  | 26%  | 25%  | 27%  | 33%  | 28%    |     |

*Table 43: 90<sup>th</sup> Percentile Response Performance – Urban area (in seconds)*

| Incident Type                     | 2020 | 2021 | 2022 | 2023 | 2024 | 5-Year |
|-----------------------------------|------|------|------|------|------|--------|
| False Incidents                   | 641  | 625  | 598  | 527  | 506  | 599    |
| Fire / Explosion                  | 666  | 707  | 754  | 630  | 537  | 615    |
| Medical                           | 453  | 442  | 416  | 511  | 435  | 454    |
| Other Responses                   | 613  | 651  | 647  | 613  | 594  | 615    |
| Hazardous Materials               | 710  | 696  | 556  | 637  | 637  | 649    |
| Rescue                            | 575  | 593  | 638  | 648  | 491  | 596    |
| Total                             | 644  | 627  | 613  | 600  | 573  | 605    |
| 384 second compliance - Fire      | 49%  | 56%  | 43%  | 44%  | 47%  | 52%    |
| 384 second compliance - All Calls | 44%  | 49%  | 49%  | 50%  | 58%  | 51%    |

The following observations regarding MFRS emergency response performance were noted:

- The total response time at the 90<sup>th</sup> percentile for the 5-years was 810 seconds (13 minutes, 30 seconds) and only achieved the best practice benchmark 28% of the time, Town wide.
- The total response time (Urban area) at the 90<sup>th</sup> percentile for the 5-years was 605 seconds (10 minutes, 5 seconds) and only achieved the best practice benchmark 52% of the time town-wide.
- The 90<sup>th</sup> percentile total response time – Urban area, has shown gradual improvement, dropping from 644 seconds in 2020 to 573 seconds in 2024.
- Medical incidents had the shortest response times, with a 90<sup>th</sup> percentile of 454 seconds over the 5-year period. due to prioritization and streamlined response.
- Fire/Explosion incidents had the longest response times, with a 90<sup>th</sup> percentile of 615 seconds over 5-years, indicating these complex emergencies consistently take the most time to reach and manage. This met a 385-second (6-minute, 24-second) standard over 52% of the time.

As a breakdown of total response time, a department should be exploring all categories that contribute to the total response numbers. Examining the breakdown, alarm handling and assembly time is currently not broken down by station and is measured department wide.

Examining crew movements and station layout may reveal slightly higher numbers. When examining the travel time, this is the largest discrepancy and could be related to the distance of calls from the station, traffic congestion experienced, and concurrent call loads requiring units outside the station area to respond to the incident.

## 4.7 Response Coverage Mapping

This section provides mapping of the response coverage for the Milton Fire & Rescue Services. The methodology used to calculate the theoretical travel time and area coverage was based on the following formula:

**Response Time Goal – (90<sup>th</sup> Percentile Alarm Processing Time + 90<sup>th</sup> Percentile Assembly Time) = Theoretical Travel Time**

For example:

*384 seconds (6-minutes, 24 seconds) or 480 seconds (8-minute) - (90<sup>th</sup> percentile alarm processing time of 83 seconds + 90<sup>th</sup> percentile assembly time of 82 seconds) = theoretical travel time (in seconds)*

The theoretical travel time and road network travel speed data were applied to generate the response area of each station in the geographic information system (GIS) mapping program. Table 44 shows the calculated travel time for the 90<sup>th</sup> percentile from all stations.

The calculated theoretical travel time using this approach is a conservative calculation. Use of the 90<sup>th</sup> percentile assembly times to calculate theoretical travel time and corresponding area coverage for the NFPA 384-second standard, as well as an alternative 8-minute response time goal, is highly reliable. Sometimes the 50<sup>th</sup> percentile times are used; however, the associated assembly times would only be achieved 50% of the time. In other words, the theoretical travel time and area coverage would only be achieved about 50% of the time. Whereas by using the 90<sup>th</sup> percentile times, the mapped area coverage is smaller but should be achieved 90% of the time and is, therefore, a more reliable representation of response area coverage within a given time. The limiting factor in this analysis is the occurrence of concurrent incidents where a fire apparatus has to travel from a neighboring station to respond.

*Table 44: Theoretical Travel Time Calculation- Urban area (in seconds)*

| Total Response time<br>Goal (secs) | Theoretical Initial Response<br>time goal (secs) | ERF Total Response<br>time goal (secs) | Theoretical ERF Response<br>Goal Travel Time |
|------------------------------------|--------------------------------------------------|----------------------------------------|----------------------------------------------|
| 384                                | 56                                               | 624                                    | 296                                          |
| 444                                | 116                                              | 684                                    | 356                                          |

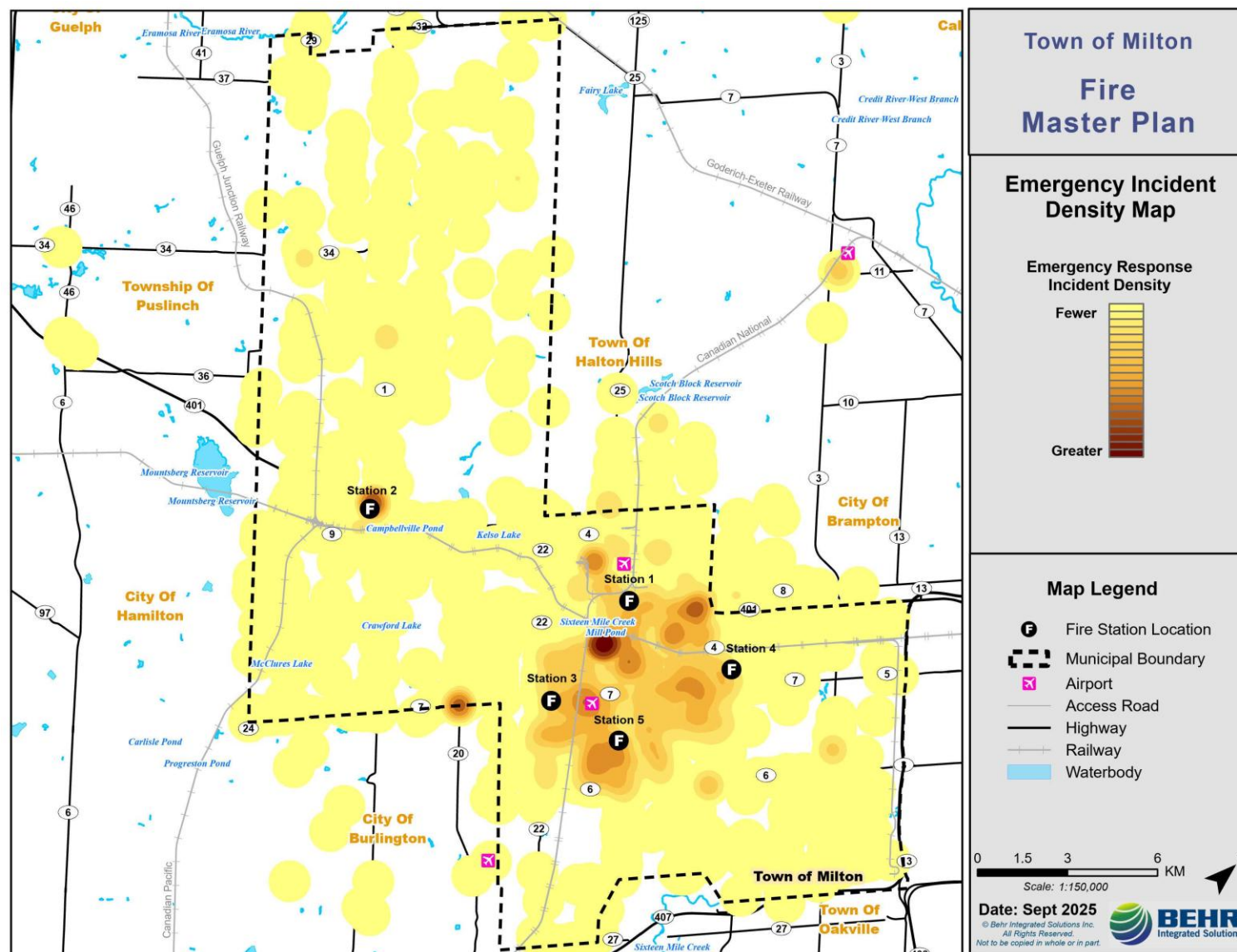
The following maps indicate incident density (heat map), current response performance, and options for consideration when developing response time performance. An incident heat map provides valuable insight into the historical occurrence of incidents, offering a visual representation of zones with higher demand for services. When combined with response coverage mapping, these maps help ensure that areas of highest demand are, whenever possible, situated closest to a fire station.

The following maps offer a comprehensive overview:

Map 4: Emergency Call Density Map – Visualizes the density of historical incidents.

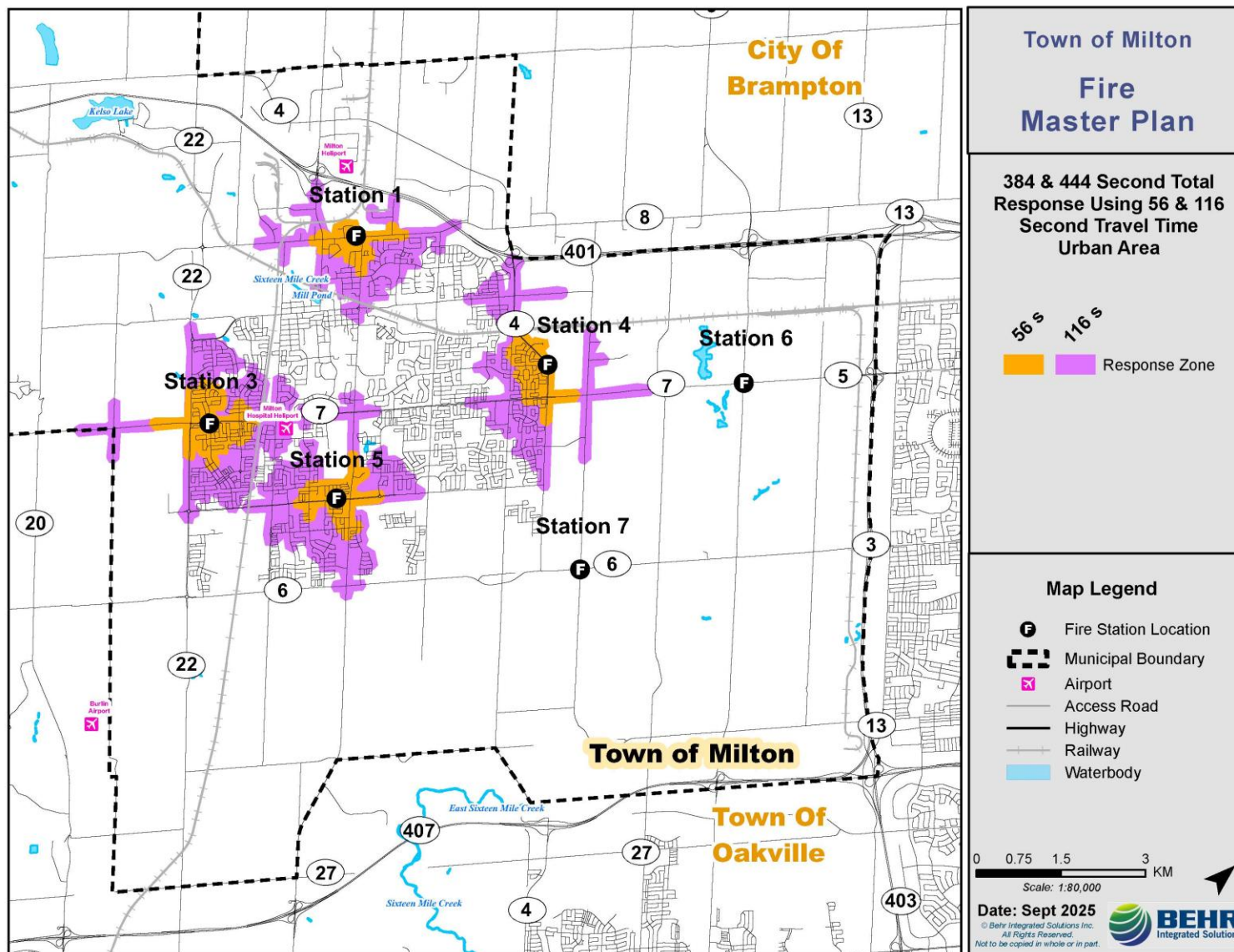
Map 5: Response Coverage (56 seconds and 116 seconds travel time) – Shows coverage based on the industry best practice recommended total response time and the actual travel time to meet 384 second initial total response time. We have further added 444 second initial total response time to indicate a 5-minute travel time.

Map 4: Emergency Call Density Map





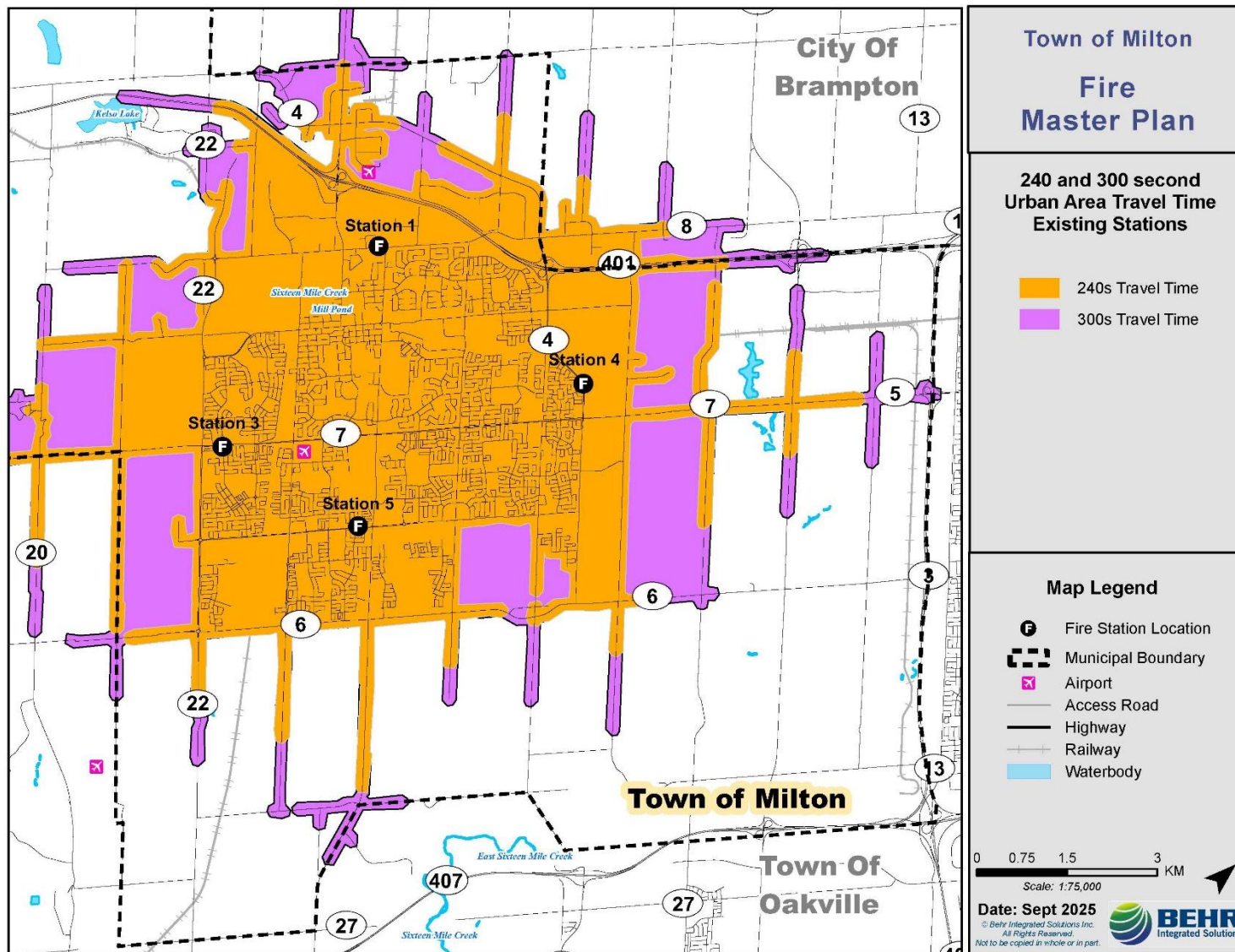
Map 5: Response Coverage Based Upon 56 Seconds and 116 Seconds Travel Time



The following maps illustrate the principles of industry best practice recommend travel times at the 90<sup>th</sup> percentile. Improvements in call processing and assembly times, within the recommended NFPA standards, could enhance the overall response times and extend the response time achievements within each response zone.

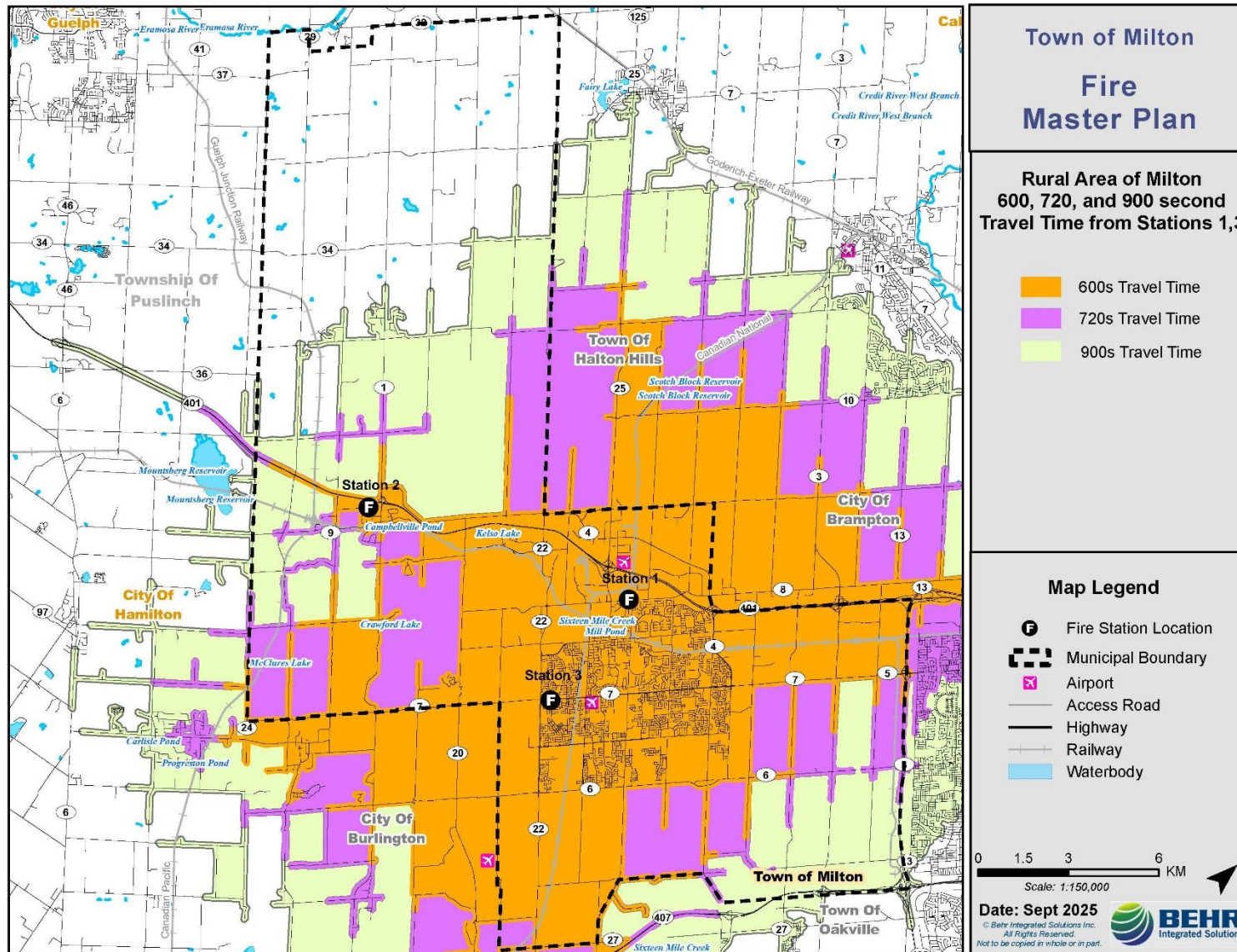
- Map 6: 240 and 300 second travel time coverage (urban area).
- Map 7: Rural 600, 720, & 900 second travel time coverage (rural area)

Map 6: 240 & 300 Second Travel Time





Map 7: Rural 600, 720, & 900 second travel time coverage (rural area)



Observations on response coverage based on 240 and 300 second travel time:

Initial unit coverage within 240 seconds (4 min) is reasonable across the built-up core and most established neighbourhoods, forming a continuous footprint west central through south-central Milton. The 300-second (5 min) band extends that reach to the majority of remaining urban neighbourhoods and some greenfield fronts, with residual gaps at a few fringe pockets (notably at the far southeast growth edge near the 407 corridors, scattered eastern fringe blocks beyond Station 5's first-due grid). Physical barriers (rail lines and Hwy 401 interchanges) create local "shadow" areas in the 4-minute band that are picked up by the 5-minute band.

Estimated Urban Coverage (Existing Stations 1,3,4, & 5)

- ≤240 s (4 min): ~71% of the urban area
- ≤300 s (5 min): ~76% of the urban area

Observations on response coverage based on 600, 720, and 900 second travel time (rural area):

Travel time modeling for Stations 1 and 3 shows that the 600-second (10-minute) envelope provides only limited penetration into the northwest rural area. Coverage from Station 3 reaches portions of the Campbellville area, but much of the surrounding agricultural and residential land lies outside this range. The limited reach of the 600-second zone highlights that few rural residents benefit from initial unit arrival within the benchmarked 10-minute response time.

At the 720-second (12-minute) interval, coverage improves, extending deeper into the northwest and capturing additional hamlets and rural settlements. Station 3 provides the most meaningful contribution in this band, with the capacity to reach north of Campbellville and toward the Brookville community (Guelph Line and 15 Sideroad). Even so, areas further north and west remain outside of effective 12-minute coverage, particularly where road access is constrained by natural features, rail lines, or Highway 401.

The 900-second (15-minute) travel envelope represents the most consistent reach for full-time crews into the northwest. Within this window, much of the Brookville area and surrounding agricultural properties are covered, though responses north of Brookville and toward Milton's northern boundary extend beyond 15 minutes. This aligns with industry standards for rural response expectations but limits the ability to conduct offensive operations upon arrival.

Combined with the absence of reliable hydrant infrastructure, rural firefighting is heavily dependent on tanker shuttle operations and water trucking. These realities emphasize the need for continued investment in fire prevention programming, water supply planning, and mutual aid support to mitigate the higher risks posed by extended travel times in Milton's rural northwest.

## **4.8 Effective Response Force**

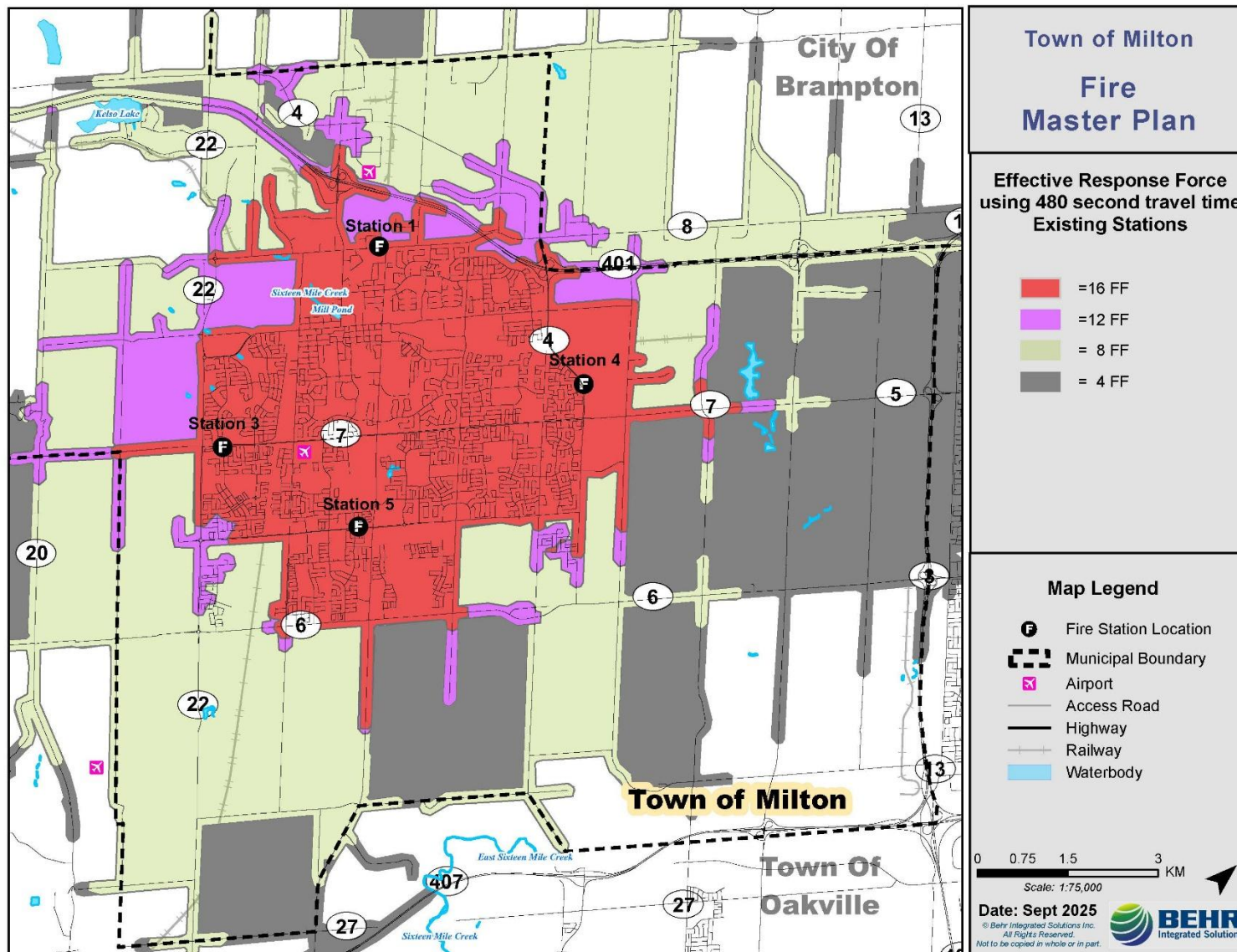
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This section provides further explanation on the importance of assembling an effective response force (ERF) comprising adequate firefighters and equipment to manage emergency incidents safely and effectively.

ERF standards are based on fire response research completed by organizations such as NFPA and the National Institute of Standards and Technology (NIST). These standards are established to ensure adequate resources are available to complete critical tasks in a safe and timely manner. NIST research identified over 22 essential fire ground tasks at a typical single-family house fire. Ideally, other industry best practices suggest a minimum of 16 firefighters, or four companies of four firefighters, are required for a full alarm assignment (17 if an aerial device is used) for a standard residential house fire. These incidents represent the higher probability of all structure fires in the Town.



Map 8: 480 second ERF Response Coverage



Analysis of response performance indicates that while the central urban core of the Town of Milton is currently able to achieve an Effective Response Force (ERF) of 16 firefighters (4 apparatus) within the targeted 480-second (8-minute) travel time, this level of performance is not achievable across the broader municipality. In fringe areas immediately surrounding the central core, the system is able to assemble 3 apparatus (12 firefighters) within the same 8-minute benchmark. However, across most of the remaining urban and rural areas, the current station distribution model, which prioritizes geographic coverage rather than ERF overlap, limits the ability to meet this response objective without reliance on delayed secondary units or part time firefighters.

Using the 480-second travel-time maps, ERF coverage across the urban area increases materially with Stations 6 and 7. Stations 1,3,4, & 5 (existing): the urban area can assemble:

- 8 ff (≈2 companies) 45-50%
- 12 ff in ~20–25%
- 16 ff in ~8–12% (largely the central core)
- 20 ff in ≈ 0%
- 24 ff ≈ 0%
- Fringe growth areas generally top out at 8–12 ff

Current performance metrics suggest that achieving the ERF benchmark often necessitates the response of apparatus from a minimum of 4 separate stations, which introduces added travel time and system stress, particularly during concurrent incidents or when units are committed to other calls. Improvements in alarm handling and assembly times may marginally expand the area of coverage that meets the 8-minute ERF standard, but systemic limitations remain due to station spacing, staffing levels, and reliance on part-time staffing.

Importantly, higher-risk or complex incidents, such as high-rise fires or industrial fires, exceed the resource requirements of standard ERF deployments and require additional staffing. These incidents often require the utilization of paid-on-call staff from Stations 1, 2, and 3, which introduces further delays beyond the 8-minute ERF benchmark, and in some cases, pushes the full response time to over 10 minutes. This lag compromises intervention timelines and potentially impacts fire containment, occupant survivability, and responder safety. Adjustments to critical tasking procedures, part time firefighter response expectations, and the development of policy and operational guidelines to reflect realistic ERF performance under Milton's composite model are further explored in Section 4.9.

## 4.9 Critical Task Analysis

A critical task analysis for common incident types illustrates the resources required to achieve tactical objectives based on resource availability. The rationale for completing a critical task analysis is to identify whether response policies and guidelines align with available resources. In other words, are enough firefighters typically responding to complete the critical tasks on emergency scenes in a safe and timely manner?

However, the optimal number of firefighters is not always available. Response policies and guidelines should identify critical task assignments and tactical objectives based on available resources. The optimal number of firefighters to manage larger and more complex incidents may not be dispatched initially due to the availability of firefighters. As a result, tactical objectives should be scaled to reflect these limitations. For example, an interior fire attack or rescue may not be possible with a single pumper company and a limited water supply. Response policies or guidelines should also identify a contingency plan to call in off-duty firefighters or initiate mutual aid/automatic aid for larger or more complex incidents.

The following tables provide examples of critical task analyses that should be embedded in fire department standard operating guidelines or policies. The purpose of completing a critical task analysis is to establish the ERF response requirements and embed task assignments in standard operating guidelines. The **examples** provided are intended to illustrate leading practices with respect to the ERF required to safely manage commonly occurring emergency incidents. They are provided as a guide and are not intended to specifically represent MFRS response capacity or apparatus.

*Table 45: Low Risk: Small Fire (No Exposures): Garbage, Vehicle – Private, Grass, Investigate (External), Monitoring Alarm (W/O Confirmation), Medical*

| Low Risk Incident     |   |
|-----------------------|---|
| Command and Safety    | 1 |
| Driver/ Pump Operator | 1 |
| Incident responders   | 2 |
| Total Personnel       | 4 |

*Table 46: Moderate Risk: Attached Garage, Single Family Residential (Detached/Duplex)*

| Moderate Risk Incident         |    |
|--------------------------------|----|
| Command                        | 1  |
| Safety                         | 1  |
| Pump Operator                  | 1  |
| attack line/ search and rescue | 6  |
| Water supply                   | 1  |
| Rapid Intervention Crew        | 3  |
| Ventilation/ Utilities         | 2  |
| Total Personnel                | 15 |

*Table 47: Moderate Risk: Motor Vehicle Crash (1-3 Private Vehicles)*

| MVC                    |   |
|------------------------|---|
| Command and Safety     | 1 |
| Driver/ Pump Operator  | 1 |
| Incident responders    | 5 |
| Blocker vehicle driver | 1 |
| Total Personnel        | 8 |

*Table 48: Moderate Risk: Technical Rescue*

| Technical Rescue      |    |
|-----------------------|----|
| Command               | 1  |
| Safety                | 1  |
| Rescue Sector Officer | 1  |
| Rescue specialists    | 7  |
| support               | 3  |
| Total Personnel       | 13 |

Table 49: High Risk: Commercial, Seniors' Home, Industrial, Strip Mall, Mid-Rise Residential

| High Risk Incident      |    |
|-------------------------|----|
| Command                 | 1  |
| Safety                  | 1  |
| Pump Operator           | 1  |
| Initial Attack Line     | 2  |
| Back up line            | 2  |
| Search and rescue       | 4  |
| Water supply            | 1  |
| Rapid Intervention Crew | 4  |
| Suppression Support     | 6  |
| Ventilation/ Utilities  | 4  |
| Total Personnel         | 26 |

## 4.10 Optimizing Station location and Apparatus placement

### 4.10.1 Station Location

As the Town of Milton continues to grow and expand both horizontally and vertically, the MFRS must explore opportunities to optimize station locations and response performance. The placement of fire stations to provide a quick response time of the first-in unit allows the Town to provide a level of service that meets the principles of response standards. To provide ample coverage, the service must consider many factors, including:

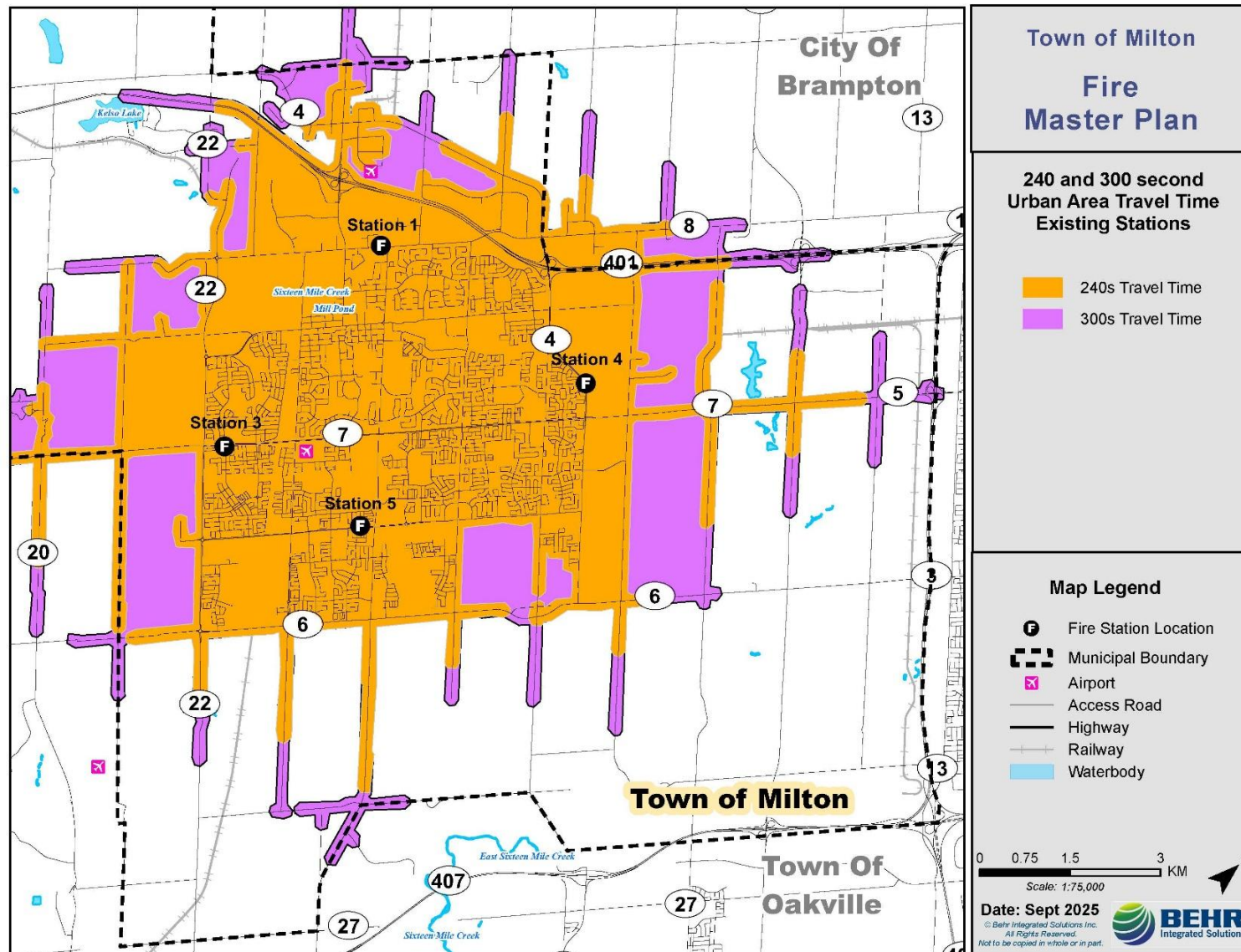
- Future growth nodes – both horizontal and vertical
- Community risks and the areas where the risks are located
- Road networks and increased traffic congestion

The consideration and location for future growth and risk allow the municipality to prepare for the future, ensuring that the infrastructure required is secured, such as lands and necessary funding. Also being considered is the opportunity to further expand on the utilization of the paid-on-call firefighters. The uniqueness of the MFRS structure allows for additional resources on the scene during larger incidents, or when the situation requires additional resources for coverage of stations

Map 9 illustrates the current coverage provided by the existing stations utilizing the 240-second travel time principle. We have also considered a 300 second (5-minute) travel time in Map 9.



Map 9: Current Coverage 240 & 300 Second Travel Time



## 4.10.2 Apparatus Placement

The current placement of apparatus with the minimum number of staff regularly assigned to each unit is outlined in table below.

*Table 50: Apparatus List, Minimum Staffing, and Location*

| No. | Unit Location | Unit No. | Unit Type     | Staffing  |
|-----|---------------|----------|---------------|-----------|
| 1   | Station 1     | S401     | Pumper        | 4         |
| 2   | Station 1     | R401     | Rescue        |           |
| 3   | Station 1     | T401     | Tanker        |           |
| 4   | Station 1     | A401     | Aerial        |           |
| 5   | Station 1     | P401     | Pumper        |           |
| 6   | Station 2     | P402     | Pumper        | Part time |
| 7   | Station 2     | T402     | Tanker        |           |
| 8   | Station 3     | P403     | Pumper        | 4         |
| 9   | Station 3     | A403     | Aerial        |           |
| 10  | Station 3     | AL403    | Rescue        |           |
| 11  | Station 3     | T403     | Tanker        |           |
| 12  | Station 4     | P404     | Pumper        | 4         |
| 13  | Station 4     | P450     | Pumper- Spare |           |
| 14  | Station 4     | P451     | Tanker- Spare |           |
| 15  | Station 5     | A405     | Aerial        | 4         |
| 16  | Station 5     | R405     | Rescue        |           |

The ability to provide a quick initial response is further compounded by the incident load in a specific station response area. Multiple calls occurring at the same time, or concurrent calls, place further pressures on response performance as another vehicle will be required to respond from another response area, thereby lengthening the response time to an incident. Examining the concurrent call load for each response area can assist in determining apparatus placement and the requirement to have multiple staffed apparatus in a specific station.

Between 2020 and 2024, the fire department experienced a gradual rise in concurrent call activity, with overlapping incidents increasing from 129 in 2020 to 204 in 2024. This equates to a modest increase in concurrent call volume from 6.97% to 7.20% of total annual incidents, figures that remain within reasonable operational parameters and currently present limited risk to public safety.

Over the five-year period, the most common incident types involved in concurrent calls were rescue (24.6%), false fire alarms (23.7%), and a broad "all other" category (36.3%) that includes service calls and miscellaneous non-emergency responses. Resource-intensive events such as rescue and fire suppression often involve extended on-scene times, which can limit unit availability for subsequent calls.

While concurrency levels are currently manageable, the upward trend, combined with growing overall call volumes, warrants continued monitoring. The rise in concurrent medical calls in 2024 may signal shifting service demands or increased reliance on tiered response protocols. Regular analysis of concurrent call data will help ensure that emergency response performance remains effective and resilient as the community evolves.

Table 51 demonstrates the five-year concurrent call load involvement by unit type.

*Table 51: 5-Year Concurrent Call Load Unit Involvement*

|        |       | Station 1 | Station 2 | Station 3 | Station 4 | Station 5 |
|--------|-------|-----------|-----------|-----------|-----------|-----------|
| 2020   | Calls | 49        | 4         | 48        | 44        | N/A       |
|        | %     | 2.65%     | 0.22%     | 2.59%     | 2.38%     | N/A       |
| 2021   | Calls | 62        | 3         | 38        | 57        | 27        |
|        | %     | 3.14%     | 0.15%     | 1.93%     | 2.89%     | 1.37%     |
| 2022   | Calls | 72        | 5         | 5         | 60        | 54        |
|        | %     | 3.03%     | 0.21%     | 0.21%     | 2.53%     | 2.27%     |
| 2023   | Calls | 77        | 3         | 33        | 67        | 64        |
|        | %     | 3.15%     | 0.12%     | 1.35%     | 2.74%     | 2.62%     |
| 2024   | Calls | 95        | 5         | 59        | 71        | 74        |
|        | %     | 3.35%     | 0.18%     | 2.08%     | 2.50%     | 2.61%     |
| 5-year | Calls | 355       | 20        | 183       | 294       | 219       |
| Totals | %     | 3.09%     | 0.17%     | 1.59%     | 2.56%     | 1.91%     |

#### **4.10.3 Station-Level Concurrent Call Load Analysis (2020–2024)**

Station 1 has experienced a steady and consistent rise in concurrent call volume over the past five years, culminating in 95 concurrent incidents in 2024, representing 3.35% of its total calls, the highest among all stations. With a five-year average of 3.09%, Station 1 reflects a growing operational workload that may signal potential service level impacts during periods of peak demand. However, these figures remain within acceptable parameters and do not currently pose a significant risk to public safety. Station 4 follows closely with a consistent concurrency pattern ranging from 2.38% to 2.89% annually and a five-year average of 2.56%. Its stable yet high concurrency ranking may reflect its location in a consistently active service area, but its figures are still within manageable thresholds.

Station 3 presents a moderate concurrency profile with a five-year average of 1.59%, despite a sharp dip in 2022 (only five concurrent calls) and a notable increase by 2024 (59 calls; 2.08%). This may indicate shifting demand in its coverage area and should be monitored to identify any emerging service pressures. Station 5, which came online after 2020, has seen a steady increase in concurrent calls, reaching 74 in 2024 (2.61%) and trending similarly to Station 4. Its five-year average of 1.91% is artificially low due to the absence of data in 2020, but overall concurrency remains reasonable. Station 2 consistently records the lowest concurrency levels, averaging just 0.17% over the period, reflecting either a low call volume or a lower level of demand overlap, indicating minimal operational pressure at this time. Overall, concurrency levels across all stations remain within acceptable limits, though Stations 1, 4, and 5 should continue to be monitored as community growth and service demand evolve.

**Observation #22:** Between 2020 and 2024, Milton Fire & Rescue Services (MFRS) experienced a steady rise in concurrent call activity, with the number of overlapping incidents increasing from 129 to 204 annually. Although the overall proportion of concurrent calls remains manageable, rising slightly from 6.97% to 7.20%, some individual stations, particularly Stations 1, 4, and 5, are beginning to experience elevated levels of overlap. Station 1, for example, recorded the highest concurrency rate at 3.35% in 2024, with a five-year average of 3.09%, suggesting that workload pressures may increasingly strain response capacity in that area. This trend is especially significant for resource-intensive incidents like rescues and fires, which dominate concurrent event profiles and often result in prolonged scene times, limiting apparatus availability for subsequent responses.

While current concurrency rates are within operational norms and not yet indicative of widespread service degradation, early signals of geographic and temporal pressure are emerging. Station 3, for instance, saw a dramatic spike in concurrent calls in 2024 following a low in 2022, highlighting the potential for rapid demand shifts in growth areas. Station 5 has also shown year-over-year increases since coming online. These patterns demonstrate the need for proactive monitoring, especially as continued urban development and increasing call volumes could soon push some stations beyond current resource capacities.

**Recommendation #22:** Implement a formal concurrent call load monitoring process, using dispatch and incident data analytics to assess call overlap trends by time of day, location, and station impact. This data should be reviewed annually and integrated into resource deployment planning, station siting strategies, and staffing forecasts to determine when new apparatus, personnel, or facility expansion is warranted.

**Suggested completion:** 1-12- months

**Cost:** Varies on scope

**Strategic Objective:** Operations

**Rationale:** Implementing a formal, data-driven concurrent call monitoring process will allow MFRS to make informed decisions on resource deployment, staffing, and infrastructure planning. By tracking call overlap trends by time of day, location, and incident type, the department can identify emerging pressure points and adapt accordingly. This insight will be crucial in planning for new apparatus deployment, phased hiring strategies, or future station expansion, particularly in zones with rising concurrency or known growth pressures.

Moreover, using dispatch and incident data analytics as part of a standardized annual review will ensure concurrency trends are not only monitored but integrated into broader operational planning processes. This proactive approach enables better anticipation of system strain, supports evidence-based budgeting requests, and reinforces the Town's commitment to maintaining effective response capabilities. As Milton's population grows and urban density increases, a formal concurrency analysis framework will serve as a key tool to protect service levels and ensure timely emergency response across all fire station catchment areas.

## 4.11 Fire Station Location Analysis

### 4.11.1 Strategic Role of Station Location in Service Delivery

The location of fire stations is a critical determinant of emergency response effectiveness. As the Town of Milton continues to grow rapidly, especially in the northeast and southeast quadrants, strategic fire station planning must ensure that station deployment aligns with response time performance targets, community risk concentrations, and infrastructure development. A well-positioned fire station can significantly reduce emergency response times, increase survivability and containment success rates, and reduce public exposure to fire-related hazards or other emergencies.

Fire stations are not static assets; they must evolve in response to population changes, road network expansions, and land-use developments. This requires a forward-looking strategy that integrates growth forecasts, risk assessments, and service delivery benchmarks. Timely fire suppression response is directly linked to improved outcomes in emergencies, especially structure fires, medical incidents, and rescues. As such, establishing new stations is both a public safety imperative and a proactive risk mitigation investment.



The Town of Milton currently operates four full-time staffed fire stations, supported by a part time firefighter model that augments response capacity. As population and development increase, particularly in growth nodes such as the Trafalgar GO Transit corridor, the Britannia Secondary Plan area, and the Milton Education Village, response capacity must be scaled accordingly to preserve equity and performance across all service zones.

This section outlines the planning, rationale, and timing for two new fire stations:

- **Station 6**, to be built within the next 60-72 months.
- **Station 7**, to be built beyond 72- months.

#### 4.11.2 Principles of Station Location Planning

When determining future fire station locations, MFRS must consider a wide range of interconnected criteria:

##### 1. Emergency Response Concentrations

- Locations must be responsive to historical and projected call volumes.
- Incident mapping identifies geographic hotspots, particularly for fires, medical calls, MVCs, and rescues.
- These concentrations help determine where demand pressure is most acute, particularly in newly urbanized or intensifying areas.

##### 2. Travel Time Performance

- Stations must maximize compliance with performance standards: **300-second (5-minute) travel time** for the first-due apparatus and 480-second (8-minute) Effective Response Force (ERF) assembly time.
- These benchmarks are derived from the principles of industry best practices and are essential for time-sensitive incidents such as cardiac arrest, active structure fires, and hazardous materials incidents.
- Road infrastructure, topographical barriers, and traffic congestion must be considered when siting stations.

##### 3. Road Network Access

- Stations should be sited with direct access to arterial roads and minimal delay points (e.g., intersections, rail crossings).
- Strategic proximity to grid connectors (e.g., James Snow Parkway, Derry Road, Trafalgar Road, Britannia Road) ensures optimal ingress and egress for emergency vehicles.



#### 4. Land Suitability and Availability

- Preference is given to municipally owned land to reduce acquisition costs and ensure zoning compatibility.
- Minimum 1 to 1.5-acre parcels are needed to support station construction, apparatus maneuvering, parking, crew amenities, and possible future expansion.
- Land banking in advance of development build-out is recommended to ensure affordability and locational flexibility.

#### 5. Alignment with Official Plan and Growth Forecasts

- New station siting must align with the Town's Official Plan, Secondary Plans, and Halton Region's servicing frameworks.
- Understanding the 10–20-year growth trajectory ensures that capital investments remain relevant and capable of serving the community over the long term.

Determining the location of a fire station is an important decision for a growing community. Fire stations must be strategically located to optimize response time, maximize coverage, and minimize overall costs. Geographic Information Systems (GIS) mapping is an essential tool for analyzing optimum coverage areas while evaluating proximity to main roads and high-risk areas. It is imperative that planning for a new fire station is embedded in the community's long-range plan to meet response objectives throughout its lifecycle.

#### 4.11.3 Growth Factors Driving the Need for New Stations

Recent growth analysis highlights several development areas contributing significant population and structural risk:

- **Trafalgar Secondary Plan and GO Mobility Hub:** High-density residential and commercial intensification with vertical growth.
- **Britannia Secondary Plan:** Rapid greenfield development with varied housing forms including mid-rise and low-rise developments.
- **Milton Education Village (MEV):** A blend of institutional, residential, and commercial land use with a distinct focus on student accommodation and research facilities.
- **Walker (Boyne Area):** Continued subdivision build-out, raising call volumes south of Derry Road, including single-detached, townhouses, and emerging low-rise apartment complexes.

These growth areas are expected to add over 50,000 residents by 2031, increasing both the volume and complexity of emergency calls. This translates to a higher concentration of vulnerable populations, increased fire load due to building materials and density, and elevated risk of concurrent incidents in isolated geographic pockets.

#### **4.11.3.1 Station 6 – Trafalgar and Derry Road Area (Target: 60-72 Months)**

Station 6 is proposed for the Trafalgar and Derry Road area due to its strategic centrality within the northeast quadrant. This area is experiencing high levels of construction, with multi-residential developments, educational campuses, and retail nodes emerging concurrently.

##### **Objectives and Benefits:**

- Extend 300-second travel time coverage to Trafalgar and Louis St. Laurent corridors.
- Reduce dual reliance on Stations 3 and 4 to meet ERF benchmarks.
- Minimize reliance on automatic aid from Mississauga Fire.
- Support regional intensification goals without compromising public safety performance.

##### **Additional Planning Considerations:**

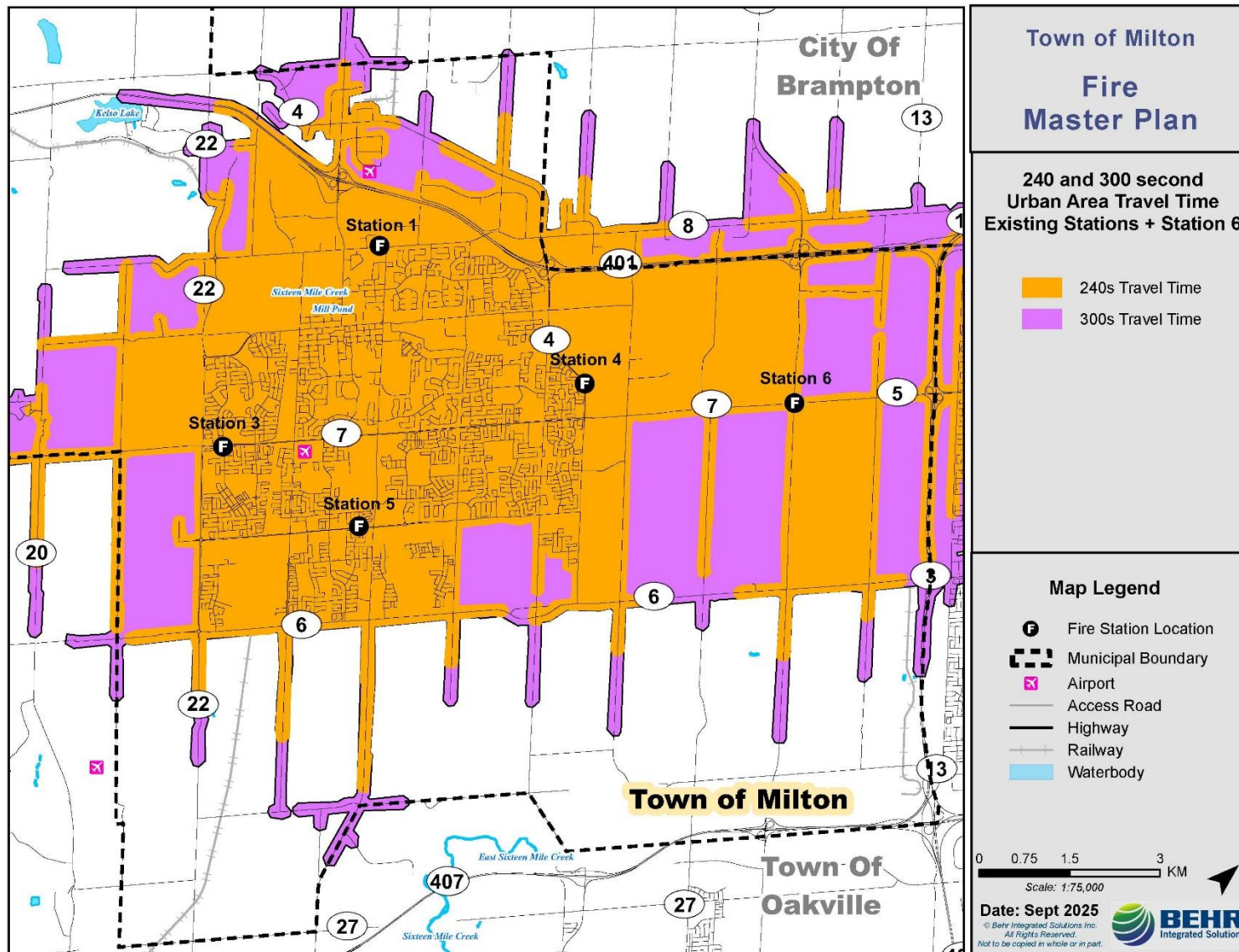
- The site should include sufficient parking for on-shift and off-duty personnel.
- Consideration for future site for state-of-the-art Fire Communications centre, allowing for potential expansion of additional fire departments.
- Sustainable station design (e.g., geothermal, solar) should be evaluated.

##### **Coverage Modeling:**

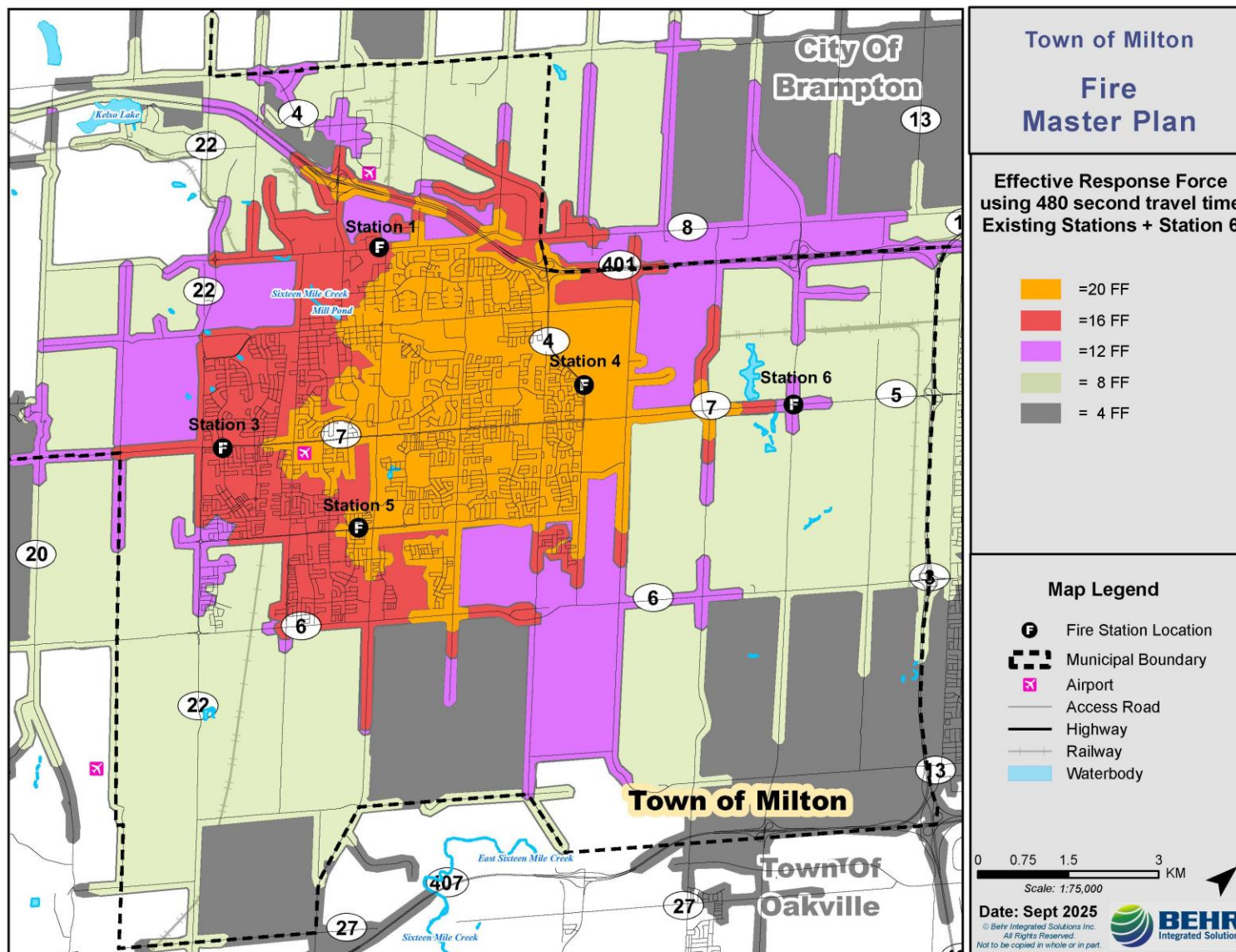
- Map 10: 240 and 300 second travel time – New Station 6
- Map 11 ERF- New Station 6

**Note:** *Unshaded portions of these maps reflect areas with incomplete road networks. As development proceeds, modeling should be refreshed.*

Map 10: 240 & 300 Second Travel Time, New Station 6



Map 11: Effective Response Force, New Station 6





The following observations to ERF with the addition of station 6:

- Brings the fast-growing south corridor (Trafalgar/Boyne/Britannia) into reliable first-due range.
- Creates meaningful overlap with Station 5, improving redundancy along Britannia and south-central neighbourhoods.
- ERF coverage gains (urban area share within 8 min)
  - 8 ff: ~45–50% → ~65–70%
  - 12 ff: ~20–25% → ~40–45%
  - 16 ff: ~8–12% → ~20–25%
  - 20 ff: ~2–3% → ~8–12%
  - 24 ff: ~0% → ~2–3%

As a result, the operational impacts include:

- Much higher reliability for initial attack and ERF assembly in east and southeast Milton subdivisions and mixed-use nodes.
- Reduces dependence on distant central stations for southern calls; improves resilience during overlapping incidents in the core.

**Observation #23:** The northeast quadrant of Milton, particularly the Trafalgar and Derry Road area, is undergoing rapid urbanization, marked by significant residential growth, emerging educational institutions, and commercial development. This intensification has led to increased service demand and heightened pressure on existing resources, notably Stations 4 and 5, which currently provide overlapping coverage to the area. Additionally, this zone represents a strategic location within Milton's broader growth framework and is subject to regional intensification policies that will further expand the population and infrastructure in the coming years.

Fire Station 6, centrally located within this evolving urban sector, is positioned to provide critical response time coverage to the Trafalgar corridor and Louis St. Laurent Boulevard. Current coverage gaps compromise MFRS's ability to consistently meet the Effective Response Force (ERF) benchmarks and necessitate reliance on automatic aid from neighbouring jurisdictions such as Mississauga Fire, which is not a sustainable long-term solution. Modeling indicates that a station in this location would close critical gaps in both 240-second and 300-second travel time targets, particularly once the road network is completed.

**Recommendation #23:** MFRS should proceed with the planning, design, and construction of Fire Station 6 within the next 60-72 months.

**Suggested completion:** 60-72 months

**Cost:** Varies on scope

#### **Strategic Objective: Operations**

**Rationale:** *Constructing Station 6 within the next 60-72 months is essential to ensuring MFRS maintains effective service delivery amidst Milton's northeast intensification. The new station will reduce dependency on adjacent stations and external aid, supporting both autonomy and resiliency in Milton's emergency response network. In doing so, it will enable the fire service to meet Council-endorsed performance objectives, maintain compliance with industry best practices, and fulfill expectations tied to development growth.*

*Furthermore, the station's proposed design, with space for a communications centre, future third apparatus bay, and multi-use spaces, will support long-term operational flexibility and municipal priorities such as sustainable infrastructure and regional dispatch collaboration. Advancing the planning and construction of Station 6 now will ensure its delivery by 3031-3032, aligned with both staffing forecasts and the Town's long range capital plan. This forward-looking investment positions MFRS to stay ahead of growth, mitigate risk, and maintain community safety as Milton continues to expand.*

#### 4.11.3.2 Station 7 – Britannia Corridor (Target: Beyond 72- Months)

Station 7 is envisioned to anchor fire protection in the southeast portion of Milton, particularly Britannia Road corridor. Current travel times from Station 3 exceed 300 seconds during peak traffic hours, which is exacerbated by limited east-west connectivity.

##### **Objectives and Benefits:**

- Reinforce fire response within Britannia, Boyne, and MEV.
- Provide backup to Station 5 during concurrency or staffing challenges.
- Enhance ERF capabilities along new collector roads where infill housing is intensifying.

##### **Planning Considerations:**

- A three-bay design should be evaluated to allow for housing additional reserve apparatus
- Co-location with EMS could optimize land use.
- Community amenity space could be included for public engagement or fire prevention events.

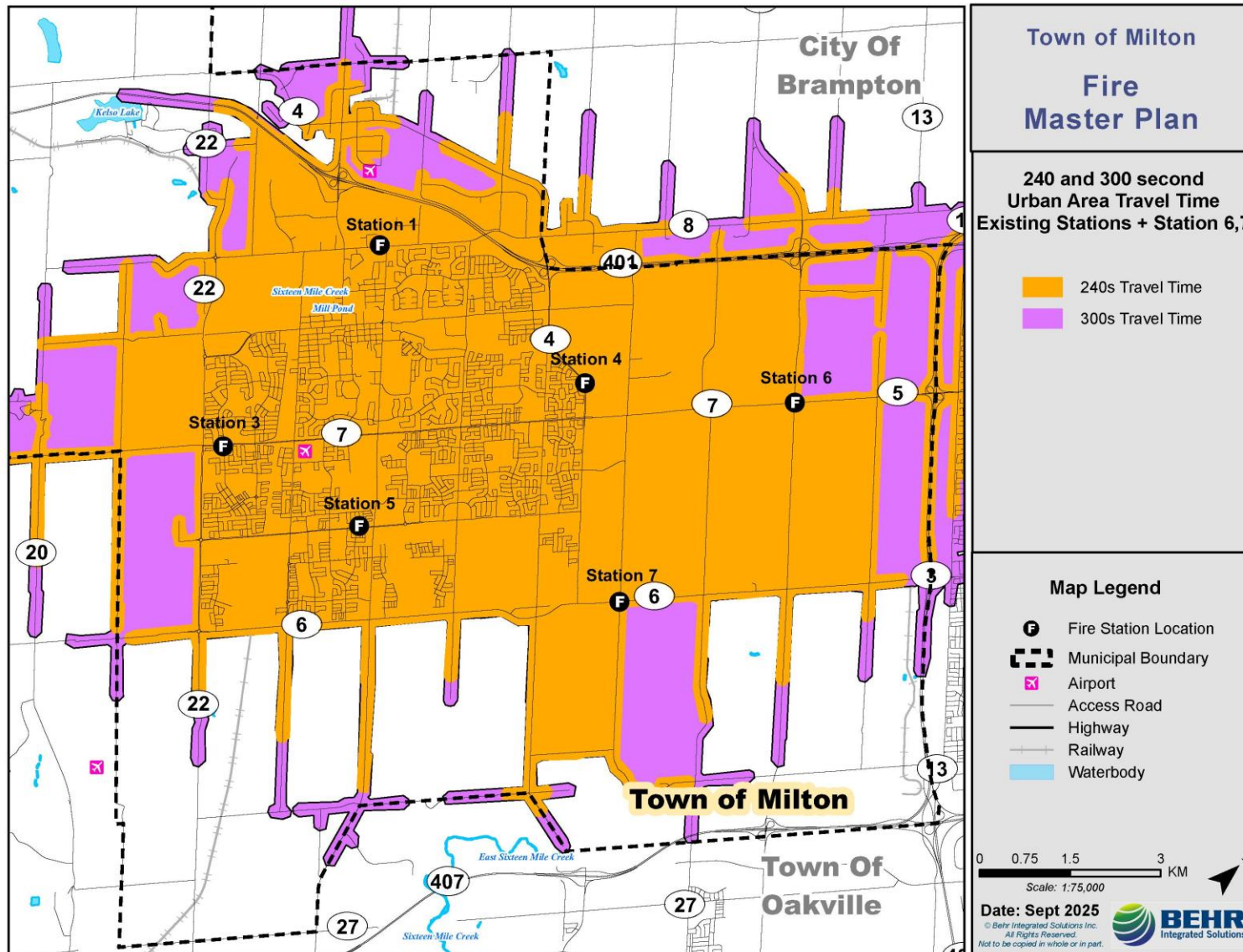
##### **Coverage Modeling:**

- *Map 12: 240 and 300 second travel time with new station 6 & 7. Map 13: ERF, New Stations 6 & 7*

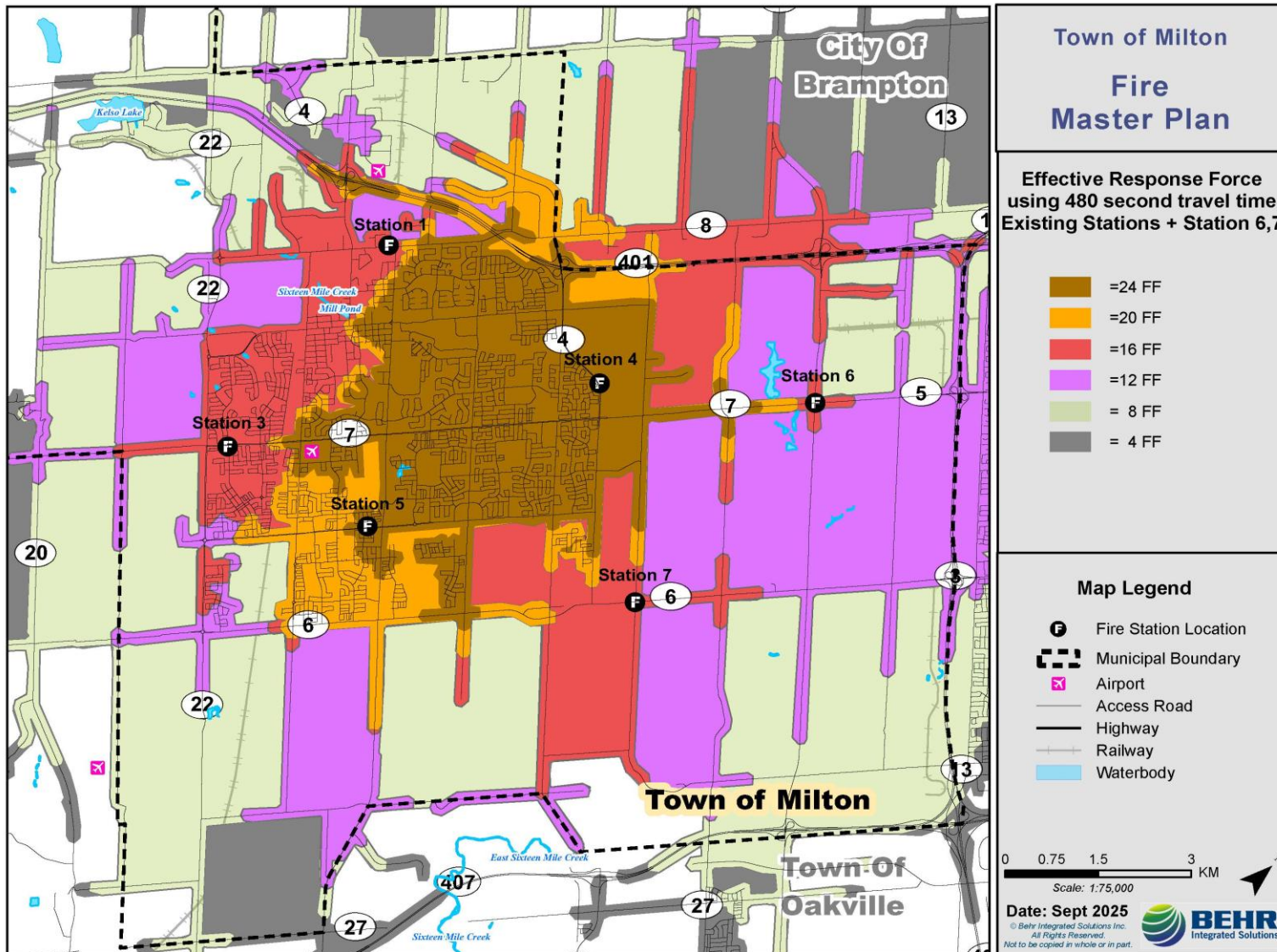
**Note:** *Unshaded portions of these maps reflect areas with incomplete road networks. As development proceeds, modeling should be refreshed.*



Map 12: 240 & 300 Second Travel Time, New Station 6 & 7



Map 13: ERF, New Station 6 & 7



The following observations to ERF with the addition of station 6 & 7:

- Adds a southeast anchor, closing one of the last major urban gaps.
- Increases overlap across the central core, boosting multi-company depth town wide.

ERF coverage gains (urban area share within 8 min)

- 8 ff: ~45–50% → ~80–85%
- 12 ff: ~20–25% → ~55–60%
- 16 ff: ~8–12% → ~30–35%
- 20 ff: ~2–3% → ~15–20%
- 24 ff: ~0% → ~6–10%

As a result, the operational impacts include:

- Town-wide ERF reliability improves markedly; most secondary plan areas (east + southeast) now fall within multi-company overlap.
- Stronger redundancy during peak periods and better ability to meet ERF targets without stripping the core.

**Observation #24:** The southeastern quadrant of Milton, particularly along the Britannia Road and Tremaine Road corridors, remains a key long-term growth area under the Town's intensification and secondary plan framework. This sector includes major future development districts such as Boyne, the Milton Education Village (MEV), and lands south of Derry Road, which are expected to experience significant residential and institutional expansion as buildout progresses. While earlier forecasts suggested this growth would occur within the timeframe of this Fire Master Plan, updated growth projections indicate that the scale and timing of development will likely extend beyond the current planning horizon.

As this area develops, the coverage limitations identified in this observation will remain relevant. Response coverage from Station 5 is expected to become increasingly constrained, particularly during peak traffic periods, with travel times exceeding 300 seconds and impacting MFRS's ability to meet response time benchmarks and effective response force (ERF) targets. Fire station modeling that includes Station 7 demonstrates improved coverage across the Britannia corridor and adjoining collector road network, supporting response performance within both 240- and 300-second travel time objectives. Accordingly, Station 7 should remain a planned long-term infrastructure requirement, with implementation timing revisited as development activity accelerates.



**Recommendation #24:** Plan for the establishment of Fire Station 7 as a longer-term initiative beyond the current Fire Master Plan horizon, including preliminary site identification, land acquisition considerations, and early design planning. Construction and commissioning should be anticipated beyond the timeframe of this Plan, with the timing to be reassessed and advanced if growth rates or service demand accelerate in the southeast area.

**Suggested completion:** Beyond the time frames within this FMP

**Cost:** Varies on scope

**Strategic Objective:** Operations

**Rationale:** *Rationale: Although the current Fire Master Plan planning horizon does not fully extend into the period when Station 7 is projected to be required, updated growth projections indicate that continued development and population intensification in the Town's southeast will eventually necessitate additional emergency response capacity. Maintaining Station 7 as a long-term planning priority will help ensure that MFRS remains positioned to respond proactively as these emerging growth areas evolve beyond the timeframe assessed in this Plan.*

*By locating Station 7 in the southeast, MFRS will strengthen ERF delivery in this expanding area while also improving overall system resilience by providing operational support to adjacent response zones, including Station 3's district. As concurrency and call volumes increase over time, a strategically located station in the southeast will enhance surge capacity and help mitigate response delays during high-demand periods.*

*Design considerations such as a three-bay layout, potential co-location with EMS, and dedicated public engagement space reflect best practices in maximizing station utility and supporting community integration. These features will support future apparatus deployment, inter-agency collaboration, and public safety outreach while optimizing land use. Station 7 remains a key long-term investment to protect service level commitments and safeguard southeastern residents as growth continues. Should development occur more rapidly than currently anticipated, the timing of this recommendation should be revisited and accelerated accordingly.*

#### 4.11.4 Staffing Model and Phased Implementation

Each new station requires 20 full-time firefighters to maintain a 4-person crew across 4 platoons. This staffing model aligns with:

- Response performance based on the principles of industry best-practice standards for career departments
- 2-in/2-out for interior fire attack

The four-person crew minimum ensures that initial attack teams can operate safely and within legal parameters. It also permits immediate entry in life-threatening conditions without delay.

##### Strategic Staffing Phasing

The staged hiring approach allows:

- Budget smoothing over multiple fiscal cycles
- Integration of new hires into existing crews for mentorship
- Utilization of recruits to address rising call volumes ahead of station opening

##### Support Staffing Requirements

- Additional training resources will be needed as full-time personnel exceed 100 FTE.
- Increased fire prevention and public education resources will be essential to address expanding inspection zones.
- Consideration should be given to administrative, scheduling, and data analysis support roles to ensure operational efficiency.

#### 4.11.5 Anticipated Response Time and ERF Coverage Improvements

The proposed stations will close critical coverage gaps. The 300-second benchmark is particularly crucial for:

- Flashover prevention during structure fires
- Rapid defibrillation in cardiac emergencies
- Hazard mitigation in vehicle and industrial incidents

ERF compliance increases are expected to reduce insurance premiums via Fire Underwriters Survey (FUS) and improve public confidence. Mapping analyses should continue annually to track changes and inform resource allocation.

#### 4.11.6 Anticipated Response Time and ERF Coverage Improvements

With the addition of Stations 6 and 7, MFRS will improve its ability to achieve proposed response performance benchmark times, particularly the **240-second and 300-second travel times for first-due engine response** and the **480-second total response for 14-person ERF** in urban and suburban zones.

Table 52: Using 240 Second Travel Time Benchmark

| Area/Region                    | Existing 4-min. Travel Coverage | Post-Station 6 | Post-Station 7 |
|--------------------------------|---------------------------------|----------------|----------------|
| Trafalgar Corridor / NE Milton | < 40%                           | > 90%          | > 90%          |
| Britannia Corridor / SE Milton | < 50%                           | 50–60%         | > 90%          |
| Walker (Boyne) Area            | 60%                             | 70%            | > 90%          |
| Hwy 401 / James Snow Ramp Zone | 65%                             | > 95%          | > 95%          |
| Town-wide 4-min coverage avg   | ~71% (2024)                     | ~82%           | ~92%           |

Table 53: Performance Metric Projections (240 seconds)

| Performance Metric                        | 2024 Baseline | 2029 Projection (Post-Stn. 6) | 2031 Projection (Post-Stn. 7) |
|-------------------------------------------|---------------|-------------------------------|-------------------------------|
| 1st Apparatus Arrival ≤ 240s @ 90th %     | 71%           | 82%                           | 90–92%                        |
| Full ERF Assembly ≤ 480s (Structure Fire) | 38%           | 58–65%                        | 75–80%                        |
| Concurrency (2+ incidents active)         | 12% of calls  | 12% (better distributed)      | 15% (better distributed)      |

#### 4.11.7 240-Second Travel Time Benchmark

Using the principles of industry best practice benchmarks recommending 240-second travel time for first-due apparatus, the current system achieves ~71% town-wide coverage. However, significant deficiencies are evident in NE and SE Milton where <50% of calls receive coverage within four minutes.

The addition of Station 6 dramatically improves coverage in the Trafalgar corridor (increasing from <40% to >90%), while Station 7 boosts service to the Britannia and Boyne growth areas. Post-implementation, town-wide 4-minute coverage improves to ~92%, substantially narrowing performance gaps in urbanizing areas.

Despite these improvements, the 240-second target remains difficult to achieve system-wide, especially under increasing traffic, complex intersections, and vertical growth. ERF performance also lags, with full 14-person assembly ≤ 480s only reaching 75–80% even after both stations are active, indicating that distance and staffing distribution still constrain full compliance.

This benchmark represents an aspirational standard that supports maximum survivability and containment but may not fully reflect real-world municipal design and resource limitations.

#### 4.11.8 300-Second Travel Time Benchmark (Proposed for Milton)

The proposed 300-second (5-minute) benchmark provides a more realistic and achievable target that balances risk, geography, and road network constraints. Under this lens, current town-wide coverage already reaches ~76%, improving to ~96% after Stations 6 and 7 are operational.

Notably, areas like NE and SE Milton, previously underserved, reach >95% compliance by 2031. This more inclusive benchmark accounts for travel delays due to development-phase roads, rail crossings, and collector/arterial design, making it a practical planning tool.

ERF assembly time  $\leq 480$  seconds benefits proportionally from better distributed travel zones, rising to ~78–82% compliance by 2031. This improves the ability to meet the full staffing threshold of 14 firefighters on scene within 8 minutes, even under concurrency.

While slightly less aggressive than the best practice benchmarks the 300-second model better aligns with Milton’s size, growth trends, and built form, offering a more sustainable approach to fire station deployment and capital planning.

Table 54: Proposed 300-Second Benchmark

| Metric                     | 240 sec Benchmark                      | 300 sec Benchmark                     |
|----------------------------|----------------------------------------|---------------------------------------|
| Town-wide Coverage (2031)  | ~92%                                   | ~96%                                  |
| NE/SE Growth Area Coverage | Improves from <50% to >90%             | Improves from ~60–65% to >95%         |
| ERF Assembly $\leq 480$ s  | 75–80% with new stations               | 78–82% with new stations              |
| Strategic Fit for Milton   | High standard, aspirational            | Realistic, practical, well-aligned    |
| Infrastructure Implication | Higher demand on station siting/timing | Greater flexibility in network design |

#### 4.11.9 Staffing Implications

Each new fire station (Station 6 and Station 7) will require a total of 20 full-time firefighters, including 16 Firefighters and 4 Captains, to support a 4-platoon system ensuring four firefighters on duty at all times (24/7 coverage). This staffing model aligns with best practice standards for career fire departments and fulfills Ontario’s legal requirements, including compliance with the Occupational Health and Safety Act (OHSA) and the 2-in/2-out best practice for a safe minimum crew for interior fire suppression.



To minimize operational and financial strain, it is recommended that staffing be phased in over a 3–4-year period prior to the commissioning of each station. This gradual approach provides sufficient time for recruitment, onboarding, certification, and integration into the department’s operational culture.

*Table 55: Staffing Implications*

| Year  | Station 6                    | Station 7                    |
|-------|------------------------------|------------------------------|
| 2026  | Hire 4 FTE firefighters      |                              |
| 2027  | Hire 8 FTE firefighters      |                              |
| 2028  | Hire 8 FTE firefighters      |                              |
|       | Promote 4 Captains           |                              |
| 2029  |                              | Hire 4FTE firefighters       |
| 2030  |                              | Hire 8 FTE firefighters      |
| 2031  |                              | Hire 8 FTE firefighters      |
|       |                              | Promote 4 Captains           |
| Total | 20 FTEs (16 FF + 4 Captains) | 20 FTEs (16 FF + 4 Captains) |

This phased staffing plan ensures that each new fire station can operate with a full suppression complement immediately upon opening while distributing financial and HR impacts across multiple budget years. Incremental hires may be used for float coverage, special projects, or to address overtime relief prior to station activation.

As the department expands toward 100+ full-time operational personnel, Milton Fire & Rescue Services should also consider the need for:

- **Additional Training Officers**, to support recruit training, probationary evaluations, and continuing education.
- **Administrative support**, particularly in scheduling, performance reporting, and payroll coordination.

The recommended staffing model reflects not only operational best practices but also the safety considerations that apply to full-service fire departments in Ontario.

**Observation #25:** The recommended addition of Station 6 and Station 7 represents a critical expansion of Milton Fire & Rescue Services (MFRS) to meet the demands of urban growth in the northeast and southeast quadrants of the Town. To ensure these stations are fully operational upon opening, and to prevent overburdening existing resources, MFRS must align its staffing model with the projected timelines for infrastructure completion and community development. A phased hiring schedule beginning in 2026 enables incremental onboarding, operational readiness, and supervisory development ahead of full-service activation. This strategy minimizes budgetary shocks, promotes workforce stability, and ensures a progressive buildup of operational capacity.

The proposed plan includes the hiring of 4 full-time firefighters in 2026, 8 firefighters in both 2027 and 2028, with the promotion of 4 captains in 2028 to establish the supervisory structure required for Station 6. This model is mirrored for Station 7, beginning with new hires in 2029 and culminating in full staffing and promotions by 2031. This staged approach supports succession planning and provides time for integrated training, policy development, and shift assimilation.

**Recommendation #25:** Incorporate phased hiring plans for Station 6 and Station 7 into its 10-year staffing forecast, with annual adjustments reviewed during the Town's budget cycle.

**Suggested completion:** 12-72 months

**Cost:** Wage cost per firefighter \$111,771 (2024) plus benefits

**Strategic Objective:** Operations

***Rationale:** Integrating phased hiring into MFRS's 10-year staffing forecast, with annual adjustments reviewed during the Town's budget cycle, provides a flexible and financially responsible approach to workforce planning. It allows the Town to match staffing investments with construction progress, service demand indicators, and evolving fiscal conditions. This recommendation also ensures compliance with response time benchmarks and Effective Response Force (ERF) requirements as service areas expand, and call volumes increase.*

*Moreover, by pre-emptively onboarding and training new staff ahead of station openings, MFRS can maintain high levels of service continuity and operational cohesion. It mitigates the risks associated with last-minute recruitment, including training delays, onboarding bottlenecks, and leadership gaps. Formalizing the phased hiring schedule within the Town's long-range financial and staffing plans reflects strategic foresight and demonstrates a commitment to maintaining responsive, scalable, and efficient emergency services across all regions of Milton.*

**Observation #26:** The current Effective Response Force (ERF) coverage in the northeast quadrant of Milton is challenged by increasing development, higher call volumes, and the geographic distance from existing fire stations. Station 1, while centrally located, experiences frequent concurrent calls and is increasingly relied upon to cover adjacent high-growth areas such as Trafalgar and Derry Road, where Station 6 is planned. The current deployment model at Station 1 lacks the staffing capacity to support multiple simultaneous incidents or quickly scale to complex calls requiring full ERF. As the phased hiring of full-time firefighters begins in 2026, these new resources offer an opportunity to enhance coverage by activating a second staffed response unit at Station 1, thereby addressing current response delays and mitigating risk to public safety.

**Recommendation #26:** Temporarily staff a second response vehicle at Station 1, using the phased hiring of full-time firefighters between 2026 and 2028, as outlined in the staffing forecast in recommendation 25. This second unit should remain operational until a full-time response vehicle can be relocated to new station 6.

**Suggested completion:** 12-36 months

**Cost:** neutral

**Strategic Objective:** Operations

***Rationale:** Temporarily staffing a second response vehicle at Station 1 during the 2026–2028 hiring phase provides a strategic bridge between present service delivery limitations and future infrastructure development. This interim measure enhances operational flexibility, reduces strain on existing crews, and significantly improves the ability to meet ERF targets for complex incidents or concurrent calls, particularly in high-growth zones to the east of Station 1. By utilizing planned personnel increases, the Town avoids the need for additional immediate hiring while optimizing the deployment of available human resources.*

*This approach also allows MFRS to gather performance data, refine deployment strategies, and train new personnel under live operational conditions, ensuring they are fully prepared when transitioned to Station 6. Maintaining the second unit at Station 1 until Station 6 becomes operational reinforces Milton’s commitment to proactive service delivery and strengthens emergency response capability in a cost-effective and scalable manner.*

## APPENDICES

|                                                                       |     |
|-----------------------------------------------------------------------|-----|
| Appendix A: Glossary of Terms .....                                   | A-1 |
| Appendix B: List of Figures, Maps, Images, and Tables .....           | B-1 |
| Appendix C: Community Comparative Analysis .....                      | C-1 |
| Appendix D: Response Mapping Methodology.....                         | D-1 |
| Appendix E: Mandatory Certification for Fire Protection Services..... | E-1 |
| Appendix F: Fire Prevention Staffing Model .....                      | F-1 |

## Appendix A: Glossary of Terms

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Apparatus                             | Any vehicle provided with machinery, devices, equipment, or materials of the Fire department for firefighting as well as equipment used to transport firefighters or supplies.                                                                                                                                                                                                                             |
| Assembly Time                         | The time the notification sounds in the fire station until the first vehicle leaves the station. In a full-time department this is expected to be within 80 seconds but for volunteer departments the time to collect a response crew can vary widely depending on location and time of emergency as well as all the factors that impact travel time.                                                      |
| Chute Time                            | See Assembly Time                                                                                                                                                                                                                                                                                                                                                                                          |
| Dangerous Goods                       | This term is synonymous with the terms hazardous materials and restricted articles. The term is used internationally in the transportation industry and includes explosives, and any other article defined as a combustible liquid, corrosive material, infectious substances, flammable compressed gases, oxidizing materials, poisonous articles, radioactive materials, and other restrictive articles. |
| Discovery                             | Time between the start of the emergency and when someone or an engineered system has detected the incident.                                                                                                                                                                                                                                                                                                |
| Dispatch Time                         | Time required to extract the necessary information from the caller to allow the proper response to be initiated. The dispatcher identifies the correct fire location and initiates the dispatch by paging the appropriate fire station.                                                                                                                                                                    |
| Emergency Call                        | The period between discovery and the actual notification of emergency services.                                                                                                                                                                                                                                                                                                                            |
| Emergency Communications Centre (ECC) | A facility dedicated to emergency services to receives calls, processes them, and then dispatches emergency units to the correct location in the appropriate time period.                                                                                                                                                                                                                                  |
| Emergency Operations Centre (EOC)     | The protected sites from which civil officials coordinate, monitor, and direct emergency response activities during an emergency or disaster.                                                                                                                                                                                                                                                              |
| Emergency                             | Any occasion or instance that warrants action to save lives and to protect property, public health, and safety. A situation is larger in scope and more severe in terms of actual or potential effects.                                                                                                                                                                                                    |
| Fire Suppression                      | The application of an extinguishing agent to a fire at a level such that an open flame is arrested; however, a deep-seated fire will require additional steps to assure total extinguishment.                                                                                                                                                                                                              |
| Hazard Analysis                       | A document, which identifies the local hazards that have caused, or possess the potential to adversely affect public health and safety, public and private property, or the environment.                                                                                                                                                                                                                   |
| Impact                                | The effect that each hazard will have on people such as injury and loss, adverse effects on health, property, the environment, and the economy.                                                                                                                                                                                                                                                            |

|                                      |                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Incident                             | A situation that is limited in scope and potential effects.                                                                                                                                                                                                                                                                                                                                  |
| Intervention Time                    | The time from fire reporting to the point where the first arriving pumper, or other apparatus providing comparable functions, arrives at the fire scene and directs an extinguishing agent on the fire.                                                                                                                                                                                      |
| Mutual Aid Agreement                 | An agreement between jurisdictions to assist each other during emergencies by responding with available workforce and apparatus.                                                                                                                                                                                                                                                             |
| National Fire Protection Association | The National Fire Protection Association (NFPA) is an internationally recognized trade association established in 1896 that creates and maintains standards and codes for usage and adoption by local governments to reduce the worldwide burden of fire and other hazards. This includes standards and guidelines to which many fire departments utilize to carry on day-to-day operations. |
| Response                             | Those measures undertaken immediately after an emergency has occurred, primarily to save human life, treat the injured, and prevent further injury and losses. They include response plan activation, opening and staffing the EOC, mobilization of resources, issuance of warnings and direction, provision of aid, and may include the declaration of a State of Local Emergency.          |
| Risk                                 | The chance or likelihood of an occurrence based on the vulnerability and known circumstances of a community.                                                                                                                                                                                                                                                                                 |
| Setup Time                           | This is the time necessary on site to evaluate the necessary actions, position the required resources and commence the intervention. In the case of a fire, completing size-up, assigning the necessary tasks, and deploying resources can provide delays on scene. A well-trained crew can minimize these delays while providing a safe, successful response.                               |
| Standard Operating Guidelines (SOG)  | A written organizational directive that establishes or prescribes specific operational or administrative methods to be followed routinely, which can be varied due to operational need in the performance of designated operations or actions.                                                                                                                                               |
| Standard Operating Procedures (SOP)  | A written organizational directive that establishes or prescribes specific operational or administrative methods to be followed routinely for the performance of designated operations or actions.                                                                                                                                                                                           |
| Travel Time                          | Time period from when the apparatus leaves the station to when it arrives on scene. Factors to consider for travel time are driver skill, weather, traffic, topography, road conditions and vehicle capabilities.                                                                                                                                                                            |

## Appendix B: List of Figures, Maps, Images, and Tables

### Figures

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| Figure 1: Fire Services Master Plan Process .....                  | iv  |
| Figure 2: Fire Master Plan Process .....                           | 4   |
| Figure 3: Economic Sectors (2021) .....                            | 17  |
| Figure 4: Risk Evaluation Matrix .....                             | 27  |
| Figure 5: Risk Matrix Template .....                               | 29  |
| Figure 6: Milton Fire & Rescue Service Organization Chart.....     | 53  |
| Figure 7: Fire Service Time Management Examples .....              | 54  |
| Figure 8: Fire Apparatus Life Cycle Cost Projection Example .....  | 159 |
| Figure 9: Percent of Incidents by Subcategory (2020 to 2024) ..... | 167 |
| Figure 10: Unique Incidents by Incident Type (2020 to 2024).....   | 174 |
| Figure 11: Incidents by Time of Day (2020 to 2024) .....           | 175 |
| Figure 12: Incidents by Day of the Week (2020 to 2024) .....       | 176 |
| Figure 13: Incidents by Month of the Year (2020 to 2024).....      | 177 |
| Figure 14: Incident Intervention Continuum (Urban Area) .....      | 179 |

### Maps

|                                                                                     |     |
|-------------------------------------------------------------------------------------|-----|
| Map 1: Town of Milton Overview .....                                                | 14  |
| Map 2: Town of Milton Official Plan – Schedule D .....                              | 21  |
| Map 3: Town of Milton Official Plan – Schedule B .....                              | 22  |
| Map 4: Emergency Call Density Map.....                                              | 194 |
| Map 5: Response Coverage Based Upon 56 Seconds and 116 Seconds Travel<br>Time ..... | 195 |
| Map 6: 240 & 300 Second Travel Time .....                                           | 197 |
| Map 7: Rural 600, 720, & 900 second travel time coverage (rural area).....          | 198 |
| Map 8: 480 second ERF Response Coverage .....                                       | 201 |
| Map 9: Current Coverage 240 & 300 Second Travel Time .....                          | 206 |
| Map 10: 240 & 300 Second Travel Time, New Station 6 .....                           | 215 |
| Map 11: Effective Response Force, New Station 6.....                                | 216 |
| Map 12: 240 & 300 Second Travel Time, New Station 6 & 7 .....                       | 220 |
| Map 13: ERF, New Station 6 & 7.....                                                 | 221 |

### Images

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| Image 1: Population Comparisons (2021 Census).....                  | 9   |
| Image 2: Risk Management Cycle Process.....                         | 26  |
| Image 3: Fire Department Budget as Percent of Municipal Budget..... | C-2 |
| Image 4: Cost Per Capita Comparison.....                            | C-2 |



Image 5: Municipal Comparative Response Call Volume (2023& 2024) ..... C-7

## Tables

|                                                                                                              |     |
|--------------------------------------------------------------------------------------------------------------|-----|
| Table 1: Targeted Interview List.....                                                                        | 5   |
| Table 2: Participating in Community Comparatives.....                                                        | 9   |
| Table 3: Milton Major Employers.....                                                                         | 16  |
| Table 4: Secondary Plan Development Areas.....                                                               | 18  |
| Table 5: Building Types and Risks .....                                                                      | 19  |
| Table 6: Population and Private Dwellings Change (2001 to 2021) .....                                        | 19  |
| Table 7: Town of Milton 25-year population forecast .....                                                    | 20  |
| Table 8: Population growth (2016-2021).....                                                                  | 23  |
| Table 9: Average and Median Age 2021 .....                                                                   | 23  |
| Table 10: Population Distribution 2021 .....                                                                 | 23  |
| Table 11: Age distribution percentage 2021 .....                                                             | 24  |
| Table 12: OBC Major Occupancy Classification .....                                                           | 31  |
| Table 13: Town of Milton Total Existing Property Stock.....                                                  | 33  |
| Table 14: Vulnerable Occupancies .....                                                                       | 36  |
| Table 15: Impacts of Hazards on Fire Protection Services .....                                               | 39  |
| Table 16: Milton Fire & Rescue Services Staffing Ratio Calculation .....                                     | 61  |
| Table 17: Fire Prevention Inspections Frequency Levels .....                                                 | 79  |
| Table 18: Public Hazard Incidents 2020-2024 .....                                                            | 99  |
| Table 19: 2020-2024 Rescue response incidents: .....                                                         | 101 |
| Table 20: NFPA Professional qualification standards by position.....                                         | 117 |
| Table 21: Gap Analysis Summary.....                                                                          | 127 |
| Table 22: Station 1 Overview.....                                                                            | 141 |
| Table 23: Station 2 Overview.....                                                                            | 143 |
| Table 24: Station 3 Overview.....                                                                            | 145 |
| Table 25: Station 4 Overview.....                                                                            | 147 |
| Table 26: Station 5 Assessment.....                                                                          | 149 |
| Table 27: Fire Apparatus Service Schedule (Fire Insurance Grading) .....                                     | 152 |
| Table 28: Fire Apparatus Life Cycle Cost Projection Example .....                                            | 158 |
| Table 29: MFRS Apparatus and Planned Life Cycle.....                                                         | 160 |
| Table 30: Unique Response Types within Milton (2019 to 2023) .....                                           | 167 |
| Table 31: Incidents by sub-categories (2020-2024) .....                                                      | 168 |
| Table 32: Non-Fire Call Breakdown by Sub-Category - Medical (2020 to 2024).....                              | 169 |
| Table 33: Non-Fire Call Breakdown by Sub-Category – Other<br>Response/Overpressure (2020 to 2024).....       | 170 |
| Table 34: Non-Fire Call Breakdown by Sub-Category – Pre-Fire Condition/Public<br>Hazard (2020 to 2024) ..... | 171 |

|                                                                                                                                                                 |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Table 35: Non-Fire Call Breakdown by Sub-Category - Rescue (2020 to 2024) .....                                                                                 | 172 |
| Table 36: Industry Performance Standards .....                                                                                                                  | 181 |
| Table 37: Alarm Processing Times (90th percentile) .....                                                                                                        | 184 |
| Table 38: Assembly Performance by Incident Type (in seconds) * .....                                                                                            | 185 |
| Table 39: Assembly time by full-time shifts (in seconds).....                                                                                                   | 186 |
| Table 40: Travel Performance by incident type- Town-wide (in seconds).....                                                                                      | 189 |
| Table 41: Travel Performance by incident type urban area (in seconds) .....                                                                                     | 189 |
| Table 42: 90th Percentile Response Performance (in seconds) .....                                                                                               | 191 |
| Table 43: 90 <sup>th</sup> Percentile Response Performance – Urban area (in seconds) .....                                                                      | 191 |
| Table 44: Theoretical Travel Time Calculation- Urban area (in seconds) .....                                                                                    | 193 |
| Table 45: Low Risk: Small Fire (No Exposures): Garbage, Vehicle – Private, Grass,<br>Investigate (External), Monitoring Alarm (W/O Confirmation), Medical ..... | 203 |
| Table 46: Moderate Risk: Attached Garage, Single Family Residential<br>(Detached/Duplex).....                                                                   | 204 |
| Table 47: Moderate Risk: Motor Vehicle Crash (1-3 Private Vehicles).....                                                                                        | 204 |
| Table 48: Moderate Risk: Technical Rescue .....                                                                                                                 | 204 |
| Table 49: High Risk: Commercial, Seniors’ Home, Industrial, Strip Mall, Mid-Rise<br>Residential .....                                                           | 205 |
| Table 50: Apparatus List, Minimum Staffing, and Location.....                                                                                                   | 207 |
| Table 51: 5-Year Concurrent Call Load Unit Involvement .....                                                                                                    | 208 |
| Table 52: Using 240 Second Travel Time Benchmark.....                                                                                                           | 225 |
| Table 53: Performance Metric Projections (240 seconds).....                                                                                                     | 225 |
| Table 54: Proposed 300-Second Benchmark .....                                                                                                                   | 226 |
| Table 55: Staffing Implications.....                                                                                                                            | 227 |
| Table 56: Community Comparative Budget Ranking.....                                                                                                             | C-1 |
| Table 57: Community Comparative Standard of Cover .....                                                                                                         | C-3 |
| Table 58: Community Comparative Departments’ Profile.....                                                                                                       | C-4 |
| Table 59: Examples of Incident Types for Statistical Analysis.....                                                                                              | C-5 |
| Table 60: Municipal Comparative Response Call Volume.....                                                                                                       | C-6 |

## Appendix C: Community Comparative Analysis

### Budgets

Department budgets are of particular importance for most communities. In some instances, fire and emergency services are a considerable portion of a municipality's operating budget. This information was obtained using reported 2024 budgets.

Table 56: Community Comparative Budget Ranking

| Community                                          | Municipal Budget 2024 | Fire Dept. Operating Budget | % of Municipal Budget | Cost Per Capita |
|----------------------------------------------------|-----------------------|-----------------------------|-----------------------|-----------------|
| Town of Milton                                     | \$192,300,000         | \$15,663,714                | 8.14%                 | \$117.79        |
| City of Guelph                                     | \$550,764,311         | \$32,031,617                | 5.82%                 | \$222.84        |
| Town of Oakville                                   | \$446,606,303         | \$46,922,000                | 10.51%                | \$291.51        |
| City of Burlington                                 | \$244,000,000         | \$36,875,000                | 15.11%                | \$197.25        |
| Town of Halton Hills                               | \$69,968,495          | \$10,319,800                | 14.75%                | \$163.93        |
| Municipality of Clarington                         | \$76,807,800          | \$14,766,827                | 19.23%                | \$145.59        |
| Municipality of Chatham-Kent                       | \$418,984,119         | \$25,843,161                | 6.17%                 | \$248.52        |
| Per Capita Net Expenditure Fire (Milton): \$117.79 |                       |                             |                       |                 |
| Average Per Capita Net Expenditure Fire: \$152.42  |                       |                             |                       |                 |

Image 3: Fire Department Budget as Percent of Municipal Budget

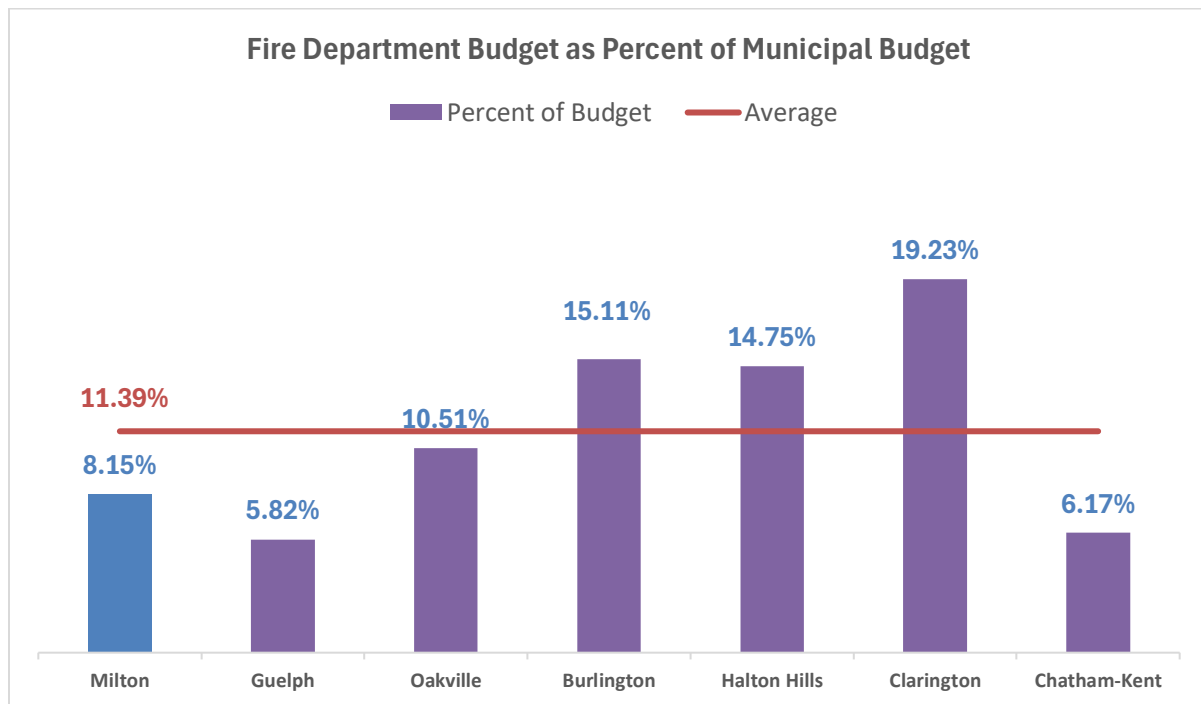
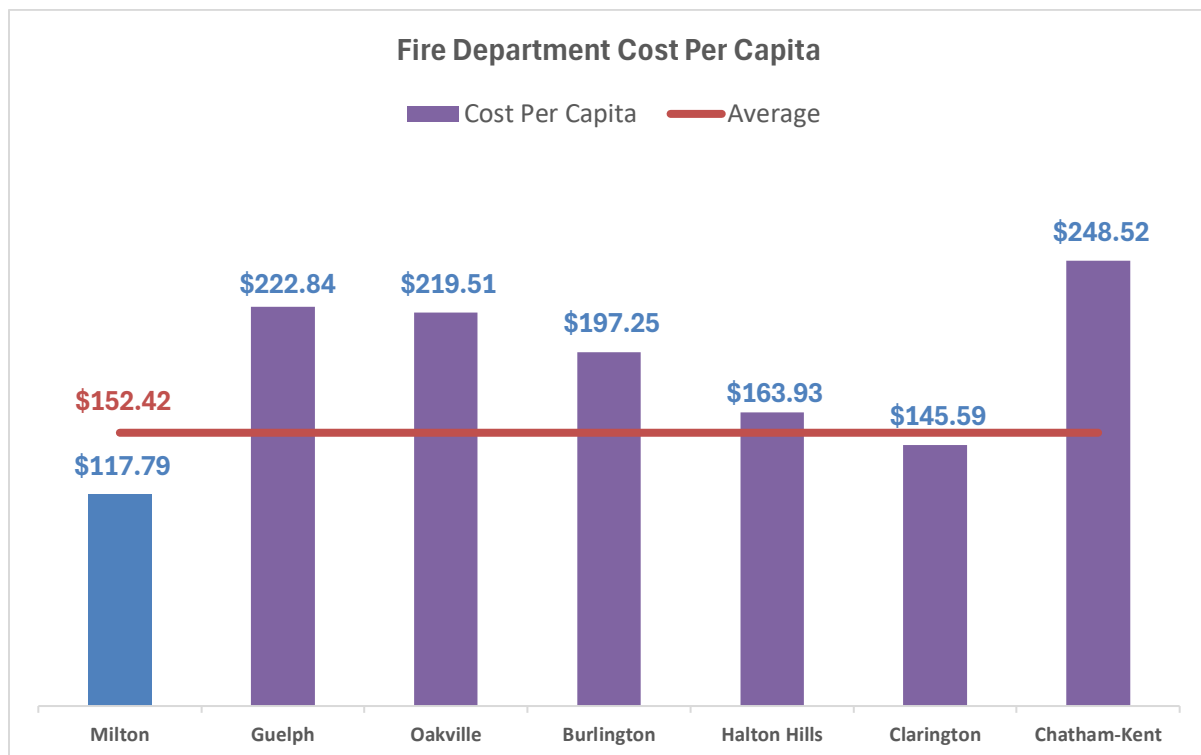


Image 4: Cost Per Capita Comparison



## Industry Standards

Table 57: Community Comparative Standard of Cover

| Community                    | Standard of Cover | Council Approved? | Standard based on a leading practice.<br>i.e., NFPA, OHS, etc. |
|------------------------------|-------------------|-------------------|----------------------------------------------------------------|
| Town of Milton               | No                | No                | NA                                                             |
| City of Guelph               | No                | No                | NA                                                             |
| Town of Oakville             | Yes               | NA                | Yes                                                            |
| City of Burlington           | Yes               | Yes               | Yes                                                            |
| Town of Halton Hills         | No                | No                | NA                                                             |
| Municipality of Clarington   | Yes               | Yes               | No                                                             |
| Municipality of Chatham-Kent | No                | No                | NA                                                             |

## Department Profile

Department profiles, staffing models and levels of service are based on community risk, risk tolerance and the ability of a community to pay for and sustain desired service levels.

Table 58: Community Comparative Departments' Profile

| Community                                                          | Milton                     | Guelph                         | Oakville | Burlington | Halton Hills   | Clarington      | Chatham-Kent |
|--------------------------------------------------------------------|----------------------------|--------------------------------|----------|------------|----------------|-----------------|--------------|
| Department Type                                                    | Composite                  | Career                         | Career   | Composite  | Composite      | Composite       | Composite    |
| No. of Stations                                                    | 5                          | 6                              | 9        | 8          | 3              | 5               | 19           |
| Total Staff                                                        | 166.5                      | 181                            | 257      | 273        | 109            | 179             | 450          |
| Fire Chief (FT/PT)                                                 | FT                         | FT                             | FT       | FT         | FT             | FT              | FT           |
| Total Deputy Chief (PT/FT)                                         | 2 FT                       | 2 FT                           | 3 FT     | 3 FT       | 3 FT           | 2 FT            | 4            |
| Total Assistant Deputy Chief (ADC)                                 |                            |                                |          |            |                |                 |              |
| Total Support Staff (PT/FT)                                        | 2.5                        | 3                              | 3        | 4          | 2              | 3               | 5            |
| Total Suppression Staff (PT/FT)<br>(WEP – Work Experience Program) | 84 FT<br>70 PT             | 147 FT                         | 240 FT   | 180        | 54 FT<br>44 PT | 64 Ft<br>100 PT | 420          |
| Total Fire Prevention Staff (PT/FT)                                | 5 FT                       | 7 FT                           | 12 FT    | 8          | 2 FT           | 5 FT            | 4            |
| Total Training Staff (PT / FT)                                     | 4 FT                       | 2 FT                           | 5 FT     | 3          | 2 FT           | 3 FT            | 2            |
| Total Dispatch Staff (PT / FT)                                     | 1 Div Chief<br>8 FT<br>6PT | 8 FT<br>1 FT Comms.<br>Manager | N/A      | 14         | N/A            | N/A             | N/A          |
| Mechanical                                                         | 2 FT                       | 2 FT                           | N/A      | N/A        | 1 FT           | 1               | N/A          |
| Other                                                              | N/A                        | 1 FT - IT                      | N/A      | N/A        | N/A            | N/A             | N/A          |

FT: Fulltime    PT: Part-time    POC: Paid-On-Call    PPC: Paid-per-Call

## Response Data

The same 2020–2024 information was used in comparing the response data for each community. Information is shared using two categories: Incident Type and Call Volume. Using these breakdowns allows for the uniqueness of each community to be represented as well as highlighting the areas of similarity for fire and emergency response.

Table 59: Examples of Incident Types for Statistical Analysis

| INCIDENTS BY TYPE                                               |                                                                                               |                                                                                            |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| EMS Related Calls                                               |                                                                                               |                                                                                            |
| Call Types                                                      | Pre-Hospital Care: Alpha, Bravo Charlie Delta Echo                                            |                                                                                            |
|                                                                 | Lift Assist                                                                                   |                                                                                            |
|                                                                 | False Alarms                                                                                  |                                                                                            |
| Fire-Related Calls                                              |                                                                                               |                                                                                            |
| Fire Emergency                                                  | Alarm<br>Burning Complaint<br>Structure Fire<br>Minor Fire<br>Smoke                           | Car Fire<br>Re-check<br>Wildfire – Grass, Brush, Outdoor<br>Oven/Pot on stove<br>explosion |
| MVI (Motor Vehicle Incident), aka MVC (Motor Vehicle Collision) | Extrication                                                                                   | No Extrication                                                                             |
| Rescue                                                          | Stalled Elevator<br>Lift/Machine Rescue<br>High Angle                                         | Swift Water<br>Building Collapse<br>Ice                                                    |
| Hazmat/Dangerous Good                                           | Highway Incident<br>Rail Incident                                                             | Industrial Incident<br>Resident Incident                                                   |
| Non-Emergency                                                   | Carbon Monoxide<br>Gas/Oil Smell/Spill<br>Power/Telephone/Cable Line Down<br>Natural Gas Leak | Aircraft Standby Incident<br>Bomb Threat<br>Hazardous Materials<br>Propane Leak/Smell      |
| Other                                                           | Inspection<br>Burning Pile Inspection<br>Assist Other Agency<br>Public Service                | Needle Pick-up<br>Flood Assessment<br>Water Problem (in structure)                         |

**Note:** Description and category names may not be common terminology in all jurisdictions.



Table 60: Municipal Comparative Response Call Volume

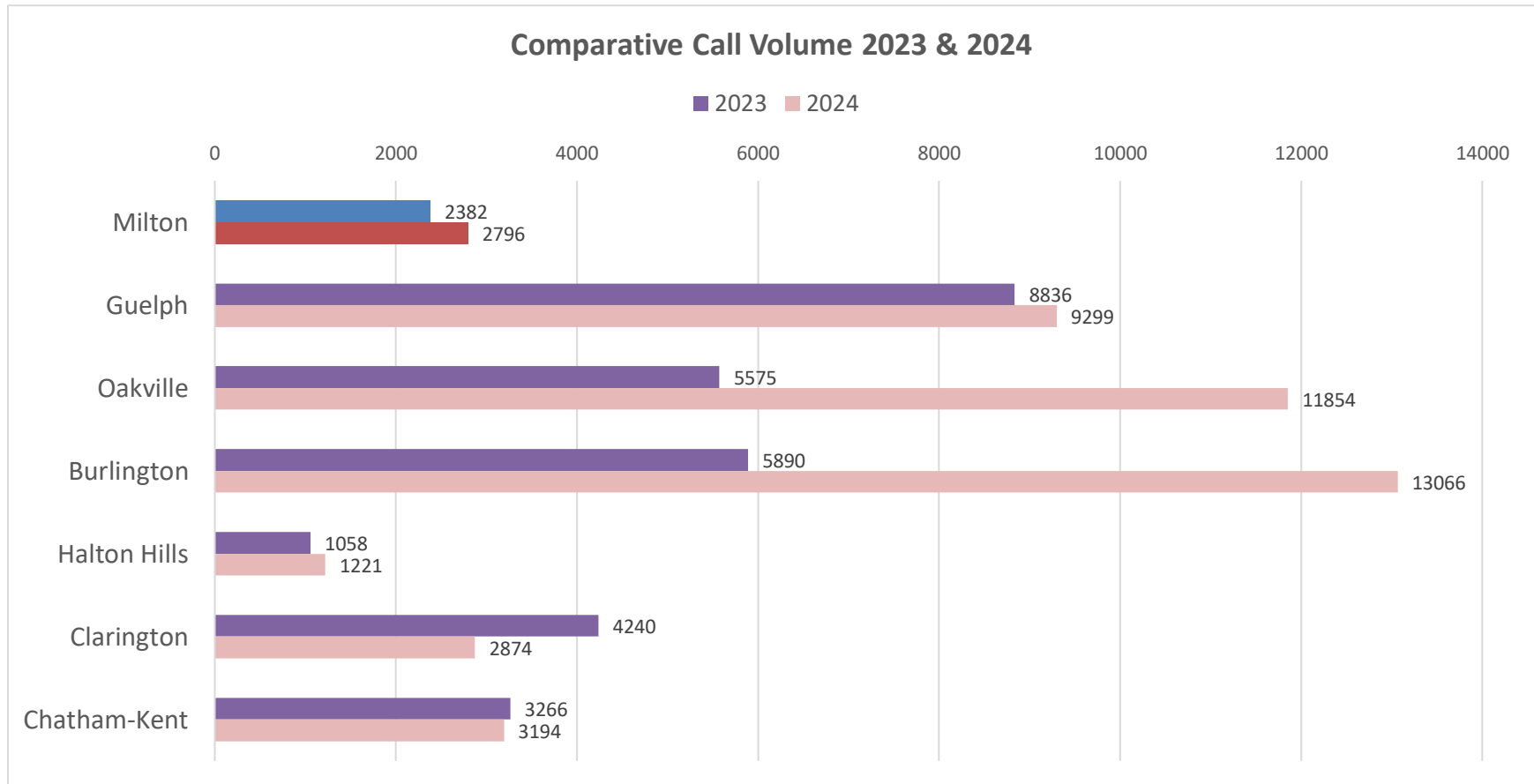
| Community          |      | Milton | Guelph             | Oakville | Burlington | Halton Hills | Clarington | Chatham-Kent |
|--------------------|------|--------|--------------------|----------|------------|--------------|------------|--------------|
| Total Call Volume  | 2020 | 1809   | 5914               | 6380     | 7009       | 1003         | 2629       | N/A          |
|                    | 2021 | 1983   | 7395*              | 6968     | 7643       | 925          | 2215       | N/A          |
|                    | 2022 | 2301   | 8248               | 8120     | 8701       | 1071         | 2535       | 2976         |
|                    | 2023 | 2382   | 8836               | 5575     | 5890       | 1058         | 4240°      | 3266         |
|                    | 2024 | 2796   | 9299               | 11854    | 13066      | 1221         | 2874       | 3194         |
| Fire Related Calls | 2020 | 1729   | N/A                | NA       | 2784       | 28           | 428        | N/A          |
|                    | 2021 | 1862   | Oct-Dec:<br>583 *  | NA       | 3013       | 40           | 368        | N/A          |
|                    | 2022 | 2181   | 3049               | NA       | 3220       | 26           | 318        | 2359         |
|                    | 2023 | 2208   | 3249               | NA       | 3346       | 27           | 331        | 2709         |
|                    | 2024 | 2478   | 3657               | NA       | 3578       | 63           | 360        | 2566         |
| EMS Related Calls  | 2020 | 80     | N/A                | NA       | 4225       | 125          | 960        | N/A          |
|                    | 2021 | 121    | Oct-Dec:<br>1213 * | NA       | 4630       | 101          | 596        | N/A          |
|                    | 2022 | 120    | 6859               | NA       | 5481       | 126          | 605        | 617          |
|                    | 2023 | 174    | 6541               | NA       | 2544       | 161          | 2350°      | 557          |
|                    | 2024 | 318    | 5064               | NA       | 9488       | 172          | 801        | 628          |

\* New RMS implemented October 2021

° For 2023, Clarington Emergency and Fire Service medical protocols were adapted to include difficulty breathing and chest pain

N/A - No data available

Image 5: Municipal Comparative Response Call Volume (2023& 2024)



## Appendix D: Response Mapping Methodology

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Response travel times are directly influenced by station location and can be varied based upon a cost/risk analysis and the development of performance targets.

### Data Formats

Preference of ESRI Shapefiles

### Base Data Layers Requested

#### A. Hydrology

- Supports response planning for water-related incidents (e.g., water rescue units).
- Enables analysis of spill contamination risks and containment strategies, especially in relation to rail networks and overland flow.
- Identifies bridge crossings that may be incident-prone (e.g., MVC/MVA, spills).
- Enhances map completeness and situational awareness.

#### B. Single-Line Road/Transportation Network

- Used to calculate response times based on road speeds.
- Roads are modeled into a network to support response routing.

#### C. Railways

- Identifies risk areas where rail infrastructure may impede response times.
- Assists in planning for derailments, chemical spills, and evacuation scenarios.

#### D. Municipal Boundaries

- Defines mutual aid limits and jurisdictional responsibilities.
- Supports sub-area mapping and regional response zone identification.
- Provides data for gap analysis and future station planning.

#### E. Parks

- Highlights accessibility challenges and opportunities for station placement.
- Supports locational analysis for new stations based on proximity.
- Includes classification of parks (local, regional, provincial, national).

#### F. Projection File

- Ensures spatial consistency with client or municipal datasets.
- Enables accurate measurement of distance and time for analysis.

**G. Orthophoto (GeoTIFF, Mr.SID)**

- Used for ground-truthing and visual verification of locations.
- Not typically included in final maps due to size and transfer limitations.

**H. Emergency Services Locations**

- Ensures accurate geolocation of facilities beyond address matching.
- Adjustments may be made to align facility points with road networks (typically within 50 meters).

**Response Zone Modeling****A. Assumptions**

- Average weather conditions (no storms, snow, etc.).
- Roadway segments include nodes/junctions at intersections.
  - If missing, network requires cleaning and fixing.
- Roadways may extend beyond municipal boundaries.
- Emergency responders are trained, and vehicles are operational.
- Roads are dry and in good condition.
- No time penalties for left turns.
- Road speeds provided by client; if unavailable:
  - Speeds are derived from road class tables.
  - Posted speeds are reduced by up to 5%.
- Average traffic volume; assumes free-flowing lanes.
- Rail crossings are unobstructed.
- Time of day modeled between 9 AM – 9 PM.
- Traffic signal pre-emption systems (e.g., Opticom) are assumed to be present.
- No intersection delays unless specified.
- School zones are adjusted only if identified.

**B. Response Time Calculation**

- Customized based on input from Emergency Services.
- Includes 80% of typical service calls.
- Based on total drive time using road speed data.
- Adjustments made for known variances or trends.

**C. Response Polygons**

- Define general response areas based on maximum drive limits.
- Identify mutual aid zones and coverage gaps.
- Support fire zone development and station planning.
- Highlight potential station relocations.

**Additional Analysis****A. Out-of-Scope (Subject to Client Discussion)**

- Transition from project-based to operational modeling:
  - Time-of-day and seasonal variations
  - Call volume and types
  - Advanced modeling and scripting for batch processing

**B. Data Availability**

- Client-provided data is used when sufficiently detailed.
- Assumptions are made when data is incomplete.

**C. Advanced Analysis (Optional)**

- Intersection-based speed reductions (e.g., stop signs, traffic lights).
- May be complex and time-intensive due to:
  - Limited client engagement
  - Inaccessible or missing data
  - One-off nature of projects

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## Appendix E: Mandatory Certification for Fire Protection Services

| Item | Fire protection service                                                                                                                                                             | Minimum Certification Standard                                                                                                                                                                                                                                                                                                                                                                                                                                 | Compliance Deadline |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 1    | Firefighter Exterior Attack: Fire suppression operations from the exterior of the building only.                                                                                    | <p>The following job performance requirements of NFPA 1001, “Standard for Fire Fighter Professional Qualifications”, 2019 Edition, Chapter 4 (Firefighter I) and Chapter 5 (Firefighter II):</p> <p>4.1, 4.2, 4.3.1, 4.3.2, 4.3.3, 4.3.6, 4.3.7, 4.3.8, 4.3.10 (A1-A9, B1-B3, B4 (exterior stairway), B5-B10), 4.3.15, 4.3.16, 4.3.17, 4.3.18, 4.3.19, 4.3.20, 4.3.21, 4.5</p> <p>5.1, 5.2, 5.3.1, 5.3.2 (A1-A4), 5.3.3, 5.3.4, 5.4.2, 5.5.3, 5.5.4, 5.5.5</p> | July 1, 2026        |
| 2    | Firefighter Exterior Attack and auto extrication: Fire suppression operations from the exterior of the building only and auto extrication rescue.                                   | <p>All job performance requirements in item 1 and the following job performance requirements of NFPA 1001, “Standard for Fire Fighter Professional Qualifications”, 2019 Edition, Chapter 5 (Firefighter II):</p> <p>5.4.1</p>                                                                                                                                                                                                                                 | July 1, 2026        |
| 3    | Firefighter Exterior Attack and hazardous materials response: Fire suppression operations from the exterior of the building only and Operations-level hazardous materials response. | <p>All job performance requirements in item 1, all job performance requirements of NFPA 1072, “Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications”, 2017 Edition, Chapter 5 (Operations), and the following job performance requirements of Chapter 6 (Operations Mission Specific):</p> <p>6.2 and 6.6</p>                                                                                 | July 1, 2026        |



| Item | Fire protection service                                                                                                                                                                                                               | Minimum Certification Standard                                                                                                                                                                                                                                                                                                                                          | Compliance Deadline |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 4    | Firefighter Exterior Attack, auto extrication, and hazardous materials response: Fire suppression operations from the exterior of the building only, automobile extrication rescue and Operations-level hazardous materials response. | All job performance requirements in items 1, 2 and 3.                                                                                                                                                                                                                                                                                                                   | July 1, 2026        |
| 5    | Firefighter Interior Attack: Fire suppression operations that enter the interior of the building and can perform rescue.                                                                                                              | All job performance requirements in item 1 and the following job performance requirements of NFPA 1001, “Standard for Fire Fighter Professional Qualifications”, 2019 Edition, Chapter 4 (Firefighter I) and Chapter 5 (Firefighter II):<br><br>4.3.4, 4.3.9, 4.3.10 (A10-A11, B4 (interior stairway), B11), 4.3.11, 4.3.12, 4.3.13, 4.3.14<br><br>5.3.2 (A5-A9, B1-B6) | July 1, 2026        |
| 6    | Firefighter Interior Attack and auto extrication: Fire suppression operations that enter the interior of the building and can perform rescue and automobile extrication rescue.                                                       | All job performance requirements in item 5 and the following job performance requirements of NFPA 1001, “Standard for Fire Fighter Professional Qualifications”, 2019 Edition, Chapter 5 (Firefighter II):<br><br>5.4.1                                                                                                                                                 | July 1, 2026        |
| 7    | Firefighter Interior Attack and hazardous materials response: Fire suppression operations that enter the interior of the building and Operations-level hazardous materials response.                                                  | All job performance requirements in item 5, all job performance requirements of NFPA 1072, “Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications”, 2017 Edition, Chapter 5 (Operations) and the following job performance requirements of Chapter 6 (Operations Mission Specific):<br>6.2 and 6.6      | July 1, 2026        |

| Item | Fire protection service                                                                                                                                                                                                                                                                   | Minimum Certification Standard                                                                                                                                                                                                                                                                            | Compliance Deadline |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 8    | Firefighter Interior Attack, auto extrication, and hazardous materials response: Fire suppression operations that enter the interior of the building and can perform rescue, automobile extrication rescue, and Operations-level hazardous materials response (full-service firefighter). | All job performance requirements of NFPA 1001, “Standard for Fire Fighter Professional Qualifications”, 2019 Edition, Chapter 5 (Firefighter II).                                                                                                                                                         | July 1, 2026        |
| 9    | Team Lead Exterior Attack: Supervision of firefighters that provide fire suppression operations from the exterior of the building only.                                                                                                                                                   | All job performance requirements in item 1 and the following job performance requirements of NFPA 1021, “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I):<br><br>4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3 | July 1, 2026        |
| 10   | Team Lead Exterior Attack and auto extrication: Supervision of firefighters that provide fire suppression operations from the exterior of the building only or that provide auto extrication rescue.                                                                                      | All job performance requirements in item 2 and the following job performance requirements of NFPA 1021, “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I):<br><br>4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3 | July 1, 2026        |
| 11   | Team Lead Exterior Attack and hazardous materials response: Supervision of firefighters that provide fire suppression operations from the exterior of the building only or that provide Operations-level hazardous materials response.                                                    | All job performance requirements in item 3 and the following job performance requirements of NFPA 1021, “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I):<br><br>4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3 | July 1, 2026        |

| Item | Fire protection service                                                                                                                                                                                                                                                           | Minimum Certification Standard                                                                                                                                                                                                                                                                             | Compliance Deadline |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 12   | Team Lead Exterior Attack, auto extrication, and hazardous materials: Supervision of firefighters that provide fire suppression operations from the exterior of the building only or that provide automobile extrication rescue or Operations-level hazardous materials response. | All job performance requirements in item 4, and the following job performance requirements of NFPA 1021, “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I):<br><br>4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3 | July 1, 2026        |
| 13   | Team Lead Interior Attack: Supervision of firefighters that provide fire suppression operations from the interior of the building and can perform rescue.                                                                                                                         | All job performance requirements in item 5 and the following job performance requirements of NFPA 1021, “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I):<br><br>4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3  | July 1, 2026        |
| 14   | Team Lead Interior Attack and auto extrication: Supervision of firefighters that provide fire suppression operations from the interior of the building and can perform rescue or that provide automobile extrication rescue.                                                      | All job performance requirements in item 6 and the following job performance requirements of NFPA 1021, “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I):<br><br>4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3  | July 1, 2026        |

| Item | Fire protection service                                                                                                                                                                                                                                                                                                                  | Minimum Certification Standard                                                                                                                                                                                                                                                                            | Compliance Deadline |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 15   | Team Lead Interior Attack and hazardous materials response: Supervision of firefighters that provide fire suppression operations from the interior of the building and can perform rescue or that provide Operations-level hazardous materials response.                                                                                 | All job performance requirements in item 7 and the following job performance requirements of NFPA 1021, “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I):<br><br>4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3 | July 1, 2026        |
| 16   | Team Lead Interior Attack, auto extrication, and hazardous materials response: Supervision of firefighters that provide fire suppression operations from the interior of the building and can perform rescue or that provide automobile extrication rescue or Operations-level hazardous materials response (full-service fire officer). | All job performance requirements of NFPA 1021 “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I).                                                                                                                                                          | July 1, 2026        |
| 17   | Pump Operations: Operation of a pumper apparatus without driving the apparatus, or where the apparatus does not require a class D licence.                                                                                                                                                                                               | All job performance requirements of NFPA 1002, “Standard for Fire Apparatus Driver/Operator Professional Qualifications”, 2017 Edition, Chapter 5 (Apparatus Equipped with Fire Pump), without pre-requisites in Chapter 4.                                                                               | July 1, 2026        |
| 18   | Pump Operations: driver: Driving and operating a pumper apparatus that requires a class D licence.                                                                                                                                                                                                                                       | All job performance requirements in NFPA 1002 “Standard for Fire Apparatus Driver/Operator Professional Qualifications”, 2017 Edition, Chapter 5 (Apparatus Equipped with Fire Pump).                                                                                                                     | July 1, 2026        |
| 19   | Fire Prevention/Inspection Level I: conducting fire and life safety inspections.                                                                                                                                                                                                                                                         | All job performance requirements of NFPA 1031, “Standard for Professional Qualifications for Fire Inspector and Plan Examiner”, 2014 Edition, Chapter 4 (Fire Inspector I).                                                                                                                               | July 1, 2026        |

| Item | Fire protection service                                                                                                                                                                         | Minimum Certification Standard                                                                                                                                                                                                                                                                 | Compliance Deadline |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 20   | Fire Prevention/Inspection Level II: conducting fire and life safety inspections including in facilities that store, handle or use flammable/combustible liquids.                               | All job performance requirements in item 19 and NFPA 1031, “Standard for Professional Qualifications for Fire Inspector and Plan Examiner”, 2014 Edition, Chapter 5 (Fire Inspector II).                                                                                                       | July 1, 2026        |
| 21   | Fire Investigator: conducting fire cause and origin investigations.                                                                                                                             | All job performance requirements of NFPA 1033, “Professional Qualifications for Fire Investigator”, 2014 Edition, Chapter 4 (Fire Investigator).                                                                                                                                               | July 1, 2026        |
| 22   | Fire and Life Safety Educator: providing fire and life safety education.                                                                                                                        | All job performance requirements of NFPA 1035, “Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist, and Youth Firesetter Program Manager Professional Qualifications”, 2015 Edition, Chapter 4 (Fire and Life Safety Educator I). | July 1, 2026        |
| 23   | Training Officer Level I: providing training and education to other fire personnel.                                                                                                             | All job performance requirements of NFPA 1041, “Standard for Fire and Emergency Services Instructor Professional Qualifications”, 2019 Edition, Chapter 4 (Fire and Emergency Services Instructor I).                                                                                          | July 1, 2026        |
| 24   | Training Officer Level II: providing training and education to other fire personnel including lead instructor roles at live fire and above or below grades technical rescue practical training. | All job performance requirements in item 23 and NFPA 1041, “Standard for Fire and Emergency Services Instructor Professional Qualifications”, 2019 Edition, Chapter 5 (Fire and Emergency Services Instructor II).                                                                             | July 1, 2026        |
| 25   | Emergency Communicators Level I: taking emergency calls.                                                                                                                                        | All job performance requirements of NFPA 1061, “Standard for Public Safety Telecommunications Personnel Professional Qualifications”, 2018 Edition, Chapter 4 (Public Safety Telecommunicator I).                                                                                              | July 1, 2026        |
| 26   | Emergency Communicators Level II: taking emergency calls and dispatching emergency vehicles.                                                                                                    | All job performance requirements in item 25 and NFPA 1061, “Standard for Public Safety Telecommunications Personnel Professional Qualifications”, 2018 Edition, Chapter 5 (Public Safety Telecommunicator II).                                                                                 | July 1, 2026        |

| Item | Fire protection service                                                                                                                                             | Minimum Certification Standard                                                                                                                                                                                                    | Compliance Deadline |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 27   | Incident Safety Officers: undertaking the primary role of incident safety officer at emergency calls.                                                               | All job performance requirements of NFPA 1521, “Standard for Fire Department Safety Officer Professional Qualifications”, 2020 Edition, Chapter 5 (Incident Safety Officer).                                                      | July 1, 2026        |
| 28   | Hazardous Materials Response — Operations Mission Specific Level: responding to emergencies involving hazardous materials at the Operations Mission Specific Level. | All job performance requirements of NFPA 1072, “Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications”, 2017 Edition, Chapter 6 (Operations Mission Specific)     | July 1, 2026        |
| 29   | Hazardous Materials Response — Technician Level: responding to emergencies involving hazardous materials at the Technician Level.                                   | All job performance requirements of NFPA 1072, “Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications”, 2017 Edition, Chapter 7 (Hazardous Materials Technician). | July 1, 2026        |
| 30   | Rope Rescue — Operations: rope rescue at the Operations Level.                                                                                                      | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 5 (Rope Rescue) (Operations):<br><br>5.2                                    | July 1, 2028        |
| 31   | Rope Rescue — Technician: rope rescue at the Technician Level.                                                                                                      | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 5 (Rope Rescue) (Technician):<br><br>5.3                                    | July 1, 2028        |

| Item | Fire protection service                                                               | Minimum Certification Standard                                                                                                                                                                                | Compliance Deadline |
|------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 32   | Structural Collapse — Operations: structural collapse rescue at the Operations Level. | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 6 (Structural Collapse Rescue) (Operations):<br><br>6.2 | July 1, 2028        |
| 33   | Structural Collapse — Technician: structural collapse rescue at the Technician Level. | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 6 (Structural Collapse Rescue) (Technician):<br><br>6.3 | July 1, 2028        |
| 34   | Confined Space — Operations: confined space rescue at the Operations Level.           | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 7 (Confined Space Rescue) (Operations):<br><br>7.2      | July 1, 2028        |
| 35   | Confined Space — Technician: confined space rescue at the Technician Level.           | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 7 (Confined Space Rescue) (Technician):<br><br>7.3      | July 1, 2028        |
| 36   | Trench Rescue — Operations: trench rescue at the Operations Level.                    | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 12 (Trench Rescue) (Operations):<br><br>12.2            | July 1, 2028        |



| Item | Fire protection service                                                          | Minimum Certification Standard                                                                                                                                                                            | Compliance Deadline |
|------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 37   | Trench Rescue — Technician: trench rescue at the Technician Level.               | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 12 (Trench Rescue) (Technician):<br><br>12.3        | July 1, 2028        |
| 38   | Surface Water Rescue — Operations: surface water rescue at the Operations Level. | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 17 (Surface Water Rescue) (Operations):<br><br>17.2 | July 1, 2028        |
| 39   | Surface Water Rescue — Technician: surface water rescue at the Technician Level. | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 17 (Surface Water Rescue) (Technician):<br><br>17.3 | July 1, 2028        |
| 40   | Swift Water Rescue — Operations: swift water rescue at the Operations Level.     | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 18 (Swiftwater Rescue) (Operations):<br><br>18.2    | July 1, 2028        |
| 41   | Swift Water Rescue — Technician: swift water rescue at the Technician Level.     | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 18 (Swiftwater Rescue) (Technician):<br><br>18.3    | July 1, 2028        |

| Item | Fire protection service                                                  | Minimum Certification Standard                                                                                                                                                                  | Compliance Deadline |
|------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 42   | Ice Water Rescue — Operations: ice water rescue at the Operations Level. | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 20 (Ice Rescue) (Operations):<br><br>20.2 | July 1, 2028        |
| 43   | Ice Water Rescue — Technician: ice water rescue at the Technician Level. | The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 20 (Ice Rescue) (Technician):<br><br>20.3 | July 1, 2028        |

## Appendix F: Fire Prevention Staffing Model

| OBC Building Class                     | Inspection Frequency (Years) | NFPA 1730 | FUS  | Meet |      | Classification                      | FTE #'s |
|----------------------------------------|------------------------------|-----------|------|------|------|-------------------------------------|---------|
| A                                      | 3                            | 2         | 0.5  | ✓    | 67%  | Chief FPO                           | 1       |
| B                                      | 1                            | 1         | 0.5  | ✓    | 100% | FPO                                 | 0       |
| C                                      | 2                            | 2         | 0.5  | ✓    | 100% | Inspector                           | 3       |
| D                                      | 3                            | 3         | 1    | ✓    | 33%  | Public Educator                     | 0       |
| E                                      | 3                            | 3         | 1    | ✓    | 33%  |                                     |         |
| F                                      | 3                            | 2         | 0.5  | ✓    | 50%  |                                     |         |
| F - Division 1                         | 2                            | 1         | 0.25 | ✓    | 50%  | Total                               | 4       |
| Efficiency Factor                      | 75%                          |           |      |      |      |                                     | 8.25    |
|                                        | Calculated                   | Adjusted  |      |      |      | Total additional FPO Staff Required | 4.3     |
| Inspectors Required (Inspections)      | 3.55                         | 4.73      |      |      |      |                                     |         |
| Inspectors Required (Other Activities) | 2.64                         | 3.52      |      |      |      |                                     |         |
|                                        | 6                            | 8.25      |      |      |      |                                     |         |
| Number of Staff Required               |                              | 8         |      |      |      |                                     |         |
| Number of additional Staff Required    |                              | 4         |      |      |      |                                     |         |

## CAPACITY PLANNING MODEL BY BUILDING GROUP TYPE

|         |                                                                                                                                                                                                                                                                                                                                                   | Method of Inspection | Number of Buildings in Group (A) | Average Time to Complete Initial Inspection (Hours) (B) | Average Time to Complete Recall Inspection (Hours) (C) | Average Time to Complete Initial & Recall Inspection (Hours) (D) | Total Time to Inspect Group (Hours) (A x B) | Frequency of Inspections (Every 1, 2, 3 or 4 Years) | Total Time Each Year to Inspect Group (Person Weeks) (A x B) | Total Time to Inspect Group (Person Years) (A x B) |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------------------|---------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------|
| Group A | <b>Assembly occupancy</b> (Group `A) means the occupancy or the use of a <b>building</b> , or part thereof, by a gathering of persons for civic, political, travel, religious, social, educational, recreational or like purposes or for the consumption of food or drink.                                                                        |                      | 133                              | 2.5                                                     | 0.625                                                  | 3.125                                                            | 415.625                                     | 2                                                   | 5.20                                                         | 0.10                                               |
| Group B | <b>Institutional occupancy</b> (Group `B) means the occupancy or use of a <b>building</b> or part thereof by persons who require supervisory care, medical care or medical treatment or by persons who are under restraint for correctional purposes and are incapable of self preservation because of security measures not under their control. |                      |                                  |                                                         |                                                        |                                                                  |                                             |                                                     |                                                              |                                                    |
|         | Nursing Homes                                                                                                                                                                                                                                                                                                                                     |                      | 0                                | 4                                                       | 1                                                      | 5                                                                | 0                                           | 1                                                   | 0.00                                                         |                                                    |
|         | Special Care                                                                                                                                                                                                                                                                                                                                      |                      | 1                                | 2                                                       | 0.5                                                    | 2.5                                                              | 2.5                                         | 1                                                   | 0.06                                                         |                                                    |
|         | Assisted -Supportive Living Facility                                                                                                                                                                                                                                                                                                              |                      | 3                                | 2                                                       | 0.5                                                    | 2.5                                                              | 7.5                                         | 1                                                   | 0.19                                                         |                                                    |
|         | Group Homes                                                                                                                                                                                                                                                                                                                                       |                      | 26                               | 2                                                       | 0.5                                                    | 2.5                                                              | 65                                          | 1                                                   | 1.63                                                         |                                                    |
|         | Detention Police                                                                                                                                                                                                                                                                                                                                  |                      | 1                                | 3                                                       | 0.75                                                   | 3.75                                                             | 3.75                                        | 1                                                   | 0.09                                                         |                                                    |
|         | Hospital                                                                                                                                                                                                                                                                                                                                          |                      | 1                                | 8                                                       | 2                                                      | 10                                                               | 10                                          | 1                                                   | 0.25                                                         |                                                    |
| Group C | <b>Residential occupancy</b> (Group `C) means the occupancy or use of a <b>building</b> or part thereof by persons for whom sleeping accommodation is provided but who are not harboured or detained to receive medical care or treatment or are not involuntarily detained.                                                                      |                      |                                  |                                                         |                                                        |                                                                  |                                             |                                                     |                                                              |                                                    |
|         | LOW RISE                                                                                                                                                                                                                                                                                                                                          |                      | 133                              | 3                                                       | 0.75                                                   | 3.75                                                             | 498.75                                      | 2                                                   | 6.23                                                         |                                                    |
|         | HIGH RISE                                                                                                                                                                                                                                                                                                                                         |                      | 27                               | 4                                                       | 1                                                      | 5                                                                | 135                                         | 2                                                   | 1.69                                                         |                                                    |
|         | ROOMING, BOARDING, LODGING                                                                                                                                                                                                                                                                                                                        |                      | 0                                | 4                                                       | 1                                                      | 5                                                                | 0                                           | 2                                                   | 0.00                                                         |                                                    |
|         | Apartment                                                                                                                                                                                                                                                                                                                                         |                      | 700                              | 2                                                       | 0.5                                                    | 2.5                                                              | 1750                                        | 2                                                   | 21.88                                                        |                                                    |
|         | HOTEL, MOTEL, MOTOR LODGE                                                                                                                                                                                                                                                                                                                         |                      | 12                               | 3                                                       | 0.75                                                   | 3.75                                                             | 45                                          | 2                                                   | 0.56                                                         |                                                    |
|         | SINGLE, SEMI, TOWNHOUSE, CONDO                                                                                                                                                                                                                                                                                                                    |                      | 46,979                           | N/A                                                     | N/A                                                    | N/A                                                              | N/A                                         | N/A                                                 | N/A                                                          |                                                    |
|         | OTHER RESIDENTIAL                                                                                                                                                                                                                                                                                                                                 |                      | 0                                | 1                                                       | 0.25                                                   | 1.25                                                             | 0                                           | 2                                                   | 0.00                                                         |                                                    |

### CAPACITY PLANNING MODEL BY BUILDING GROUP TYPE (cont.)

| CAPACITY PLANNING MODEL BY BUILDING GROUP TYPE (cont.) |                                                                                                                                                                                                                                                                         |  | Method of Inspection | Number of Buildings in Group (A) | Average Time to Complete Initial Inspection (Hours) (B) | Average Time to Complete Recall Inspection (Hours) (C) | Average Time to Complete Initial & Recall Inspection (Hours) (D) | Total Time to Inspect Group (Hours) (A x B) | Frequency of Inspections (Every 1, 2, 3 or 4 Years) | Total Time Each Year to Inspect Group (Person Weeks) (A x B) | Total Time to Inspect Group (Person Years) (A x B) |      |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------|----------------------------------|---------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------|------|
| Group D                                                | Business and personal services occupancy (Group `D`) means the occupancy or use of a building or part thereof for the transaction of business or the rendering or receiving of professional or personal services.                                                       |  |                      | 397                              | 1.5                                                     | 0.375                                                  | 1.875                                                            | 744                                         | 3                                                   | 6.20                                                         | 0.12                                               |      |
| Group E                                                | Mercantile occupancy (Group `E`) means the occupancy or use of a building or part thereof for the displaying or selling of retail goods, wares or merchandise.                                                                                                          |  |                      | 253                              | 2                                                       | 0.5                                                    | 2.5                                                              | 633                                         | 3                                                   | 5.27                                                         | 0.10                                               |      |
| Group F                                                | Industrial occupancy (Group `F`) means the occupancy or use of a building or part thereof for assembling, fabricating, manufacturing, processing, repairing or storing of goods and materials.                                                                          |  |                      | 686                              | 3                                                       | 0.75                                                   | 3.75                                                             | 2,573                                       | 3                                                   | 21.44                                                        | 0.41                                               |      |
| Group F Division 1                                     | High hazard industrial occupancy (Group `F` Division 1) means an industrial occupancy that contains sufficient quantities of highly combustible and flammable or explosive materials that, because of their inherent characteristics, constitute a special fire hazard. |  |                      | 4                                | 6                                                       | 1.5                                                    | 7.5                                                              | 30                                          | 1                                                   | 0.75                                                         | 0.01                                               |      |
|                                                        |                                                                                                                                                                                                                                                                         |  |                      | 2,377                            |                                                         |                                                        |                                                                  |                                             |                                                     |                                                              |                                                    | 3.55 |
| Plans Examination                                      | Examination of building plans, blueprints and drawings for new building construction and site inspections of same                                                                                                                                                       |  |                      | 90                               | 2                                                       | 0                                                      | 2                                                                | 180                                         | 1                                                   | 4.50                                                         | 0.09                                               |      |
| Complaint Inspections                                  | Inspections done to address complaints of possible Fire Code violations or general fire and life safety concerns                                                                                                                                                        |  |                      | 1771                             | 1                                                       | 0.25                                                   | 1.25                                                             | 2213.75                                     | 1                                                   | 55.34                                                        | 1.06                                               |      |
| Request Inspections                                    | Inspections by owners to address concerns in their building                                                                                                                                                                                                             |  |                      | 38                               | 1.5                                                     | 0                                                      | 1.5                                                              | 57                                          | 1                                                   | 1.43                                                         | 0.03                                               |      |

**CAPACITY PLANNING MODEL  
(ADDITIONAL SERVICES PROVIDED)**

|                                     |                                                                                    | Method of Inspection | Average Number of Inspections per Year | Average Time to Complete Initial Inspection (Hours) (B) | Average Time to Complete Recall Inspection (Hours) (C) | Average Time to Complete Initial & Recall Inspection (Hours) (D) | Total Time to Inspect This Type (Hours) (A x B) | Frequency of Inspections (Every 1, 2, 3 or 4 Years) | Total Time Each Year to Inspect This Type (Person Weeks) (A x B) | Total Time to Inspect This Type (Person Years) (A x B) |
|-------------------------------------|------------------------------------------------------------------------------------|----------------------|----------------------------------------|---------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------|
| <b>Information Inspections</b>      | Inspections done for third parties (ie. Lawyers, Insurance Companies, Banks, etc.) |                      | 35                                     | 2                                                       | 0                                                      | 2                                                                | 70                                              | 1                                                   | 1.75                                                             | 0.03                                                   |
| <b>Court and Prep Time</b>          |                                                                                    |                      | 5                                      | 8                                                       | 0                                                      | 8                                                                | 40                                              | 1                                                   | 1.00                                                             | 0.02                                                   |
| <b>Business License Inspections</b> |                                                                                    |                      | 120                                    | 1                                                       | 0.5                                                    | 1.5                                                              | 180                                             | 1                                                   | 4.50                                                             | 0.09                                                   |
| <b>Fire Safety Plan Review</b>      |                                                                                    |                      | 0                                      | 7                                                       | 2                                                      | 9                                                                | 0                                               | 1                                                   | 0.00                                                             | 0.00                                                   |
| <b>Public Education</b>             |                                                                                    |                      | 277                                    | 2                                                       | 1                                                      | 3                                                                | 831                                             | 1                                                   | 20.78                                                            | 0.40                                                   |
| <b>Other Inspections</b>            |                                                                                    |                      | 739                                    | 2                                                       | 0.5                                                    | 2.5                                                              | 1,848                                           | 1                                                   | 46.19                                                            | 0.89                                                   |
| <b>Fire Investigations</b>          | Investigations into the cause and origin of a fire                                 |                      | 12                                     | 6                                                       | 0                                                      | 6                                                                | 72                                              | 1                                                   | 1.80                                                             | 0.03                                                   |
| <b>Preplanning</b>                  | # of preplan creations                                                             |                      | 0                                      | 1                                                       | 0                                                      | 1                                                                | 0                                               | 1                                                   | 0.00                                                             | 0.00                                                   |
| <b>Total =</b>                      |                                                                                    |                      |                                        |                                                         |                                                        |                                                                  |                                                 |                                                     |                                                                  | <b>2.64<br/>3.55<br/>6.2</b>                           |

Adjusted - Effcy Factor = 8

# Town of Milton Community Risk Assessment

Final Report  
December 2, 2024



Presented to:



Prepared by:

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## Preface

This Community Risk Assessment will serve as a foundational document to inform and direct the development of a municipal Fire Master Plan for the Town of Milton to address the strengths, threats and vulnerabilities that are unique to the town, to protect lives, the environment and property.

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## Acronyms

| Acronym | Definition                                |
|---------|-------------------------------------------|
| CEMP    | Community Emergency Management Program    |
| CI      | Critical Infrastructure                   |
| CO      | Carbon Monoxide                           |
| CRA     | Community Risk Assessment                 |
| FPPA    | Fire Protection and Prevention Act        |
| HIRA    | Hazard Identification and Risk Assessment |
| MFRS    | Milton Fire & Rescue Services             |
| MPAC    | Municipal Property Assessment Corporation |
| MVC     | Motor Vehicle Collision                   |
| MW      | Megawatt                                  |
| NBC     | National Building Code                    |
| NFPA    | National Fire Protection Association      |
| OBC     | Ontario Building Code                     |
| OFC     | Ontario Fire Code                         |
| OFM     | Office of the Fire Marshal                |
| PPE     | Personal Protective Equipment             |

## TABLE OF CONTENTS

|                                                                                 |           |
|---------------------------------------------------------------------------------|-----------|
| <b>EXECUTIVE SUMMARY .....</b>                                                  | <b>I</b>  |
| Introduction .....                                                              | i         |
| Community Risk Assessment Process .....                                         | i         |
| Summary of Identified Risks and Key Findings .....                              | ii        |
| <b>SECTION 1 INTRODUCTION .....</b>                                             | <b>1</b>  |
| 1.1 Background .....                                                            | 1         |
| 1.2 Purpose .....                                                               | 2         |
| 1.3 Methodology .....                                                           | 2         |
| <b>SECTION 2 GEOGRAPHIC PROFILE .....</b>                                       | <b>6</b>  |
| 2.1 Geographic Overview .....                                                   | 6         |
| 2.1.1 Road Network .....                                                        | 8         |
| 2.1.2 Bridges and Culverts .....                                                | 9         |
| 2.1.3 Rail .....                                                                | 10        |
| 2.2 Waterways and Marinas .....                                                 | 13        |
| 2.3 Rural landscape and Wildfire Interface .....                                | 13        |
| 2.4 Geographic Profile – Identified Risks and Key Findings .....                | 14        |
| <b>SECTION 3 BUILDING STOCK PROFILE .....</b>                                   | <b>15</b> |
| 3.1 Ontario Building Code Occupancy Classifications .....                       | 15        |
| 3.2 OFM Fire Risk Model Occupancy Classification .....                          | 16        |
| 3.2.1 Town of Milton Existing Major Building Stock Classification Summary ..... | 22        |
| 3.3 Building Age and Construction .....                                         | 23        |
| 3.3.1 Lightweight Construction .....                                            | 26        |
| 3.4 Building Density and Exposure .....                                         | 27        |
| 3.5 Building Growth & Density .....                                             | 28        |
| 3.5.1 Density .....                                                             | 29        |
| 3.5.2 Additional Dwelling Units .....                                           | 29        |
| 3.6 Building Height and Area .....                                              | 30        |
| 3.6.1 Building Height .....                                                     | 30        |
| 3.6.2 Building Area .....                                                       | 35        |
| 3.7 Potential High-Fire Risk Occupancies .....                                  | 35        |

|                                                        |                                                                   |           |
|--------------------------------------------------------|-------------------------------------------------------------------|-----------|
| 3.7.1                                                  | Fuel Load Concerns .....                                          | 36        |
| 3.8                                                    | Occupancies with Potential High-Fire Safety Risk.....             | 43        |
| 3.8.1                                                  | Registered Vulnerable Occupancies.....                            | 43        |
| 3.8.2                                                  | Other High-Fire Life Safety Risk Occupancies.....                 | 47        |
| 3.9                                                    | Historic or Culturally Significant Buildings .....                | 47        |
| 3.10                                                   | Building Stock Profile – Identified Risks and Key Findings .....  | 52        |
| <b>SECTION 4 CRITICAL INFRASTRUCTURE PROFILE .....</b> |                                                                   | <b>53</b> |
| 4.1                                                    | Critical Infrastructure in the Town of Milton .....               | 53        |
| 4.1.1                                                  | Water Servicing & Infrastructure .....                            | 54        |
| 4.1.2                                                  | Stormwater & Sanitary Servicing & Infrastructure.....             | 54        |
| 4.1.3                                                  | Transportation Infrastructure .....                               | 56        |
| 4.1.4                                                  | Energy and Communications Infrastructure .....                    | 58        |
| 4.1.5                                                  | Other Critical Infrastructure Considerations .....                | 59        |
| 4.2                                                    | Critical Infrastructure – Identified Risks and Key Findings ..... | 62        |
| <b>SECTION 5 DEMOGRAPHIC PROFILE .....</b>             |                                                                   | <b>63</b> |
| 5.1                                                    | Population and Dispersion .....                                   | 63        |
| 5.1.1                                                  | Growth by Neighbourhood .....                                     | 63        |
| 5.1.2                                                  | Population Age.....                                               | 65        |
| 5.2                                                    | Gender.....                                                       | 68        |
| 5.3                                                    | Socioeconomic Circumstances .....                                 | 70        |
| 5.3.1                                                  | Labour Force Status .....                                         | 70        |
| 5.3.2                                                  | Educational Attainment .....                                      | 72        |
| 5.3.3                                                  | Median Income .....                                               | 73        |
| 5.3.4                                                  | Housing Tenure.....                                               | 74        |
| 5.4                                                    | Cultural Background, Language Considerations .....                | 77        |
| 5.5                                                    | Transient Populations and Commuting.....                          | 78        |
| 5.5.1                                                  | Commuter Populations .....                                        | 79        |
| 5.5.2                                                  | Tourism .....                                                     | 80        |
| 5.5.3                                                  | Indigenous Population.....                                        | 80        |
| 5.6                                                    | Demographic Profile – Identified Risks and Key Findings .....     | 82        |
| <b>SECTION 6 HAZARD PROFILE .....</b>                  |                                                                   | <b>83</b> |
| 6.1                                                    | Hazard Identification and Risk Assessment (HIRA) .....            | 83        |
| 6.1.1                                                  | Town of Milton Emergency Response Plan Risk Assessment .....      | 83        |

|                                                                                 |            |
|---------------------------------------------------------------------------------|------------|
| 6.2 Hazard Profile – Identified Risks and Key Findings .....                    | 87         |
| <b>SECTION 7 PUBLIC SAFETY RESPONSE PROFILE .....</b>                           | <b>88</b>  |
| 7.1 Public Safety Response Agencies in the Town of Milton .....                 | 88         |
| 7.1.1 Fire Protection Services Agreements and Plans .....                       | 91         |
| <b>SECTION 8 COMMUNITY SERVICES PROFILE .....</b>                               | <b>94</b>  |
| 8.1 Community Services .....                                                    | 94         |
| <b>SECTION 9 ECONOMIC PROFILE .....</b>                                         | <b>98</b>  |
| 9.1 Economic Sectors and Employers in the Town of Milton .....                  | 98         |
| 9.2 Economic Profile – Identified Risks and Key Findings .....                  | 100        |
| <b>SECTION 10 PAST LOSS &amp; EVENT HISTORY PROFILE.....</b>                    | <b>101</b> |
| 10.1 Past Loss.....                                                             | 101        |
| 10.1.1 Total Fire Loss.....                                                     | 101        |
| 10.1.2 Fires by Occupancy Type .....                                            | 103        |
| 10.1.3 Civilian Fatalities and Injuries.....                                    | 105        |
| 10.1.4 Reported Fire Cause.....                                                 | 106        |
| 10.1.5 Ignition Source.....                                                     | 107        |
| 10.1.6 Smoke Alarm Status .....                                                 | 108        |
| 10.2 Event History .....                                                        | 109        |
| 10.2.1 Emergency Call Volume.....                                               | 110        |
| 10.3 Past Loss & Event History Profile – Identified Risks and Key Findings..... | 119        |
| <b>SECTION 11 IDENTIFIED RISKS AND RISK TREATMENTS .....</b>                    | <b>120</b> |
| 11.1 Prioritizing Risk .....                                                    | 121        |
| 11.1.1 Risk assignment Process Overview.....                                    | 121        |
| 11.1.2 Assigned Risk Levels .....                                               | 124        |
| 11.2 Risk Treatment .....                                                       | 135        |
| 11.3 Risk Mapping.....                                                          | 142        |
| <b>APPENDICES .....</b>                                                         | <b>146</b> |

## EXECUTIVE SUMMARY

### Introduction

A Community Risk Assessment (CRA) is a process used to identify, evaluate, and prioritize potential hazards, vulnerabilities, and risks to the public within a specific community or geographic area. Under the Fire Protection and Prevention Act, 1997 (FPPA), **Ontario Regulation 378/18: Community Risk Assessments (O. Reg. 378/18)**, every municipality must complete and review a CRA “to inform decisions about the provisions of fire protection services<sup>1</sup>” in the interest of public safety. It involves gathering information, analyzing data, and engaging with stakeholders to understand the potential threats and vulnerabilities that could lead to various types of emergencies or disasters. The goal of a CRA is to inform emergency management and response agencies to enhance community resiliency and reduce the impact of potential future emergencies.

### Community Risk Assessment Process

The Office of the Fire Marshal (OFM) has developed a guideline (OFM-TG-02-2019) to assist municipalities during the process of conducting a CRA. As per O.Reg. 378/18, there are nine mandatory profiles that must be examined:

1. **Geographic Profile:** Physical features of the community
2. **Building Stock Profile:** Types, numbers, uses and ages of buildings in the community
3. **Critical Infrastructure Profile:** Facilities and services that meet vital needs, sustain economy, and protect public security
4. **Demographic Profile:** Composition of the community’s population
5. **Public Safety and Response Profile:** Organized agencies and organizations within and external to the community that can respond to certain types of incidents
6. **Community Services Profile:** Community agencies, organizations and associations that can provide supportive services
7. **Hazard Profile:** Natural, human-caused, and technological hazards in the community
8. **Economic Profile:** Economic sectors that are critical to financial stability of the community
9. **Past Loss and Event History Profile:** Past emergency responses in the community

---

<sup>1</sup> (Ontario Regulation 378/18: Community Risk Assessments, Mandatory Use, Section 1 (b))

Each profile is considered and, where applicable, taken through the core five-step process of a CRA development as outlined in the table below.

| No. | Step                            | Description                                                                                                                                                                                                                         |
|-----|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Data Collection                 | Gather relevant data about the community, including demographics, geography, infrastructure, land use, historical disaster data, socio-economic factors, and stakeholder input.                                                     |
| 2   | Hazard Identification           | Identify the various hazards that could affect the community. Hazards include natural, human-made and technological events.                                                                                                         |
| 3   | Vulnerability Analysis          | Assess the community's vulnerabilities in relation to each identified hazard. Consider factors such as population density, housing quality, socio-economic status, access to community resources and community protection agencies. |
| 4   | Risk Assessment                 | Combine information about hazards and vulnerabilities to assess the overall risk to the community by quantifying the likelihood and potential impact of various hazards occurring and affecting vulnerable areas.                   |
| 5   | Risk Ranking and Risk Treatment | Assign each risk a ranking score and potential treatment options to accept, avoid, mitigate, or transfer the risk.                                                                                                                  |

The results of the five-step process will provide a series of identified risks and key findings. Identified risks are factors which may highlight a need for future consideration during the development of a Fire Master Plan (FMP) when examining emergency service levels, while key findings may be noted as strengths in the community's current response model and/or trends to be monitored.

The identified risks and key findings of the Town of Milton's CRA are summarized in the next section and a full analysis of the risk assessment process is outlined in Section 11 of this report.

## Summary of Identified Risks and Key Findings

The following identified risks and key findings are drawn from analyses presented throughout the report. They are grouped based on the nine mandatory profiles and in the order in which they appear in the report.

As per the OFM technical guidelines, the risk treatments presented in this report are a generalized basis for further consideration and in-depth analysis during the development of a FMP, which will serve to account for feasibility of risk treatments, cost, and execution.



Table 1: Summary of Identified Risks

| No. | Profile    | Identified Risk                                                                                                                                                 | Probability Level | Rationale                                                                                                                                                                                                                                                                                    | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                                        | Risk Level |
|-----|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 1   | Geographic | The road network predominately Hwy 401 bisecting the town, is a contributor to emergency call volume due to motor vehicle collisions and vehicle fires          | Almost Certain    | <ul style="list-style-type: none"> <li>Over the period of January 2018 – December 2022 MFRS has responded to 1950 rescue calls of which 92.05% are related to vehicle collisions.</li> </ul>                                                                                                 | Moderate          | <ul style="list-style-type: none"> <li>Potential for risk to life safety of occupants of motor vehicles</li> <li>Potential risk for property loss</li> <li>Could pose a threat to small local business</li> <li>Could pose a threat to the quality of the environment</li> <li>Consequence level could be impacted by the magnitude of a hazard event</li> </ul> | High       |
| 2   | Geographic | Since provincial highways and rail lines are designated dangerous goods routes, traffic carrying various hazardous materials passes through the town regularly. | Possible          | <ul style="list-style-type: none"> <li>Guelph Junction Railway operate various lines running through the municipality, which includes farmland and over water surfaces. The containers transported include dangerous goods.</li> <li>Highways 401, 407 and 25 pass through Milton</li> </ul> | Major             | <ul style="list-style-type: none"> <li>Significant loss of life</li> <li>Multiple property damage to significant portion of the town</li> <li>Long term disruption of farms, businesses, local employment, and tourism and/or Environmental damage that would result in evacuation of local residents, farms, and businesses</li> </ul>                          | Moderate   |

| No. | Profile                                        | Identified Risk                                                                                                                                                                                                                                                                                    | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                      | Risk Level |
|-----|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 3   | Building Stock and Past Loss and Event History | Group C residential occupancies represent 89.65% of the towns existing occupancies. Additionally, 83.51% of structure fires loss, 85.71% of the civilian fire related injuries and 100.00% of the fire related fatalities occurred in Group C Occupancies. (January 1, 2018, to December 31, 2022) | Almost Certain    | <ul style="list-style-type: none"> <li>The majority of the town's existing property stock is comprised of Group C - Residential Occupancies (89.65%)</li> <li>83.51% of structure fires loss over the five-year period from January 1, 2018, to December 31, 2022, occurred within Group C - Residential Occupancies.</li> <li>85.71% of the civilian fire related injuries and 100.00% of the fire related fatalities occurred in Group C Occupancies.</li> <li>In 10.83% of fires there was no smoke alarm present</li> <li>Incidents where a smoke alarm was present but failed to operate accounted for 13.33% which is higher than the provincial average</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Could pose a threat to small local businesses, and/or pose a threat to the quality of the environment</li> <li>Potential for vulnerable individuals including seniors and youth within Group C</li> <li>Potential for exposure risk depending on dwelling type and building age</li> </ul> | High       |

| No. | Profile        | Identified Risk                                                                                                                                                                                                                      | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                                                        | Risk Level |
|-----|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 4   | Building Stock | 8.51% (3631) of the building stock was constructed before 1975 preceding the adoption of the 1975 OBC and 16.51% (7046 properties) of the town's building stock was constructed before 1981, preceding the adoption of the 1981 OFC. | Likely            | <ul style="list-style-type: none"> <li>Approximately 8.51% of the town's building stock was built preceding the adoption of 1975 OBC</li> <li>Approximately 16.51% of the town's building stock was built preceding the adoption of 1981 OFC</li> <li>the Town of Milton reported that in 10.83% of fires responded to, there was no smoke alarm present</li> <li>incidents where a smoke alarm was present but failed to operate accounted for 13.33%,</li> <li>the status of smoke alarms could not be conclusively determined in 30.00% of the incidents responded to by MFRS which is 4.71% higher than that of the province.</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Could pose a threat to small local businesses, and/or pose a threat to the quality of the environment</li> <li>Occupants could be vulnerable individuals including seniors and youth within Group C – Residential</li> </ul> | Moderate   |

| No. | Profile                                    | Identified Risk                                                                                                                                   | Probability Level | Rationale                                                                                                                                                                                                                                                                                 | Consequence Level | Rationale                                                                                                                                                                                                                                                                        | Risk Level |
|-----|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 5   | Building Stock & Past Loss & Event History | There are 70 properties within Milton that have been identified as having a potentially high fuel load and therefore an increased high fire risk. | Likely            | <ul style="list-style-type: none"> <li>There are 690 industrial occupancies (1.65% of property stock) - several with known high fuel load concerns</li> <li>There have been 23 industrial fires over the past 5 years (12.57% of all fires) resulting in over \$750k fire loss</li> </ul> | Major             | <ul style="list-style-type: none"> <li>Significant threat to businesses, local economy, and tourism</li> <li>Impact to environment could result in a short term, partial evacuation of local residents and businesses</li> <li>Prolonged disruptions to supply chains</li> </ul> | High       |
| 6   | Building Stock                             | According to MPAC Data, there are 44 buildings over 100,000 square feet and two buildings over 1,000,000 square feet                              | Possible          | <ul style="list-style-type: none"> <li>There are 690 industrial occupancies (1.65% of property stock) - several with known high fuel load concerns</li> <li>There have been 23 industrial fires over the past 5 years (12.57% of all fires) resulting in over \$750k fire loss</li> </ul> | Major             | <ul style="list-style-type: none"> <li>Significant threat to businesses, local economy, and tourism</li> <li>Impact to environment could result in a short term, partial evacuation of local residents and businesses</li> <li>Prolonged disruptions to supply chains</li> </ul> | Moderate   |

| No. | Profile        | Identified Risk                                                                                                                                                                                            | Probability Level | Rationale                                                                                                                                                                                | Consequence Level | Rationale                                                                                                                                                                                                                                                                        | Risk Level |
|-----|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 7   | Building Stock | There are 78 Properties identified by the Town as Heritage Properties. Historic areas can present a high fire risk due to their age and the materials used to construct the buildings, as well as exposure | Likely            | <ul style="list-style-type: none"> <li>78 Properties identified by the Town as Heritage Properties.</li> <li>These building are built prior to the adoption of the OBC or OFC</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Significant threat to businesses, local economy, and tourism</li> <li>Impact to environment could result in a short term, partial evacuation of local residents and businesses</li> <li>Loss is permanent – cannot be replaced</li> </ul> | Moderate   |
| 8   | Building Stock | The Town of Milton currently has 23 occupancies that have been identified as a potential vulnerable occupancy.                                                                                             | Possible          | <ul style="list-style-type: none"> <li>23 occupancies that have been identified as a potential vulnerable occupancy</li> <li>Occupants may have poorer fire safety habits</li> </ul>     | Major             | <ul style="list-style-type: none"> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> <li>potential for large loss of life, significant property damage</li> </ul>                                                       | Moderate   |

| No. | Profile        | Identified Risk                                                                                                                                                                                                                                     | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                             | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                  | Risk Level |
|-----|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 9   | Building Stock | The permitting of up to 3 additional dwelling units per residential property allows for increased occupants and increased risk in residential buildings. Additionally, MFRS doesn't have access to identifying these building prior to an incident. | Likely            | <ul style="list-style-type: none"> <li>By-laws allow for up to 3 additional dwelling units within the same residential building</li> <li>The Town does not currently have a tool to identify these ADU's</li> <li>There are potentially over 1400 applications for permits with the building division for the construction of these ADU's.</li> </ul> | Major             | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Potential for vulnerable individuals including seniors and youth within Group C buildings.</li> <li>Potential for exposure risk depending on dwelling type and building age</li> </ul> | High       |

| No. | Profile     | Identified Risk                                                                                                                                                                                                                    | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                         | Risk Level |
|-----|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 10  | Demographic | The percentage of the population aged 65 years and older in Milton is 10.47%. Additionally, 9.28% of the town's population falls between the ages of 55 and 64, gradually aging into the senior demographic of 65 years and older. | Almost Certain    | <ul style="list-style-type: none"> <li>Canada's aging population has been recognized as one of the most significant demographic trends.</li> <li>Seniors (those 65 years and over) are considered to represent one of the highest fire risk groups across the province based on residential fire death rate (fire deaths per million of population).</li> <li>There are 4 registered long-term care/retirement homes in Milton with capacity for approximately 570 people</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Potential for exposure risk depending on dwelling type and building age</li> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> </ul> | High       |
| 11  | Demographic | In the Town of Milton, the proportion of newcomers is 9.33% higher when compared to that of the province. (39.28% compared to Ontario at 29.98%)                                                                                   | Likely            | <ul style="list-style-type: none"> <li>The predominant languages other than English spoken by Milton residents are Urdu, Arabic, Spanish, Punjabi, and Tagalog</li> </ul>                                                                                                                                                                                                                                                                                                            | Moderate          | <ul style="list-style-type: none"> <li>Cultural background and language considerations remain crucial factors for fire service providers when developing and delivering fire prevention and public education programs.</li> </ul>                                                                                                                 | Moderate   |

| No. | Profile                     | Identified Risk                                                                                                                                                                                                                                        | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                       | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                         | Risk Level |
|-----|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 12  | Past Loss and Event History | For the period from January 1, 2018, to December 31, 2022, the Town of Milton experienced a total of 183 structure fires with 67.21% (123) of these fires occurring in Group C-Residential Occupancies, contributing to 83.51% of the total fire loss. | Almost Certain    | <ul style="list-style-type: none"> <li>Fires were responsible for 77.78% of the total loss for this period.</li> <li>85.71% of the civilian fire related injuries and 100.00% of the fire related fatalities occurred in Group C Occupancies.</li> <li>Milton has a 16.07% higher fire loss in group C occupancies than the province</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Potential for exposure risk depending on dwelling type and building age</li> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> </ul> | High       |



| No. | Profile                     | Identified Risk                                                                                                                                                                                                                                                                                               | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                      | Risk Level |
|-----|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 13  | Past Loss and Event History | For the period from January 1, 2018, to December 31, 2022, group F- Industrial occupancies accounted for 12.57% of the structure fires and 3.67% of the total structure fire loss but only represents 1.65% of the building stock. Milton had a 5.30% higher incidence of industrial fires than the province. | Likely            | <ul style="list-style-type: none"> <li>Group F industrial accounts for only 1.65% of the property stock but 12.57 % of the structure fires and 3.67% of fire loss.</li> <li>Milton had a 5.30% higher incidence of industrial fires than the province.</li> <li>There have been 23 industrial fires over the past 5 years resulting in over \$750k fire loss</li> <li>There are 85 properties within Milton that have been identified as having a potentially high fuel load and therefore an increased high fire risk.</li> <li>14.29% of the injuries were attributed to Group F industrial fires which is 11.41% higher than the province</li> </ul> | Major             | <ul style="list-style-type: none"> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> <li>potential for large loss of life, significant property damage, significant threat to businesses and local economy – depending on type of business</li> </ul> | High       |

| No. | Profile                     | Identified Risk                                                                                                                                                  | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                     | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                         | Risk Level |
|-----|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 14  | Past Loss and Event History | Compared to the province, Milton exhibited a 6.65% lower incidence of fires in Group C-Residential Occupancies but a 16.07% higher share of structure fire loss. | Likely            | <ul style="list-style-type: none"> <li>The town's percentage of fire loss 16.07% higher than the province</li> <li>incidents where a smoke alarm was present but failed to operate accounted for 13.33%,</li> <li>the status of smoke alarms could not be conclusively determined in 30.00% of the incidents responded to by MFRS which is 4.71% higher than that of the province.</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Potential for exposure risk depending on dwelling type and building age</li> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> </ul> | Moderate   |
| 15  | Past Loss and Event History | In the Town of Milton 14.29% of the injuries were attributed to Group F industrial fires which is 11.41% higher than the province                                | Likely            | <ul style="list-style-type: none"> <li>Group F industrial accounts for only 1.65% of the property stock but 12.57 % of the structure fires and 3.67% of fire loss.</li> <li>Milton had a 5.30% higher incidence of industrial fires than the province.</li> </ul>                                                                                                                             | Major             | <ul style="list-style-type: none"> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> <li>potential for large loss of life, significant property damage, significant threat to businesses and local economy – depending on type of business</li> </ul>                                    | High       |

Table 2: Summary of Key Findings

| No. | Profile                 | Key Finding                                                                                                                                                                                                                                                                                                                               |
|-----|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Geographic              | Large areas of agricultural land and green spaces throughout the municipality face an increased risk of grass, field, and wooded area fires, particularly during droughts and dry conditions typically experienced in the summer months. Potential for increased risk for wildland-urban interface fires should continue to be monitored. |
| 2   | Geographic              | Waterfront activities heighten the risk of incidents both on the water and along the shorelines. MFRS reported a total of 3 water and/or ice rescues between January 2018 and December 2022.                                                                                                                                              |
| 3   | Geographic              | Fire suppression services in rural areas can experience longer response times due to the distance from service locations.                                                                                                                                                                                                                 |
| 4   | Geographic              | There are risks associated with potential interactions between rail traffic and vehicular or pedestrian traffic within the town.                                                                                                                                                                                                          |
| 5   | Geographic              | Grade-level rail crossings may act as physical barriers within the town's road network, potentially leading to delays in emergency response times.                                                                                                                                                                                        |
| 6   | Geographic              | The potential of a new intermodal rail facility in the south area of the town will bring increased rail traffic, rail storage and the potential for increased hazards.                                                                                                                                                                    |
| 7   | Building Stock          | The Town of Milton currently has 24 identified high-rise buildings, with 36 identified as under-construction or proposed for development. MFRS must continue to monitor increased risks.                                                                                                                                                  |
| 8   | Critical Infrastructure | Approximately 1,795 emergency calls between 2018 and 2022 were motor vehicle-related incidents. This represents 92.05% of all rescue calls and about 18.40% of all calls responded to by MFRS during that period.                                                                                                                         |
| 9   | Critical Infrastructure | The most significant risk related to utilities involves fallen hydro lines. Between 2018 and 2022, MFRS responded to 102 incidents involving fallen hydro lines, accounting for 15.86% of all public hazard calls.                                                                                                                        |
| 10  | Demographic             | The youngest demographic, individuals aged 14 years and under, makes up 22.20% of the town's population, which is higher than the provincial figure of 15.98%.                                                                                                                                                                            |
| 11  | Demographic             | The population aged 35-49 represents 23.99% of the town's total population, 4.78% higher than the provincial average.                                                                                                                                                                                                                     |

| No. | Profile                   | Key Finding                                                                                                                                                                                                                                                                                                                   |
|-----|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12  | Demographic               | The Town of Milton has a 13.78% higher proportion of households with two or more occupants compared to the provincial average.                                                                                                                                                                                                |
| 13  | Demographic               | 47.83% of Milton residents commute to other locations within Ontario, a significantly higher proportion than the provincial rate of 23.50%.                                                                                                                                                                                   |
| 14  | Hazard                    | The city's 2023 Hazard Identification and Risk Assessment (HIRA) highlights hazards that could potentially impact the ability of MFRS to effectively deliver fire protection services.                                                                                                                                        |
| 15  | Economic                  | There are 13 major employers identified, each with more than 200 employees, that significantly contribute to the economic vitality of the community.                                                                                                                                                                          |
| 16  | Economic                  | The number of new businesses increased by 17% in 2023, alongside over 3.8 million square feet of expansion in Industrial, Commercial, and Institutional (ICI) space. Additionally, 9,827,899 square feet of industrial development has been either newly constructed or proposed for the Derry Green Corporate Business Park. |
| 17  | Past Loss & Event History | Over the five-year period from January 1, 2018, to December 31, 2022, 10.38% of fires responded to were caused by design, construction, or maintenance deficiencies, which is 4.03% higher than the provincial average.                                                                                                       |
| 18  | Past Loss & Event History | Over a five-year period from January 1, 2018, to December 31, 2022, 10.83% of fires in Milton occurred in buildings where no smoke alarm was present, which is lower than the provincial average of 17.35%.                                                                                                                   |
| 19  | Past Loss & Event History | In 30.00% of incidents over the five-year period, the status of smoke alarms could not be conclusively determined, which is 4.71% higher than the provincial average.                                                                                                                                                         |
| 20  | Past Loss & Event History | From January 1, 2018, to December 31, 2022, total emergency call volume in Milton increased by 27.90%.                                                                                                                                                                                                                        |
| 21  | Past Loss & Event History | From January 1, 2018, to December 31, 2022, 602 fires were reported, representing 6.17% of total calls. This is higher than the provincial average of 2.10%.                                                                                                                                                                  |
| 22  | Past Loss & Event History | From January 1, 2018, to December 31, 2022, rescue calls accounted for 19.99% of all calls, with 92.05% of those attributed to motor vehicle collisions.                                                                                                                                                                      |

## Section 1

### Introduction

#### 1.1 Background

This Community Risk Assessment (CRA) has been developed for the Town of Milton to comply with **Ontario Regulation 378/18: Community Risk Assessments (O. Reg. 378/18)**. O. Reg. 378/18 was made under the authority of the Fire Protection and Prevention Act, 1997 (FPPA) and came into effect on July 1, 2019.

It requires all municipalities in Ontario to develop a CRA prior to July 1st, 2024. This regulation also requires municipalities to **“use its community risk assessment to inform decisions about the provisions of fire protection services”**<sup>2</sup>. This CRA should be utilized to inform the Town to assist in the development of fire protection services. This CRA is formatted to become a stand-alone document in the future to assist the municipality in sustaining compliance with O. Reg. 378/18 that includes conducting a review of the CRA when necessary, and annually.

In addition to this CRA, the FPPA requires that municipalities must provide fire protection programs that **“must include public education with respect to fire safety and certain components of fire prevention and provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances”**<sup>3</sup>. The recent introduction of O. Reg. 378/18 is now a core component of developing an in-depth analysis of a community’s fire related risks through a comprehensive analysis of nine mandatory profiles.

The FPPA also assigns duties to the Office of the Fire Marshal (OFM) to **“advise municipalities in the interpretation and enforcement of this Act and the regulations”**<sup>4</sup>. The OFM has developed Technical Guideline-02-2019 (TG-02-2019) to assist municipalities and fire departments in the process to develop a CRA and to utilize the completed CRA to inform the municipality’s decisions about complying with the FPPA.

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<sup>2</sup> (Ontario Regulation 378/18: Community Risk Assessments, Mandatory Use, Section 1 (b), 2017)

<sup>3</sup> (Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4, 2024, pp. Part II Responsibility for Fire Protection Services, Section 2.1 (a) (b))

<sup>4</sup> (Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4, 2024, pp. Part III Fire Marshal, Section 9.2 (b))

At a minimum, the regulation outlines a standard set of information profiles that must be considered when conducting a community risk assessment. The Guideline provides suggestions as to how to record and analyze the data/information and provides sample worksheets to assist municipalities. A leading practice in Ontario would see the Town of Milton's Community Risk Assessment report maintained as a living document by the Milton Fire Services. This would include regular (e.g. annual) review and updates to the CRA's data and information.

The methodology and analysis utilized to develop this CRA has been directly informed by TG-02-2019 that recognizes the value of understanding the fire risk within a community, and the importance of developing fire risk reduction and mitigation strategies in addition to providing fire suppression services.

## 1.2 Purpose

The primary purpose of this CRA is twofold:

1. To develop a Community Risk Assessment for the Town of Milton to identify the fire related risks within the community and comply with O. Reg. 378/18; and
2. To utilize the risk conclusions of the Community Risk Assessment to inform a comprehensive analysis of the existing, and future fire protection needs of the Town of Milton.

## 1.3 Methodology

In addition to TG-02-2019, the methodology applied to develop this CRA has been informed by other current industry standards and best practices. These include:

1. OFM Comprehensive Fire Safety Effectiveness Model: Fire Risk Sub-Model
2. OFM Public Fire Safety Guideline (PFSG) 04-40A-03: Simplified Risk Assessment
3. NFPA 1300, Standard on Community Risk Assessment and Community Risk Reduction Plan Development (2020 Edition)
4. NFPA 1730, Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations (2019 Edition)
5. Vision 20/20 Community Risk Assessment: A Guide for Conducting a Community Risk Assessment (Version 1.5, 2016)
6. Vision 20/20 Community Risk Reduction Planning: A Guide for Developing a Community Risk Reduction Plan

As required by O. Reg. 378/18, this CRA includes a comprehensive analysis of the nine mandatory profiles including:

- i. Geographic Profile
- ii. Building Stock Profile
- iii. Critical Infrastructure Profile
- iv. Demographic Profile
- v. Public Safety and Response Profile
- vi. Community Services Profile
- vii. Hazard Profile
- viii. Economic Profile
- ix. Past Loss and Event History Profile

Within each of the nine profiles, there are several sub-topics examined. These sub-topics are illustrated in Figure 1. These profiles are based on an analysis of several sources of information, including data provided by the Town of Milton, Milton Fire & Rescue Services (MFRS), Statistics Canada, the OFM, and desktop research.

The mandatory profile analyses result in a series of risk related conclusions that will be used to inform service levels or other strategies in alignment with the three lines of defense through a risk treatment process. These are referred to as a ‘**key finding**’ or an ‘**identified risk**.’ Those findings referred to as an ‘Identified Risk’ are taken through a risk assignment process to assist with risk prioritization as referred to within TG-02- 2019. In specific circumstances, being those that involve additional jurisdictional or legislative considerations, a risk-related conclusion is referred to as a Special Consideration. All risk-related conclusions will be taken through a risk treatment process and aligned with the three lines of defense to inform decision making. Figure 2 illustrates the risk treatment process.

**Identified Risks:** These are hazards or risks that **currently** exist within a community and could potentially be worsened in the event of an emergency, leading to a detrimental impact on the community, the Fire Department or both. Risks may arise from specific hazards identified in individual profiles or from compounded risks that span multiple profiles. The risk level is determined by evaluating the probability and potential consequences of each risk, which in turn guides how the Fire Department resources are allocated.

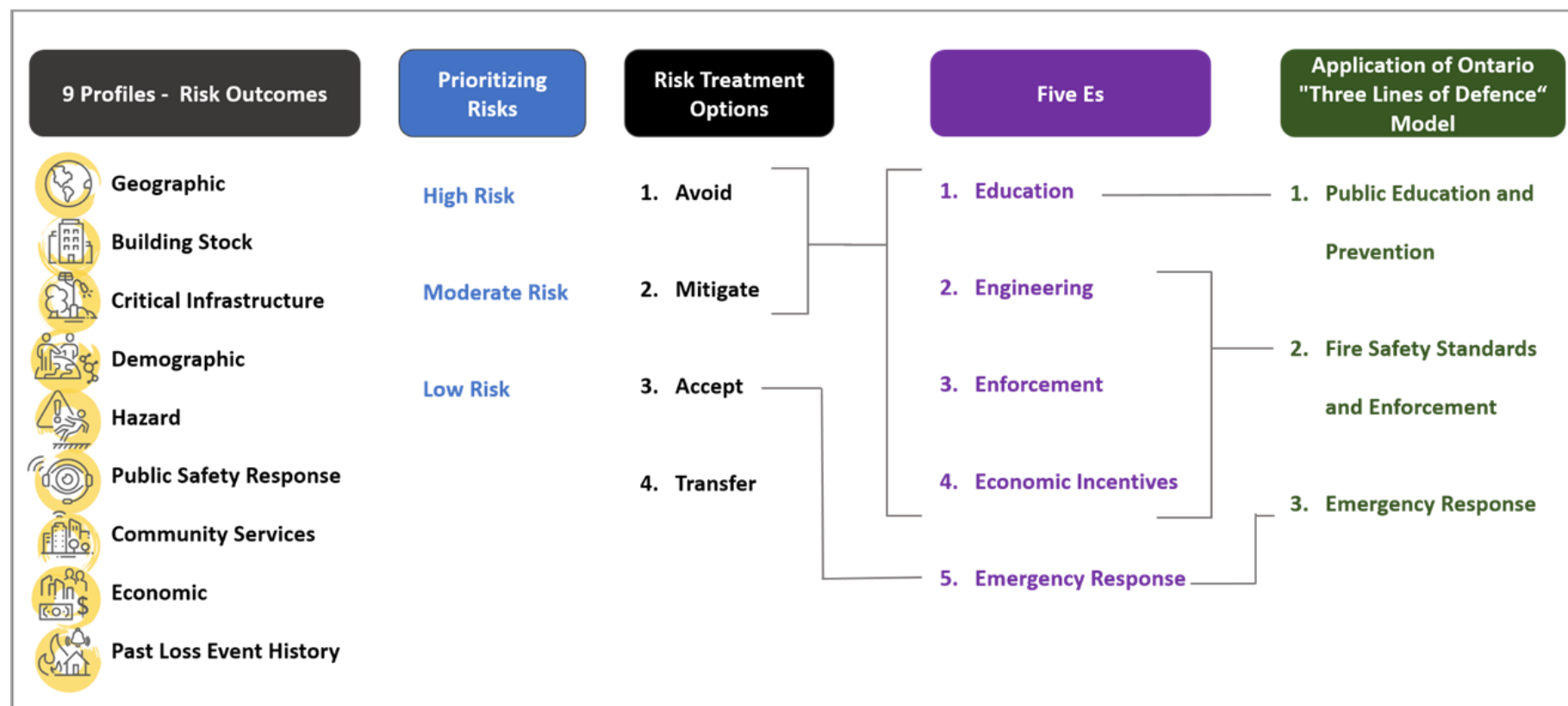
**Key Findings:** These may be noted as strengths in the community’s current response model and/or future trends or developments that should be closely monitored. While these concerns may not currently qualify as identified risks requiring immediate action, they are significant enough to be flagged, monitored, and reviewed as part of the annual CRA update.

Figure 1: Community Risk Assessment Profiles and Sub-topics

| COMMUNITY RISK ASSESSMENT PROFILES AND SUB-TOPICS                                                                                                                                            |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                          |                                                                                                    |                                                                                                        |                                                                                                               |                                                                                        |                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                             |                                                                                                                                                                                                                     |                                                                                                                                                                                                             |                                                                                                                                         |                  |                     |                            |     |                                                                                                                                                                        |
| Geographic                                                                                                                                                                                   | Building Stock                                                                                                                                                                                                                                                                                       | Critical Infrastructure                                                                                                                                                                                                                                                                      | Demographics                                                                                                                                                                                                             | Hazards                                                                                            | Public Safety Response                                                                                 | Community Services                                                                                            | Economic                                                                               | Past Loss & Event History                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>Road network</li> <li>Bridges</li> <li>Railways</li> <li>Airport</li> <li>Natural features and landforms</li> <li>Wildland Urban Interface</li> </ul> | <ul style="list-style-type: none"> <li>Property stock by occupancy type</li> <li>Building age, construction</li> <li>Building density and exposure</li> <li>Building height and area</li> <li>Potential high fire risk occupancies</li> <li>Historically or culturally important features</li> </ul> | <ul style="list-style-type: none"> <li>Food and water</li> <li>Oil and natural gas</li> <li>Electricity</li> <li>Telecommunications</li> <li>Public safety and security</li> <li>Continuity of government</li> <li>Transportation</li> <li>Health</li> <li>Financial institutions</li> </ul> | <ul style="list-style-type: none"> <li>Population and dispersion</li> <li>Age</li> <li>Gender</li> <li>Socioeconomic circumstances</li> <li>Ethnic and cultural considerations</li> <li>Transient populations</li> </ul> | <ul style="list-style-type: none"> <li>Hazard Identification and Risk Assessment (HIRA)</li> </ul> | <ul style="list-style-type: none"> <li>Public safety response agencies within the community</li> </ul> | <ul style="list-style-type: none"> <li>Community service agencies, organizations, and associations</li> </ul> | <ul style="list-style-type: none"> <li>Major employers and economic sectors</li> </ul> | <ul style="list-style-type: none"> <li>Overall fire loss</li> <li>Fire loss by occupancy type</li> <li>Civilian fire deaths and injuries</li> <li>Fire cause and ignition</li> <li>Smoke alarm status</li> <li>Call volume</li> <li>Call types</li> </ul> |



Figure 2: Risk Treatment Process



The analysis presented within this CRA has been informed by a wide range of data sources. Where applicable, all numerical data has been rounded to the nearest 1/100 (hundredth) decimal point to provide consistency in the analysis. As a result, the numerical totals presented within each analysis, although stated as reflecting 100%, may show a minor variance based on the use of only the nearest 1/100 (hundredth) decimal points.

## Section 2

### Geographic Profile

The geographic profile of a community is an assessment of the physical features of a community, such as highways, waterways, railways, bridges, landforms, quarries, and wildland-urban interfaces, that may present inherent risks to the community and affect emergency services' access to incidents and response capabilities. This section contains a detailed analysis of these geographical features for the Town of Milton to assist in determining the type and level of fire protection services needed for the community and any potential impacts these features may pose on service delivery.

#### 2.1 Geographic Overview

Milton, Ontario, is a rapidly growing town in Southern Area, part of the Halton Region and the Greater Toronto Area (GTA). Covering approximately 365 km<sup>2</sup>, Milton had a population of 143,101 as per the 2021 Town data projections, resulting in a population density of about 392 people per square kilometer. The town is well-connected by major highways, including Highway 401, which runs east-west through Milton, Highway 407 to the north, and Highway 25 running north-south. Additionally, Milton is served by the Milton line of the GO Transit system, providing convenient commuter train and bus services to Toronto and other areas<sup>5</sup>.

Milton is comprised of 25 distinct neighbourhoods, ranging from urban centres to rural and industrial areas. The town is also situated on the Niagara Escarpment, a UNESCO World Biosphere Reserve, offering rich biodiversity and recreational opportunities such as the Bruce Trail.<sup>6</sup>

Milton is about 40 kilometers west of Toronto, 32 kilometers west of Mississauga, 27 kilometers southeast of Guelph, and 61 kilometers east of Kitchener. This strategic location provides Milton residents with convenient access to a wide range of employment, educational, and recreational opportunities in the Greater Toronto and Hamilton Area<sup>7</sup>.

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<sup>5</sup> (Wikipedia - Town of Milton, 2024)

<sup>6</sup> (Wikipedia - Town of Milton, 2024)

<sup>7</sup> (Wikipedia - Town of Milton, 2024)

# Town of Milton Fire Services Overview Map

This map provides an overview of the Town of Milton Fire Services area. It highlights the Town of Milton in yellow, surrounded by other municipalities including Township of Guelph/Eramosa, County of Wellington, Township of Puslinch, City of Hamilton, City of Burlington, Township of Halton Hills, and Town of Oakville. The map shows five fire stations (Station 1 to Station 5) marked with red 'X' symbols. Station 1 is located near the Milton (Afi) Heliport, Station 2 is near the Mountsberg Reservoir, Station 3 is near the Milton Hospital Heliport, Station 4 is near the Burlington Executive Airport, and Station 5 is near the Sixteen Mile Creek. The map also displays various roads, including highways (401, 403, 10, 11, 13, 15, 20, 22, 25, 27, 34, 36, 37, 41, 44, 47, 125), and waterways (Eramosa River, Fairy Lake, Scotch Brook Reservoir, Kebo Lake, Cranford Lake, McCures Lake, Sixteen Mile Creek). A legend in the bottom left corner defines symbols for Station Demand Zone, First Nation, City of Milton, Municipal Boundary (Upper and District, Lower and Single), Protected Area / Park, Fire Station Location, Airport, Access Road, Highway, Railway, and Waterway / Waterbody. A scale bar at the bottom indicates a scale of 1:140,000, with distances in kilometers (0 to 12). The date of the map is September 2024. The BEHR Integrated Solutions logo is in the bottom right corner.

**Scale:** 1:140,000

**Date:** September 2024

**BEHR Integrated Solutions**

### 2.1.1 Road Network

Road networks and transportation systems provide fire services with access throughout a community when responding to emergency calls. The road network is how fire apparatus travel through a municipality; therefore, it is valuable to consider areas where there may be a lack of connectivity due to road network design, as well as other natural barriers (e.g. rivers, lakes, etc.) or human-made barriers (e.g. rail lines, traffic calming measures, etc.). Road networks can also contribute to vehicle congestion, causing delays in emergency response travel times. Where possible, the town's transportation planning processes should include MFRS as a stakeholder to provide consideration for emergency services' needs and challenges relating to the road network, traffic congestion, and traffic calming and related topics.

Roads are also important from a risk and emergency response perspective because motor vehicle-related incidents are often a common source of emergency call volume within a municipality.

The Town of Milton oversees a road network totaling 599.30 center-line kilometers, valued at \$1,843,619,407, with high-class bituminous (HCB) roads covering 412.10 kilometres and low-class bituminous (LCB) roads covering 187.30 kilometres.

According to the town's Asset Management Plan (2024)<sup>8</sup>, the overall condition of Milton's transportation assets is good, with more than 96% in fair or better condition based on field inspections and age assessments. However, less than 4% of the assets, with a replacement cost of \$75.1 million, are in poor to very poor condition and may require replacement in the short term. The Town of Milton's approach to asset lifecycle management is comprehensive. Maintenance, repair, and replacement activities are guided by technical external condition assessment surveys, asset age, and staff judgment through routine inspections and monitoring. Risk assessments and other contextual information is used to select the right lifecycle activity at the right time.

The Ontario Ministry of Transportation (MTO) oversees the following highways:

- **Highway 401:** Runs east-west through Milton
- **Highway 407:** Runs along the northeast edge of Milton and is part of the 407 Express Toll Route (ETR).
- **Highway 25:** Runs north-south through Milton

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<sup>8</sup> (Asset Management Plan, 2024)

The network of essential highways links the town to neighboring regions, Mississauga, Kitchener, Guelph, Hamilton, and Toronto. Highway 401 serves as a primary route, supported by highway 407. Since provincial highways are designated dangerous goods routes, traffic carrying various hazardous materials passes through the town regularly, highlighting the importance of safe transportation.

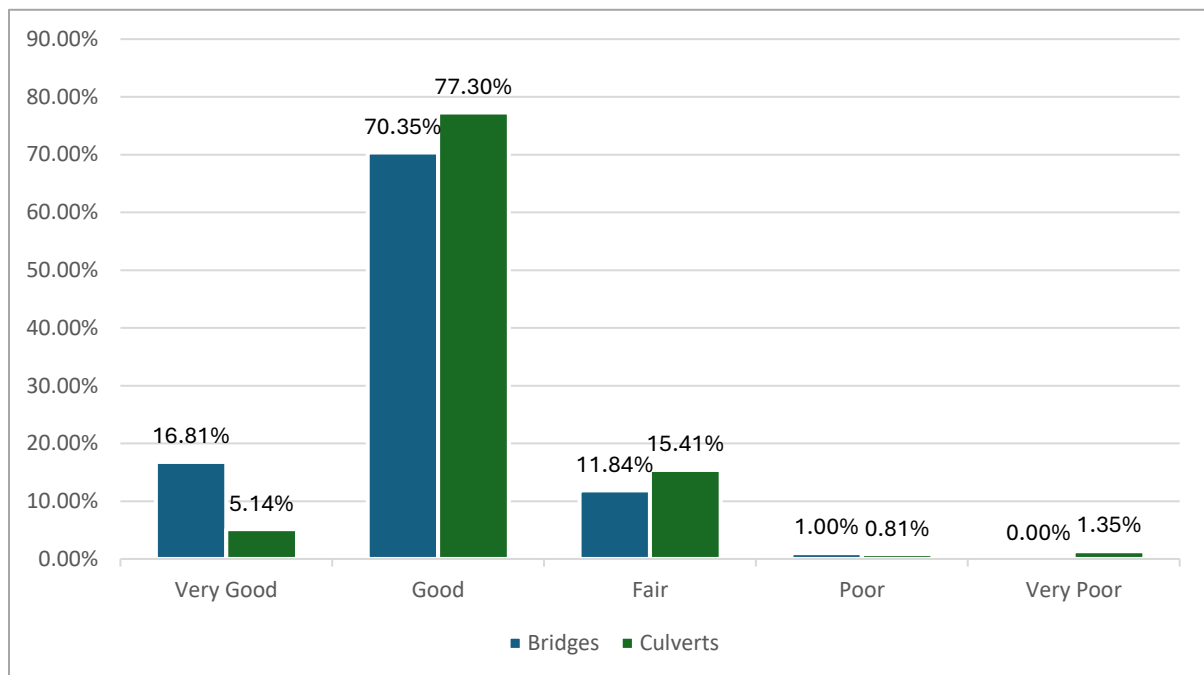
Although unlikely, an incident involving a dangerous goods release is possible along these highways. Incidents involving roads and highways, as well as incidents involving dangerous goods was listed as a moderate threat on the town's 2020 Hazard Identification and Risk Assessment.

### **2.1.2 Bridges and Culverts**

Bridges must be considered when conducting a CRA, as they can create physical barriers to emergency responses and negatively impact response times. An apparatus may face restrictions from crossing, such as load limitations, or roadway connectivity may be disrupted if a bridge is out of service for maintenance or repairs. Incidents occurring on a bridge pose increased risks, including spills, congestion, and difficulty accessing the scene. Such incidents may also necessitate specialized skills and equipment for slope rope rescue operations.

According to the town's Asset Management Plan (2024), there are 46 bridges (excluding pedestrian bridges) and 46 culverts. Among the bridges, 99% are considered to be in fair or better condition, while 1% are in poor condition. As for the culvert system, 97.84% are considered to be in fair or better condition, and 2.16% are in poor or very poor condition. Figure 3 illustrates the bridge and culvert condition.

Figure 3: Condition of Bridges & Culverts



### 2.1.3 Rail

At-grade rail crossings, where a road intersects a rail line at the same level, can create delays in emergency response by blocking roadway access and posing a risk of dangerous collisions with motor vehicles. In addition, the physical barriers formed by rail infrastructure, such as rail yards, tracks, grade separations, and level crossings, can significantly affect emergency services' travel and response times across a community. The frequency of train traffic and the nature of the goods transported through the area also contribute varying levels of risk, including the potential for derailments and the release of hazardous materials.

Of the 19 crossings in the community, 12 are equipped with flashing lights, bells, and gates. Guelph Junction Railway has 1 passive crossing, and CN has 2 passive crossings, one of which has recorded 2 accidents (with no fatalities or serious injuries) in the past five years. The remaining 4 crossings have flashing lights and bells but no gates.

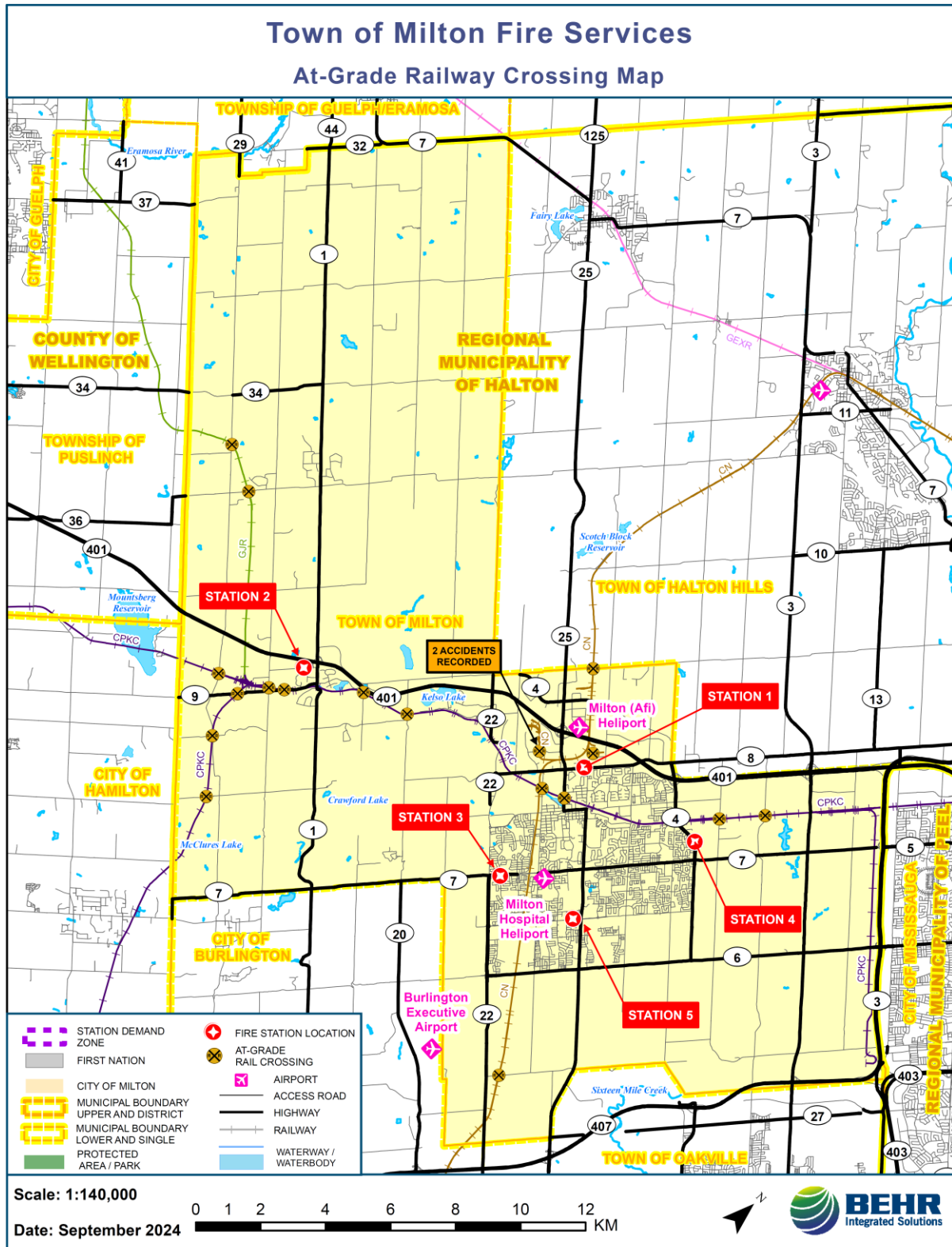
**The Guelph Junction Railway**, owned by the City of Guelph and operated by the Goderich-Exeter Railway, operates 38.6 km of track that runs from the Guelph Junction, near Campbellville, ON, extending northwest to Guelph's northwest industrial park. Passing through the western region of Milton, it traverses primarily rural farming lands, intersecting with the local road network at various level crossings. This railway is used to transport industrial products such as grain, plastics and lumber and interconnects with the Canadian Pacific and Canadian National railways.

**The Canadian Pacific Railway (CP)** operates freight services on the tracks that pass east-west through Milton. Their operations include transporting bulk commodities such as grain, coal, and potash, as well as intermodal freight which involves the movement of containers that can be transferred between ships, trucks, and trains.

**The Canadian National Railway (CN)** primarily operates on the tracks that run north-south through Milton, although they occasionally have trackage rights on the CP lines. They transport a wide range of products including automotive parts, chemicals, and consumer goods. There are plans to build an intermodal facility on rural lands in the south of the Town. This area is bordered by Tremaine Rd, Britannia Road, and Lower Base Line. The intermodal would be used to transfer freight between road transportation and the rail network.



Map 2: At Level Railway Crossings





## 2.2 Waterways and Marinas

Milton is home to several significant waterways, including Sixteen Mile Creek, Bronte Creek, the reservoir in Kelso Conservation Area, and Mill Pond. These bodies of water provide important ecological habitats and recreational opportunities. However, they also pose hazards such as seasonal flooding during heavy rainfall or rapid snowmelt, ice jams in winter, and erosion of creek banks during high flow events, necessitating swift evacuations and rescue responses. Responders require specialized technical rescue training and equipment to handle emergencies, especially in water bodies used for recreational activities, which see heightened activity during the summer season. Regular community education and preparedness programs are essential to ensure residents are aware of the risks and know how to respond during emergencies.

Waterfront activities increase the risk of an incident both on the water and along the shorelines. MFRS reported a total of 3 water and/or ice rescues over the period of January 2018 – December 2022.

## 2.3 Rural landscape and Wildfire Interface

The rural landscape of the Town of Milton is predominantly characterized by agricultural farmland, natural brush areas, and scattered residential properties. These vast open spaces are particularly vulnerable to grass and brush fires, especially during the warmer and drier summer months. The combination of dried-out vegetation and wind conditions can lead to rapidly spreading fires, which pose significant risks to crops and property.

There are a number of small residential areas mixed within the rural areas of the town. These residential pockets present a wildland-Urban interface risk in the event of a wildland fire, including forest, grass, or brush fires. These are located in the villages of Campbellville, Brookville, and Darbyville.

The varied terrain, including forests, hills, and water bodies, presents challenges for firefighting, often requiring specialized vehicles like ATVs to access difficult areas. Infrastructure such as rail tracks and limited roadways further complicates fire response, as rail tracks can spark fires and limited road access can delay firefighting efforts. Residential properties in these areas often rely on wells and non-municipal water sources, impacting firefighting capabilities and necessitating additional safety measures like firebreaks and controlled burns.

## 2.4 Geographic Profile – Identified Risks and Key Findings

Table 3: Geographic Profile - Identified Risks and Key Findings

| Identified Risk / Key Finding | Rationale                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identified Risk               | The road network, particularly Highway 401 bisecting the town, contributes to emergency call volume due to motor vehicle collisions and vehicle fires.                                                                                                                                                                                    |
| Identified Risk               | Since provincial highways and rail lines are designated dangerous goods routes, traffic carrying various hazardous materials regularly passes through the town.                                                                                                                                                                           |
| Key Finding                   | Large areas of agricultural land and green spaces throughout the municipality face an increased risk of grass, field, and wooded area fires, particularly during droughts and dry conditions typically experienced in the summer months. Potential for increased risk for wildland-urban interface fires should continue to be monitored. |
| Key Finding                   | Waterfront activities heighten the risk of incidents both on the water and along the shorelines. MFRS reported a total of 3 water and/or ice rescues between January 2018 and December 2022.                                                                                                                                              |
| Key Finding                   | Fire suppression services in rural areas can experience longer response times due to the distance from service locations.                                                                                                                                                                                                                 |
| Key Finding                   | There are risks associated with potential interactions between rail traffic and vehicular or pedestrian traffic within the town.                                                                                                                                                                                                          |
| Key Finding                   | Grade-level rail crossings may act as physical barriers within the town's road network, potentially leading to delays in emergency response times.                                                                                                                                                                                        |
| Key Finding                   | The potential of a new intermodal rail facility in the south area of the town will bring increased rail traffic, rail storage and the potential for increased hazards.                                                                                                                                                                    |

## Section 3

### Building Stock Profile

As referenced in **O. Reg. 378/18**, the building stock profile assessment includes an analysis of the types and uses of the building stock within the town. Important considerations include the number, type, and use of buildings, as well as any building-related risks known to the fire service. There are potential fire risks associated with different types or uses of buildings, depending on the presence or absence of fire safety systems and equipment at the time of construction and maintenance thereafter. This section examines these building characteristics within the town.

#### 3.1 Ontario Building Code Occupancy Classifications

OFM TG-02-2019 encourages fire services to consider the potential fire-related risks associated with different building occupancy types and uses. This involves assessing the prevalence of each occupancy classification within a community and the presence of fire and life safety systems and equipment. The Ontario Building Code (OBC) categorizes buildings by major occupancy classification, providing a recognized definition and baseline for developing a community risk assessment, as outlined in TG-02-2019.

The OBC consists of six major building occupancy classifications (groups), further defined by division within each group. The OBC major classification groups and divisions are detailed in Table 4.

Table 4: OBC Major Occupancy Classifications

| Group | Division      | Description of Major Occupancies                                                    |
|-------|---------------|-------------------------------------------------------------------------------------|
| A     | 1             | Assembly occupancies intended for the production and viewing of the performing arts |
| A     | 2             | Assembly occupancies not elsewhere classified in Group A                            |
| A     | 3             | Assembly occupancies of the arena type                                              |
| A     | 4             | Assembly occupancies in which occupants are gathered in the open air                |
| B     | 1             | Detention occupancies                                                               |
| B     | 2             | Care and treatment occupancies                                                      |
| B     | 3             | Care occupancies                                                                    |
| C     | All divisions | Residential occupancies                                                             |
| D     | All divisions | Business and personal services occupancies                                          |
| E     | All divisions | Mercantile occupancies                                                              |
| F     | 1             | High-hazard industrial occupancies                                                  |
| F     | 2             | Medium-hazard industrial occupancies                                                |
| F     | 3             | Low-hazard industrial occupancies                                                   |

Table Source: Ontario Building Code<sup>9</sup>

### 3.2 OFM Fire Risk Model Occupancy Classification

The Fire Risk Sub-model developed by the OFM utilizes major group classifications (i.e., Group A, B, C, D, E, F) without the detailed division classifications found in the OBC. This approach enables comparative assessment of buildings within a community by major occupancy groups, ensuring consistent and recognized definitions for each major occupancy type. Moreover, it allows for further analysis of specific occupancy groups. Occupancies within a group can be individually assessed, subject to any site-specific hazards or concerns, and included within the broader scope of the CRA as needed.

The OFM Fire Risk Sub-Model OBC classifications, definitions, associated fire-related risks, and potential proactive measures to mitigate risk within these occupancy types are presented in Table 5.

<sup>9</sup> (Ontario Ministry of Municipal Affairs and Housing, 2017)

Table 5: OFM Fire Risk Sub-Model Major Building Classifications

| OBC<br>Occupancy<br>Classification | OFM Fire Risk Sub-<br>Model Major Building<br>Classifications | OFM Definitions                                                                                                                                                                                                     | OFM Fire Related Risks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Proactive Measures for Reducing<br>Risk                                                                                                                                                                                                                            |
|------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Group A                            | Assembly<br>Occupancies                                       | An assembly occupancy is defined as one that is used by a gathering of persons for civic, political, travel, religious, social, educational, recreational or like purposes or for the consumption of food or drink. | Assembly buildings are often occupied by a large number of people and may contain high quantities of combustible furnishings and decorations. Occupants are generally unfamiliar with the building's exit locations and may not know how to react in the event of an emergency. Low light conditions are inherent to some of these occupancies and can contribute to occupant confusion during an evacuation. Numerous examples exist of disastrous events that have occurred throughout the world, resulting in multiple fire fatalities in these occupancies. Therefore, these facilities warrant special attention. Accordingly, it is paramount to ensure that maximum occupant load limits are not exceeded, detection is available, an approved fire safety plan is in place and adequate unobstructed exits/means of egress are readily available. | <ul style="list-style-type: none"> <li>• Regular fire prevention inspection cycles</li> <li>• Automatic fire detection and monitoring systems</li> <li>• Approved fire safety plan and staff training</li> <li>• Pre-planning by fire suppression staff</li> </ul> |

| OBC<br>Occupancy<br>Classification | OFM Fire Risk Sub-<br>Model Major Building<br>Classifications | OFM Definitions                                                                                                                                                                                                                                                                                                                 | OFM Fire Related Risks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Proactive Measures for Reducing<br>Risk                                                                                                                                                                                                                                                                                        |
|------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Group B                            | Care or Detention<br>Occupancies                              | <p>A care or detention occupancy means the occupancy or use of a building or part thereof by persons who:</p> <ul style="list-style-type: none"> <li>• Are dependent on others to release security devices to permit egress.</li> <li>• Receive special care and treatment; or,</li> <li>• Receive supervisory care.</li> </ul> | <p>In addition to the presence of vulnerable occupants, these occupancies may contain quantities of various flammable/combustible liquids and gases, oxidizers and combustible furnishings that will impact the intensity of the fire if one should occur. The evacuation or relocation of patients, residents, or inmates to an area of refuge during an emergency poses additional challenges in these facilities. It is essential to ensure that properly trained staff is available and prepared to quickly respond according to the facility's approved fire safety plan.</p> | <ul style="list-style-type: none"> <li>• Regular fire prevention inspection cycles</li> <li>• Automatic fire detection and monitoring systems</li> <li>• Approved Fire Safety Plan and staff training</li> <li>• Pre-planning by fire suppression staff</li> </ul>                                                             |
| Group C                            | Residential<br>Occupancies                                    | <p>A residential occupancy is defined as one that is used by persons for whom sleeping accommodation is provided but who are not harboured or detained to receive medical care or treatment or are not involuntarily detained.</p>                                                                                              | <p>In Ontario, residential occupancies account for 70% of all structural fires and 90% of all fire deaths. Residential units that are located in multi-unit buildings, including secondary units in a house, pose additional risks due to egress and firefighting accessibility challenges.</p>                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• Home smoke alarm programs</li> <li>• Public education programming including home escape planning.</li> <li>• Retro-fit and compliance inspection cycles for OFC compliance</li> <li>• Pre-planning by fire suppression staff</li> <li>• Fire Drills as required by the OFC</li> </ul> |

| OBC<br>Occupancy<br>Classification | OFM Fire Risk Sub-<br>Model Major Building<br>Classifications | OFM Definitions                                                                                                                                                               | OFM Fire Related Risks                                                                                                                                                                                                                                                                                                              | Proactive Measures for Reducing<br>Risk                                                                                                                                                                                                                                                                                                          |
|------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    |                                                               |                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>High-rise, vulnerable occupancies under Group C may require increases to the effective response force to ensure effective suppression operations</li> </ul>                                                                                                                                               |
| Group D                            | Business & Personal Services                                  | A business and personal services occupancy is defined as one that is used for the transaction of business or the rendering or receiving of professional or personal services. | Many office buildings are occupied by a large number of people during business hours and contain high combustible content in the form of furnishings, paper, books, computers, and other office equipment/supplies. Those that are located in a high-rise building pose additional risks due to egress and firefighting challenges. | <ul style="list-style-type: none"> <li>Regular fire prevention inspection cycles to maintain OFC compliance.</li> <li>Targeted fire prevention inspections for OFC compliance</li> <li>Staff training in fire prevention and evacuation procedures</li> <li>Public education programs</li> <li>Pre-planning by fire suppression staff</li> </ul> |

| OBC<br>Occupancy<br>Classification | OFM Fire Risk Sub-<br>Model Major Building<br>Classifications | OFM Definitions                                                                                                             | OFM Fire Related Risks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Proactive Measures for Reducing<br>Risk                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Group E                            | Mercantile                                                    | A mercantile occupancy is defined as one that is used for the displaying or selling of retail goods, wares, or merchandise. | Larger mercantile occupancies such as department stores are generally occupied by a large number of people and contain high quantities of combustibles in the form of merchandise, furnishings, and decorations. Customers may be unfamiliar with the building's exit locations and not know how to react in the event of an emergency. Additional hazards will be present in "big box" type stores that sell and store large volumes of combustible materials in bulk. These stores generally have similar properties to industrial warehouses with the additional hazard of higher number of occupants. | <ul style="list-style-type: none"> <li>Regular fire prevention inspection cycles</li> <li>Automatic fire detection and monitoring systems</li> <li>Approved Fire Safety Plan and staff training</li> <li>Pre-planning by fire suppression staff</li> <li>Identified higher risk buildings may require increases to the effective response force to ensure effective suppression operations</li> </ul> |



| OBC<br>Occupancy<br>Classification | OFM Fire Risk Sub-<br>Model Major Building<br>Classifications | OFM Definitions                                                                                                                                                                                                                                                                                                                                                                             | OFM Fire Related Risks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Proactive Measures for Reducing<br>Risk                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Group F                            | High/Medium/Low<br>Hazard Industrial                          | <p>An industrial occupancy is defined as one for the assembling, fabricating, manufacturing, processing, repairing, or storing of goods and materials. This category is divided into:</p> <ul style="list-style-type: none"> <li>low hazard (F3)</li> <li>medium hazard (F2)</li> <li>high hazard (F1) based on its combustible content and the potential for rapid fire growth.</li> </ul> | <p>These occupancies constitute a special fire hazard due to high levels of combustible, flammable or explosive content and the possible presence of oxidizing chemicals and gases. Processing and other activities that involve various ignition sources often occur in these occupancies. The lack of security during non-operational hours also makes them susceptible to incendiary type fires. Industrial fires generally involve large quantities of combustible materials and potentially result in large financial losses (e.g. building, contents) and significant damage to the community's environment and economic well-being (e.g. loss of jobs).</p> | <ul style="list-style-type: none"> <li>Regular fire prevention inspection cycles</li> <li>Staff training in fire prevention and evacuation</li> <li>Public education</li> <li>Pre-planning by fire suppression staff</li> <li>Installation of early detection systems (e.g., fire alarm systems, heat detectors)</li> <li>Installation of automatic sprinkler systems</li> <li>Approved Fire Safety Plans</li> <li>Preplanning by fire suppression staff</li> <li>Fire extinguisher training</li> </ul> |

### 3.2.1 Town of Milton Existing Major Building Stock Classification Summary

Analysis of the town's major building occupancy types was conducted using data from the Municipal Property Assessment Corporation (MPAC). Table 6 provides a summary of the town's existing major building occupancy classifications.

The majority of the town's existing property stock is comprised of Group C - Residential Occupancies (89.65%), with 52.48% of those being single-detached homes. The second largest occupancy type in the town is Other (farm), accounting for 2.26% of the town's property stock, which includes 938 farm buildings.

Table 6: Existing Major Building Classification Summary

| OBC Occupancy Classification   | OFM Fire Risk Sub-Model Major Building Classifications | Number of Occupancies | Percentage of Occupancies |
|--------------------------------|--------------------------------------------------------|-----------------------|---------------------------|
| <b>Group A</b>                 | <b>Assembly Occupancies</b>                            | <b>133</b>            | <b>0.32%</b>              |
| <b>Group B</b>                 | <b>Care or Detention Occupancies</b>                   | <b>32</b>             | <b>0.08%</b>              |
| <b>Group C</b>                 | <b>Residential Occupancies - Total</b>                 | <b>37,140</b>         | <b>89.65%</b>             |
| <i>Group C</i>                 | <i>Single-detached</i>                                 | <i>31,740</i>         | <i>52.48%</i>             |
| <i>Group C</i>                 | <i>Semi-detached</i>                                   | <i>4,932</i>          | <i>11.91%</i>             |
| <i>Group C</i>                 | <i>Row</i>                                             | <i>10,307</i>         | <i>24.88%</i>             |
| <i>Group C</i>                 | <i>Apartment &lt; 5 Storeys</i>                        | <i>133</i>            | <i>0.32%</i>              |
| <i>Group C</i>                 | <i>Apartment &gt; 5 Storeys</i>                        | <i>27</i>             | <i>0.07%</i>              |
| <i>Group C</i>                 | <i>Movable Dwellings</i>                               | <i>1</i>              | <i>0.00%</i>              |
| <b>Group D</b>                 | <b>Business &amp; Personal Services</b>                | <b>397</b>            | <b>0.96%</b>              |
| <b>Group E</b>                 | <b>Mercantile</b>                                      | <b>253</b>            | <b>0.61%</b>              |
| <b>Group F (all divisions)</b> | <b>Industrial Occupancies</b>                          | <b>690</b>            | <b>1.67%</b>              |
| <i>Division F1*</i>            | <i>High Hazard</i>                                     | <i>4</i>              | <i>0.01%</i>              |
| <i>Division F2*</i>            | <i>Medium Hazard</i>                                   | <i>675</i>            | <i>1.63%</i>              |
| <i>Division F3*</i>            | <i>Low Hazard</i>                                      | <i>11</i>             | <i>2.26%</i>              |
| <b>Other</b>                   | <b>Not classified in OBC- Farm</b>                     | <b>938</b>            | <b>2.26%</b>              |
| <b>Other</b>                   | <b>Not classified in OBC - Government</b>              | <b>1,843</b>          | <b>4.45%</b>              |
| <b>Total</b>                   |                                                        | <b>41,426</b>         | <b>100.00%</b>            |

\*Source for breakdown is (Municipal Property Assessment Corporation (MPAC), 2024).

Numbers may differ from stats Canada.

Consistent with most other municipalities in Canada, Group C - Residential Occupancies represent the most prominent type of building occupancy type. Standard Incident Reporting (SIR) from the OFM<sup>10</sup> indicates 83.51% of structure fires loss over the five-year period from January 1, 2018, to December 31, 2022, occurred within Group C - Residential Occupancies. It is also important to note 85.71% of the civilian fire related injuries, and 100.00% of the civilian fire related fatalities occurred in Group C – Residential.

### 3.3 Building Age and Construction

The OBC was adopted in 1975, and the Ontario Fire Code (OFC) was adopted in 1981. Together, these two codes have provided the foundation for eliminating many inconsistencies in building construction and maintenance that existed before their adoption. They ensure uniform building construction and maintenance standards for all new building projects and provide specific fire and life safety measures based on the building's use.

Examples of fire and life safety issues addressed by the codes include:

- Occupancy
- Exits/means of egress (including signs and lighting)
- Fire alarm and detection equipment
- Fire service access
- Inspection, testing, and maintenance

In many cases, the age and construction of a building can be directly associated with whether it was constructed before or after the introduction of these codes. For instance, during the late 19th and early 20th centuries, balloon frame construction was common, allowing exterior walls to extend continuously from the main floor to the roof, often through multiple stories. This construction method facilitated unobstructed fire and smoke spread from the basement to the roof, resulting in rapid fire propagation without occupants' or firefighters' knowledge. The OBC implemented requirements to change this construction method and introduced additional measures to mitigate fire spread through wall cavities.

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<sup>10</sup> (SIR - Municipal Fires Overview 2018-2022, 2024)

Similarly, the new codes recognize modern construction techniques such as lightweight wood frame construction, including the use of wood trusses and laminated veneer lumber. While these techniques and materials enhance construction efficiency and cost-effectiveness, they pose different challenges to firefighters compared to historical methods. For example, lightweight wood frame construction relies on structural components working together, so if one component fails due to exposure to high heat or fire, the entire roof system may fail. Lightweight construction is discussed further, later in this section.

Table 7 lists fire growth rates measured by the time it takes for a fire to reach one-megawatt (MW). Fire growth rate varies depending on the flammability of materials and contents within the building, introducing variances into the presented growth rates.

Table 7: Time to Reach 1 MW Fire Growth Rates in the Absence of Fire Suppression

| Fire Growth Rate | Time in Seconds (Minutes) to Reach 1 MW | Time in Seconds (Minutes) to Reach 2 MW |
|------------------|-----------------------------------------|-----------------------------------------|
| Slow             | 600 seconds (10 minutes)                | 848 seconds (14.13 minutes)             |
| Medium           | 300 seconds (5 minutes)                 | 424 seconds (7.07 minutes)              |
| Fast             | 150 seconds (2.5 minutes)               | 212 seconds (3.53 minutes)              |

Table Source: (Office of the Fire Marshal, 2011)

The impact of increasing fire growth rates is directly related to the time lapse from ignition to flashover, where combustible items within a given space reach a temperature high enough for them to auto-ignite. Figure 4 (below) illustrates the exponential increase in fire temperature over time and the potential for property loss and loss of life.

Figure 4: Fire Propagation Curve

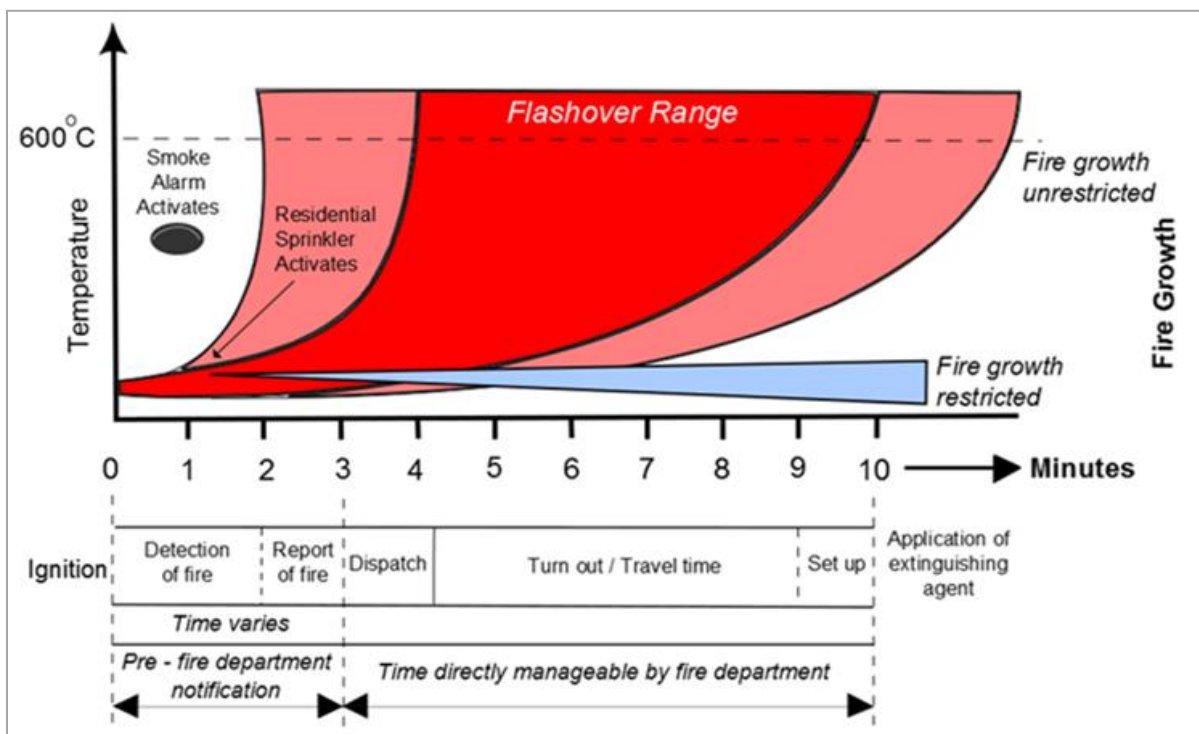


Figure Source: (Alternative Water Supplies for Public Fire Protection, 2012, p. 10)

Understanding building construction and materials is crucial for firefighters to determine the appropriate fire attack strategies and safety measures needed. Therefore, knowledge of a building's age may directly correlate with the construction methods and materials used, making building age and construction a vital component of this CRA.

Table 8 provides a summary of the age of the building stock within the town prior to the adoption of the new codes (OBC and OFC). The analysis suggests that 8.51% (3,631)<sup>11</sup> of the building stock was constructed before 1975 preceding the adoption of the 1975 OBC and 16.51% (7,046 properties) of the town's building stock was constructed before 1981, preceding the adoption of the 1981 OFC. While this represents a fire risk within the community, it is significantly lower than the provincial average.

<sup>11</sup> (Municipal Property Assessment Corporation (MPAC), 2024)

Table 8: Period of Construction of all Dwellings – Town of Milton and Ontario<sup>12</sup>

| Period of Construction | Milton Dwellings | Milton % of Dwellings | Ontario Total Number of Dwellings | Ontario % of Dwellings |
|------------------------|------------------|-----------------------|-----------------------------------|------------------------|
| Prior to 1961          | 1,910            | 4.48%                 | 1,247,430                         | 22.72%                 |
| 1961-1980              | 5,136            | 12.03%                | 1,456,110                         | 26.52%                 |
| 1981-1990              | 1,798            | 4.21%                 | 711,940                           | 12.97%                 |
| Total prior to 1991    | 8,844            | 20.72%                | 3,415,480                         | 62.20%                 |
| 1991-2000              | 517              | 1.21%                 | 644,080                           | 11.73%                 |
| 2001-2005              | 8,388            | 19.65%                | 385,045                           | 7.01%                  |
| 2006-2010              | 8,725            | 20.44%                | 348,760                           | 6.35%                  |
| 2011-2015              | 7,272            | 17.04%                | 328,735                           | 5.99%                  |
| 2016-2021              | 7,564            | 17.72%                | 369,095                           | 6.72%                  |
| Total 1991-2021        | 32,466           | 76.07%                | 2,075,715                         | 37.80%                 |
| 2022 - 2023            | 1,367            | 3.20%                 | N/A                               | N/A                    |
| Total Dwellings*       | 42,677           | 100.00%               | 5,491,200                         | 100%                   |

### 3.3.1 Lightweight Construction

As of February 25, 2022, the OFM has directed that available information documenting the presence and location of truss and lightweight construction systems, referred to as lightweight construction, must inform pre-planning activities by fire departments. Buildings with lightweight construction pose a safety risk to responding firefighters due to their susceptibility to premature failure and rapid collapse under fire conditions. Pre-plans provide responding fire departments with awareness of the presence of lightweight construction, enabling proactive fire response strategies to protect the safety of firefighters.

The use of lightweight truss construction in residential homes became predominate in the 1980's. It should be considered that all residential dwellings (single detached) should be built with lightweight construction. The town should ensure to identify all buildings with lightweight construction, primarily those constructed using wood framing. It is anticipated that the town will collect and document information on buildings with lightweight construction to update the CRA during the annual review and updating process. Furthermore, it is expected that the MFRS will integrate this information into their pre-planning program.

<sup>12</sup> (Statistics Canada, 2021)

### 3.4 Building Density and Exposure

NFPA 1730 - Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations (2019 Edition) highlights building density as a crucial factor for understanding potential fire risk, particularly in core areas like downtown districts. Closely spaced buildings, typical of historic downtown core areas and newer infill construction, may pose a higher risk of fire spreading to adjacent exposed buildings. In densely built-up areas with minimal building setbacks, a fire originating in one building could extend to neighboring structures due to their proximity. Moreover, the proximity of buildings can impede firefighting operations by limiting access for firefighters and equipment.

The adoption of the OBC and the OFC has required spatial separations and the use of fire-retardant materials and construction methods to mitigate fire risks. Basic firefighting practices prioritize the protection of exposures as a primary function and consideration during fire and emergency service responses. As mentioned earlier, older developments as well as new infill projects may present increased exposure risks due to higher building density.

Table 9 below illustrates a comparison of the town's existing Group C – residential building stock with that of the province, based on the 2021 Statistics Canada Census. Table 9 is an indication of the number of dwelling types, where as Table 6 above is an indication of the number of building/occupancy types driven by the OBC classifications.

Table 9: Group C Residential Building Stock Comparison

| Dwelling Type                       | Milton | %      | Ontario   | %      |
|-------------------------------------|--------|--------|-----------|--------|
| Single Detached                     | 21,740 | 58.52  | 2,953,210 | 53.78  |
| Semi-Detached                       | 4,932  | 13.28  | 303,260   | 5.52   |
| Row House                           | 10,307 | 27.75  | 505,265   | 9.20   |
| Apartment in a building < 5 Storeys | 133    | 0.36   | 729,815   | 13.29  |
| Apartment in a building > 5 Storeys | 36     | 0.10   | 984,665   | 17.93  |
| Moveable dwelling                   | 1      | 0.00   | 14,985    | 0.27   |
| Total                               | 37,149 | 100.00 | 5,491,200 | 100.00 |

Table Source: (MPAC, 2024) (Milton) and (Statistics Canada, 2021)(Ontario)

The Town of Milton has a higher proportion of row houses (27.75%) compared to the provincial average of 9.20%. Conversely, Milton has significantly fewer apartments in buildings over five storeys (0.10%) compared to Ontario's 17.93%. The proportion of single detached houses in Milton (58.52%) is consistent with the provincial average of 53.78%.

### 3.5 Building Growth & Density

A snapshot of development in the Town of Milton over the next decade, according to the Town of Milton's Official Plan<sup>13</sup>, projects a population growth of 242,052 or 152.80% by 2051. This growth is identified in the Derry Green Business Park, the Uptown, Milton GO Station Area, Trafalgar Corridor & Agerton Areas and the Education Village. Specifically, growth outside these urban centres represents 90% of the population growth and 89% of total household growth. There is 120,000 sq ft of new proposed office space, and 3,000 high density condo units planned or already under construction.<sup>14</sup>

**Derry Green Business Park:** The employment development in the Derry Green Business Park is planned to include a mix of business types, such as logistics, manufacturing, and distribution facilities.

**Major Transit Station Area:** The area surrounding the GO station will accommodate mixed-use and high-density residential and office development.

**Milton Education Village:** This 400-acre area is planned to accommodate post-secondary education, residential, commercial employment, and recreational amenities. It is estimated to support 12,803 residents and 2,500 jobs.

**Trafalgar Corridor:** This new greenfield development is planned to accommodate residential, office, and mixed-use developments. It is anticipated to house an additional 32,000 residents.

**Agerton Area:** This area is planned for mixed-use employment and higher-density residential developments. A new GO transit station is also proposed for this area. The estimated population is 6,800 residents, with 15,000 jobs projected over the next 20 years.<sup>15</sup>

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<sup>13</sup> (Town of Milton Official Plan, 2024 (draft))

<sup>14</sup> (Tracking Development, 2024)

<sup>15</sup> (Growing in Milton: Background & Information Report, 2023)



### 3.5.1 Density

“In the Town, the target number of new housing units occurring within the Designated Greenfield Area and Built-Up Area between 2022 and 2041 is 29,620 and 9,800 units respectively. Density targets for Designated Greenfield Areas for 2041 (number of people and jobs per hectare in the Designated Greenfield Area by 2041, consisting of the lands within the Regional Urban Boundary and outside of the Built-Up Area) are approximately 59 people/jobs per hectare. The target number of jobs within Employment Areas is expected to be roughly 19 jobs per hectare<sup>16</sup>.”

“The housing expansion is expected to comprise 28% low-density (single and semi-detached homes), 38% medium-density (multiplexes), 26% high-density (apartments), and 7% secondary suites.”<sup>17</sup>

Table 10 illustrates the Town of Milton’s proposed density phased over the next 20 years.

Table 10: Milton Share of Regional Phasing

| Location & Type             | 2022-2026 | 2027-2031 | 2032-2036 | 2037-2041 |
|-----------------------------|-----------|-----------|-----------|-----------|
| Units in Greenfield Area    | 5,760     | 6,120     | 8,780     | 8,960     |
| Low Density Units           | 2,560     | 2,710     | 3,960     | 4,040     |
| Medium & High-Density Units | 3,200     | 3,400     | 4,820     | 4,920     |
| Units in Built Up Area      | 2,360     | 2,500     | 2,480     | 2,530     |
| Employment                  | 11,700    | 12,500    | 14,000    | 14,300    |

Table Source: (Official Plan for the Halton Planning Area, 2024, p. 19)

### 3.5.2 Additional Dwelling Units

An Additional Dwelling Unit (ARU) is a self-contained residential dwelling unit with its own cooking, sanitary, and sleeping facilities. It can be located either within a single-detached, semi-detached, or townhouse dwelling, or in an ancillary building or structure on the same lot. ADUs are often referred to as additional dwelling units, basement apartments, in-law suites, coach houses, laneway houses, garden suites, tiny homes, and similar terms.

<sup>16</sup> (Growing in Milton: Background & Information Report, 2023, p. 47)

<sup>17</sup> (MiltonToday, 2024)

Property owners operating additional dwelling units (ADU's) (attached and detached) defined in the revised Comprehensive Zoning By-law 016-2014<sup>18</sup> are permitted to have a maximum of 3 ADU's, but not more than 1 detached ADU. ADU's are not currently required to register and therefore there is limited ability to ensure the Town has up-to-date contact information for the number of ADU's, property owner information, and to verify that the property continues to comply with Ontario Fire and Building Codes, as well as the Town's zoning by-law requirements.

A proposed by-law to address registering ADU's has been drafted, however at time of this review has not been enacted by Council. There are currently no registered ADUs in the Town. However, the building department has approximately 1,400 building permit applications on file for ADUs. In addition, there are 70 permit applications for finished basements, 3 permits for accessory apartments (detached), and 105 permit applications for accessory attached units within homes. Based on current trends, it is anticipated that there could be between 500 and 800 additional requests for ADU permit registration in the near future.<sup>19</sup> The risk with ADU's increase with multiple families occupying one building, concern about ADU's operating without appropriate fire safety considerations in place, and the potential need for additional emergency resources on scene to address the increased number of occupants. The current risk is the permitting of these ADU's without a tracking method and understanding the potential situation prior to arrival on scene of an emergency incident. The MFRS should continue to monitor this situation and update the risk in the CRA accordingly. These additions will increase risk and challenge the existing resources of the fire service.

## 3.6 Building Height and Area

### 3.6.1 Building Height

The building height is a characteristic that can make firefighting operations difficult. Several factors contribute to these challenges, including density and the number of occupancies, vertical stacking that allows for vertical air movement, and the movement of smoke, heat, and fire upwards. Additionally, access for firefighting on upper floors, including suppression activities, rescue, and evacuation, can be problematic.

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<sup>18</sup> Town of Milton Comprehensive Zoning By-law 016-2014 (HUSP Urban Area) - 2014

<sup>19</sup> (Additional Residential Units, 2024)

Efficient evacuation can be challenging due to a lack of direction, signage, or familiarity of occupants, potentially resulting in overcrowding of stairways and exit routes. Ensuring all required fire and life safety systems are in place and functioning is crucial for these occupancies. However, taller buildings may experience extended rescue/fire suppression response times for firefighters to ascend to upper levels, known as “vertical response.” Strategies like “shelter-in-place,” where occupants are directed to stay within their units, can be effective life safety measures. However, functional internal building communication systems are critical for the success of this strategy. Targeted public education campaigns addressing strategies like shelter-in-place are also vital for educating building occupants. In addition to the fire and life safety systems, high-rise buildings will require increase to effective response force numbers to ensure that the appropriate number of firefighters are on-scene to complete critical tasks needed during fire suppression operations.

It is important to note that terms like “high rise,” “tall buildings,” and “high buildings” have various meanings. For the purposes of developing this Community Risk Assessment (CRA), the Ontario Building Code (OBC) and Ontario Fire Code (OFC) definitions have been used. These codes define a high-rise as a building 18 metres (59 feet) above grade or six storeys.

The following fire safety features are required by the OBC for new buildings, and the OFC for occupied buildings:

- Building services (ventilation, firefighter elevators, water supply, etc.)
- Non-combustible construction (concrete and steel)
- Interior finishes (drywall, block, concrete slab)
- Fire detection and notification of occupants (pull stations, heat detectors, fire detectors, alarm system)
- Compartmentation (containment of fire and smoke spread, fire doors, fire shutters, self-closing mechanisms on doors, etc.)
- Means of egress (stairwells constructed with non-combustibles)
- Fire protection system (automatic sprinklers, standpipes and hose cabinets, fire pumps, fire extinguishers, etc.)

These fire safety features are crucial for ensuring the safety of the public and firefighters alike. Currently, the town has 24 buildings, identified in Table 11, classified as high-rise buildings according to the OBC, with floor levels 18 meters (59 feet) above grade or above five storeys. It has also identified a further 36 high-rise buildings, that are either under-construction or planned for construction which will further increase the risk and resources to MFRS.

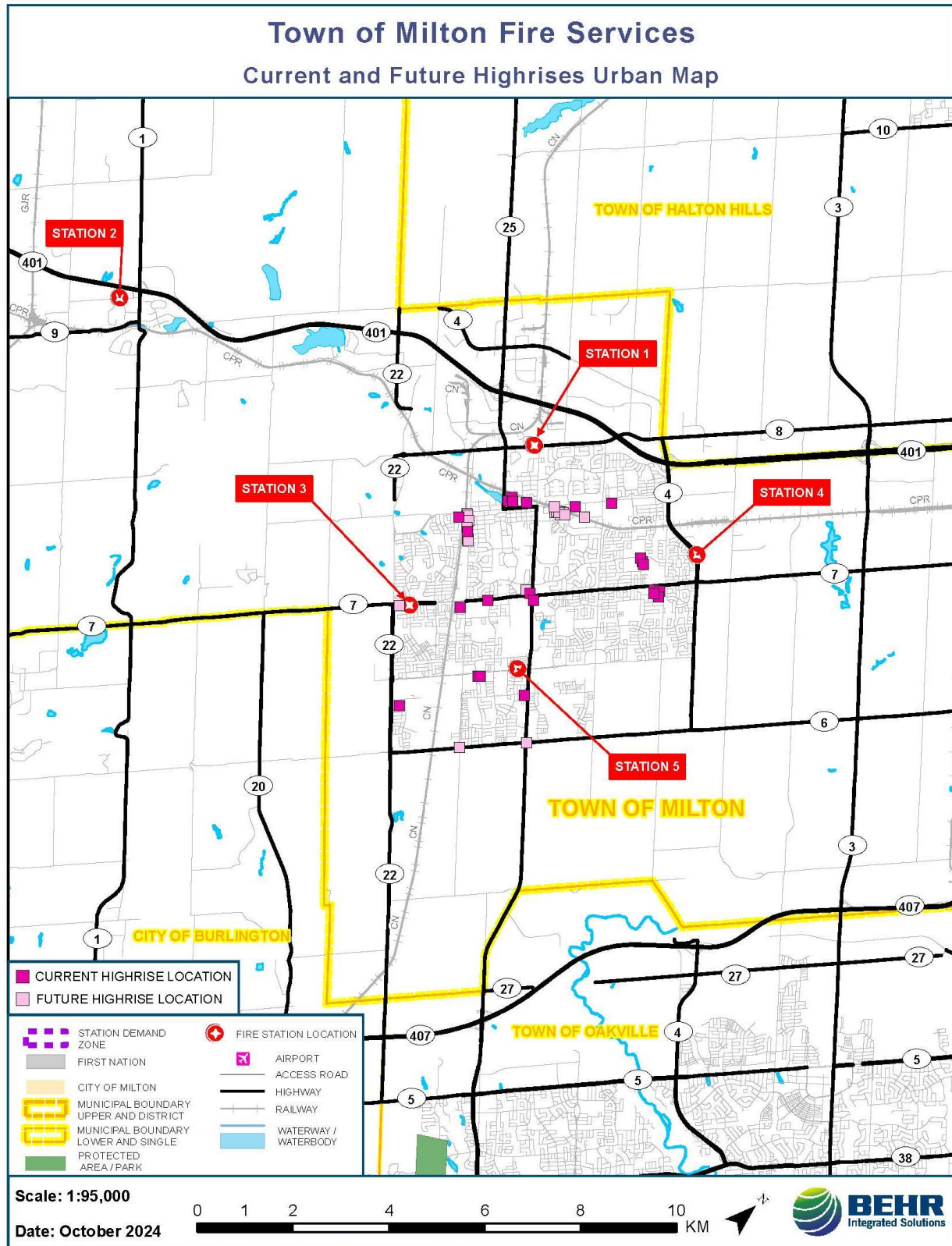
Table 11: Existing and Future High-Rises

|    | Existing                      |    | Under Construction or Planned        |
|----|-------------------------------|----|--------------------------------------|
| 1  | 716 Main St E, Milton         | 1  | Hwy 25 and Derry Rd, Milton          |
| 2  | 1050 Main St E, Milton        | 2  | Hwy 25 and Derry Rd, Milton          |
| 3  | 100 Millside Dr, Milton       | 3  | Hwy 25 and Derry Rd, Milton          |
| 4  | 100 Millside Dr, Milton       | 4  | 145 Nipissing Rd, Milton             |
| 5  | 610 Farmstead Dr, Milton      | 5  | 147 Nipissing Rd, Milton             |
| 6  | 1419 Costigan Rd, Milton      | 6  | 151 Nipissing Rd, Milton             |
| 7  | 1421 Costigan Rd, Milton      | 7  | Thompson and Drew, Milton            |
| 8  | 830 Megson Terrace, Milton    | 8  | Thompson and Drew, Milton            |
| 9  | 383 Main St E, Milton         | 9  | Thompson and Drew, Milton            |
| 10 | 33 Whitmer St, Milton         | 10 | Bronte Rd and Britannia, Milton      |
| 11 | 1125 Leger Way, Milton        | 11 | 105 Nipissing Rd, Milton             |
| 12 | 1105 Leger Way, Milton        | 12 | 115 Nipissing Rd, Milton             |
| 13 | 620 Sauve St, Milton          | 13 | 125 Nipissing Rd, Milton             |
| 14 | 630 Sauve St, Milton          | 14 | Regional Rd 25 and Britannia, Milton |
| 15 | 640 Sauve St, Milton          | 15 | Regional Rd 25 and Britannia, Milton |
| 16 | 650 Sauve St, Milton          | 16 | Regional Rd 25 and Britannia, Milton |
| 17 | 1379 Costigan Rd, Milton      | 17 | Regional Rd 25 and Britannia, Milton |
| 18 | 81 Millside Dr, Milton        | 18 | Regional Rd 25 and Britannia, Milton |
| 19 | 122 Bronte St S, Milton       | 19 | Regional Rd 25 and Britannia, Milton |
| 20 | 82 Millside Dr, Milton        | 20 | Regional Rd 25 and Britannia, Milton |
| 21 | 600 Ontario St S, Milton      | 21 | Regional Rd 25 and Britannia, Milton |
| 22 | 470 Gordon Krantz Ave, Milton | 22 | 700 Main St, Milton                  |
| 23 | 1440 Clarriage Crt, Milton    | 23 | 706 Main St, Milton                  |

|    |                       |    |                          |
|----|-----------------------|----|--------------------------|
| 24 | 8010 Derry Rd, Milton | 24 | 28 Bronte St, Milton     |
|    |                       | 25 | 60 Bronte St. Milton     |
|    |                       | 26 | 104 Bronte St, Milton    |
|    |                       | 27 | 155 Nipissing Rd, Milton |
|    |                       | 28 | 180 Bronte St S, Milton  |
|    |                       | 29 | 186 Bronte St S, Milton  |
|    |                       | 30 | 188 Bronte St S, Milton  |
|    |                       | 31 | 190 Bronte St S, Milton  |
|    |                       | 32 | 194 Bronte St, S, Milton |
|    |                       | 33 | 550 Ontario St, Milton   |
|    |                       | 34 | 780 Main St E, Milton    |
|    |                       | 35 | 780 Main St E, Milton    |
|    |                       | 36 | 560 Main St E, Milton    |

Map 3, below on page 35 shows the locations of both existing and under construction or planned high-rises. These are all located currently in the urban centre.

Map 3: Current and Future High-Rises





### 3.6.2 Building Area

Building area can pose comparable challenges to those present in taller buildings. Horizontal travel distances, rather than vertical, can lead to extended response times for firefighters attempting rescue or fire suppression activities. Large buildings, such as industrial plants, warehouses, department stores, and big box stores, often contain significant volumes of combustible materials. Many of these occupancies also use high rack storage, making fires within these systems difficult to access and increasing the risk of collapse, which can endanger firefighter safety.

As part of the data collection process, town staff provided building footprint data for the Town of Milton. The information presented in Table 12 indicates that the majority of the building stock (81.44%) has a total building area (footprint) of 2,500 square feet or less. This summary also indicates that 0.16% (66 buildings) have an area greater than 50,000 square feet, or approximately 4,655 square metres. It should be noted there are 44 buildings over 100,000 square feet and 2 buildings over 1,000,000 square feet. (Distribution centres at 2200 Yukon Court and 8450-8550 Boston Church Road).

Table 12: Building Area

| Building Size                         | # of Buildings | % of all Buildings |
|---------------------------------------|----------------|--------------------|
| 0-2,499                               | 34,613         | 81.44%             |
| 2,500-4,999                           | 7382           | 17.37%             |
| 5,000-9,999                           | 265            | 0.62%              |
| 10,000-19,999                         | 101            | 0.24%              |
| 20,000-49,999                         | 76             | 0.18%              |
| >50,000                               | 66             | 0.16%              |
| Total*                                | 42,503         | 100.00%            |
| *Condo units are counted individually |                |                    |

### 3.7 Potential High-Fire Risk Occupancies

Potential high-fire risk occupancy is another factor to consider within a town's building stock. High fire risk can be associated with a combination of factors, including building density (exposure), building age, and construction. Fuel load refers to the quantity and type of combustible content and materials within a building, encompassing combustible contents, interior finishes, and structural materials. Combustible content typically poses the greatest potential fire loss risk, as higher fuel loads increase the likelihood of ignition and severity of fires.

In many communities, large amounts of fuel load can be concentrated within a single occupancy, such as a building supply business, a large multi-unit residential building, or a historic downtown core. This section of the CRA will primarily focus on fuel load for industrial occupancies.

### 3.7.1 Fuel Load Concerns

Buildings with potential fuel load concerns are identified in Table 13. These include structures that house materials such as oxidizers, flammable liquids, and combustible chemicals.

Table 13: Potential High Fire Risk Occupancies

| No. | Facility Name/ Organization                 | Address                      | Risk Description                                         |
|-----|---------------------------------------------|------------------------------|----------------------------------------------------------|
| 1   | Westrock                                    | 8150 Parkhill Drive          | Combustible content                                      |
| 2   | Modatek Systems                             | 400 Chisholm Drive           | High fire load, flammable                                |
| 3   | Karmax Heavy Stamping                       | 331-333 Market Drive         | High fire load, flammable                                |
| 4   | Union Gas Compressor Station                | 6603-6689 Eighth Line        | Compressed Gas                                           |
| 5   | Roxul Inc                                   | 551 Harrop Drive             | Manufacturing, combustible content                       |
| 6   | Canada Building Materials (Ready Mix Plant) | 805 Nipissing Road           | Manufacturing, building materials, combustible materials |
| 7   | CRH Canada (Ready Mix Plant)                | 105 Steeles Avenue E         | Manufacturing, building materials, combustible materials |
| 8   | Maxi Mix                                    | 8105 Esquesing Line          | Manufacturing, building materials, combustible materials |
| 9   | DSV Distribution Centre                     | 2200 Yukon Court             | Over 1,000,000 square feet                               |
| 10  | Sysco Food Services                         | 2800 Peddie Road             | Food Storage/Refrigeration                               |
| 11  | CPKC Milton Yard                            | 7251 Trafalgar Road          |                                                          |
| 12  | Rona Regional Distribution Centre           | 8450-8550 Boston Church Road | Over 1,000,000 square feet, warehousing                  |
| 13  | Versa Cold                                  | 2701 High Point Drive        | Food Storage/Refrigeration                               |
| 14  | Smart Stop Self Storage                     | 530 Martin Street            | Storage/potential combustible contents                   |
| 15  | Storage Solutions - Rear Gate               | 9116 Twiss Road              | Storage/potential combustible contents                   |
| 16  | Storage Solutions                           | 9200 Twiss Road              | Storage/potential combustible contents                   |



| No. | Facility Name/ Organization    | Address                 | Risk Description                                                                 |
|-----|--------------------------------|-------------------------|----------------------------------------------------------------------------------|
| 17  | Stargate Manufacturing Inc     | 140 Market Drive        | 40,000 sq ft, truck manufacturing, combustible content                           |
| 18  | RIMEX supply                   | 570 Mcgeachie Drive     | Heavy industrial wheel/Rim manufacturing, combustible content                    |
| 19  | Solex Industrial Handling      | 200 Nipissing Road      | Metal fabrication, combustible content                                           |
| 20  | Smelko Foundry Products        | 701 Nipissing Road      | Manufacturing, combustible content                                               |
| 21  | Serpact Spring Service Limited | 8724 Regional Road 25   | Truck Repair, combustible content                                                |
| 22  | Sensient Flavours Canada Inc   | 8020 Fifth Line         | Food product manufacturing, combustible content                                  |
| 23  | Sargent Farms - Processing     | 61 Garden Lane          | Poultry processing, combustible content                                          |
| 24  | Sargent Farms - Distribution   | 6529 Regional Road 25   | Poultry Distribution warehouse, combustible content                              |
| 25  | Active Transport               | 245 Bronte Street North | Automotive warehousing, combustible content                                      |
| 26  | Rockwool - Primary Entrance    | 805 Steeles Ave E       | Combustible content                                                              |
| 27  | Rona Distribution Centre       | 11000 Steeles Ave       | Over 1,000,000 square feet, warehousing                                          |
| 28  | Ridley Windows and doors       | 2675 Reid Sideroad      | Window Manufacturing, combustible content                                        |
| 29  | Recochem Incorporated          | 8725 Holgate Cr         | Large (96,000 sq ft) manufacture, sale of chemical solvents – highly combustible |
| 30  | Pro Form Products Limited      | 624 Mcgeachie Drive     | Automotive repair product manufacturing, combustible content                     |
| 31  | Pit Crew Truck Repair          | 8724 Regional Road 25   | Automotive repair product manufacturing, combustible content                     |
| 32  | Parker                         | 160 Chisholm Drive      | Industrial manufacturing, combustible content                                    |

| No. | Facility Name/ Organization                   | Address                          | Risk Description                                               |
|-----|-----------------------------------------------|----------------------------------|----------------------------------------------------------------|
| 33  | Pallet Management Group                       | 9148 Twiss Road                  | Wood pallet manufacturing, highly combustible material         |
| 34  | Traffix                                       | 375 Wheelabrator Way             | Warehousing (over 40,000 sq ft)                                |
| 35  | Goodfellow                                    | 9144 Twiss Road                  | Bulk building material storage                                 |
| 36  | Nordex Explosives                             | 10418 Second Line<br>Nassagaweya | Manufacturing explosive products                               |
| 37  | Anchor truck repair/Central truck and trailer | 600 Harrop Drive                 | Truck repair, automotive, combustible content                  |
| 38  | Multi-unit industrial                         | 8400 Parkhill Drive              | Large industrial mall - warehousing combustible content        |
| 39  | Multi-unit industrial                         | 8300 Parkhill Drive              | Large industrial mall- warehousing combustible content         |
| 40  | MTB Transit Solutions                         | 8170 Lawson Road                 | Auto repair shop, combustible content                          |
| 41  | Moffatt Scrap Iron and Metal                  | 9620 Guelph Line                 | Scrap metal dealer/recycling – potential combustion            |
| 41  | Milton Transport Inn Limited                  | 8604 Escarpment Way              | Automotive repair, combustible content                         |
| 42  | Milton Hydro Transformer Station              | 96 Bronte St N                   | Combustible content                                            |
| 43  | Milton Hydro Distribution                     | 200 Chisholm Drive               | Combustible content                                            |
| 44  | Milton Hydro Transformer Station              | 50 Ontario Street N              | Combustible content                                            |
| 45  | Medtronic Canada ULC                          | 95 Market Drive                  | Manufacturing medical products – possible combustible content  |
| 46  | Lumberville                                   | 318 Bronte St S                  | Manufacturing, building materials, combustible materials       |
| 47  | Logistics Distribution Incorp                 | 550 Industrial Drive             | Warehousing, over 100,000 sq ft, possible combustible contents |
| 48  | Great Northern Insulation                     | 450 Industrial Drive             | Insulation manufacturer, Combustible materials                 |

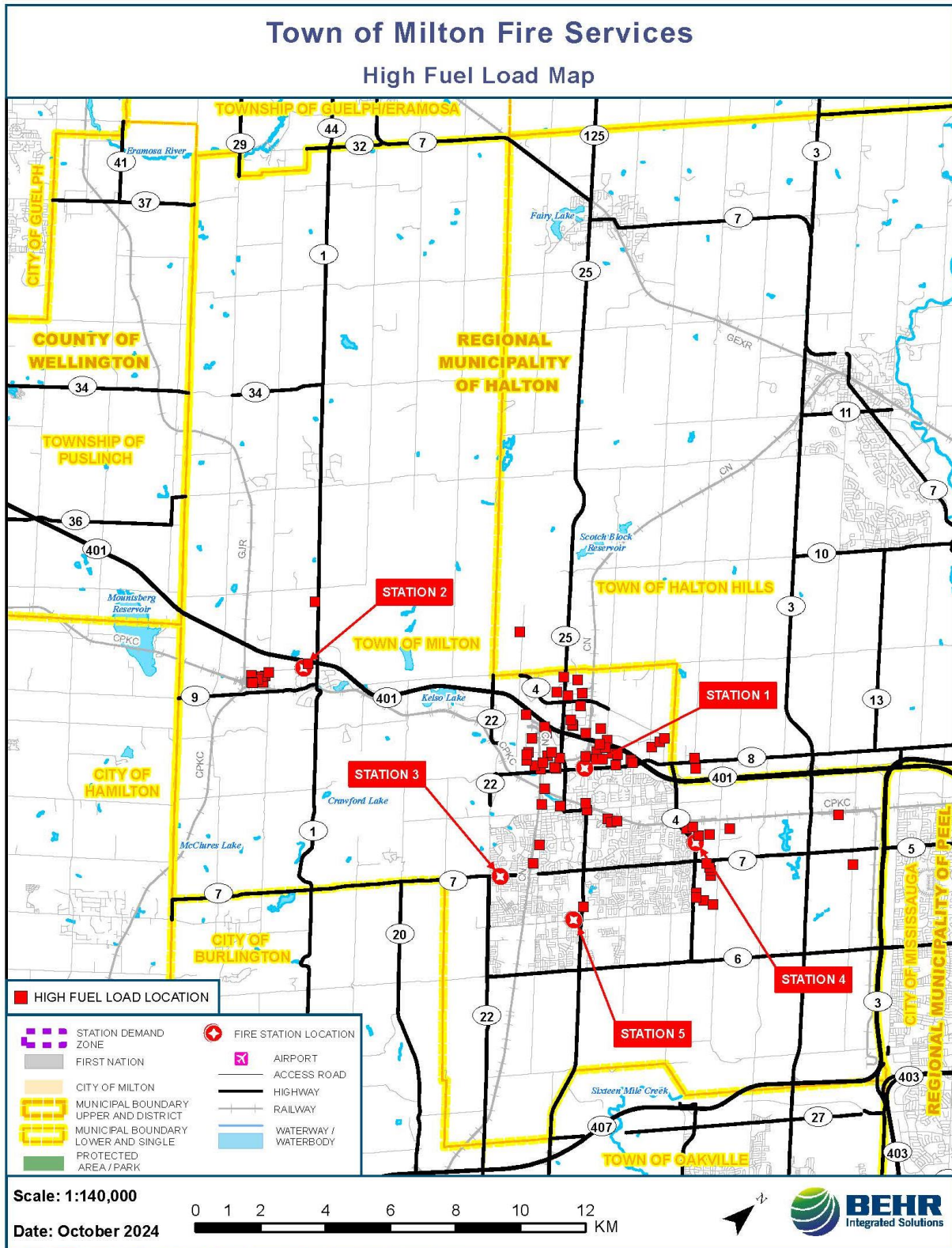
| No. | Facility Name/ Organization    | Address             | Risk Description                                                           |
|-----|--------------------------------|---------------------|----------------------------------------------------------------------------|
| 49  | Goodfellow Building C- D       | 9120 Twiss Road     | Lumber/wood manufacturing, combustible contents                            |
| 50  | Goodfellow building B          | 9180 Twiss Road     | Lumber/wood manufacturing, combustible contents                            |
| 51  | Goodfellow Building A          | 9190 Twiss Road     | Lumber/wood manufacturing, combustible contents                            |
| 52  | Goodfellow Building A          | 9188 Twiss Road     | Lumber/wood manufacturing, combustible contents                            |
| 53  | Fidelity Stainless             | 855 Steeles Ave E   | Warehousing, (over 40,000 sq ft) steel distribution, combustible contents  |
| 54  | Fasteners and Fittings Inc     | 901 Steeles Ave E   | Large Warehousing (90,000 sq Ft), combustible contents                     |
| 55  | Eaton Canada Limited           | 610 Industrial Dr   | Electrical equipment warehousing, (over 90,000 sq ft) combustible contents |
| 56  | Dufferin Quarry                | 9410 Dublin Line    | Sand quarry                                                                |
| 57  | Dare Foods                     | 725 Steeles Ave E   | Food manufacturing plant, combustible contents                             |
| 58  | Canadian Welding Bureau        | 8260 Parkhill Drive | Welding school, high flammable/combustion risk                             |
| 59  | Crawford Metal CMC             | 620 Harrop Drive    | Pipe manufacturing, high combustible risk                                  |
| 60  | McEwan Petroleum               | 421 Mcgeachie Drive | Fuel products, highly combustible                                          |
| 61  | Blue Line Distribution         | 8175 Lawson Road    | Trucking logistics/automotive, potential combustible contents              |
| 62  | BJG Warehouse and Distribution | 510 Bronte St S     | Box/Pallet warehousing, potential for combustibles                         |
| 63  | Aimco Solrec Ltd.              | 425 Morobel Drive   | Waste Management/hazardous waste disposal, high risk, flammables           |

| No. | Facility Name/ Organization | Address                 | Risk Description                                                     |
|-----|-----------------------------|-------------------------|----------------------------------------------------------------------|
| 64  | W.R Meadows of Canada       | 70 Hannant Ct           | Manufacturer of concrete construction products, combustible contents |
| 65  | Connect Conveyor Belting    | 405 Industrial Dr       | Conveyor belt manufacturer, combustible contents                     |
| 66  | Not identified              | 10725 Louis St Laurent  | Unidentified industrial (James Snow Business Park Development)       |
| 67  | Not identified              | 6440-6790 Fifth Line    | Unidentified industrial (James Snow Business Park Development)       |
| 68  | Not identified              | 955 James Snow Parkway  | Unidentified industrial (James Snow Business Park Development)       |
| 69  | Rockwool                    | 1655 Reading Court      | Warehousing, manufacturing, combustible contents                     |
| 70  | DHL Supply Chain            | 1820-1890 Reading Court | Logistics - Large warehousing (Over 500,000 sq feet)                 |

In addition to ensuring compliance with the requirements of the OBC and the OFC, fire services can implement operational strategies to address fuel load concerns. These strategies include regular fire inspection cycles and pre-planning of buildings of this nature, which provide an operational advantage in the event of a fire. In the higher risk buildings identified in table 13 above, increases to effective response force numbers will be required to ensure that the appropriate number of firefighters are on-scene to complete critical tasks needed during fire suppression operations.

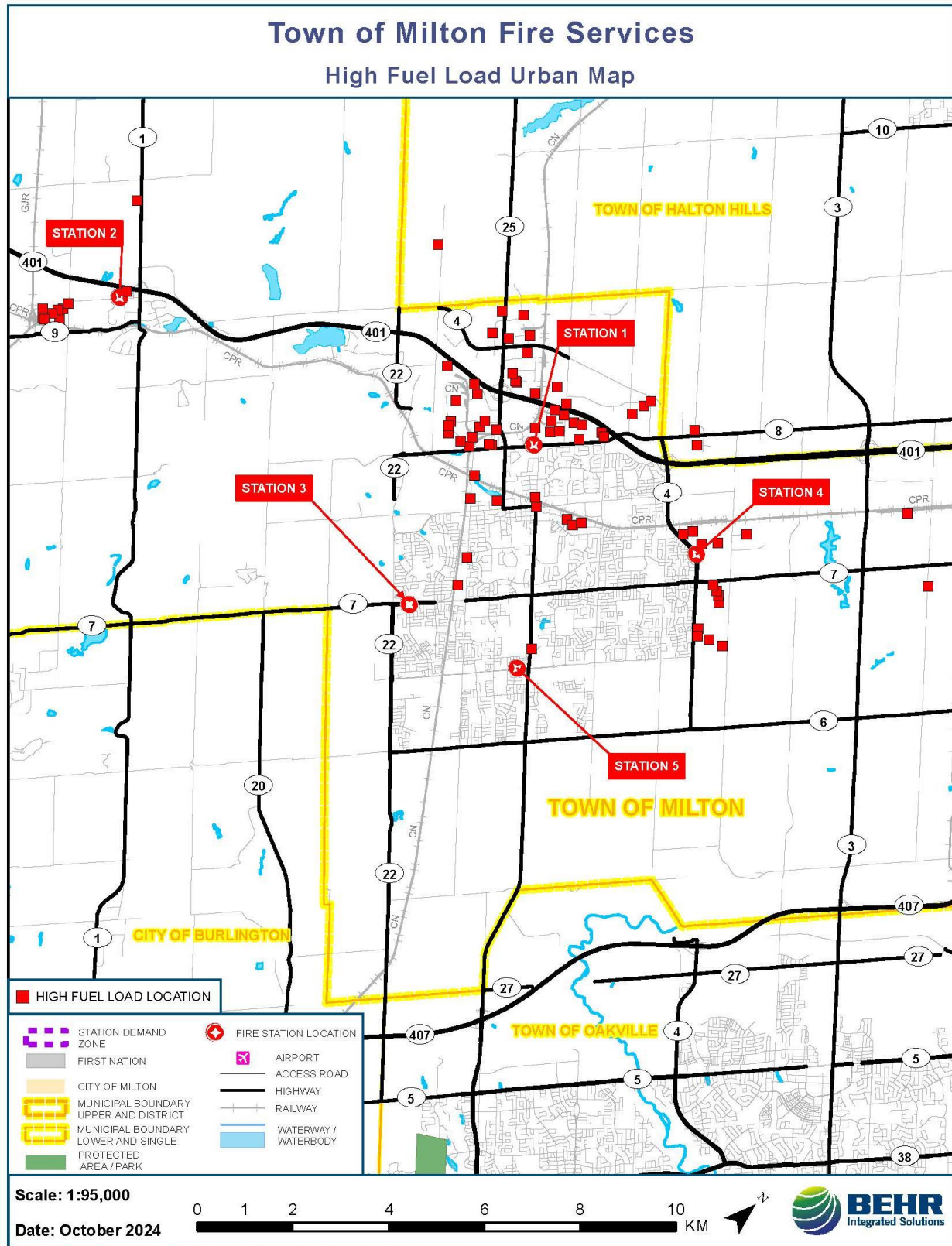
Map 4 shows the locations of the identified properties that may have higher fuel load and higher risk considerations. Map 5 is a more defined area in the built-up urban centre of the property locations.

Map 4: Higher Fuel Load locations





Map 5: Higher Fuel Load Locations Urban Centre



### 3.8 Occupancies with Potential High-Fire Safety Risk

Fire risk affects individuals differently, and some people are more vulnerable to fire injury or fatality than others. These vulnerable individuals may be unable to self-evacuate during a fire or require assistance in their evacuation efforts. Identifying the location and number of vulnerable individuals or occupancies within the community offers insight into the magnitude of this demographic within a community.

#### 3.8.1 Registered Vulnerable Occupancies

From an occupancy perspective, vulnerable occupancies house individuals who may require assistance to evacuate during an emergency due to cognitive or physical limitations, presenting a potential high-life safety risk. The OFM defines vulnerable occupancy as any care occupancy, care and treatment occupancy, or retirement home regulated under the Retirement Homes Act. These occupancies accommodate individuals such as seniors or people requiring specialized care.

It is essential to note that not all vulnerable individuals reside in vulnerable occupancies. For example, some seniors who are vulnerable due to physical limitations may live independently or in subsidized housing, making them a key demographic to reach.

Ontario Regulation 150/13: Fire Code, which amends Ontario Regulation 213/07: Fire Code, identifies vulnerable occupancies as care, care and treatment, and retirement homes. This encompasses hospitals, certain group homes, seniors' residences, and long-term care facilities. The regulation mandates the fire service to conduct annual inspections, approve and witness fire drill scenarios, and submit specific information regarding the occupancy to the OFM. A list of vulnerable occupancies is presented in Table 14.

Table 14: Vulnerable Occupancies

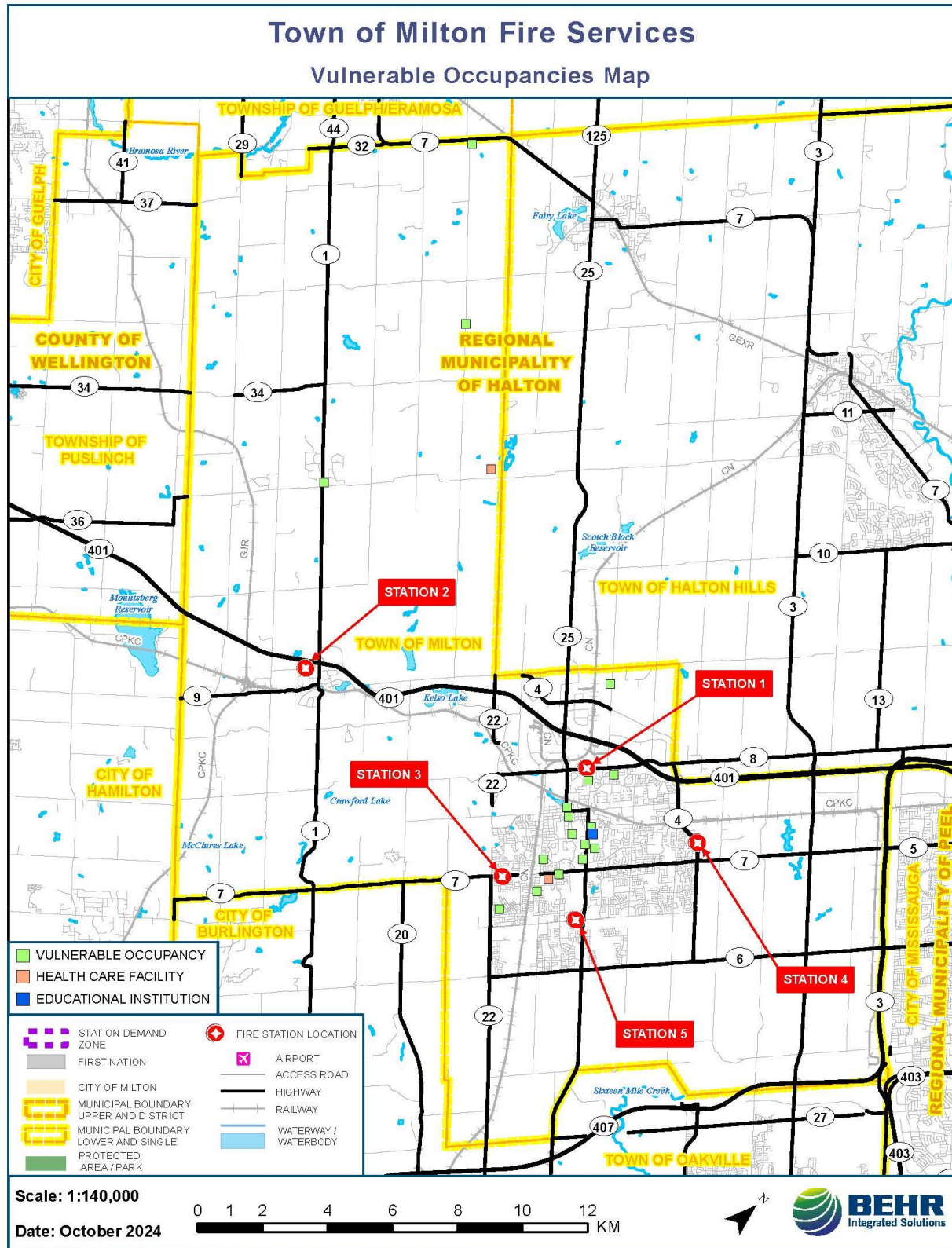
| No. | Property Name                      | Occupancy Type                                         | Location                            |
|-----|------------------------------------|--------------------------------------------------------|-------------------------------------|
| 1   | Milton District Hospital           | Hospital                                               | 725 Bronte Street South             |
| 2   | Allendale Long Term Care           | Long Term Care home                                    | 185 Ontario Street South            |
| 3   | Aspira Martindale Gardens          | Old age/retirement home                                | 45 Martin Street                    |
| 4   | Seasons Milton                     | Old age/retirement home                                | 760 Bronte Street South             |
| 5   | Birkdale                           | Old age/retirement home                                | 611 Farmstead Drive                 |
| 6   | Darling Home for Kids              | Health care facility                                   | 5657 No 15 Side Road                |
| 7   | Ernest C Drury School for the Deaf | Other Educational institution (e.g. special education) | 255 Ontario Street South<br>Dorm C4 |

| No. | Property Name                      | Occupancy Type                                         | Location                            |
|-----|------------------------------------|--------------------------------------------------------|-------------------------------------|
| 8   | Ernest C Drury School for the Deaf | Other Educational institution (e.g. special education) | 255 Ontario Street South Dorm C6    |
| 9   | Ernest C Drury School for the Deaf | Other Educational institution (e.g. special education) | 255 Ontario Street South Building I |
| 10  | Ernest C Drury School for the Deaf | Other Educational institution (e.g. special education) | 255 Ontario Street South Building K |
| 11  | Bob Rumball Group Home             | Group Home                                             | 341 Ontario Street South            |
| 12  | Bob Rumball Group Home             | Group Home                                             | 225 Commercial Street               |
| 13  | Independent Living Halton          | Group Home                                             | 296 Ontario Street North            |
| 14  | Community Living North             | Group Home                                             | 340 Ontario Street South            |
| 15  | Community Living North             | Group Home                                             | 500 Valleyview Crescent             |
| 16  | Bob Rumball Group Home             | Group Home                                             | 10 Laurier Avenue                   |
| 17  | Christian Horizons                 | Group Home                                             | 14413 Sixth Line                    |
| 18  | Bob Rumball Group Home             | Group Home                                             | 931 Toletzka Landing                |
| 19  | Community Living North             | Group Home                                             | 251 Pine Street                     |
| 20  | Community Living North             | Group Home                                             | 348 Wilson Drive                    |
| 21  | Community Living North             | Group Home                                             | 12444 Sixth Line                    |
| 22  | Bob Rumball Group Home             | Group Home                                             | 8830 Boston Church Road             |
| 23  | Bob Rumball Group Home             | Group Home                                             | 11027 Guelph Line                   |

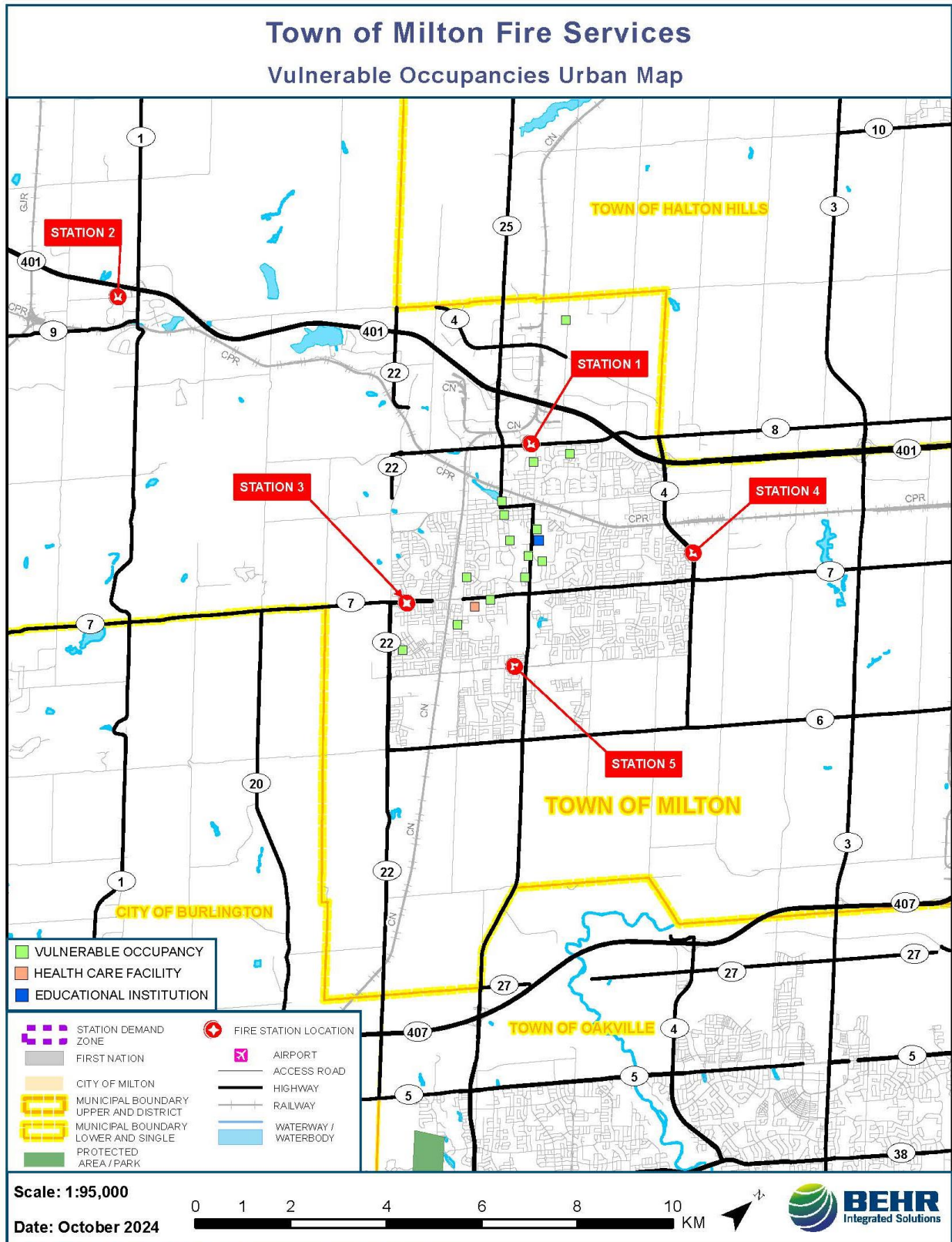
Map 6 identifies the property locations of the 23 identified vulnerable occupancies and Map 7 shows the properties in urban centre.



Map 6: Vulnerable Occupancies Locations



Map 7: Vulnérable Occupancies Locations Urban Centre



### 3.8.2 Other High-Fire Life Safety Risk Occupancies

From a risk perspective, it's valuable for a fire service to identify additional potential high fire life-safety risk considerations. This includes day care facilities and schools, where children, due to their age and potential cognitive or physical limitations, may face challenges in self-evacuation during emergencies. For the purposes of this CRA, potential high life-safety risk occupancy considerations encompass schools and licensed day care facilities. It's worth noting that many schools also offer before and after-school childcare services for children aged 4-12, as well as childcare centers for infants to pre-school-aged children.

Conducting pre-planning activities for all occupancies with vulnerable occupants would be beneficial for the MFRS. Pre-planning activities increase fire service personnel's familiarity with buildings of special interest and help reduce the risk faced by vulnerable individuals or vulnerable occupancies. These activities may include:

- Regularly scheduled fire safety inspections
- Approving and witnessing fire drill scenarios
- Providing public education on fire safety issues
- Encouraging fire drills
- Conducting pre-planning exercises to increase fire service personnel's familiarity with the facility
- Reviewing fire safety plans for accuracy and encouraging facility owners to update facilities as needed
- Providing staff training

### 3.9 Historic or Culturally Significant Buildings

An understanding of the location of historic or culturally significant buildings or facilities is an important consideration within the building stock profile of a Community Risk Assessment. Such buildings or facilities may be keystone features of the community, providing a sense of heritage, place, and pride, and contributing to the overall importance of the community. Regular fire inspections of these buildings are essential, especially if they serve as tourism destinations, as fire incidents could have significant economic impacts.

Historic areas can present a high fire risk due to their age and the materials used to construct the buildings, as well as exposure cycles. Strategies to enforce continued compliance with the OFC are considered best practices for achieving the legislative responsibilities of the town and providing an effective fire protection program to address fuel load risks.



The Town of Milton regulates numerous heritage properties through its municipal heritage register, under the Ontario Heritage Act. This register encompasses properties designated for preservation under Section 29, Part IV, as well as those recognized by the Council for their cultural heritage significance under Section 27, Part IV. Properties listed under Section 27 require approval prior to demolition. Milton has identified 78 Heritage Properties. Table 15 provides a list of properties designated as heritage properties by the municipality.

Table 15: Heritage Properties

| No. | Property Name                                 | Address                                        | Year of Construction |
|-----|-----------------------------------------------|------------------------------------------------|----------------------|
| 1   | Salem United Church and Cemetery              | 19041 County Road 2                            | 1877                 |
| 2   | St. Andrew's Presbyterian - "Old Kirk"        | 20389 Church Street                            | 1787                 |
| 3   | St. Mary's Roman Catholic Church and Cemetery | 19659 County Road 19                           | 1846                 |
| 4   | The General Store                             | Main Street                                    | 1880s                |
| 5   | The Glengarry Pharmacy                        | 14 Main Street North                           | 1830-1840            |
| 6   | The MacDonald Block                           | Main Street; Comprised of 2 separate buildings | N/A                  |
| 7   | The Merchant's Bank                           | Main Street                                    | N/A                  |
| 8   | The Real Estate Office                        | Main Street                                    | 1830-1840            |
| 9   | Bethune-Thompson House                        | 19730 John St                                  | 1783                 |
| 10  | Glengarry Cairn                               | Island                                         | N/A                  |
| 11  | Ruins of Glengarry House                      | Highway 2                                      | 1792                 |
| 12  | Sir John Johnson House                        | 19692 William St                               | 1785                 |
| 13  | St. Raphael's Ruins                           | 20000 County Road 18                           | 1821                 |
| 14  | Fairfield-Cameron House                       | 19095 County Road 2                            | 1865                 |
| 15  | Fraserfield                                   | 5137 Country Road 27                           | 1824                 |
| 16  | Glengarry Fencibles Parade Ground             |                                                | N/A                  |
| 17  | Iona Academy                                  | 4739 Frog Hollow Road                          | N/A                  |
| 18  | Martintown Grist Mill                         | 18544 Dundas Street                            | 1847                 |
| 19  | Premier John Sandfield MacDonald Farm         | 119 Military Road                              | N/A                  |
| 20  | Royal Canadian Legion                         | 5793 Church Avenue                             | N/A                  |

| No. | Property Name                                           | Address                                   | Year of Construction |
|-----|---------------------------------------------------------|-------------------------------------------|----------------------|
| 21  | St. Andrew's United Church & Graveyard                  | 19730A County Road 17                     | 1812                 |
| 22  | Workers Cottage                                         | 19408 Gore Road                           | 1840                 |
| 23  | 19408 Gore Road                                         | 5227 County Road 27                       | 1828                 |
| 24  | Avondbloem - The MacGillivray House                     | 20017 County Road 18                      | 1821                 |
| 25  | Bishop's House Property and Cultural Heritage Landscape | 18947 South Branch Road                   | 1924                 |
| 26  | Finlay Grant Farm                                       | 19408 Gore Road                           | N/A                  |
| 27  | Finnan (The Buffalo) MacDonald                          | 21831 Concession 2 Road                   | 1828                 |
| 28  | John Curry House                                        | 195 Military Road                         | 1806                 |
| 29  | Lancaster Public Library                                | 4792 2nd Line Road                        | 1902                 |
| 30  | LeClair House                                           | 18269 North Branch Road                   | 1886                 |
| 31  | Munro Home                                              | 19651 John Street                         | 1785                 |
| 32  | Nor-Westers' and Loyalists Museum                       | 20399 Water Street                        | N/A                  |
| 33  | Rayside/Dunlop House                                    | 18540 Kirk Street                         | 1789                 |
| 34  | St. Andrew's United Church and Graveyard                | 19118 County Road 18                      | 1804                 |
| 35  | Stone Farmhouse William Ross-Peter McCuaig Farmhouse    | 119 Military Road                         | 1825                 |
| 36  | Alex MacDonald Grocery                                  | 19688 County Road 19                      | 1904                 |
| 37  | Bethune Cottage                                         |                                           | N/A                  |
| 38  | Cameron House                                           | 6400 County Road 27                       | 1853                 |
| 39  | Carmichael/ MacPherson Cottage                          | 6387 Cairn View Road                      | N/A                  |
| 40  | Chattaan House                                          | 19703 John Street                         | 1840s                |
| 41  | Fairfield Estate                                        | 19119 County Road 2                       | N/A                  |
| 42  | Faulkner's Settlement Cemetery                          | Northwest Corner of Water & Calvin Street | N/A                  |
| 43  | Flowerdale Cottage or Inn                               | 20390 Old Montreal Road                   | N/A                  |
| 44  | General Store                                           |                                           | N/A                  |
| 45  | Glengarry Celtic Music Hall of Fame                     | 19687 William Street                      | N/A                  |

| No. | Property Name                            | Address                                         | Year of Construction |
|-----|------------------------------------------|-------------------------------------------------|----------------------|
| 46  | Gleninore Cemetery Cairn                 | South side of Glen Road, East of County Road 27 | 1800s                |
| 47  | Granary                                  | 18280 County Road 18                            | 1810                 |
| 48  | Inkerman Cottage                         | 20358 Old Montreal Road                         | N/A                  |
| 49  | Knox United Church                       | 1 Molan Street                                  | 1876                 |
| 50  | MacKenzie/ Henderson House               | 19539 Glen Road                                 | N/A                  |
| 51  | Martintown Mill                          | 18585 Dundas Street                             | 1846                 |
| 52  | Maryvale Abbey                           |                                                 | N/A                  |
| 53  | Precious Blood Parish                    | 18314 County Road 2                             | 1907                 |
| 54  | Prison/ Fire Hall                        |                                                 | N/A                  |
| 55  | Round Church                             | 21837 Round Church Road                         | N/A                  |
| 56  | Russell/ Harper House                    | 6368 King Street                                | N/A                  |
| 57  | S.B. MacIntosh & Son Grocery             |                                                 | N/A                  |
| 58  | School House/ Sergeant's Mess            | 20426 Old Montreal Road                         | N/A                  |
| 59  | Sir John Johnson Mills                   | 19692 William Street                            | N/A                  |
| 60  | South Lancaster Kirktown Wharf           | End of King Street, South of Water Street       | N/A                  |
| 61  | St. Andrew's Presbyterian - "Old Kirk"   | 4866 County Road 20                             | N/A                  |
| 62  | St. Andrews United Church                | 21102 Concession Road 2                         | 1886                 |
| 63  | St. Andrews United Church "Round Church" | 21873 Round Church Drive                        | N/A                  |
| 64  | St. John the Evangelist                  | 20788 South Service Road                        | 1898                 |
| 65  | St. Joseph's Parish                      | 16 Maple Road                                   | 1904                 |
| 66  | St. Lawrence Parish                      | 4th Line Road                                   | 1959                 |
| 67  | St. Margret's of Scotland                | 21505 Butternut Lane                            | 1882                 |
| 68  | St. Mary of Assumption                   | 4172 County Road 34                             | 1956                 |
| 69  | St. Mary's Parish                        | 19659 County Road 19                            | 1847                 |
| 70  | St. William's Parish                     | 18512 Dundas Street                             | N/A                  |
| 71  | The Bridge                               | Bridge Street                                   | 1981                 |
| 72  | The Brown House                          | 20363 Concession 5 Road                         | 1857                 |

| No. | Property Name                      | Address                 | Year of Construction |
|-----|------------------------------------|-------------------------|----------------------|
| 73  | The Grand Hotel                    | 18526 Dundas Street     | 1800s                |
| 74  | The Manse                          | 20391 Water Street      | N/A                  |
| 75  | The Massop/ McLennan/ Marchant Inn | 20378 Old Montreal Road | N/A                  |
| 76  | The Miller/ Brown Stagecoach Inn   | 20386 Old Montreal Road | N/A                  |
| 77  | The Moosehead Inn                  | 20373 Old Montreal Road | N/A                  |
| 78  | The Stickler House                 | 20376 Knox Street       | N/A                  |

A fire department can help reduce the risk of fire within heritage properties through several measures, including:

1. Regularly scheduled fire safety inspections to ensure compliance with fire safety regulations
2. Enforcement of the Ontario Fire Code to address any violations and ensure proper fire safety measures are in place
3. Regular review of fire safety plans for accuracy and effectiveness in mitigating fire risks
4. Encouraging facility owners to upgrade facilities as needed to improve fire safety standards and reduce potential fire hazards

### 3.10 Building Stock Profile – Identified Risks and Key Findings

Table 16: Building Stock Profile – Identified Risks and Key Findings

| Identified Risk / Key Finding | Rationale                                                                                                                                                                                                                                                                                       |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identified Risk               | Group C residential occupancies represent 89.65% of the town's existing occupancies. Additionally, 83.51% of structure fire losses, 85.71% of civilian fire-related injuries, and 100% of fire-related fatalities occurred in Group C occupancies (from January 1, 2018, to December 31, 2022). |
| Identified Risk               | Information from MPAC data indicates that approximately 15.68% (5,830 properties) of the town's building stock was constructed before 1981, prior to the adoption of the 1981 Ontario Fire Code (OFC).                                                                                          |
| Identified Risk               | According to MPAC data, there are 44 buildings over 100,000 square feet and 2 buildings over 1,000,000 square feet in the town.                                                                                                                                                                 |
| Identified Risk               | 70 properties in Milton have been identified as having a potentially high fuel load, leading to an increased fire risk.                                                                                                                                                                         |
| Identified Risk               | The town has identified 78 heritage properties. These historic areas can present a high fire risk due to the age of the buildings, the materials used in their construction, and their exposure to other risks.                                                                                 |
| Identified Risk               | Milton's population is expected to increase by approximately 152.8% by 2051.                                                                                                                                                                                                                    |
| Identified Risk               | The Town of Milton currently has 23 occupancies that have been identified as a potential vulnerable occupancy.                                                                                                                                                                                  |
| Identified Risk               | The permitting of additional dwelling units allows for increased occupants in residential building, and MFRS doesn't have access to identifying these building prior to an incident.                                                                                                            |
| Key Finding                   | The Town of Milton currently has 24 identified high-rise buildings, with 36 identified as under-construction or proposed for development. MFRS must continue to monitor increased risks.                                                                                                        |



## Section 4

### Critical Infrastructure Profile

Critical infrastructure refers to the systems, facilities, and assets crucial for the functioning of society and the economy. As referenced in **O. Reg. 378/18**, the critical infrastructure profile assessment includes analyses of the capabilities and limitations of critical infrastructure, such as electrical distribution, water distribution, telecommunications, hospitals, and airports. The following section considers these critical infrastructure characteristics within the Town of Milton.

#### 4.1 Critical Infrastructure in the Town of Milton

Ontario's Critical Infrastructure Assurance Program defines critical infrastructure (CI) as "interdependent, interactive, interconnected networks of institutions, services, systems, and processes that meet vital human needs, sustain the economy, protect public health, safety and security, and maintain continuity of and confidence in government." The program identifies nine critical infrastructure sectors: continuity of government, electricity, financial institutions, food and water, health, oil and natural gas, public safety and security, telecommunications, and transportation networks. Infrastructure is a complex system of interconnected elements where the failure of one could lead to the failure of others. The vulnerability of infrastructure is often linked to the degree to which one infrastructure component depends upon another. Therefore, it is critical that these elements be viewed in relation to one another and not in isolation.

For the purposes of this CRA, Town of Milton-specific CI concerns are described in greater detail below.

#### **4.1.1 Water Servicing & Infrastructure**

The Milton Treatment and Distribution Subsystem consists of two well fields: Kelso and Walker's Line. Four wells in the Kelso well field pump raw water into the Kelso Water Treatment Plant (WTP). The treatment includes greensand filters for manganese removal and disinfection using chlorine. The treated water is pumped from the WTP to the Milton Reservoir and then flows by gravity into the Milton distribution system. The Walkers Line well field consists of one production well. Water from the well is disinfected with chlorine and pumped into the Milton Surge Tank which is located just off 12th Side Road. From the surge tank the water is fed by gravity into the distribution system. The Milton Treatment and Distribution Subsystem is controlled through a Supervisory Control and Data Acquisition (SCADA) system that is monitored twenty-four hours per day, seven days per week.<sup>20</sup>

Water supply is a critical infrastructure that is essential for firefighting. Having access to the city's water delivery systems is critical to service delivery. The city is serviced by a system of water mains maintained by Halton Region. The majority of the regional water is obtained from Lake Ontario and the remainder from underground wells and Lake Simcoe.

#### **4.1.2 Stormwater & Sanitary Servicing & Infrastructure**

Stormwater facilities are engineered to gather and regulate runoff from precipitation, including rain and snowmelt, thereby reducing the risk of flooding, erosion, and damage to property and infrastructure. Storm sewers, which are underground pipelines, are designed to collect and transport stormwater runoff to nearby water bodies such as rivers and lakes. By preventing stormwater from flooding streets and buildings, storm sewers help manage water quality and quantity in natural water bodies.

Stormwater services play a critical role in managing and controlling the flow of stormwater runoff during precipitation events, mitigating challenges and impacts associated with flooding. This becomes especially relevant when considering the effects of climate change.

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<sup>20</sup> (The 2023 Annual Drinking Water Quality Report, 2023)

Halton Region owns, operates, and maintains the Halton Region Stormwater Management System (SMS). Halton Region's SMS provides effective stormwater management and protects its residents from the negative effects of precipitation during weather events and snowmelt along the regional road network. This SMS consists of a comprehensive network of sewers, culverts, catch basins, maintenance holes, oil grit separators (OGS), ditches, swales, and stormwater management ponds, chambers, and pumping stations. Halton Region's SMS is interconnected with the lower tier municipalities (City of Burlington, Town of Halton Hills, Town of Milton, and the Town of Oakville) stormwater networks, however, Halton Region's stormwater network is not combined with its sanitary system.<sup>21</sup>

Sanitary sewers, on the other hand, are underground pipelines that transport wastewater from residences, commercial establishments, and industries to treatment plants for purification before discharge into rivers or lakes. The proper operation of sanitary sewers is essential for preventing the spread of diseases, safeguarding public health, and preserving the environment. Any disruption to sanitary sewer operations can result in significant impacts on public health and the environment, underscoring the need to recognize them as part of critical infrastructure.

Halton Region's wastewater collection system (WWCS) is comprised of works for the collection and transmission of wastewater, and consists of trunk and local sewers, wastewater pumping stations, force mains and one in-line storage tank. There are 1,910.94 km of sewers, which include a combination of gravity sewers (1,827.67 km), force mains (73.35 km), inline storage (0.41 km), and siphons (0.25km). There are 83 wastewater pumping stations and approximately 29,288 maintenance holes. The town of Milton has 5 wastewater pumping stations:<sup>22</sup>

- Britannia Rd Pumping Station
- Fulton St Pumping Station
- Laurier Ave Pumping Station
- Midblock Pumping Station
- Tremaine Road Pumping Station

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<sup>21</sup> (Stormwater Management System Performance Report, 2023)

<sup>22</sup> (Wastewater Collection Systems Performance Report, 2023)

### 4.1.3 Transportation Infrastructure

Transportation infrastructure encompasses highways, railways, airports, seaports, and public transit systems. It plays a crucial role in enabling economic activity, ensuring public safety, facilitating social mobility, and promoting environmental sustainability. Disruptions to transportation infrastructure can have significant impacts on the functioning of municipalities and the economy, underscoring the importance of protecting and maintaining it.

The following section offers an overview of the town's transportation infrastructure. Additional details on the transportation systems in the Town of Milton are provided in the Geographic Profile.

#### 4.1.3.1 Roads & Highways

As described in the Geographic Profile, the Town of Milton has a network of essential highways linking it to neighboring regions, including Toronto, Guelph, Hamilton, and Kitchener. Highway 401 serves as a primary route, supported by Highway 6, as well as major County-level roads, such as Brock Road South, which serves as a commuter route into the City of Guelph.

Major highways and roads are of concern from the perspective of fire protection services due to the following factors:

- Incidents involving hazardous materials transport
- Motor vehicle collisions are a significant driver of call volume. Between 2018 and 2022 the number of vehicle collisions has increased by 31% and accounts 18.4% of the total call volume.
- Multi-lane and vehicle collisions can obstruct lane access for responding apparatus
- Traffic hazards (distracted drivers, high-speed movement, hazardous waste spills) present safety considerations for responding crews.

The Town responded to 1,795 emergency calls responded to between 2018 and 2022 pertain to motor-vehicle related incidents, this represents 92.05% of rescue calls and 18.40% of all calls responded to by MFRS during that period.

#### **4.1.3.2 Rail**

The Guelph Junction Railway runs north/south through the northeastern border of the town and Canadian Pacific Railway operates track running east/west across the southern border of the town. Rail lines and operations are of concern from the perspective of fire protection services due to the following factors:

- Accidents involving transportation of hazardous cargo could result in release hazardous material requiring hazardous materials response
- Potential for explosions, fires, and destabilization of surrounding structures
- For passenger train derailments or collisions, passenger and rail employee extrication and technical rescue may be required
- Difficulty accessing scene
- Major incidents resulting in long term recovery could delay daily shipment of goods and services, with potential negative affects to local economy.
- Potential risk for grass and brush fires along the track areas and threat to adjacent residential properties
- A potential new inter-modal rail yard will need to be monitored for future risk and the CRA adjusted as appropriate.

#### **4.1.3.3 Airports**

There are no commercial or freight related airports in the Town. However, there are several flight paths located directly above Milton including planes travelling to and from the Toronto Pearson Airport. The Burlington Executive Airport located in Burlington and Toronto Pearson International Airport, located in Mississauga are both in close proximity to Milton. Airports and their operations are of concern from the perspective of fire protection services due to the following factors:

- Accidents involving planes during landing and takeoff
- Difficulty in locating and accessing scenes
- Requirement for technical rescues of passengers
- Potential for fire or destabilization of structures if impacted by a plane

#### 4.1.4 Energy and Communications Infrastructure

Energy infrastructure comprises the systems, facilities, and assets involved in generating, transmitting, and distributing electricity, and gas within the municipality. In the Town, Milton Hydro serves as the local utility for electricity, while Union Gas provides natural gas services.

Energy and utility infrastructure are significant considerations for fire protection services due to several reasons:

- The natural gas subsector poses operational hazards to first responders, including leaks, personal injury, and exposure to toxic or hazardous materials
- There is potential for explosion and/or fire within these facilities.
- Emergency incidents could result in limited gas supply across the town
- Firefighter safety is a concern when responding to fires at electrical substations, which may involve high-voltage electrical hazards, and the presence of chemicals used to cool electrical conductors
- Disruptions to the electrical distribution system could affect emergency communication systems and municipal power supply, leading to various public health and safety concerns requiring fire department assistance
- Disruptions of cellular network services or internet connectivity may lead to impacts to communications, information sharing, and network access to critical infrastructure. This could include the public being able to contact 911 for emergencies.

Communications infrastructure is also considered critical infrastructure because it provides essential connectivity and communication services for daily life and the economy. This includes systems, facilities, and assets enabling the transmission and reception of voice, data, and video communications.

In the Town of Milton, the combined energy and communications infrastructure includes hydro lines and towers, pipelines, transmission lines, communications fiber lines and towers. These components play vital roles in maintaining connectivity, facilitating communication, and supporting emergency response efforts within the town.

The most pertinent risk arising from these utilities relates to fallen hydro lines. Between 2018 and 2022 MFRS responded to 102 incidents for fallen hydro lines which is 15.86% of all public hazard calls.

#### **4.1.5 Other Critical Infrastructure Considerations**

General considerations and concerns related to each CI sector as it pertains to the provision of fire protection services for other critical infrastructure sectors are included in Table 17.



Table 17: Critical Infrastructure Overview

| Sector | Identified Critical Infrastructure | Issues / Concerns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Health | Long-Term Care                     | <ul style="list-style-type: none"> <li>Disrupting large numbers of people with mobility issues</li> <li>Potential communication issues</li> <li>Need for specialized medical equipment</li> <li>There is 1 long-term care facility identified in the town</li> <li>There are 3 registered retirement homes and 1 correctional facility</li> </ul>                                                                                                                                                                                                                                             |
| Health | Outbreak/Illness                   | <ul style="list-style-type: none"> <li>A major outbreak or illness can create unexpected shortages in the workforce</li> <li>Reduced staffing can result in an inability to run an apparatus, as well as affect ambulance and police services for widespread illnesses</li> <li>Illnesses and outbreaks can also increase medical calls and have an increased cost in replenishing medical PPE</li> </ul>                                                                                                                                                                                     |
| Health | Health Centres                     | <ul style="list-style-type: none"> <li>There is one major hospital (Milton District Hospital)</li> <li>There are numerous privately owned and operated walk-in clinics and doctors' offices in the town</li> </ul>                                                                                                                                                                                                                                                                                                                                                                            |
| Food   | Food Supply and Demand             | <ul style="list-style-type: none"> <li>Food related infrastructure can include agriculture, major distribution centres or grocery stores.</li> <li>Grocery stores and food distribution centres typically contain large amounts of ammonia used as a component of refrigeration systems</li> <li>Fire responders should be aware of dangers related to an ammonia – preplanning for release and response protocols should be considered</li> <li>Gordon Food services food distribution company is a large (145,000 sq/ft) food storage and distribution company located in Milton</li> </ul> |

| Sector        | Identified Critical Infrastructure | Issues / Concerns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safety        | Fire and Emergency Services        | <ul style="list-style-type: none"> <li>There are 5 fire stations located in the town</li> <li>Frequent or extreme emergency events could increase demand for emergency response services affecting the response capacity of the fire department</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Government    | Municipal Government               | <ul style="list-style-type: none"> <li>Municipal government closed due to extreme weather, cyber-attack, health emergency, location, civil disruption causes disruption to decision making, financial support, declaration of emergencies etc.</li> <li>Municipal services are often interconnected, therefore the failure of one may lead to the failure or damage to other services or loss of continuity of operations</li> </ul>                                                                                                                                                                                                                                                                                                          |
| Manufacturing | Supply Chain Disruption            | <ul style="list-style-type: none"> <li>Prolonged disruptions to supply chains can impact apparatus replacement due to manufacturing delays (resulting in them going over lifetime)</li> <li>Supply disruptions also have an unforeseeable but potentially impactful financially impact on running apparatus, as well as the ability to obtain/replenish PPE</li> </ul>                                                                                                                                                                                                                                                                                                                                                                        |
| Manufacturing | Industrial Sites                   | <ul style="list-style-type: none"> <li>According to the Town of Milton Economic Development, in 2023 the second most leading industry is manufacturing</li> <li>Manufacturing facilities constitute a special fire hazard due to high levels of combustible, flammable or explosive content and the possible presence of oxidizing chemicals and gases.</li> <li>Milton has 690 industrial properties (see Building stock profile) which is 1.67% of the building stock</li> <li>98% of the industrial occupancies are F2 which are typically manufacturing</li> <li>There are 4 properties classified as high risk industrial (F1) including a pulp and paper mill, 2 automotive parts production plants and a compressor station</li> </ul> |

## 4.2 Critical Infrastructure – Identified Risks and Key Findings

Table 18: Critical Infrastructure – Identified Risks and Key Findings

| Identified Risk / Key Finding | Rationale                                                                                                                                                                                                          |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Key Finding                   | Approximately 1,795 emergency calls between 2018 and 2022 were motor vehicle-related incidents. This represents 92.05% of all rescue calls and about 18.40% of all calls responded to by MFRS during that period.  |
| Key Finding                   | The most significant risk related to utilities involves fallen hydro lines. Between 2018 and 2022, MFRS responded to 102 incidents involving fallen hydro lines, accounting for 15.86% of all public hazard calls. |

## Section 5

### Demographic Profile

As referenced in **O. Reg. 378/18**, the demographic profile assessment includes analysis of the composition of the community's population, respecting matters relevant to the community such as population size and dispersion, age, gender, cultural background, level of education, socioeconomic make-up, and transient population. The following sections consider these demographic characteristics within the Town of Milton.

#### 5.1 Population and Dispersion

Table 19 highlights the significant growth experienced by the Town of Milton over a twenty-year period from 2001 to 2021, in both population and total private dwellings. The most substantial increases occurred between 2001 and 2006, with a change of 71.39% in population and 73.15% in total private dwellings. These rates of increase have continued steadily since then.

Table 19: Historic Growth in Population and Households – Town of Milton

| Year | Population | % Change | Total Private Dwellings | % Change |
|------|------------|----------|-------------------------|----------|
| 2001 | 31,471     | -1.97    | 10,933                  | 4.37     |
| 2006 | 53,939     | 71.39    | 18,930                  | 73.15    |
| 2011 | 84,362     | 56.40    | 28,049                  | 48.17    |
| 2016 | 110,128    | 30.54    | 34,257                  | 22.13    |
| 2021 | 132,979    | 20.75    | 40,040                  | 16.88    |

Table Source: (Statistics Canada, 2021)

##### 5.1.1 Growth by Neighbourhood

Table 20, below on page 65 provides a detailed analysis of the population distribution across the core neighborhoods in the city. Notably, Trafalgar, Willmott, Coates, Harrison, Clarke, Nassagaweya, and Scott are expected to experience the most significant growth between 2023 and 2030, with Trafalgar and Willmott leading the way. This rapid expansion highlights the importance of planning for increased infrastructure, services, and emergency response capabilities in these areas.

Table 20: Population Growth by Neighbourhood

| Neighbourhood       | 2023<br>Population | 2023-2025<br>Growth | 2025<br>Population | 2025-2030<br>Growth | 2030<br>Population |
|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|
| Esquesing           | 624                | -463                | 161                | -6                  | 155                |
| Dorset Park         | 5,931              | 469                 | 6,400              | 700                 | 7,100              |
| Milton Heights      | 172                | 262                 | 434                | 136                 | 570                |
| Nassagaweya         | 7,134              | 1,066               | 8,200              | 1,800               | 10,000             |
| Coates              | 11,920             | 2,334               | 14,254             | 3,646               | 17,900             |
| Cobban              | 5,430              | -5,195              | 235                | 119                 | 354                |
| Ford                | 13,083             | -3,483              | 9,600              | 1,300               | 10,900             |
| Willmott            | 14,008             | 2,892               | 16,900             | 4,496               | 21,396             |
| Clarke              | 16,288             | 312                 | 16,600             | 300                 | 16,900             |
| Walker              | 1,146              | -1,057              | 89                 | 38                  | 127                |
| Harrison            | 13,105             | 1,795               | 14,900             | 2,500               | 17,400             |
| Nelson              | 1,318              | 182                 | 1,500              | 800                 | 2,300              |
| Bowes               | 130                | 130                 | 260                | 247                 | 507                |
| Beaty               | 20,863             | -163                | 20,700             | 1,200               | 21,900             |
| Dempsey             | 11,161             | 553                 | 11,714             | 286                 | 12,000             |
| Forest Grove        | 67                 | 17                  | 84                 | -1                  | 83                 |
| Bronte Meadows      | 3,069              | -269                | 2,800              | 0                   | 2,800              |
| Timberlea           | 7,755              | 1,545               | 9,300              | 1,900               | 11,200             |
| Valley View         | 190                | -25                 | 165                | 0                   | 165                |
| Fallingbrook        | 2,176              | -476                | 1,700              | 0                   | 1,700              |
| Scott               | 14,308             | 492                 | 14,800             | 100                 | 14,900             |
| 401 Industrial Area | 1,002              | 798                 | 1,800              | 0                   | 1,800              |
| Mountain View       | 1,053              | 47                  | 1,100              | 300                 | 1,400              |
| Old Milton          | 5,322              | 2,278               | 7,600              | 1,000               | 8,600              |
| Derry Green CBP     | 83                 | 26                  | 109                | 0                   | 109                |
| Trafalgar           | 1,110              | 1,590               | 2,700              | 2,600               | 5,300              |

## 5.1.2 Population Age

Identifying a community's population by age category is a core component of developing the CRA and identifying specific measures to mitigate risks associated with a specific age group, such as seniors. Environics identifies a total population of 158,348 for the Town of Milton. The age distributions of the town's population and Ontario's population are compared in Table 21.

Table 21: Population by Age Group – Town of Milton and Ontario

| Age                          | Milton Population | Milton %      | Ontario Population | Ontario %     |
|------------------------------|-------------------|---------------|--------------------|---------------|
| 0 to 4 years                 | 10,414            | 6.58          | 683,515            | 4.81          |
| 5 to 9 years                 | 11,930            | 7.53          | 764,430            | 5.37          |
| 10 to 14 years               | 12,802            | 8.08          | 803,850            | 5.65          |
| 15 to 19 years               | 11,688            | 7.38          | 801,455            | 5.63          |
| 20 to 24 years               | 9,350             | 5.90          | 895,600            | 6.30          |
| 25 to 29 years               | 10,489            | 6.62          | 975,400            | 6.86          |
| 30 to 34 years               | 12,518            | 7.91          | 981,210            | 6.90          |
| 35 to 39 years               | 12,594            | 7.95          | 948,030            | 6.67          |
| 40 to 44 years               | 13,278            | 8.39          | 890,160            | 6.26          |
| 45 to 49 years               | 12,116            | 7.65          | 894,580            | 6.29          |
| 50 to 54 years               | 9,893             | 6.25          | 941,270            | 6.62          |
| 55 to 59 years               | 7,997             | 5.05          | 1,040,160          | 7.31          |
| 60 to 64 years               | 6,694             | 4.23          | 966,575            | 6.80          |
| 65 to 69 years               | 5,563             | 3.51          | 813,215            | 5.72          |
| 70 to 74 years               | 4,516             | 2.85          | 691,280            | 4.86          |
| 75 to 79 years               | 3,255             | 2.06          | 469,485            | 3.30          |
| 80 to 84 years               | 1,812             | 1.14          | 325,110            | 2.29          |
| 85+                          | 1,439             | 0.91          | 338,615            | 2.38          |
| <b>Total</b>                 | <b>158,348</b>    | <b>100.00</b> | <b>14,223,940</b>  | <b>100.00</b> |
| Median Age of the Population | 35.2              |               | 41.60              | -             |
| Population aged 14 and under | 35,146            | 22.20         | 2,251,795          | 15.83         |
| Population aged 55 to 64     | 14,691            | 9.28          | 2,006,735          | 14.11         |
| Population aged 65 and over  | 16,585            | 10.47         | 2,504,570          | 18.54         |

Table Source: (Statistics Canada, 2021; Environics Analytics, 2023)

The youngest demographic, comprising individuals aged 14 years and under, accounts for 22.20% of the town's total population, which is higher than the province's figure of 15.98%. In comparison, for Canada, the proportion of children was 16.30% in 2021.

Although they face a lower risk of fatality in residential occupancies compared to seniors or adults, youth in this age group remain an essential demographic for public education efforts. Therefore, directing public education and prevention programs toward this demographic holds significant value. Implementing structured education programs consistently for children and youth can effectively embed fire and life safety awareness and knowledge into future generations.

The working age population (15 to 64) represented 67.33% of the total population. In comparison, for Canada, the proportion of the population aged 15 to 64 was 64.8% in 2021.

The percentage of the population aged 65 years and older in Milton represents 10.47% of the total population, which is 7.31% lower than that of the province at 18.54%. Additionally, 9.28% of the town's population falls between the ages of 55 and 64, gradually aging into the senior demographic of 65 years and older. The population aged 35-49 represents 23.99% of the total population. This is 4.78% higher than that of the province. These demographic trends emphasize the importance of developing informed, **targeted public education programs** and risk reduction strategies within the community.

Figure 5 illustrates the age group comparisons between Milton and Ontario.

Figure 5: Percent of Population by Age Group – Town of Milton and Ontario

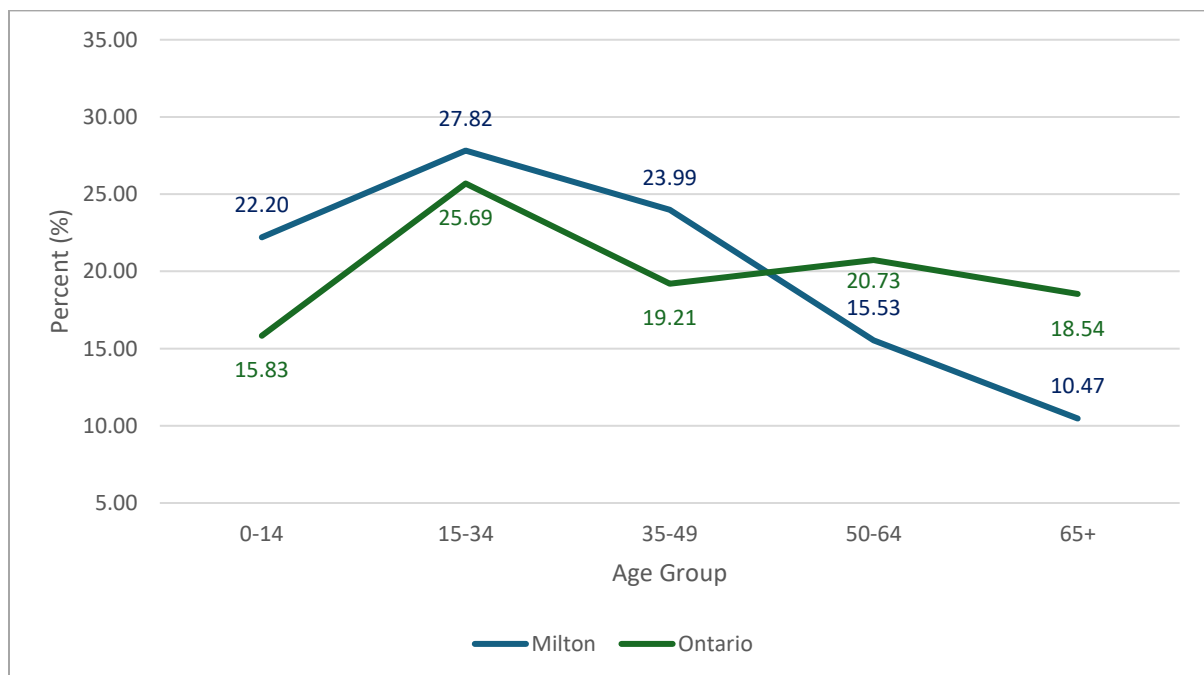


Figure Source: (Statistics Canada, 2021)



A community's population by age is an important factor in identifying specific measures to mitigate risks associated with age groups, such as seniors. Canada's aging population has emerged as one of the most significant demographic trends. According to Statistics Canada, from 2016 to 2021, Canada experienced a notable increase in the proportion of seniors since Confederation, primarily due to the baby boomer generation reaching the age of 65. Presently, there are more Canadians over the age of 65, accounting for 18.98% of the population, than there are children aged 14 years and younger, who make up 16.25%.

Seniors, defined as individuals aged 65 years and over, are regarded as one of the highest fire risk groups across the province, based on the residential fire death rate (fire deaths per million of population). Figure 6 illustrates the number of fire deaths in Ontario, between 2013 and 2022, highlighting seniors' increased vulnerability to fatality in residential occupancies compared to other age groups.

Figure 6: 2011-2020 Provincial Residential Fire Death Rate by Age of Victim

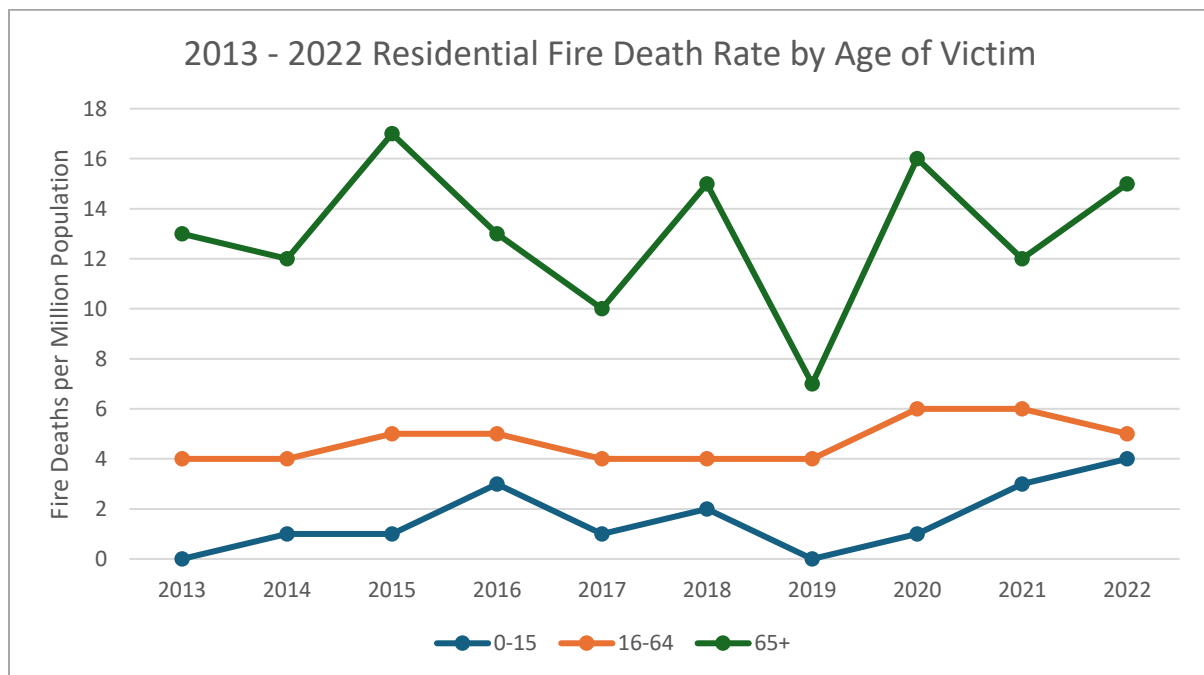


Figure Source: The Office of the Fire Marshal (OFM) investigates fatal fires in Ontario (Ontario Residential Fire Fatalities Children, Adults, Seniors 2013-2022)

## 5.2 Gender

**NFPA 1730: Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations (2019 Edition)** integrates gender considerations into Community Risk Assessments, acknowledging historical data indicating a higher incidence of fire-related injuries or fatalities among males. In the Town of Milton, Table 22 outlines the gender distribution by age, with males representing 49.70% and females 50.31%, closely aligning with the provincial gender ratio of 49.11% men and 51.10% women. This parity persists across age groups, with a minor gap emerging among individuals 0-24 (18.75% men versus 17.64% women). These statistics generally reflect provincial trends, suggesting that gender-based refinements in public education programming in Milton may not be necessary.

Table 22: Gender Distribution by Age Group – Town of Milton

| Age Group                    | Total Population | Total %    | Male          | %            | Female        | %            |
|------------------------------|------------------|------------|---------------|--------------|---------------|--------------|
| 0 to 4 years                 | 8,875            | 6.67       | 4,455         | 3.35         | 4,420         | 3.32         |
| 5 to 9 years                 | 11,055           | 8.31       | 5,665         | 4.26         | 5,395         | 4.06         |
| 10 to 14 years               | 12,050           | 9.06       | 6,260         | 4.71         | 5,785         | 4.35         |
| 15 to 19 years               | 9,520            | 7.16       | 4,925         | 3.70         | 4,600         | 3.46         |
| 20 to 24 years               | 6,880            | 5.17       | 3,630         | 2.73         | 3,250         | 2.44         |
| 25 to 29 years               | 6,880            | 5.17       | 3,430         | 2.58         | 3,450         | 2.59         |
| 30 to 34 years               | 9,270            | 6.97       | 4,310         | 3.24         | 4,965         | 3.73         |
| 35 to 39 years               | 11,375           | 8.55       | 5,265         | 3.96         | 6,110         | 4.60         |
| 40 to 44 years               | 12,415           | 9.34       | 5,890         | 4.43         | 6,525         | 4.91         |
| 45 to 49 years               | 11,040           | 8.30       | 5,665         | 4.26         | 5,375         | 4.04         |
| 50 to 54 years               | 8,530            | 6.42       | 4,510         | 3.39         | 4,025         | 3.03         |
| 55 to 59 years               | 6,700            | 5.04       | 3,470         | 2.61         | 3,230         | 2.43         |
| 60 to 64 years               | 5,155            | 3.88       | 2,570         | 1.93         | 2,585         | 1.94         |
| 65 to 69 years               | 4,375            | 3.29       | 2,005         | 1.51         | 2,375         | 1.79         |
| 70 to 74 years               | 3,890            | 2.93       | 1,810         | 1.36         | 2,080         | 1.56         |
| 75 to 79 years               | 2,400            | 1.80       | 1,125         | 0.85         | 1,270         | 0.96         |
| 80 to 84 years               | 1,400            | 1.05       | 640           | 0.48         | 755           | 0.57         |
| 85 to 89 years               | 740              | 0.56       | 315           | 0.24         | 420           | 0.32         |
| 90 to 94 years               | 345              | 0.26       | 120           | 0.09         | 225           | 0.17         |
| 95 to 99 years               | 65               | 0.05       | 20            | 0.02         | 45            | 0.03         |
| 100 +                        | 5                | 0.00       | 0             | 0.00         | 5             | 0.00         |
| <b>Total</b>                 | <b>132,965</b>   | <b>100</b> | <b>66,080</b> | <b>49.70</b> | <b>66,890</b> | <b>50.31</b> |
| Population aged 14 and under | 31,980           | 24.05      | 16,380        | 12.32        | 15,600        | 11.73        |
| Population aged 15 to 64     | 87,765           | 66.01      | 43,665        | 32.84        | 44,115        | 33.18        |
| Population aged 55 to 64     | 11,855           | 8.92       | 6,040         | 4.54         | 5,815         | 4.37         |
| Population aged 65 and over  | 13,220           | 9.94       | 6,035         | 4.54         | 7,175         | 5.40         |
| Population aged 85 and over  | 1,155            | 0.87       | 455           | 0.34         | 695           | 0.52         |

Table Source: (Statistics Canada, 2021)

## 5.3 Socioeconomic Circumstances

Socioeconomic circumstances of a community are known to have a significant impact on fire risk. Socioeconomic status is reflected in an individual's economic and social standing and is measured in a variety of ways. These factors can be reflected in the analysis of socioeconomic indicators such as labour force status, educational attainment, and income as well as household tenure, occupancy, suitability, and cost.

Socioeconomic factors intersect in several ways and have direct and indirect impacts on fire risk. One such example is outlined in the OFM's Fire Risk Sub-Model. The Sub-Model refers to the relationship between income and fire risk. As one consideration, households with less disposable income may be less likely to purchase fire safety products (e.g., smoke alarms, fire extinguishers, etc.), which puts them at higher risk of experiencing consequences from a fire. Another consideration is that households living below the poverty line may have a higher number of persons per bedroom in a household and/or children who are more likely to be at home alone. These circumstances would impact both the probability and consequence of a fire. While these complex relationships between socioeconomic circumstances and the probability / consequence of a fire are not well understood, this CRA seeks to explore these factors.

The factors reviewed at a high level have been selected based on the data available from Statistics Canada. Socioeconomic factors such as income decile group and median household income have been displayed spatially throughout this section.

Factors that are highlighted in this section include:

- Labour force status
- Immigrant status
- Educational attainment
- Household tenure, occupancy, suitability, and cost

### 5.3.1 Labour Force Status

Those who are economically disadvantaged, including low-income families, the homeless, and perhaps those living alone, may experience a higher fire risk. The OFM's Fire Risk Sub-Model references several reports that suggest there is a correlation between income levels and fire risk. The reports identify the following factors:

- The higher number of vacant buildings found in low-income neighborhoods attract the homeless. This introduces risks such as careless smoking, drinking, and unsafe heating practices.

- Building owners are less likely to repair building systems (electrical, mechanical, suppression) due to affordability, increasing fire risk from improper maintenance.
- Households with lower disposable income are less likely to purchase fire safety products (i.e., smoke alarms, extinguishers, cigarette ignition-resistant furniture, etc.) due to affordability.
- Households with lower disposable income are more likely to have utilities shut off due to non-payment, leading to increased risks related to unsafe heating, lighting, and cooking practices.
- The 1981 report, “Fire-Cause Patterns for Different Socioeconomic Neighborhoods in Toledo, Ohio,” determined that the incendiary fire rate in low-income neighborhoods is 14.4 times higher compared to areas with the highest median income. Further, fires caused by smoking and children playing occurred at rates 8.5 and 14.2 times higher, respectively.
- Single-parent families are more economically challenged since there is only one income. These households also have fewer resources to arrange childcare, increasing the likelihood of fires caused by unsupervised children.
- Studies have shown that cigarette smoking is inversely related to income. In Canada, findings by the Centre for Chronic Disease Prevention and Control through the National Population Health Survey established that there were nearly twice as many smokers in the lowest income group when compared against the highest (38% vs. 21% respectively).
- Those with low education and literacy levels are inhibited in their ability to read instruction manuals and warning labels and less likely to grasp fire safety messages.

Labour force status is a possible indicator of income levels which directly influence fire risk (e.g., lower income, increased fire risk). The participation rate (i.e., the proportion of residents in the labor force) can also be an indicator of income and can be considered alongside unemployment rates (e.g., lower participation rate and higher unemployment could mean lower income, higher fire risk).

Table 23 details the labor force statistics for Milton compared to Ontario. Milton’s participation rate is lower at 56.83% than that of the province at 62.80. Milton’s employment is consistent with that of the province; however, Milton has a much lower unemployment rate of 2.62% versus 12.25% in Ontario, indicative of a healthier job market. Milton also exhibits a higher percentage of individuals not in the labour force at 43.16% compared to Ontario’s 37.20%.

Table 23: Labour Force Status – Town of Milton and Ontario

| Status                  | Milton Total | Ontario Total |
|-------------------------|--------------|---------------|
| In the Labour Force     | 89,997       | 7,399,200     |
| <i>Employed</i>         | 87,639       | 6,492,895     |
| <i>Unemployed</i>       | 2,358        | 906,310       |
| Not in the Labour Force | 68,351       | 4,383,620     |
| Total*                  | 158,348      | 11,782,820    |
| Participation Rate      | 56.83        | 62.80         |
| Employment Rate         | 55.35        | 55.10         |
| Unemployment Rate       | 2.62         | 12.25         |

Table Source: (EnviroNics Analytics, 2023; Statistics Canada, 2021)

### 5.3.2 Educational Attainment

The relationship between educational attainment and income is complex. An analysis conducted by Statistics Canada has found that high-income Canadians are generally more likely to be highly educated. Approximately two thirds (67.10%) of the top 1% had attained a university degree compared to 20.90% of all Canadians aged 15 and over.

Based on this national trend and for the purposes of this Community Risk Assessment, it is assumed that higher education leads to more disposable income and a lower fire risk. It is also assumed that households with higher disposable income are more likely to invest in fire life safety products such as fire extinguishers and smoke alarms, reducing the fire risk.

Table 24 compares educational attainment levels between the Town of Milton and the Province of Ontario using 2021 Census data. The data indicates that Milton residents generally have higher educational attainment compared to the provincial average. Milton exhibits both a lower-than-average percentage of individuals without a certificate, diploma, or degree (11.60% compared to the provincial average of 15.28%) and a higher-than-average percentage of residents with a high school diploma, as well as those holding a postsecondary certificate, diploma, or degree, in comparison to provincial averages. This trend suggests increased awareness of fire safety practices and potentially correlates with lower rates of accidental fires due to negligence.

Table 24: Educational Attainment – Town of Milton and Ontario

| Educational Attainment                       | Milton Total | Milton % | Ontario Total | Ontario % |
|----------------------------------------------|--------------|----------|---------------|-----------|
| No Certificate / Diploma / Degree            | 10,710       | 11.60    | 1,799,890     | 15.28     |
| High School Diploma or Equivalent            | 21,480       | 23.28    | 3,204,170     | 27.19     |
| Postsecondary Certificate; Diploma or Degree | 60,090       | 65.12    | 6,778,765     | 57.53     |
| Total                                        | 92,285       | 100.00   | 11,782,825    | 100.00    |

Table Source: (Statistics Canada, 2021)

### 5.3.3 Median Income

Table 25 presents median income statistics for Milton in 2020, showing higher income levels compared to the Ontario averages. The median individual income in Milton was \$47,600, which reflects an 13.45% difference compared to Ontario's median individual income of \$41,200. Similarly, the median household income in Milton was \$126,000, indicating a significant 27.78% difference from Ontario's median household income of \$91,000. Higher median incomes in Milton may indicate a more affluent community with better-resourced households, potentially leading to improved fire prevention measures and safer living conditions. However, higher income levels can also correspond to larger, more valuable properties that may pose unique challenges for firefighting and rescue operations in the event of emergencies.

Table 25: Median Income of the Town of Milton and Ontario - 2020

| Geography    | Median Income Individual | Median Income Household |
|--------------|--------------------------|-------------------------|
| Milton       | \$47,600                 | \$126,000               |
| Ontario      | \$41,200                 | \$91,000                |
| % Difference | 13.45%                   | 27.78%                  |

Table Source: (Statistics Canada, 2021)

#### 5.3.3.1 Income Decile Groups

Income can also be examined through the lens of income decile groups, which offer a rough ranking of an individual's economic status based on their relative position in the Canadian distribution of adjusted after-tax income of economic families, as defined by Statistics Canada.

Table 26 presents data on economic family income decile groups for the population in private households in Milton compared to Ontario. In Milton, 37.47% of the population falls within the bottom half of the income distribution, while 62.53% are in the top half. This distribution contrasts with Ontario, where a larger proportion (46.44%) is in the lower half of the income distribution, and 53.56% are in the top half. These statistics indicate a higher concentration of higher-income households in Milton compared to the provincial average, which can influence the community's economic resilience and potentially impact fire risk and emergency preparedness. Understanding income distribution within the community is crucial for the fire department's risk assessment and resource allocation efforts.

Table 26: Economic Family Income Decile Group for the Population in Private Households – Town of Milton and Ontario

| Decile Group                           | Milton Total | Milton % | Ontario Total | Ontario % |
|----------------------------------------|--------------|----------|---------------|-----------|
| In the bottom half of the distribution | 46,125       | 37.47    | 6,516,085     | 46.44     |
| In the top half of the distribution    | 76,970       | 62.53    | 7,515,670     | 53.56     |
| Total                                  | 123,095      | 100.00   | 14,031,755    | 100.00    |

Table Source: (Statistics Canada, 2021)

### 5.3.4 Housing Tenure

Housing tenure, particularly the rate of homeownership, serves as a significant indicator of socioeconomic status within a community. A higher rate of homeownership often suggests greater wealth, stability, and higher incomes, whereas a higher rate of rental properties may reflect lower incomes and socioeconomic challenges.

Lower homeownership rates are generally associated with higher fire risk due to several factors. Homeowners typically invest in property maintenance and are more likely to have access to fire prevention resources and insurance. In contrast, rented properties may experience higher turnover rates, potentially leading to neglect of fire safety measures by tenants or landlords.

According to Table 27, in Milton, 81.62% are owned, and 18.38% are rented. This ownership trend is notably higher than the provincial average, where 68.40% of households are owned and 31.41% are rented. The high rate of homeownership in Milton can significantly influence community stability and investment in property maintenance, indirectly impacting fire risk and emergency response dynamics.



Table 27: Household Tenure – Town of Milton and Ontario

| Household Tenure                                     | Milton Total | Milton % | Ontario Total | Ontario % |
|------------------------------------------------------|--------------|----------|---------------|-----------|
| Owner                                                | 36,182       | 81.62    | 3,755,720     | 68.40     |
| Renter                                               | 8,146        | 18.38    | 1,724,970     | 31.41     |
| Provided by Government, First Nation, or Indian Band | 0            | 0.00     | 10,510        | 0.19      |
| Total                                                | 44,328       | 100.00   | 5,491,200     | 100.00    |

Table Source: (Environics Analytics, 2023; Statistics Canada, 2021)

### 5.3.4.1 Occupancy

A higher proportion of multiple persons per household can contribute to increased fire risk and potential fire loss. As shown in Table 28, the Town of Milton has a higher proportion of households with two or more occupants (87.32%) compared to the provincial rate (73.54%). This higher occupancy density within households can elevate the risk of fire incidents.

Table 28: Household Occupancy

| Household Occupancy                     | Milton Total | Milton % | Ontario Total | Ontario % |
|-----------------------------------------|--------------|----------|---------------|-----------|
| 1 Person                                | 5,619        | 12.68    | 1,452,540     | 26.45     |
| 2 Persons                               | 10,281       | 23.19    | 1,798,040     | 32.74     |
| 3 Persons                               | 8,217        | 18.54    | 872,480       | 15.89     |
| 4 Persons                               | 11,575       | 26.11    | 825,445       | 15.03     |
| 5 Persons                               | 8,636        | 19.48    | 542,700       | 9.88      |
| Total                                   | 44,328       | 100.00   | 5,491,205     | 100.00    |
| Number of persons in private households | 140,312      |          | 13,681,340    |           |
| Average household size                  | 3.17         |          | 2.49          |           |

Table Source: (Environics Analytics, 2023; Statistics Canada, 2021)

### 5.3.4.2 Suitability

The 2021 Census data, as presented in Table 29, indicates that the Town of Milton is generally aligned with that of the province related to household suitability with 6.79% of the town's housing is classified as not suitable, contrasting with 6.72% in the province. Housing suitability is determined based on whether the dwelling has adequate bedrooms relative to the ages and relationships among household members, according to the National Occupancy Standard.

Table 29: Household Suitability – Town of Milton and Ontario

| Housing Suitability | Milton Total | Milton % | Ontario Total | Ontario % |
|---------------------|--------------|----------|---------------|-----------|
| Suitable            | 34,660       | 93.21    | 5,122,185     | 93.28     |
| Not suitable        | 2,525        | 6.79     | 369,015       | 6.72      |
| Total               | 37,185       | 100.00   | 5,491,200     | 100.00    |

Table Source: (Statistics Canada, 2021)

### 5.3.4.3 Housing Costs

The cost of housing often reflects a household's disposable income, which can influence their ability to invest in household fire safety measures. In Milton 25.64% of households spend 30% or more of their income on housing compared to Ontario at 24.23%, as shown in Table 30 below.

In Milton the median value of a home is \$920,000 compared to \$700,000 in Ontario, as referenced in Table 31. Additionally, the median monthly shelter costs for owned dwellings and rented dwellings are comparable. This affordability may allow residents to allocate more resources to fire safety measures, potentially lowering fire risk.

Table 30: Shelter Costs – Town of Milton and Ontario

| Shelter Costs                                                     | Milton | %      | Ontario   | %      |
|-------------------------------------------------------------------|--------|--------|-----------|--------|
| Spending less than 30% of household total income on shelter costs | 27,570 | 74.36  | 4,103,320 | 75.77  |
| Spending 30% or more of household total income on shelter costs   | 9,505  | 25.64  | 1,312,095 | 24.23  |
| Total                                                             | 37,075 | 100.00 | 5,415,415 | 100.00 |

Table Source: (Statistics Canada, 2021)

Table 31: Median Costs – Town of Milton and Ontario

| Median Costs                                      | Milton    | Ontario   |
|---------------------------------------------------|-----------|-----------|
| Median value of dwellings                         | \$920,000 | \$700,000 |
| Median monthly shelter costs for owned dwellings  | \$2,340   | \$1,440   |
| Median monthly shelter costs for rented dwellings | \$2,200   | \$1,300   |

Table Source: (Statistics Canada, 2021)

## 5.4 Cultural Background, Language Considerations

In the Town of Milton, the proportion of newcomers is higher (39.28%) compared to Ontario (29.98%). Cultural background and language considerations remain crucial factors for fire service providers when developing and delivering fire prevention and public education programs. Communication barriers, including language proficiency and literacy levels, continue to be important to address. There may still be familiarity challenges related to fire safety standards within immigrant populations, therefore, targeted education initiatives are necessary to ensure that all residents, regardless of cultural background or language proficiency, have access to essential fire safety information and resources. Table 32 summarizes the immigration status of Milton's population.

Table 32: Immigration Status – Town of Milton and Ontario

| Immigration Status                        | Milton  | Milton % | Ontario    | Ontario % |
|-------------------------------------------|---------|----------|------------|-----------|
| Non-immigrants                            | 93,448  | 59.43    | 9,437,320  | 67.26     |
| <i>Born in province of residence</i>      | 84,321  | 90.23    | N/A        | -         |
| <i>Born outside province of residence</i> | 9,127   | 9.77     | N/A        | -         |
| Immigrants                                | 61,765  | 39.28    | 4,206,585  | 29.98     |
| Non-permanent residents                   | 2,030   | 1.29     | 387,850    | 2.76      |
| Total                                     | 157,243 | 100.00   | 14,031,755 | 100.00    |

Table Source: (Environics Analytics, 2023; Statistics Canada, 2021)

Table 33 provides statistics related to knowledge of the official languages. In Milton, 90.32% of the population knows only English, while 7.77% are proficient in both English and French. Additionally, only a small percentage (1.83%) have no knowledge of English or French. However, a deeper exploration into "mother tongue" languages reveals a diverse linguistic landscape.

The predominant languages other than English spoken by Milton residents are Urdu, Arabic, Spanish, Punjabi, and Tagalog. Beyond these top languages, there is a notable presence of other language groups and specific languages contributing to the linguistic diversity of Milton. As Milton grows, it's important to address potential communication barriers arising from this diversity to ensure effective community engagement and emergency communication strategies.

Table 33: Knowledge of Official Language – Town of Milton and Ontario

| Language                   | Milton Total | Milton % | Ontario Total | Ontario % |
|----------------------------|--------------|----------|---------------|-----------|
| English Only               | 111,315      | 90.32    | 12,196,575    | 86.50     |
| French Only                | 100          | 0.08     | 39,310        | 0.28      |
| English and French         | 9,580        | 7.77     | 1,519,365     | 10.78     |
| Neither English nor French | 2,255        | 1.83     | 344,545       | 2.44      |
| Total (non-institutional)  | 123,250      | 100.00   | 14,099,795    | 100.00    |

Table Source: (Statistics Canada, 2021)

## 5.5 Transient Populations and Commuting

**Ontario Regulation 378/18** mandates the consideration of “transient populations”, referring to population shifts occurring within a community at various times during the day, week, or year. Population shifts can stem from factors like employment, tourism, and education. In some municipalities, residents routinely leave for work, contributing to increased traffic and possibly more motor vehicle collisions. Other communities may serve as major tourist destinations, leading to significant population fluctuations based on seasonal tourism activities. This can heighten the demand for fire protection services, especially concerning overnight tourism accommodations. Additionally, educational institutions can draw transient student populations who commute daily or reside in dormitories or student housing seasonally.

Student accommodations and short-term rental units present distinct fire safety challenges, often arising from the conversion of houses into boarding houses or rooming house accommodations that do not adhere to the Ontario Fire Code (OFC) or Ontario Building Code (OBC). Identifying these properties poses a challenge for fire prevention division staff tasked with enforcing fire codes.

### 5.5.1 Commuter Populations

Commuter populations represent a significant portion of Milton’s labour force. Table 34 shows the commuting destination trends for the residents of the town based on 2021 Census data. Among Milton's labour force, 38.30% commute locally within their census subdivision (CSD) of residence, while 13.68% travel to nearby areas within the same Census Division (CD). Additionally, 47.83% of Milton residents commute to other locations within the same province, a significantly higher proportion than Ontario's rate of 23.50%, likely influenced by the town’s proximity to major metropolitan areas.

Table 34: Commuting Destinations – Town of Milton and Ontario

| Commuting Destination*                                                      | Milton Labour Force | %      | Ontario Labour Force | %      |
|-----------------------------------------------------------------------------|---------------------|--------|----------------------|--------|
| Commute within census subdivision (CSD) of residence                        | 11,715              | 38.30  | 2,212,620            | 58.72  |
| Commute to a different CSD within Census Division (CD) of residence         | 4,185               | 13.68  | 653,055              | 17.33  |
| Commute to a different CSD and CD within province or territory of residence | 14,630              | 47.83  | 885,485              | 23.50  |
| Commute to a different province or territory                                | 55                  | 0.18   | 17,050               | 0.45   |
| Total                                                                       | 30,585              | 100.00 | 3,768,210            | 100.00 |

\*Commuting destination for the employed labour force aged 15 years and over in private households with a usual place of work - 25% sample data

Table Source: (Statistics Canada, 2021)

Table 35 provides insights into the timing of commutes to work among Milton residents aged 15 years and over. The data reveals that most commuters leave for work during peak morning hours, with 44.75% departing between 7AM and 9AM. These patterns emphasize the significance of understanding peak commuting times for emergency planning, particularly during periods of high travel activity when motor vehicle collision calls are more likely.

Table 35: Time of Commute to Work

| Time Leaving for Work*    | Labour Force | %      |
|---------------------------|--------------|--------|
| Between 5 AM and 5:59 AM  | 2,855        | 7.81   |
| Between 6 AM and 6:59 AM  | 5,760        | 15.76  |
| Between 7 AM and 7:59 AM  | 8,535        | 23.35  |
| Between 8 AM and 8:59 AM  | 7,820        | 21.40  |
| Between 9 AM and 11:59 AM | 5,635        | 15.42  |
| Between 12 PM and 4:59 AM | 5,945        | 16.27  |
| Total                     | 36,550       | 100.00 |

\*Total time leaving for work for the employed labour force aged 15 years and over with a usual place of work or no fixed workplace address - 25% sample data

Table Source: (Statistics Canada, 2021)

## 5.5.2 Tourism

An increase in tourism can lead to heightened demand for fire protection services, particularly with overnight accommodations. The Town of Milton hosts several events and attractions annually, drawing both residents and non-residents. These events, which include annual festivals and gatherings, contribute to increased foot traffic and activity within the community. Notable festivals and events held throughout the year include:

- **Milton October Festival:** At Milton Fairgrounds - large local vendor marketplace
- **AfroJazz Fest:** One of the largest multicultural festivals in Ontario.
- **Downtown Street Festival** – Hosted by the Town of Milton

## 5.5.3 Indigenous Population

The Town of Milton has a lower proportion of Indigenous population (0.71%) compared to Ontario's average of 2.90%. The majority of those identifying as Indigenous in the Town of Milton report a single Indigenous identity, with 88.64% of these individuals having a single Indigenous response. Of these, the majority identify as First Nations (62.82%) followed by Métis (35.26%). It is crucial to monitor these populations closely, especially with new Census data, to inform the planning of public education programs and materials that cater to the unique needs and perspectives of Indigenous communities in the Town of Milton. Table 36 provides insights into the Indigenous population within the Town of Milton compared to the province.

Table 36: Indigenous Population – Town of Milton and Ontario

| Indigenous Identity                                | Milton Total | Milton % | Ontario Total | Ontario % |
|----------------------------------------------------|--------------|----------|---------------|-----------|
| Indigenous Identity                                | 880          | 0.71     | 880           | 2.90      |
| Single Indigenous Responses                        | 780          | 88.64    | 780           | 95.91     |
| <i>First Nations</i>                               | 490          | 62.82    | 490           | 64.37     |
| <i>Métis</i>                                       | 275          | 35.26    | 275           | 34.52     |
| <i>Inuk (Inuit)</i>                                | 20           | 2.56     | 20            | 1.11      |
| Multiple Indigenous Responses                      | 45           | 5.11     | 45            | 1.75      |
| Indigenous Responses not specifically listed above | 55           | 6.25     | 55            | 2.34      |
| Non-Indigenous Identity                            | 122,230      | 99.29    | 122,230       | 97.10     |
| Total                                              | 123,110      | 100.00   | 123,110       | 100.00    |
| Registered or Treaty Indian                        | 295          | 0.24     | 295           | 1.23      |
| Not a Registered or Treaty Indian                  | 122,815      | 99.76    | 122,815       | 98.77     |

Table Source: (Statistics Canada, 2021)

## 5.6 Demographic Profile – Identified Risks and Key Findings

Table 37: Demographic Profile – Identified Risks and Key Findings

| Identified Risk / Key Finding | Rationale                                                                                                                                                                                                                          |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identified Risk               | The percentage of the population aged 65 years and older in Milton is 10.47%. Additionally, 9.28% of the town's population falls between the ages of 55 and 64, gradually aging into the senior demographic of 65 years and older. |
| Identified Risk               | In the Town of Milton, the proportion of newcomers is 9.33% higher than that of the province (39.28% compared to Ontario's 29.98%).                                                                                                |
| Key Finding                   | The youngest demographic, individuals aged 14 years and under, makes up 22.20% of the town's population, which is higher than the provincial figure of 15.98%.                                                                     |
| Key Finding                   | The population aged 35-49 represents 23.99% of the town's total population, 4.78% higher than the provincial average.                                                                                                              |
| Key Finding                   | The Town of Milton has a 13.78% higher proportion of households with two or more occupants compared to the provincial average.                                                                                                     |
| Key Finding                   | 47.83% of Milton residents commute to other locations within Ontario, a significantly higher proportion than the provincial rate of 23.50%.                                                                                        |



## Section 6

### Hazard Profile

#### 6.1 Hazard Identification and Risk Assessment (HIRA)

The hazard profile assessment includes analysis of the hazards within the community, including natural hazards, hazards caused by humans, and technological hazards to which a fire service may be expected to respond, and that may have a significant impact on the community. This section considers these hazards within the Town of Milton.

A hazard is defined as a phenomenon, substance, human activity, or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. Hazards can be natural, human-caused, or technological. A Hazard Identification and Risk Assessment (HIRA) is a comprehensive process to assess risks based on potential consequences and frequencies. The outcome of the HIRA assists municipalities in prioritizing risks based on their likelihood and potential to cause an emergency. Appropriate measures can then be taken to mitigate, prepare for, and respond to the risks that pose the greatest threat to reduce future losses.

Under the Local Authority Emergency Management Regulation 203/2018, municipalities are required to have an emergency plan that must include a ‘hazard and risk assessment’. The regulation does not specify which standard must be used; however, the use of a formal HIRA process is encouraged.

##### 6.1.1 Town of Milton Emergency Response Plan Risk Assessment

A CRA provides an opportunity to examine the results of a community emergency management program (CEMP) risk assessment and the impact that these identified hazards would have on a fire service. For the purposes of this CRA, a ‘fire protection services’ lens will be applied to the top hazards as identified. As a component of the risk assessment and risk analysis process, the top hazards in the community were identified as a part of the risk assessment which was revised in 2023. Hazards were assigned a risk score and risk level ranking from extreme to very low, depending on their probability and consequence. As a result of this analysis, Table 38 shows the top hazards that were identified: (note some hazards were grouped together based on similar risks).

Table 38: Town of Milton Hazards

| Hazard                     | Level of Risk |
|----------------------------|---------------|
| Infectious Disease         | High          |
| Electrical Energy          | High          |
| Winter Weather             | High          |
| Cyber Attack               | High          |
| Chemical                   | High          |
| High Wind                  | High          |
| Tornado                    | High          |
| Rail, Light Rail or Subway | High          |
| Road and Highway           | Moderate      |

Table Source: (Hazard Identification and Risk Assessment (HIRA), 2024)

To better understand the risks of hazards as they pertain to fire protection services, the top hazards have been assessed to identify possible impacts on fire protection services. Many of the potential impacts are not unique to a jurisdiction. The results of this review are presented in Table 39.

Table 39: Impacts of Hazards on Fire Protection Services

| Hazard             | Possible Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Infectious disease | <p><b>Overall Impact</b></p> <p>Medically vulnerable persons are at risk. Increased use of non-recyclable PPE for staff. Critical infrastructure must be maintained with planning for staffing and acquisition of critical supplies.</p> <p><b>Fire Services</b></p> <p>Epidemic or pandemic breakout can present significant challenges to first responders causing potential fire service workplace absenteeism, and an increased demand for medical response and supplies as was illustrated during COVID 19. Fire services currently take on a large number of medical calls. PPE was severely limited and supply chain issues for all equipment impacted operations. In many cases planned programming related to inspections and public education had to be delayed or modified.</p> |

| Hazard            | Possible Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrical Energy | <p><b>Overall Impact</b></p> <p>Threat of exposure fire to homes and businesses. Large-scale evacuations may be possible, with many people displaced. Evacuations with little notice may occur. Potential for damages and loss. Damage to the environment. Many larger industrial properties in the town.</p> <p><b>Fire Services</b></p> <p>May require mutual aid support. May not be equipped (with enough people or apparatus) to extinguish fire as it expands. May require specialized resources.</p>                                                    |
| Winter weather    | <p><b>Overall Impact</b></p> <p>Above ground power lines could be impacted along with road treatments, debris clearing, salt gravel or other road treatment supplies. Increase in call volume due to vehicular incidents, rescues.</p> <p><b>Fire Services</b></p> <p>Depending on the severity of the debris on roads and downed power lines, access to various sections of the road network could be limited to fire service response delaying emergency response times. Interruptions to communication towers could impact fire service communications.</p> |
| Cyber Attack      | <p><b>Overall Impact</b></p> <p>Privacy/data breach of public and/or town. Inability to perform administrative functions.</p> <p><b>Fire Services</b></p> <p>Breaches to major infrastructure could result in injury or fatalities. Breaches to databases could impede dispatch, record keeping and investigations. Breaches could result in financial loss.</p>                                                                                                                                                                                               |

| Hazard                    | Possible Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chemical                  | <p><b>Overall Impact</b></p> <p>Serious injury or fatality. Possible secondary emergencies such as fire or explosion when chemicals mixed with air, water, or other agents. Could require small- or large-scale evacuation of homes, businesses, school etc.</p> <p><b>Fire Services</b></p> <p>Depending on the severity and type of release, could pose secondary risk to firefighters on-scene. Must have proper knowledge of chemical release. May not be able to access the scene until proper back-up arrives or have proper information.</p>                                                        |
| Tornado High Wind         | <p><b>Overall Impact</b></p> <p>Above ground power lines could impact buildings or roads and winds could take down communication towers. Life safety risk, in particular to vulnerable population. Multiple areas of damage</p> <p><b>Fire Services</b></p> <p>Depending on the severity of the debris on roads and downed power lines, access to various sections of the road network could be limited to fire service response delaying emergency response times. Interruptions to communication towers could impact fire service communications. Multiple locations requiring additional resources.</p> |
| Rail/Light Rail or Subway | <p><b>Overall Impact</b></p> <p>Threat to life safety, may require evacuation. Impact to road network and environment.</p> <p><b>Fire Services</b></p> <p>Pose secondary threat of fire or explosion to responders. Requires support from rail owners. May require securing a large scene and additional support from mutual aid partners.</p>                                                                                                                                                                                                                                                             |
| Roadway/highway emergency | <p><b>Overall Impact</b></p> <p>Threat to life safety. Impact to road network, downed power lines and vehicular fires.</p> <p><b>Fire Services</b></p> <p>Pose secondary threat to responders of fire or explosion. Delayed response in accessing scene. May require support for high number of injuries/fatalities and/or rescues.</p>                                                                                                                                                                                                                                                                    |

## 6.2 Hazard Profile – Identified Risks and Key Findings

Table 40: Hazard Profile – Identified Risks and Key Findings

| Identified Risk / Key Finding | Rationale                                                                                                                                                                              |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Key Finding                   | The city's 2023 Hazard Identification and Risk Assessment (HIRA) highlights hazards that could potentially impact the ability of MFRS to effectively deliver fire protection services. |

## Section 7

### Public Safety Response Profile

#### 7.1 Public Safety Response Agencies in the Town of Milton

As required by **O. Reg. 378/18**, the Public Safety Response Profile considers the types of incidents responded to by other entities in the community, and those entities' responsibilities. These entities could include police, ambulance, fire, and other entities that may be tasked with or able to assist in some capacity the collective response to an emergency. The following sections consider these public safety response characteristics within the Town of Milton.

Public safety and response agencies refer to agencies and organizations that respond to specific types of incidents within a community that provide trained personnel and resources critical to upholding public safety. Each of these entities offers specialized skill sets in support of front-line operations. The types of response services offered might include fire protection, medical attention, rescue operations, policing activities, or dangerous goods response. In addition to responding individually to certain types of incidents, these entities work closely with one another in the event of major emergencies through a structured standardized response approach to ensure effective coordination among all response agencies.

Table 41 lists the public safety response agencies who could be able to assist the town in a collective emergency response effort and may contribute to the minimization of risk within the community. Identifying the public safety response agencies within the community can help the fire service understand the agencies that may be able to assist in the response to an emergency.

Table 41: Public Safety Response Agencies

| Public Safety Response Agency   | Types of Incidents they Respond to                                                                                                                                                                                               | Agency Role in Incident                                                                                                                                                                          |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Halton Regional Police Services | <ul style="list-style-type: none"> <li>Traffic calls, emergency calls, crowd control, public assistance</li> <li>Major crimes i.e., homicide, kidnapping, organized crime</li> <li>Investigations</li> <li>Complaints</li> </ul> | <ul style="list-style-type: none"> <li>Enforce Criminal Code</li> <li>Enforce Municipal bylaws</li> <li>Investigate cross-jurisdictional and major crimes</li> <li>Offender transport</li> </ul> |

| Public Safety Response Agency         | Types of Incidents they Respond to                                                                                                                                                                                             | Agency Role in Incident                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ontario Provincial Police (OPP)       | <ul style="list-style-type: none"> <li>Traffic incidents on Provincial Highways</li> <li>Nuclear response incidents (large scale)</li> </ul>                                                                                   | <ul style="list-style-type: none"> <li>Enforce Criminal Code</li> <li>Enforce Highway Traffic Act</li> <li>Traffic control</li> </ul>                                                                                                                                                                                                   |
| Municipal By-Law Enforcement Officers | <ul style="list-style-type: none"> <li>Violations of town by-laws</li> </ul>                                                                                                                                                   | <ul style="list-style-type: none"> <li>Enforcing by-law infractions on town roads</li> <li>Providing information on legislation and town by-laws to industry, as well as the general public</li> <li>Enforce town bylaws</li> <li>Liaise with County by- law enforcement</li> </ul>                                                     |
| Office of the Fire Marshal            | <ul style="list-style-type: none"> <li>Fire</li> <li>Large scale explosions</li> </ul>                                                                                                                                         | <ul style="list-style-type: none"> <li>Assistance with managing fire and obtaining resources beyond the capability of the town</li> </ul>                                                                                                                                                                                               |
| Halton Region Paramedic Service       | <ul style="list-style-type: none"> <li>Advanced EMT pre-hospital care</li> <li>Mass casualty incidents</li> <li>Evacuation of health facilities (hospital, nursing homes etc.)</li> <li>Disease related emergencies</li> </ul> | <ul style="list-style-type: none"> <li>Ensuring provision of paramedic services at the site of the emergency</li> <li>Ensuring continuity of paramedic services coverage is maintained throughout the remainder of the community/town</li> <li>Liaise with the Medical Officer of Health to help facilitate medical services</li> </ul> |

| Public Safety Response Agency                                   | Types of Incidents they Respond to                                                                                                                                                                                                                                                                        | Agency Role in Incident                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Medical Officer of Health                                       | <ul style="list-style-type: none"> <li>Communicable Diseases</li> <li>Health Inspection Services</li> <li>Advice on Medical Services</li> <li>Public Health Advisory</li> <li>Liaise with long term care facilities, hospitals, retirement homes, and other vulnerable populations as required</li> </ul> | <ul style="list-style-type: none"> <li>Provide information and instructions to the population on matters concerning public health</li> <li>Protect the health of the community from inherent health threats by enforcement of the applicable legislation.</li> <li>Continue delivery of established programs to ensure continuity of care and general health protection</li> </ul> |
| CANUTEC                                                         | <ul style="list-style-type: none"> <li>Hazardous spills/emissions</li> </ul>                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>Product information</li> <li>Safe handling information</li> <li>emergency actions</li> </ul>                                                                                                                                                                                                                                                |
| Ministry of Environment                                         | <ul style="list-style-type: none"> <li>Spills</li> <li>Environmental disasters</li> </ul>                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>Provide personnel and equipment for cleanup and remediation</li> </ul>                                                                                                                                                                                                                                                                      |
| Ministry of Labour, Immigration, Training and Skill Development | <ul style="list-style-type: none"> <li>Industrial accidents</li> <li>Workplace critical injuries and deaths</li> </ul>                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>Investigate worker injury or death</li> </ul>                                                                                                                                                                                                                                                                                               |
| Ministry of Transportation                                      | <ul style="list-style-type: none"> <li>Major/large vehicle incidents on King's Highways</li> </ul>                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Traffic control</li> <li>Assist with repair and cleanup</li> </ul>                                                                                                                                                                                                                                                                          |
| Emergency Management Ontario                                    | <ul style="list-style-type: none"> <li>Large-scale emergencies requiring declaration of state of local emergency</li> </ul>                                                                                                                                                                               | <ul style="list-style-type: none"> <li>Provincial level support</li> <li>Communication</li> </ul>                                                                                                                                                                                                                                                                                  |
| CP Police Service                                               | <ul style="list-style-type: none"> <li>Rail emergencies (on and off board)</li> <li>Rail security incidents on and-off board</li> <li>Promote rail safety</li> <li>Protect infrastructure</li> <li>Enforce Criminal Code</li> </ul>                                                                       | <ul style="list-style-type: none"> <li>Oversee response to all rail emergencies.</li> <li>Liaise with and support municipal or provincial fire and emergency services as needed for large incidents</li> </ul>                                                                                                                                                                     |



| Public Safety Response Agency | Types of Incidents they Respond to                                                                                                                                                                                                  | Agency Role in Incident                                                                                                                                                                                        |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CN Police                     | <ul style="list-style-type: none"> <li>Rail emergencies (on and off board)</li> <li>Rail security incidents on and-off board</li> <li>Promote rail safety</li> <li>Protect infrastructure</li> <li>Enforce Criminal Code</li> </ul> | <ul style="list-style-type: none"> <li>Oversee response to all rail emergencies.</li> <li>Liaise with and support municipal or provincial fire and emergency services as needed for large incidents</li> </ul> |
| Ontario SPCA                  | <ul style="list-style-type: none"> <li>Incidents involving animals</li> </ul>                                                                                                                                                       | <ul style="list-style-type: none"> <li>Advise responders on best tactics</li> <li>Assist in enforcement</li> <li>Address animal welfare needs</li> </ul>                                                       |

The **Joint Emergency Services Operational Advisory Group (JESOAG)** is a collaborative initiative involving the Fire Departments of Milton, Oakville, Burlington, and Halton Hills, along with Halton Region Paramedic Services (HRPS), the Ontario Provincial Police (OPP), and Halton Regional Police Services (HRPS). JESOAG, comprised of senior fire, police, and emergency medical personnel, meets quarterly to discuss, and address trends from a unified incident management structure perspective. When necessary, Inter-Agency Protocols are implemented. JESOAG also routinely plans and initiates multi-agency field exercises.

The Town of Milton is part of the Halton Region Tiered Response Agreement, which includes HREMS, HRPS, and the municipalities of Oakville, Burlington, and Halton Hills. This agreement outlines specific conditions for multi-agency responses and notification criteria for each participant, while also allowing each municipal fire service to decide whether to allocate resources to assist EMS based on current fire emergencies.

### 7.1.1 Fire Protection Services Agreements and Plans

Large emergency events can quickly overwhelm the response capacity of most community fire departments in Ontario. As a result, mutual aid plans and automatic aid agreements are a necessary component in adding response capacity for these low frequencies but potentially high or extreme consequence events.

The Town of Milton has established fire protection agreements with the following municipalities:

- City of Mississauga
- Town of Halton Hills
- Town of Oakville
- City of Burlington

Table 42 provides a detailed list of the existing fire protection agreements between the Town of Milton and these surrounding municipalities.

Table 42: Fire Protection Agreements

| Municipality | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mississauga  | The City of Mississauga provides fire suppression, rescue, and emergency response services to the Town of Milton under a fire protection services agreement dated March 27, 2024.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Halton Hills | The Town of Milton provides fire suppression, rescue, and emergency response services to the Town of Halton Hills under a fire protection services agreement dated June 2, 2014.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Oakville     | The Town of Milton receives fire protection and emergency services from the Town of Oakville Fire Department through a 2003 agreement. “Fire protection and emergency services” are defined to include fire suppression, rescue, and emergency services. Under the agreement, the Town of Oakville also provides fire cause and determination and investigation services in the fire protection area described in Schedule A of the agreement.                                                                                                                                                                                                         |
| Burlington   | The Corporation of the Town of Milton and the Corporation of the City of Burlington are parties to an Automatic Aid Agreement dated April 31, 2003. The agreement outlines the areas in which Milton provides response into Burlington and those parts of Milton where Burlington provides response. Each jurisdiction is responsible for its own costs under the agreement. The agreement authorizes both parties to provide to each other “fire services” defined as “one or more emergency services customarily rendered by a Fire Service in Ontario, including firefighting or control.” The agreement does not include fire prevention services. |

The principal purpose for entering into these fire protection agreements is to promote and ensure that adequate and coordinated resources are made available when requested from, or by a neighbouring town to minimize the loss of human life and property and damage to the environment in the event of an emergency that requires such additional resources.

All inter-municipal agreements should be reviewed regularly and adjusted as required. This provides for the updating and clarification of agreements and consideration of adjustments. It may also lead to discussions regarding localized fire service response agreements and considerations about whether automatic aid in defined circumstances might be of additional value.

## Section 8

### Community Services Profile

As referenced in **O. Reg. 378/18**, the community service profile assessment includes analysis of the types of services provided by other entities in the community, and those entities' service capabilities. This includes the presence or absence and potential abilities of other agencies, organizations, or associations to provide services that may assist in mitigating the impacts of emergencies to which the fire department responds. The following sections consider these community service characteristics within the Town of Milton.

#### 8.1 Community Services

Fires and other emergency events can have devastating effects on a community and at times can overwhelm public safety and security agencies' capacity to respond. In an emergency event, community-based agencies, organizations, and associations can provide surge capacity to the response and recovery efforts of first responders and a useful resource to call upon if integrated into the emergency management framework early on. These types of affiliations can contribute a variety of capabilities essential to response and recovery efforts, including support in the areas of communications, health care, logistics, shelter, food and water supply, emergency clothing, and more specialized skill sets. Table 43 lists the community agencies and non-government organizations (NGOs) available to the Town of Milton.

Table 43: Community Service Agencies

| Community Service Agency                                                                        | Type of Assistance Provided                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Local School Boards: Town the Halton District School Board and the Halton Catholic School Board | The youngest demographic, comprising individuals aged 14 years and under, accounts for 22.20% of the town's total population. Partnering with school boards and other agencies that work with children can provide opportunity for fire and life safety education. Arrangements have been made between the Town the Halton District School Board and the Halton Catholic School Board to provide schools for use as evacuation centres. In addition to providing facilities for evacuation centers, the school boards have also agreed to provide representatives to coordinate such use. The specific details and locations of the identified schools and representatives are confidential and are available only to Regional Emergency Control Group and Emergency Operations Centre personnel, as appropriate. The Demographic Profile found in this CRA includes a discussion of school aged children. |
| Salvation Army                                                                                  | The Salvation Army offers a food bank as well as a specialized infant food bank that provides infant formula, diapers, and supplies within the Town to those who face challenges with food security. The Salvation Army may also provide distribution service during an emergency affecting Milton residents. Provides basic and advance medical care for first aid emergencies at public events. They are also able to provide volunteer support in the event of emergency situations such natural or human disasters.                                                                                                                                                                                                                                                                                                                                                                                    |
| Victim Services Halton                                                                          | Provides immediate on-site crisis, trauma, safety & support services to victims of crime and tragic circumstances.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| St Johns Ambulance                                                                              | The St. John's Ambulance offers first aid and CPR services at public recreational events within the Town, as well as a base of volunteers capable of providing first aid, CPR, and health care services in the event of a disaster within the community.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Canadian Mental Health Association- Halton Branch                                               | Services and support for people experiencing mental health challenges. May be accessed for those impacted by an emergency.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Community Service Agency                        | Type of Assistance Provided                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Halton Multi-cultural Council (HMC) Connections | <p>HMC Connections is a government funded, full-service settlement agency. It provides the following services to immigrants and refugees living in Halton Region:</p> <ul style="list-style-type: none"> <li>• Counselling and settlement services;</li> <li>• Assistance with basic needs;</li> <li>• Access to information relating to affordable housing and financial budgeting rights, entitlements, responsibilities, education, health care coverage and transportation;</li> <li>• Advocacy on behalf of the client with professionals (service provider, doctor, court, lawyer, etc.);</li> <li>• Assessing eligibility for social services and financial assistance;</li> <li>• Interpretation and Translation;</li> <li>• Community Connections Mentorship Program;</li> <li>• Computer classes; and</li> <li>• English Conversation Circles, generally as well as specific programs for seniors.</li> </ul> |
| Oakville and Milton Humane Society              | <p>The Oakville and Milton Humane Society is responsible for enforcing the provisions of the Ontario Society for the Prevention of Cruelty to Animals Act, while the Town enforces its animal control by-law.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Conservation Halton                             | <p>Under the Halton Region Emergency Program and Plan, the Town will consult with Conservation Halton in the event of a flood emergency. Flood warnings are made available to the public by way of the Conservation Halton's website. Flooding and erosion are natural hazards identified within Conservation Halton's watershed. The Conservation Authority's flood warning program and water control initiatives along with land use planning are efforts to protect the people and property within the watershed.</p>                                                                                                                                                                                                                                                                                                                                                                                                |

| Community Service Agency     | Type of Assistance Provided                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Public Health Emergency Plan | The Emergency Plan for Public Health outlines the department's role in monitoring, preventing disease and protecting the health of the people in the event of a Public Health Emergency. The Halton Region Pandemic Influenza Response Plan identifies roles and responsibilities of internal and external partners and stakeholders and outline procedures for communications and activation. |

## Section 9

### Economic Profile

As referenced in **O. Reg. 378/18**, the economic profile assessment includes analysis of the economic sectors affecting the community that are critical to its financial sustainability. This involves economic drivers in the community that have a significant influence on the ability of the community to provide or maintain service levels. The following sections consider these economic characteristics within the Town of Milton.

#### 9.1 Economic Sectors and Employers in the Town of Milton

According to the Town of Milton, in 2023, retail trade, manufacturing, professional, scientific, and technical services, and health care are the top contributing industries to Milton's economic base. The top industries that contribute to the economic base of the town are summarized in Figure 7.

Figure 7: Town of Milton Top Industries

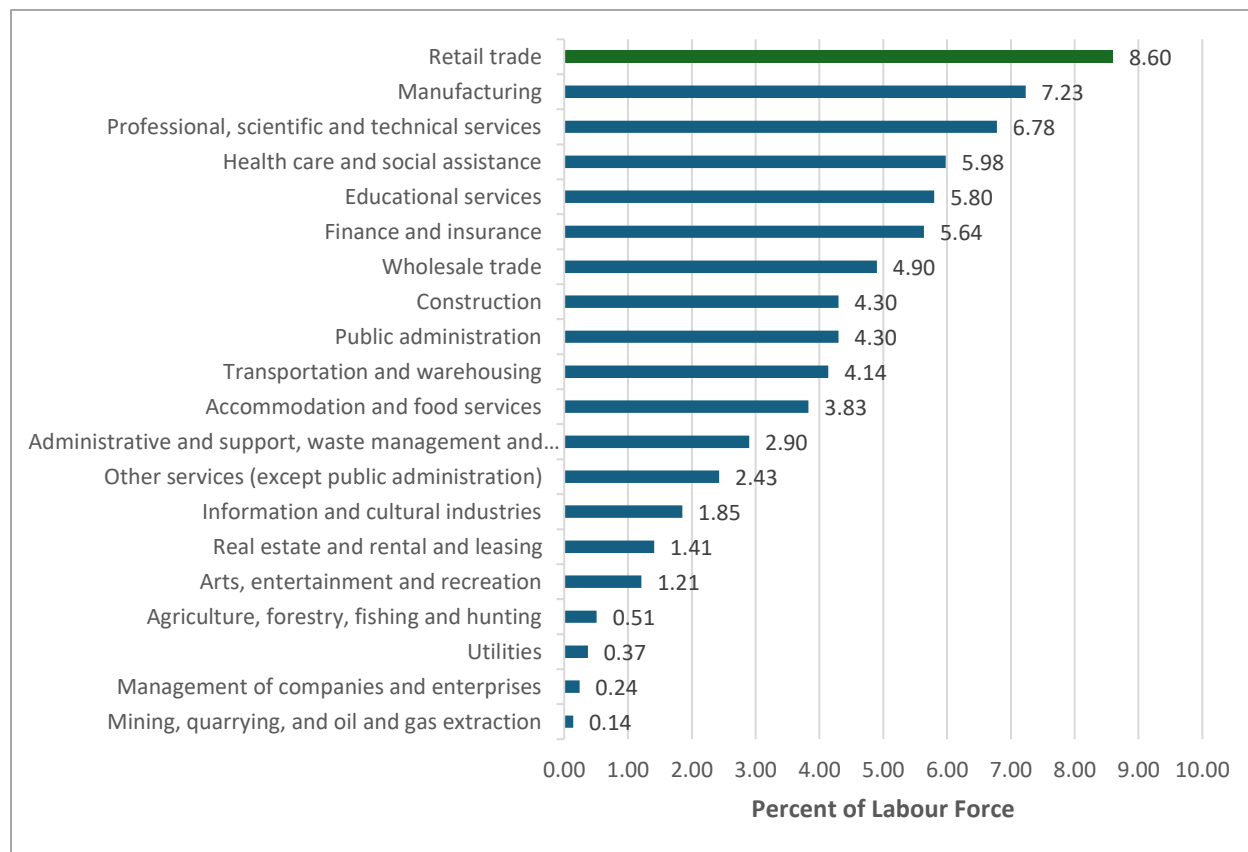


Figure Source: (Environics Analytics, 2023)



According to the Town's Economic Development Annual Report, the number of new businesses increased by 17% in 2023. The town supported over 3.8 million square feet in new Industrial, Commercial, and Institutional (ICI) expansion and streamlined the process for 9,827,899 square feet of industrial development, either newly constructed or proposed for the Derry Green Corporate Business Park. The Derry Green Business Park continues to progress, with Phase 1 focusing on distribution, logistics, and advanced manufacturing.<sup>23</sup> Notable tenants include:

- **DSV** – North American Head Office – Global Transportation and Logistics Facility
- **Edgewell Personal Care, ULC** – Distribution Warehouse Facility
- **Lululemon** – Distribution Warehouse Facility
- **Princess Auto** – Distribution Warehouse Facility (Relocating to expand to a larger facility)
- **511 Food Service**
- **ROCKWOOL** – Additional facility and further expansion of existing assets in Milton
- **General Mills**
- **Lowes**

Certain industries, employers, and events contribute significantly to the financial sustainability and economic vitality of a community. A fire or other emergency at key sectors and employment facilities could have major impacts on the local economy and employment.

The town has identified its major employers, as shown in Table 44.

Table 44: Major Employers in the Town of Milton

| Company                           | Service/Product          | # of Employees | Address                   |
|-----------------------------------|--------------------------|----------------|---------------------------|
| Karmax Heavy Stamping             | Metal Manufacturing      | 900            | 333 Market Drive          |
| Gordon Food Services              | Food Distribution Centre | 800            | 2999 James Snow Parkway N |
| Modatek Systems                   | Vehicle/Metal Stamping   | 600            | 400 Chisholm Drive        |
| Monaghan Mushrooms Ltd.           | Distribution Centre      | 450            | 7345 Guelph Line          |
| Allendale Long Term Care Facility | Health Care/Seniors Care | 300            | 185 Ontario Street S      |

<sup>23</sup> (Economic Development Annual Report, 2023)

| Company                           | Service/Product         | # of Employees | Address                 |
|-----------------------------------|-------------------------|----------------|-------------------------|
| Loblaw (Real Canadian Superstore) | Grocery                 | 300            | 820 Main Street         |
| Uline Canada Corp                 | Storage/Warehousing     | 300            | 3333 James Snow Parkway |
| Eaton Industries Ltd              | Equipment Manufacturing | 250            | 610 Industrial Drive    |
| Vanier Centre for Women           | Correctional Facility   | 250            | 655 Martin Street       |
| Milton District Hospital          | Health Care             | 200            | 725 Bronte Street S     |
| Town of Milton                    | Public Services         | 200            | 150 Mary Street         |
| Walmart                           | Department Store/Retail | 200            | 1280 Steeles Avenue E   |
| Parker Canada                     | Aerospace Manufacturing | 200            | 160 Chisholm Drive      |

Milton has identified several major employers in various industries in the private sector, several of them being in the manufacturing industry. Certain industrial operations may have increased fuel loads and conduct higher risk activities. Proactive inspections should target these facilities to ensure compliance with codes, maintenance, and emergency planning requirements.

## 9.2 Economic Profile – Identified Risks and Key Findings

Table 45: Economic Profile – Identified Risks and Key Findings

| Identified Risk / Key Finding | Rationale                                                                                                                                                                                                                                                                                                                     |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Key Finding                   | There are 13 major employers identified, each with more than 200 employees, that significantly contribute to the economic vitality of the community.                                                                                                                                                                          |
| Key Finding                   | The number of new businesses increased by 17% in 2023, alongside over 3.8 million square feet of expansion in Industrial, Commercial, and Institutional (ICI) space. Additionally, 9,827,899 square feet of industrial development has been either newly constructed or proposed for the Derry Green Corporate Business Park. |

## Section 10

### Past Loss & Event History Profile

As referenced in **O. Reg. 378/18**, the past loss and event history profile assessment includes analysis of the community's past emergency response experience, including an analysis of the number and types of emergency responses, injuries, deaths, and dollar losses, and a comparison of the community's fire loss statistics with provincial fire loss statistics. Evaluation of previous response data will inform decisions on fire protection services delivery, including public fire safety education and inspection programs. The following sections consider these past loss and event history characteristics within the Town of Milton.

The analysis within this section is based on the OFM's Standard Incident Reporting (SIR) for the period of January 1st, 2018, to December 31st, 2022. It is noted that at the time of this review, the OFM had not publicly released updated 2023 SIR data.

#### 10.1 Past Loss

Analysis of historical data provides valuable insight into understanding the specific trends within a community. Assessing the key factors of life safety risk and fire risk in relation to provincial statistics provides a foundation for evaluating where specific programs or services may be necessary.

##### 10.1.1 Total Fire Loss

The analysis of total fire loss in the Town of Milton over the five-year period from 2018 to 2022 as displayed in Table 46 includes three categories representing the primary types of fires and the total amount of dollar loss associated with these fires. This includes 183 structure fires, 19 outdoor fires, and 151 vehicle fires representing \$27,339,555 in total dollar loss. Over this five-year period, the city averaged 71 fires per year and \$5,467,911 in property loss per year.

Table 47 presents a comparison of average structure fires and property loss between the Town of Milton and the province of Ontario for the years 2018 to 2022. Over this period, Milton experienced an average of 36.6 structure fires annually, resulting in an average property loss of \$4,256,065 per year. These fires accounted for 10.37% of all fires in the town and 15.56% of the total property loss. In comparison, Ontario reported an average of 7,026 structure fires annually with an average loss of \$881,092,618, representing 12.86% of all fires in the province and 17.70% of the total property loss.

Table 46: Total Fire Loss – Town of Milton

| Year           | Structure Fires | Loss (\$)    | Outdoor Fires | Outdoor Loss | Vehicle Fires | Vehicle Loss | Total Fires | Total Loss   |
|----------------|-----------------|--------------|---------------|--------------|---------------|--------------|-------------|--------------|
| 2018           | 42              | \$5,246,405  | 3             | \$6,010      | 31            | \$967,099    | 76          | \$6,219,514  |
| 2019           | 30              | \$3,473,500  | 2             | \$40,050     | 35            | \$1,012,600  | 67          | \$4,526,150  |
| 2020           | 33              | \$3,702,120  | 4             | \$106,100    | 29            | \$2,053,000  | 66          | \$5,861,220  |
| 2021           | 33              | \$5,856,500  | 7             | \$4,850      | 24            | \$939,996    | 64          | \$6,801,346  |
| 2022           | 45              | \$2,986,800  | 3             | \$2,525      | 32            | \$942,000    | 80          | \$3,931,325  |
| Total          | 183             | \$21,265,325 | 19            | \$159,535    | 151           | \$5,914,695  | 353         | \$27,339,555 |
| % of All Fires | 51.84           | 77.78        | 5.38          | 0.58         | 42.78         | 21.63        | 100.00      | 100.00       |
| Average        | 36.6            | \$4,253,065  | 3.8           | \$31,907     | 30.2          | \$1,182,939  | 70.6        | \$5,467,911  |

Table Source: (SIR Municipal Fires Overview 2018-2022) - Milton

Table 47: Structure Fires and Property Loss – Town of Milton and Ontario

| Year                   | Milton Structure Fires | Milton Structure Loss | % of All Fires | % of All Loss | Ontario Structure Fires | Ontario Structure Loss | % of All Fires | % of All Loss |
|------------------------|------------------------|-----------------------|----------------|---------------|-------------------------|------------------------|----------------|---------------|
| 2018                   | 42                     | \$5,246,405           | 11.90          | 19.19         | 7,012                   | \$734,340,655          | 12.83          | 14.75         |
| 2019                   | 30                     | \$3,473,500           | 8.50           | 12.71         | 6,715                   | \$860,432,756          | 12.29          | 17.28         |
| 2020                   | 33                     | \$3,702,120           | 9.35           | 13.54         | 6,842                   | \$790,698,587          | 12.52          | 15.88         |
| 2021                   | 33                     | \$5,856,500           | 9.35           | 21.42         | 7,081                   | \$858,108,388          | 12.96          | 17.23         |
| 2022                   | 45                     | \$2,986,800           | 12.75          | 10.92         | 7,482                   | \$1,161,882,704        | 13.69          | 23.34         |
| Total                  | 183                    | \$21,265,325          | 51.84          | 77.78         | 35,132                  | \$4,405,463,090        | 64.29          | 88.48         |
| Total, fires with Loss | 353                    | \$27,339,555          | 100.00%        | 100.00%       | 54,645                  | \$4,978,933,145        | 100.00         | 100.00        |
| Average                | 36.6                   | \$4,253,065           | 10.37          | 15.56         | 7,026                   | \$881,092,618          | 12.86          | 17.70         |

Table Source: (SIR Municipal Fires Overview 2018-2022) - Milton

### **10.1.2 Fires by Occupancy Type**

This section examines structure fires occurring from January 1st, 2018, to December 31st, 2022, categorized by occupancy type, utilizing data from the OFM's Standard Incident Reporting. Over this period, the Town of Milton experienced a total of 183 structure fires with 67.21 (123) of these fires occurring in Group C-Residential Occupancies, contributing to 83.51% of the total fire loss. Compared to the province, Milton exhibited a 6.65% lower incidence of fires in Group C-Residential Occupancies but a 16.07% higher share of structure fire loss.

The second most substantial source of property loss was Group F – Industrial occupancies, representing 12.57% of structure fires and 3.67% of total structure fire loss during this period. Milton had a 5.30% higher incidence of industrial fires than the province (Table 48). Further, the structure fire loss for Group F- industrial is 3.67% of the total structure fire loss, which is 6.69% lower than the province for Group F - industrial types.

Table 48: Fires by Major Occupancy Type – 2018-2022

| Group | Occupancy Classification     | # of Structure Fires | Milton % of Structure Fires | Milton Structure Fire Loss | Milton % of Structure Fire Loss | Ontario % of Structure Fires | Ontario % Structure Fire Loss |
|-------|------------------------------|----------------------|-----------------------------|----------------------------|---------------------------------|------------------------------|-------------------------------|
| A     | Assembly                     | 5                    | 2.73                        | \$305,400                  | 1.44                            | 3.33                         | 3.76                          |
| B     | Care & Detention             | 3                    | 1.64                        | \$130,000                  | 0.61                            | 1.45                         | 0.75                          |
| C     | Residential                  | 123                  | 67.21                       | \$17,758,025               | 83.51                           | 73.86                        | 67.44                         |
| D     | Business & Personal Services | 5                    | 2.73                        | \$132,000                  | 0.62                            | 2.63                         | 2.63                          |
| E     | Mercantile                   | 4                    | 2.19                        | \$152,200                  | 0.72                            | 3.28                         | 4.44                          |
| F     | Industrial                   | 23                   | 12.57                       | \$779,900                  | 3.67                            | 7.26                         | 11.99                         |
| Other | Not Classified in OBC        | 11                   | 6.01                        | \$97,300                   | 0.46                            | 5.52                         | 1.18                          |
| Farm  | Classified in the OBC        | 9                    | 4.92                        | \$1,910,500                | 8.98                            | 2.67                         | 7.81                          |
| Total |                              | 183                  | 100.00                      | \$21,265,325               | 100.00                          | 100.00                       | 100.00                        |

Table Source: (SIR - Municipal Fires Overview 2018-2022) - Milton

### 10.1.3 Civilian Fatalities and Injuries

As shown in Table 49, according to data from the OFM Standard Incident Reporting, spanning from January 1st, 2018, to December 31st, 2022, there were 7 reported injuries and 1 fatality within the Town of Milton. Six injuries (85.71%) were associated with Class C – Residential Occupancy fires, which is lower than the rate of injuries associated with this occupancy type for the province (89.68%). In the Town of Milton 14.29% of the injuries were attributed to Group F industrial fires which is 11.41% higher than the province.

Table 49: Civilian Fire Fatalities and Injuries by OBC Major Occupancy Classification – Town of Milton and Ontario

| Group | Occupancy Classification     | Milton Injuries | Milton Injuries (%) | Milton Fatalities | Milton Fatalities (%) | Ontario Injuries | Ontario Injuries (%) | Ontario Fatalities | Ontario Fatalities (%) |
|-------|------------------------------|-----------------|---------------------|-------------------|-----------------------|------------------|----------------------|--------------------|------------------------|
| A     | Assembly                     | 0               | 0.00                | 0                 | 0                     | 23               | 0.90                 | 3                  | 0.64                   |
| B     | Care & Detention             | 0               | 0.00                | 0                 | 0                     | 51               | 1.99                 | 6                  | 1.27                   |
| C     | Residential                  | 6               | 85.71               | 1                 | 100                   | 2304             | 89.68                | 444                | 94.07                  |
| D     | Business & Personal Services | 0               | 0.00                | 0                 | 0                     | 35               | 1.36                 | 0                  | 0.00                   |
| E     | Mercantile                   | 0               | 0.00                | 0                 | 0                     | 34               | 1.32                 | 1                  | 0.21                   |
| F     | Industrial                   | 1               | 14.29               | 0                 | 0                     | 74               | 2.88                 | 12                 | 2.54                   |
| Other | Not Classified in OBC        | 0               | 0.00                | 0                 | 0                     | 34               | 1.32                 | 6                  | 1.27                   |
| Farm  | Classified in the NBC        | 0               | 0.00                | 0                 | 0                     | 14               | 0.54                 | 0                  | 0.00                   |
| Total |                              | 7               | 100.00              | 1                 | 0.00                  | 2,569            | 100.00               | 472                | 100.00                 |

Table Source: (SIR - Municipal Fires Overview 2018-2022) - Milton

#### 10.1.4 Reported Fire Cause

The NFPA defines fire cause as “the circumstances, conditions, or agencies that bring together a fuel, ignition source, and oxidizer (such as air or oxygen) resulting in a fire or a combustion explosion.” Assessing the possible cause of the fires reported is an important factor in identifying potential trends or areas that may be considered for introducing additional public education or fire prevention initiatives. Within OFM fire loss reporting, there are four categories of cause used to classify the cause of a fire. These include intentional, unintentional, other, and undetermined. Table 50, below on page 108 presents the reported fire causes for the town compared to the province over the five-year period from January 1st, 2018, to December 31st, 2022.

The "intentional" category includes fires started for a specific reason, typically classified as arson, acts of vandalism, or for personal gain through insurance claims. The number of intentional fires is in line with or lower than that of the province

The "unintentional" category represents common causes of fires, including human behavioral causes (e.g., misuse of ignition sources) and equipment failures (e.g., mechanical failure). Unintentional fire causes represented 62.84% of all reported fires in the town during this period, compared to 66.01% for the province. The leading causes of unintentional fires in the town were the misuse of ignition sources at 28.42% and mechanical/electrical failures at 13.66%, compared to 28.14% and 15.06%, respectively, in the province. Design/construction/maintenance deficiencies in Milton are 4.03% higher than that of the province.



Table 50: Reported Fire Cause – Town of Milton and Ontario – 2018-2022

| Nature        | Fire Cause                                     | Milton #<br>of Fires | Milton %<br>of Fires | Ontario #<br>of Fires | Ontario %<br>of Fires |
|---------------|------------------------------------------------|----------------------|----------------------|-----------------------|-----------------------|
| Intentional   | Arson                                          | 9                    | 4.92                 | 2,219                 | 6.32                  |
|               | Vandalism                                      | 3                    | 1.64                 | 536                   | 1.53                  |
|               | Other                                          | 0                    | 0.00                 | 11                    | 0.03                  |
| Unintentional | Design/Construction/<br>Maintenance Deficiency | 19                   | 10.38                | 2,232                 | 6.35                  |
|               | Mechanical/Electrical<br>Failure               | 25                   | 13.66                | 5,292                 | 15.06                 |
|               | Misuse of Ignition Source                      | 52                   | 28.42                | 9,885                 | 28.14                 |
|               | Other Unintentional                            | 9                    | 4.92                 | 2,554                 | 7.27                  |
|               | Vehicle Collision                              | 0                    | 0.00                 | 29                    | 0.08                  |
|               | Children Playing                               | 0                    | 0.00                 | 138                   | 0.39                  |
|               | Undetermined                                   | 10                   | 5.46                 | 3,062                 | 8.72                  |
| Other         | Other                                          | 10                   | 5.46                 | 1,952                 | 5.56                  |
| Undetermined  | Undetermined                                   | 46                   | 25.14                | 7,100                 | 20.21                 |
| Unknown       | Unknown, not reported                          | 0                    | 0.00                 | 122                   | 0.35                  |
| Total         |                                                | 183                  | 100.00               | 35,132                | 100.00                |

Table Source: (SIR - Municipal Fires Overview 2018-2022) - Milton

### 10.1.5 Ignition Source

According to the 2019 NFPA Glossary of Terms, ignition source is defined as “any item or substance capable of an energy release of type and magnitude sufficient to ignite any flammable mixture of gases or vapors that could occur at the site or onboard the vehicle.” Table 51 provides fire loss by source of ignition for the town and the province. In 23.50% of fires, the ignition source was reported as undetermined. Determining source can assist fire services in the development of public education program to reduce or prevent future events. It could also lead to trends that may indicate greater targeted enforcement needs or identify concerns to the Ontario Fire Marshal for review by their Technical Services section.

The balance of the source of ignition across a number of classifications (Electrical equipment, cooking equipment, heating equipment, open flame, other electrical/mechanical) mostly fall close to or below provincial averages with the exception of miscellaneous which is 4.88% higher than the province.

Table 51: Source of Ignition – Town of Milton and Ontario – 2018-2022

| Reported Ignition Source           | Milton # of Fires | Milton % of Fires | Ontario # of Fires | Ontario % of Fires |
|------------------------------------|-------------------|-------------------|--------------------|--------------------|
| Appliances                         | 15                | 8.20              | 1,528              | 4.35               |
| Cooking Equipment                  | 25                | 13.66             | 5,450              | 15.51              |
| Electrical Distribution Equipment  | 13                | 7.10              | 2,977              | 8.47               |
| Heating Equipment                  | 11                | 6.01              | 2,582              | 7.35               |
| Lighting Equipment                 | 5                 | 2.73              | 964                | 2.74               |
| Open Flame tools/ Smokers Articles | 23                | 12.57             | 4,974              | 14.16              |
| Other Electrical/Mechanical        | 10                | 5.46              | 1,791              | 5.10               |
| Processing Equipment               | 4                 | 2.19              | 421                | 1.20               |
| Miscellaneous                      | 27                | 14.75             | 3,469              | 9.87               |
| Exposure                           | 7                 | 3.83              | 1,736              | 4.94               |
| Undetermined                       | 43                | 23.50             | 9,101              | 25.91              |
| Unknown/Not Reported               | 0                 | 0.00              | 139                | 0.40               |
| <b>Total</b>                       | <b>183</b>        | <b>100.00</b>     | <b>35,132</b>      | <b>100.00</b>      |

Table Source: (SIR - Municipal Fires Overview 2018-2022) - Milton

### 10.1.6 Smoke Alarm Status

In the Province of Ontario, smoke alarms serve as crucial safety measures, mandated on every level of residential dwellings to act as the first line of defense against fires. Smoke alarm programs and compliance initiatives are integral components of public education and fire prevention efforts led by municipal fire services. Data regarding smoke alarm status during fire incidents is collected and reported by municipalities to the province, with information publicly available for analysis. Table 52 shows that over a five-year period from January 1st, 2018, to December 31st, 2022, the Town of Milton reported that in 10.83% of fires responded to, there was no smoke alarm present. This is lower than the provincial average of 17.35%. Conversely, incidents where a smoke alarm was present but failed to operate accounted for 13.33%, slightly higher than the provincial rate of 12.40%. In 45.83% of occurrences, smoke alarms were present and successfully operated, which is higher than the provincial rate of 44.68%.

Table 52: Smoke Alarm Presence and Operation on the Floor of Fire Origin – Town of Milton and Ontario– 2018-2022

| Smoke Alarm Status<br>(on floor of origin)     | Milton<br>Total | Milton % | Ontario<br>Total | Ontario % |
|------------------------------------------------|-----------------|----------|------------------|-----------|
| No Smoke Alarm Present                         | 13              | 10.83    | 4,307            | 17.35     |
| Smoke Alarm Present & Operated                 | 55              | 45.83    | 11,091           | 44.68     |
| Smoke Alarm Present & did not Operate          | 16              | 13.33    | 3,079            | 12.40     |
| Smoke Alarm Present, Operation<br>undetermined | 20              | 16.67    | 2,007            | 8.09      |
| Smoke Alarm Presence Undetermined              | 16              | 13.33    | 4,269            | 17.20     |
| Unknown, not reported                          | 0               | 0.00     | 69               | 0.28      |
| Total                                          | 120             | 100.00   | 24,822           | 100.00    |

Table Source: (SIR Municipal Smoke Alarm Presence and Operation in Residential Fires 2018-2022) - Milton

Among the incidents analyzed over the five-year period, the status of smoke alarms could not be conclusively determined in 30.00% of the incidents responded to by MFRS which is 4.71% higher than that of the province. The reasons for the undetermined status could vary, including factors such as the extent of fire damage obscuring the evidence of smoke alarm presence or functionality, lack of proper documentation, or limitations in investigative procedures. Efforts to enhance data collection and investigation methods could help reduce the number of undetermined cases, providing valuable insights for fire prevention and safety initiatives.

## 10.2 Event History

Event history seeks to apply MFRS historic emergency call data to develop an understanding of community risks. The OFM provided the data used in this analysis for all historical calls for the five-year period from January 1st, 2018, to December 31st, 2022. This section provides a statistical assessment of historic emergency call volumes for the town. The analysis included within this section also provides a detailed breakdown of calls by OFM response type. Data used in the analysis of call volume by type was sourced from the OFM's Standard Incident Reporting because call volume by type is compared to the province. The volume and frequency of historic calls informs the understanding of response probability. The types of calls inform the potential consequences of MFRS responses and calls for service. The combined consideration of these elements provides an understanding of community risk, based on past calls for service.

## 10.2.1 Emergency Call Volume

This section illustrates the historical emergency call volume by year, month, day of week, and time of day for all types of incidents responded to by MFRS for the time from January 1st, 2018, to December 31st, 2022.

### 10.2.1.1 Annual Call Volume – All Incident Types

The analysis of annual emergency call volume can be beneficial in understanding evolving trends or changes in emergency response demand. A summary of the total number of emergency calls for the period from January 1st, 2018, to December 31st, 2022, is shown in Figure 8. This analysis identifies an increase in the total emergency call volume within the town over this period from 1,799 calls in 2018 to 2,301 calls in 2022. This represents a total increase of 27.91% over this five-year period with an average of 1,951 calls per year. There was an 18.73% increase in the call volume from 2021 to 2022. This is a trend that is being observed across the province as it came out of Covid-19, however, this trend should be monitored.

Figure 8: Annual Call Volume – All Incidents January 1, 2018, to December 31, 2022

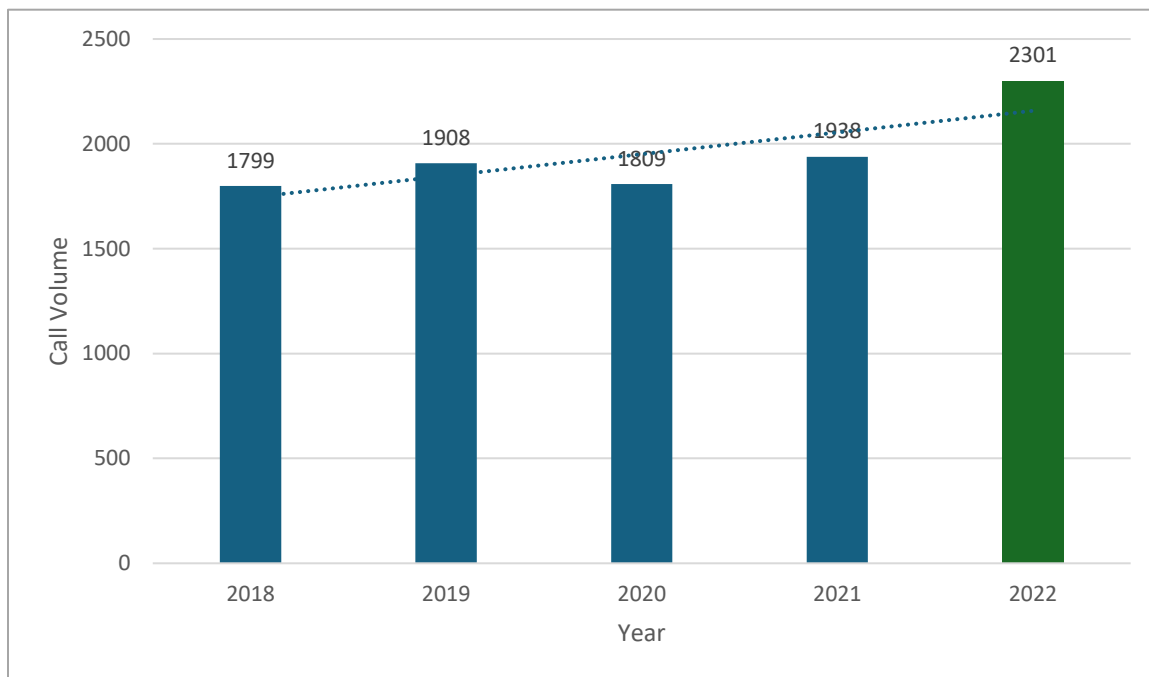


Figure Source: (SIR Municipal Emergency Calls by Year, Month, Day, Hour & Response Categories 2018-2022) - Milton

### 10.2.1.2 Monthly Emergency Call Volume – All Incident Types

Figure 9 illustrates that call volumes remain relatively consistent throughout the year, with the highest occurrences typically observed from May to August. This increase aligns with the expected influx of tourists and heightened travel activity through the town during these months.

Figure 9: Total Call Volume by Month – All Incidents January 1, 2018, to December 31, 2022

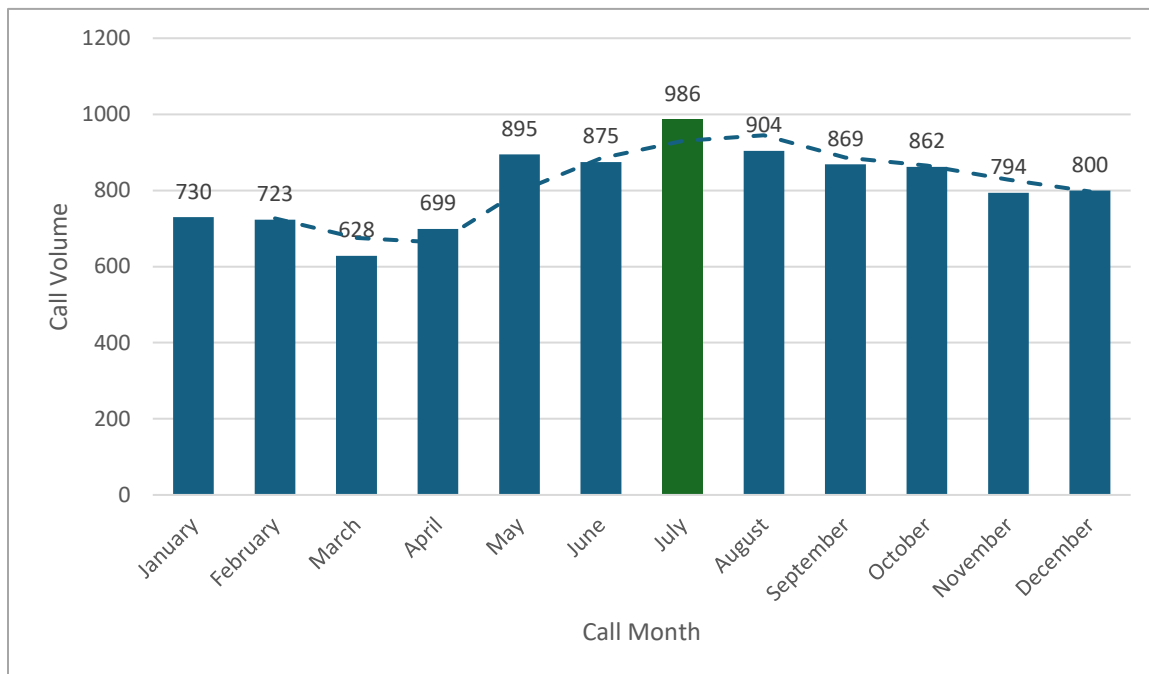


Figure Source: (SIR Municipal Emergency Calls by Year, Month, Day, Hour & Response Categories 2018-2022) - Milton

### 10.2.1.3 Daily Emergency Call Volume – All Incident Types

Figure 10 presents an analysis of the call volume by day of the week. The data shows that incidents generally occurred with similar frequency, with a noticeable increase from Friday to Saturday. This trend is expected, as more of the population engages in recreational activities and there is typically an increase in traffic volume throughout the town during these days.

Figure 10: Total Call Volume by Day – All Incidents January 1, 2018, to December 31, 2022

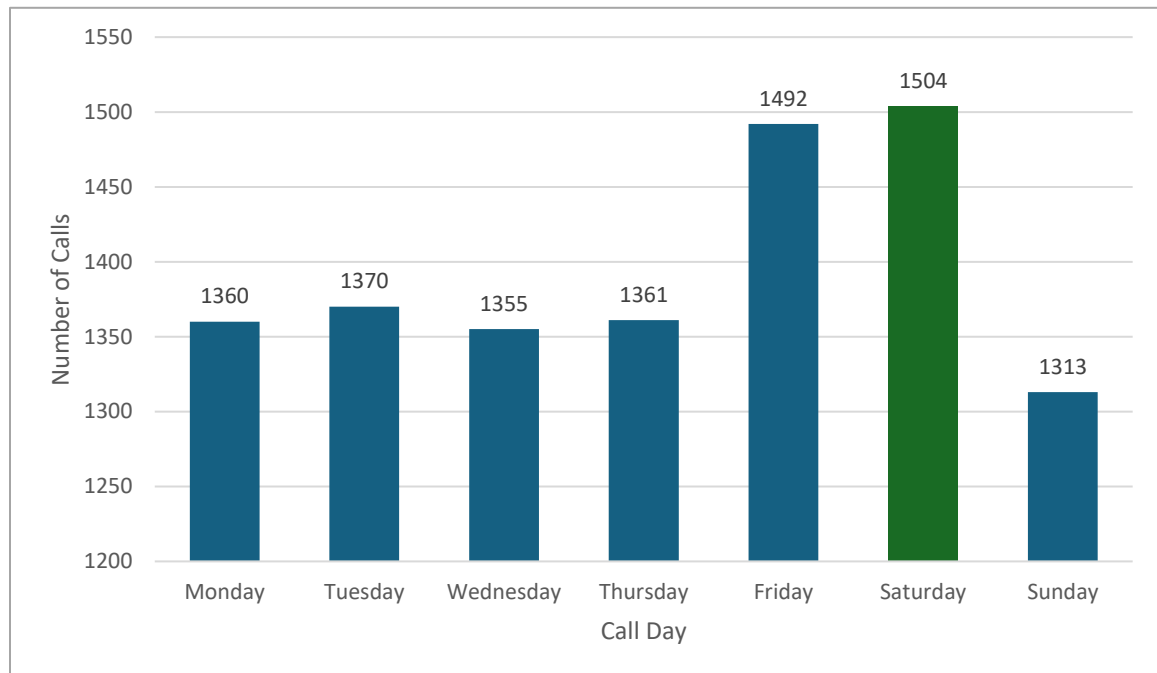


Figure Source: (SIR Municipal Emergency Calls by Year, Month, Day, Hour & Response Categories 2018-2022) - Milton

#### 10.2.1.4 Hourly Emergency Call Volume – All Incident Types

For the period from January 1, 2018, to December 31, 2022, higher call volumes typically seen at rush hour both in the morning and in the evening with the highest between 3PM and 9PM (see Figure 11).

Figure 11: Total Call Volume by Time of Day – All Incidents January 1, 2018, to December 31, 2022

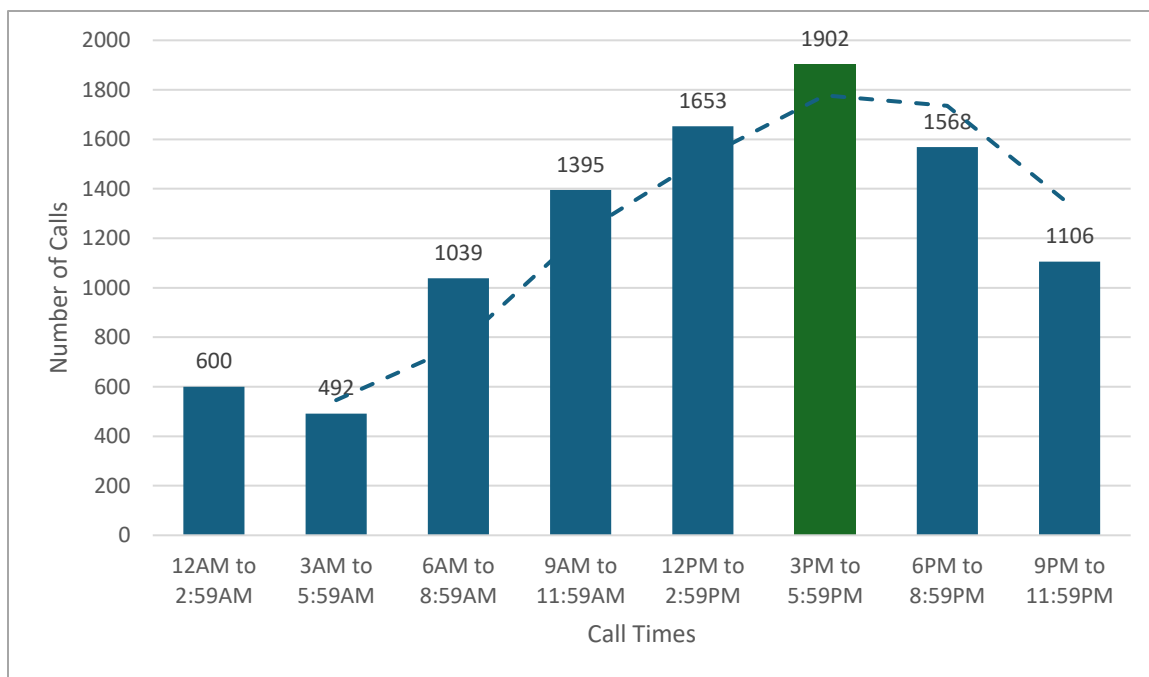


Figure Source: (SIR Municipal Emergency Calls by Year, Month, Day, Hour & Response Categories 2018-2022) - Milton

### 10.2.1.5 Call Type – All Incident Types

This section analyzes the emergency call volume for the period from January 1, 2018, to December 31, 2022. key trends in the types of incidents that the department responded to over this five-year period.

Table 53 illustrates that during this period 28.67% of the total emergency calls that MFRS responded to were false alarms. Rescue calls accounted for 19.99% of all calls, with 92.05% attributed to motor vehicle collisions. The number of fires reported over this 5-year period was 602 which is 6.17% of the total calls. This is higher than fires reported provincially at 2.10%. Table 54 provides a breakdown of all calls.

Table 53: Total Number of Incidents – Summary - January 1, 2018, to December 31, 2022

| Incident Subcategory                     | 2018         | 2019         | 2020         | 2021         | 2022         | Total        | Total %        |
|------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Property fires/explosions                | 126          | 108          | 113          | 122          | 133          | 602          | 6.17%          |
| Burning (controlled)                     | 53           | 56           | 85           | 57           | 46           | 297          | 3.04%          |
| Overpressure rupture/explosion (no fire) | 0            | 1            | 0            | 1            | 0            | 2            | 0.02%          |
| Pre-fire conditions/no fire              | 57           | 82           | 81           | 88           | 182          | 490          | 5.02%          |
| False fire calls                         | 468          | 558          | 554          | 630          | 587          | 2,797        | 28.67%         |
| CO false calls                           | 102          | 122          | 116          | 137          | 88           | 565          | 5.79%          |
| Public Hazard                            | 106          | 122          | 132          | 120          | 163          | 643          | 6.59%          |
| Rescue                                   | 391          | 384          | 309          | 356          | 510          | 1,950        | 19.99%         |
| Medical/Resuscitator                     | 80           | 81           | 80           | 121          | 120          | 482          | 4.94%          |
| Other response                           | 416          | 394          | 339          | 306          | 472          | 1,927        | 19.75%         |
| <b>Total</b>                             | <b>1,799</b> | <b>1,908</b> | <b>1,809</b> | <b>1,938</b> | <b>2,301</b> | <b>9,755</b> | <b>100.00%</b> |

Table Source: (SIR Municipal Emergency Calls by Response Type Class 2018-2022) - Milton



Table 54: Total Number of Incidents – Breakdown - January 1, 2018, to December 31, 2022

| Call Type                                        | 2018         | 2019         | 2020         | 2021         | 2022         | Total        | Total %       |
|--------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| A. Structure Fire                                | 42           | 30           | 33           | 33           | 45           | 183          | 1.88          |
| B. Other Fire                                    | 3            | 2            | 4            | 7            | 3            | 19           | 0.19          |
| C. Vehicle Fire                                  | 31           | 35           | 29           | 24           | 32           | 151          | 1.55          |
| D. No Loss Fire                                  | 5            | 6            | 7            | 8            | 9            | 35           | 0.36          |
| E. No Loss Fire (Excluded)                       | 45           | 35           | 40           | 50           | 44           | 214          | 2.19          |
| F. Non-Fire Call                                 | 1,673        | 1,800        | 1,696        | 1,816        | 2,168        | 9,153        | 93.83         |
| <b>Total</b>                                     | <b>1,799</b> | <b>1,908</b> | <b>1,809</b> | <b>1,938</b> | <b>2,301</b> | <b>9,755</b> | <b>100.00</b> |
| <b>F. Non-Fire Call Breakdown</b>                |              |              |              |              |              |              |               |
| Burning Controlled                               | 53           | 56           | 85           | 57           | 46           | 297          | 3.24          |
| Authorized controlled burning complaint          | 14           | 20           | 31           | 20           | 17           | 102          | 34.34         |
| Open Air Burning/unauthorized controlled burning | 39           | 36           | 54           | 37           | 29           | 195          | 65.66         |
| CO False Fire Calls                              | 102          | 122          | 116          | 137          | 88           | 565          | 6.17          |
| CO false alarm - equipment malfunction           | 67           | 84           | 88           | 97           | 56           | 392          | 69.38         |
| CO false alarm - perceived emergency             | 35           | 38           | 28           | 40           | 32           | 173          | 30.62         |
| False Fire Calls                                 | 374          | 558          | 554          | 630          | 587          | 2,703        | 29.53         |
| Alarm System Equipment Accidental Activation     | 10           | 156          | 161          | 163          | 130          | 620          | 22.94         |
| Alarm System Equipment Malfunction               | 171          | 175          | 197          | 201          | 204          | 948          | 35.07         |
| Human - Accidental                               | 64           | 70           | 41           | 82           | 90           | 347          | 12.84         |
| Human - Malicious                                | 8            | 8            | 10           | 14           | 42           | 82           | 3.03          |
| Human - Perceived Emergency                      | 82           | 102          | 105          | 100          | 79           | 468          | 17.31         |
| Other False Fire Call                            | 39           | 47           | 40           | 70           | 42           | 238          | 8.81          |
| Medical/Resuscitator Call                        | 80           | 81           | 80           | 121          | 120          | 482          | 5.27          |
| Accident or illness                              | 6            | 6            | 3            | 11           | 6            | 32           | 6.64          |

| Call Type                                                   | 2018 | 2019 | 2020 | 2021 | 2022 | Total | Total % |
|-------------------------------------------------------------|------|------|------|------|------|-------|---------|
| Alcohol or Drug Related                                     | 2    | 2    | 3    | 2    | 1    | 10    | 2.07    |
| Asphyxia, respiratory Condition                             | 0    | 0    | 3    | 0    | 0    | 3     | 0.62    |
| Burns                                                       | 1    | 0    | 1    | 0    | 2    | 4     | 0.83    |
| Medical/Resuscitator Call - Continued                       |      |      |      |      |      |       |         |
| Chest Pains or Suspected Heart Attack                       | 1    | 0    | 1    | 0    | 2    | 4     | 0.83    |
| CPR administered                                            | 16   | 13   | 21   | 25   | 17   | 92    | 19.09   |
| Defibrillator Used                                          | 2    | 1    | 1    | 1    | 3    | 8     | 1.66    |
| Electric Shock                                              | 0    | 0    | 0    | 1    | 0    | 1     | 0.21    |
| Medical aid not required on arrival                         | 3    | 3    | 3    | 7    | 10   | 26    | 5.39    |
| Medical Resuscitator call false alarm                       | 0    | 1    | 2    | 3    | 1    | 7     | 1.45    |
| Medical Resuscitator call no action required                | 12   | 12   | 15   | 20   | 26   | 85    | 17.63   |
| Other Medical Resuscitator Call                             | 9    | 6    | 7    | 11   | 12   | 45    | 9.34    |
| Oxygen Administered                                         | 3    | 4    | 1    | 1    | 3    | 12    | 2.49    |
| Seizure                                                     | 1    | 3    | 1    | 1    | 0    | 6     | 1.24    |
| Traumatic Shock                                             | 0    | 0    | 0    | 0    | 1    | 1     | 0.21    |
| Vital Signs Absent, DOA                                     | 24   | 30   | 18   | 38   | 36   | 146   | 30.29   |
| Other Response                                              | 416  | 394  | 339  | 306  | 472  | 1,927 | 21.05   |
| Assistance not required by other agency                     | 116  | 123  | 73   | 75   | 83   | 470   | 24.39   |
| Assistance to other agencies                                | 21   | 19   | 21   | 33   | 16   | 110   | 5.71    |
| Assistance to Police                                        | 14   | 11   | 14   | 13   | 16   | 68    | 3.53    |
| Assisting other Fire Department (Automatic Aid)             | 1    | 1    | 3    | 2    | 1    | 8     | 0.42    |
| Assisting other Fire Department (Fire Protection Agreement) | 0    | 0    | 0    | 0    | 0    | 0     | 0.00    |
| Assisting other Fire Department (Mutual Aid)                | 0    | 2    | 0    | 4    | 2    | 8     | 0.42    |
| Assisting other Fire Department (Other)                     | 2    | 0    | 0    | 1    | 0    | 3     | 0.16    |

| Call Type                                                | 2018 | 2019 | 2020 | 2021 | 2022 | Total | Total % |
|----------------------------------------------------------|------|------|------|------|------|-------|---------|
| Cancelled on Route                                       | 57   | 48   | 42   | 30   | 42   | 219   | 11.36   |
| Illegal Grow Operation (no fire)                         | 0    | 0    | 0    | 0    | 0    | 0     | 0.00    |
| Incident Not Found                                       | 28   | 34   | 31   | 22   | 33   | 148   | 7.68    |
| Other Public Service                                     | 138  | 105  | 91   | 62   | 216  | 612   | 31.76   |
| Other Response                                           | 39   | 51   | 64   | 64   | 63   | 281   | 14.58   |
| Overpressure Rupture/explosion (no fire)                 | 0    | 1    | 0    | 1    | 0    | 2     | 0.02    |
| Overpressure Rupture- Gas pipe (no fire)                 | 0    | 0    | 0    | 0    | 0    | 0     | 0.00    |
| Overpressure Rupture (no fire- steam boilers, hot water) | 0    | 1    | 0    | 1    | 0    | 2     | 100.00  |
| Pre-Fire Conditions (no fire)                            | 57   | 82   | 81   | 88   | 182  | 490   | 5.35    |
| Fireworks (no fire)                                      | 1    | 0    | 8    | 0    | 2    | 11    | 2.24    |
| Lightning (no fire)                                      | 0    | 0    | 1    | 0    | 1    | 2     | 0.41    |
| Other (cooking, toasting, smoke, steam)                  | 9    | 14   | 18   | 25   | 92   | 158   | 32.24   |
| Other pre fire conditions (no fire)                      | 16   | 18   | 16   | 27   | 35   | 112   | 22.86   |
| Overheat (no fire- mechanical devices)                   | 21   | 34   | 23   | 20   | 30   | 128   | 26.12   |
| Pot on Stove                                             | 10   | 16   | 15   | 16   | 22   | 79    | 16.12   |
| Public Hazard                                            | 106  | 122  | 132  | 120  | 163  | 643   | 7.03    |
| Bomb, Explosive removal Standby                          | 0    | 0    | 0    | 0    | 0    | 0     | 0.00    |
| CO incident, CO present                                  | 24   | 52   | 47   | 33   | 61   | 217   | 33.75   |
| Gas Leak - Miscellaneous                                 | 1    | 0    | 1    | 0    | 0    | 2     | 0.31    |
| Gas Leak - Natural Gas                                   | 24   | 15   | 15   | 17   | 19   | 90    | 14.00   |
| Gas Leak - Propane                                       | 2    | 3    | 2    | 3    | 1    | 11    | 1.71    |
| Gas Leak - Refrigeration                                 | 0    | 0    | 0    | 0    | 0    | 0     | 0.00    |
| Other Public Hazard                                      | 9    | 11   | 9    | 8    | 14   | 51    | 7.93    |
| Power Lines Down, Arcing                                 | 20   | 11   | 24   | 24   | 23   | 102   | 15.86   |
| Public Hazard call false alarm                           | 3    | 14   | 10   | 6    | 6    | 39    | 6.07    |
| Public Hazard no action required                         | 3    | 3    | 8    | 3    | 4    | 21    | 3.27    |
| Ruptured Water, Steam Pipe                               | 9    | 4    | 8    | 17   | 25   | 63    | 9.80    |
| Spill- Gasoline or Fuel                                  | 10   | 7    | 6    | 7    | 7    | 37    | 5.75    |

| Call Type                       | 2018 | 2019 | 2020 | 2021 | 2022 | Total | Total % |
|---------------------------------|------|------|------|------|------|-------|---------|
| Spill - Miscellaneous           | 1    | 1    | 2    | 2    | 3    | 9     | 1.40    |
| Spill - Toxic Chemical          | 0    | 1    | 0    | 0    | 0    | 1     | 0.16    |
| Suspicious Substance            | 0    | 0    | 0    | 0    | 0    | 0     | 0.00    |
| Rescue                          | 391  | 384  | 309  | 356  | 510  | 1,950 | 21.30   |
| Animal Rescue                   | 1    | 1    | 2    | 3    | 3    | 10    | 0.51    |
| Building Collapse               | 0    | 0    | 0    | 0    | 0    | 0     | 0.00    |
| Commercial Industrial Accident  | 0    | 1    | 0    | 0    | 0    | 1     | 0.05    |
| Confine Space Rescue (non-fire) | 0    | 0    | 0    | 0    | 0    | 0     | 0.00    |
| High Angle Rescue               | 0    | 2    | 0    | 1    | 3    | 6     | 0.31    |
| Home/Residential Accident       | 1    | 0    | 1    | 3    | 2    | 7     | 0.36    |
| Low Angle Rescue                | 1    | 0    | 3    | 2    | 4    | 10    | 0.51    |
| Other Rescue                    | 13   | 5    | 0    | 1    | 6    | 25    | 1.28    |
| Persons Trapped in Elevator     | 15   | 10   | 11   | 13   | 12   | 61    | 3.13    |
| Rescue False Alarm              | 0    | 0    | 0    | 1    | 0    | 1     | 0.05    |
| Rescue No Action Required       | 3    | 2    | 5    | 11   | 10   | 31    | 1.59    |
| Vehicle Collision               | 344  | 352  | 269  | 312  | 452  | 1,729 | 88.67   |
| Vehicle Extrication             | 13   | 11   | 16   | 8    | 18   | 66    | 3.38    |
| Water Ice Rescue                | 0    | 0    | 1    | 0    | 0    | 1     | 0.05    |
| Water Rescue                    | 0    | 0    | 1    | 1    | 0    | 2     | 0.10    |

Table Source: (SIR Municipal Emergency Calls by Response Type Class 2018-2022) - Milton

### 10.3 Past Loss & Event History Profile – Identified Risks and Key Findings

Table 55: Past Loss & Event History Profile – Identified Risks and Key Findings

| Identified Risk / Key Finding | Rationale                                                                                                                                                                                                                                                                                                                      |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identified Risk               | From January 1, 2018, to December 31, 2022, the Town of Milton experienced a total of 183 structure fires, with 67.21% (123 fires) occurring in Group C - Residential Occupancies, contributing to 83.51% of the total fire loss.                                                                                              |
| Identified Risk               | For the period from January 1, 2018, to December 31, 2022, Group F- Industrial Occupancies accounted for 12.57% of the structure fires and 3.67% of the total structure fire loss, despite representing only 1.65% of the building stock. Milton had a 5.30% higher incidence of industrial fires than the provincial average. |
| Identified Risk               | Compared to the province, Milton experienced a 6.65% lower incidence of fires in Group C-Residential Occupancies but a 16.07% higher share of total structure fire loss.                                                                                                                                                       |
| Identified Risk               | In Milton, 14.29% of injuries were attributed to Group F - Industrial Fires, which is 11.41% higher than the provincial average.                                                                                                                                                                                               |
| Key Finding                   | Over the five-year period from January 1, 2018, to December 31, 2022, 10.38% of fires responded to were caused by design, construction, or maintenance deficiencies, which is 4.03% higher than the provincial average.                                                                                                        |
| Key Finding                   | Over a five-year period from January 1, 2018, to December 31, 2022, 10.83% of fires in Milton occurred in buildings where no smoke alarm was present, which is lower than the provincial average of 17.35%.                                                                                                                    |
| Key Finding                   | In 30.00% of incidents over the five-year period, the status of smoke alarms could not be conclusively determined, which is 4.71% higher than the provincial average.                                                                                                                                                          |
| Key Finding                   | From January 1, 2018, to December 31, 2022, total emergency call volume in Milton increased by 27.90%.                                                                                                                                                                                                                         |
| Key Finding                   | From January 1, 2018, to December 31, 2022, 602 fires were reported, representing 6.17% of total calls. This is higher than the provincial average of 2.10%.                                                                                                                                                                   |
| Key Finding                   | From January 1, 2018, to December 31, 2022, rescue calls accounted for 19.99% of all calls, with 92.05% of those attributed to motor vehicle collisions.                                                                                                                                                                       |

## Section 11

### Identified Risks and Risk Treatments

The purpose of a CRA is to identify risks that are then used to inform decision-making regarding the provision of fire protection services. The analysis throughout this CRA identifies ‘Key Findings’ and ‘Identified Risks’ to be considered. In alignment with **TG-02-2019**, this section takes the identified risk conclusions through a risk assignment process to assist in the prioritization of risks, as well as a risk treatment process. This section of the CRA brings together all the key findings and identified risks. They are taken through a risk treatment process and aligned with the “Five E’s” of Community Risk Reduction and three lines of defence to inform the analysis and recommendations for within a Fire Master Plan or other strategic document as shown in Figure 12.

Figure 12: Risk Conclusions Application Process

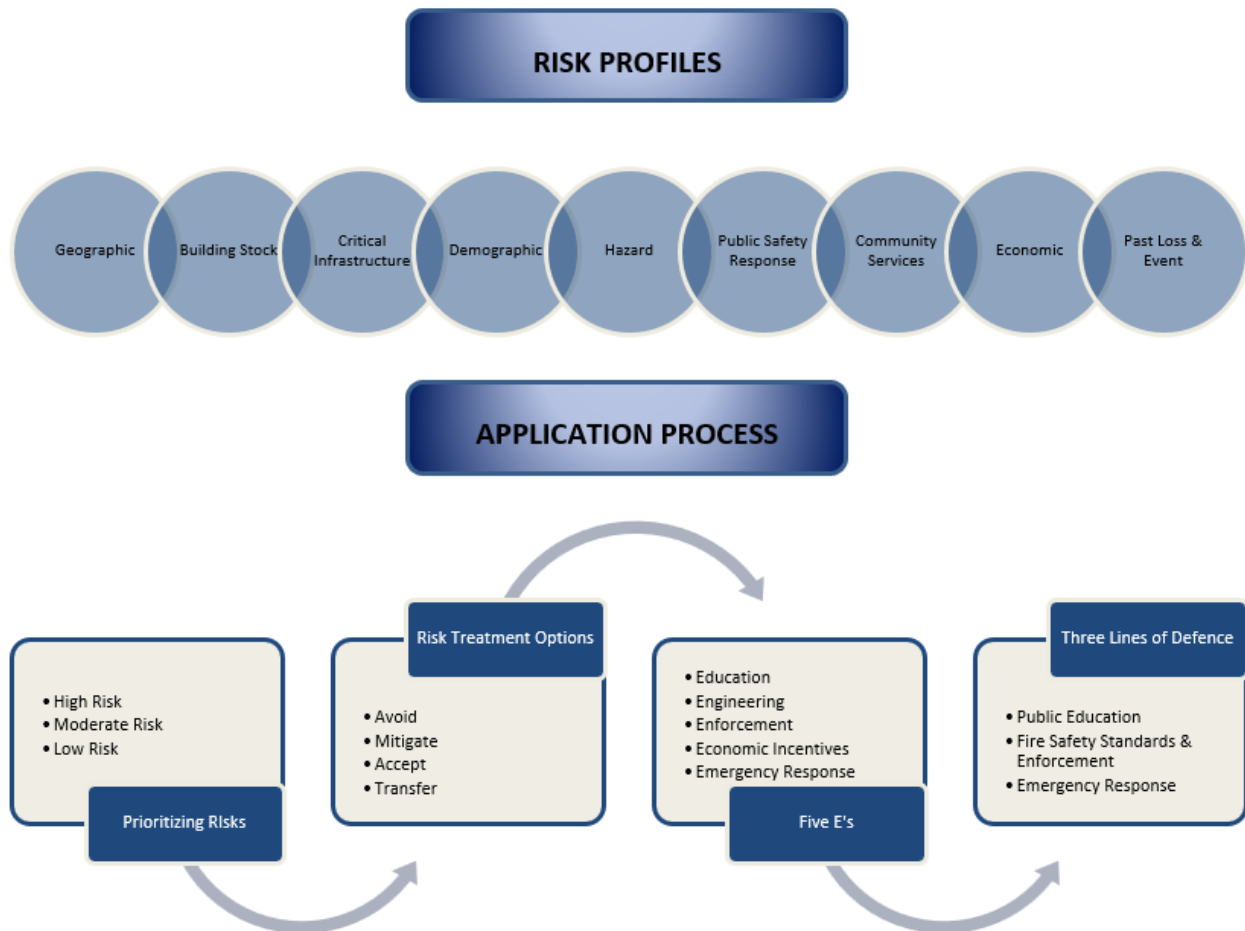


Figure Source: (NFPA 1300, 2020, p. Annex A.6.3.3.2(4); OFM-TG-02-2019, Revised 2022, pp. Section 6, pg. 16)

## 11.1 Prioritizing Risk

Following the probability and consequence levels identified by the OFM as described in the subsections below, the risk assignment process considers the probability and consequence of each identified risk. This will result in each risk having a risk level (e.g., low, moderate, or high) assigned. These risk levels will then be used to assist in the prioritization of risks as part of a Fire Master Plan.

### 11.1.1 Risk assignment Process Overview

The risk assignment methodology used as part of this CRA is informed by the OFM Technical Guideline (TG)-02-2019 Community Risk Assessment Guideline. There are three steps included in the risk assignment exercise used for this CRA:

1. **Determine a probability level:** The probability of a fire or emergency event occurring can be estimated in part based on historical experience of the community and that of the province. The likelihood categories, and the values presented, follow the OFM TG-02-2019 Community Risk Assessment Guideline. Table 56 presents the probability levels and the adjusted descriptions.

Table 56: Probability Level

| Likelihood Category | Numerical Value <sup>24</sup> | Description                                                                                                                                                                 |
|---------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rare                | 1                             | <ul style="list-style-type: none"> <li>May occur in exceptional circumstances</li> <li>No incidents in the past 15 years</li> </ul>                                         |
| Unlikely            | 10                            | <ul style="list-style-type: none"> <li>Could occur at some time, especially if circumstances change</li> <li>5 to 15 years since last incident</li> </ul>                   |
| Possible            | 100                           | <ul style="list-style-type: none"> <li>Might occur under certain circumstances</li> <li>1 incident in the past 5 years</li> </ul>                                           |
| Likely              | 1,000                         | <ul style="list-style-type: none"> <li>Will probably occur at some time under current circumstances</li> <li>Multiple or recurring incidents in the past 5 years</li> </ul> |
| Almost Certain      | 10,000                        | <ul style="list-style-type: none"> <li>Expected to occur unless circumstances change</li> <li>Multiple or recurring incidents in the past year</li> </ul>                   |

Table Source: (OFM-TG-02-2019, Revised 2022, pp. Section 4.1, pg.13)

<sup>24</sup> (City of Mississauga CRA, 2017)

2. **Determine a consequence level:** The consequences of an emergency event relate to the potential losses or negative outcomes associated with the incident. There are four components that should be evaluated in terms of assessing consequence. These include:
- a) **Life Safety:** Injuries or loss of life due to occupant and firefighter exposure to life threatening fire or other situations.
  - b) **Property Loss:** Monetary losses relating to private and public buildings, property content, irreplaceable assets, significant historic/symbolic landmarks, and critical infrastructure due to fire.
  - c) **Economic Impact:** Monetary losses associated with property income, business closures, downturn in tourism, tax assessment value and employment layoffs due to fire.
  - d) **Environmental Impact:** Harm to human and non-human (e.g., wildlife, fish, and vegetation) species of life and general decline in quality of life within the community due to air/water/soil contamination because of fire or fire suppression activities.

Table 57 presents the consequence levels.



Table 57: Consequence Levels

| Likelihood Category | Numerical Value <sup>25</sup> | Description                                                                                                                                                                                                                                                                                                                          |
|---------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Insignificant       | 1                             | <ul style="list-style-type: none"> <li>No life safety issue</li> <li>Limited value or no property loss</li> <li>No impact to local economy</li> <li>No effect of general living conditions</li> </ul>                                                                                                                                |
| Minor               | 10                            | <ul style="list-style-type: none"> <li>Potential risk to life safety of occupants</li> <li>Minor property loss</li> <li>Minimal disruption to business activity and/or Minimal impact on general living conditions</li> </ul>                                                                                                        |
| Moderate            | 100                           | <ul style="list-style-type: none"> <li>Threat to life safety of occupants</li> <li>Moderate property loss</li> <li>Poses threat to small local businesses</li> <li>Could pose threat to quality of the environment</li> </ul>                                                                                                        |
| Major               | 1,000                         | <ul style="list-style-type: none"> <li>Potential for large loss of life</li> <li>Would result in significant property damage</li> <li>Significant threat to businesses, local economy, and tourism</li> <li>Impact to environment would result in a short term, partial evacuation of local residents and businesses</li> </ul>      |
| Catastrophic        | 10,000                        | <ul style="list-style-type: none"> <li>Significant loss of life</li> <li>Multiple property damage to a significant portion of the town</li> <li>Long term disruption of businesses, local employment, and tourism and/or Environmental damage that would result in long-term evacuation of local residents and businesses</li> </ul> |

Table Source: (OFM-TG-02-2019, Revised 2022, pp. Section 4.2, pg. 14)

<sup>25</sup> (City of Mississauga CRA, 2017)

3. **Establish the risk level:** (i.e., low, moderate, or high) for each risk based on the identified probability and consequence for each event. Once probability and consequence are determined the level of risk is calculated by multiplying the numerical values<sup>26</sup> for probability and consequence. The relationship between probability and consequence as it pertains to risk levels can be illustrated in a risk matrix. In a risk matrix, probability and consequence are defined on separate scales with varying descriptors providing directions on how to assign the probability and consequence of an event. Table 58 shows the risk matrix for this CRA.

Table 58: Probability & Consequence Risk Matrix

| Probability/<br>Consequence | Insignificant<br>1 | Minor<br>10 | Moderate<br>100 | Major<br>1,000 | Catastrophic<br>10,000 |
|-----------------------------|--------------------|-------------|-----------------|----------------|------------------------|
| Almost Certain<br>10,000    | Moderate           | Moderate    | High            | High           | High                   |
| Likely<br>1,000             | Moderate           | Moderate    | Moderate        | High           | High                   |
| Possible<br>100             | Low                | Moderate    | Moderate        | Moderate       | High                   |
| Unlikely<br>10              | Low                | Low         | Moderate        | Moderate       | Moderate               |
| Rare<br>1                   | Low                | Low         | Low             | Moderate       | Moderate               |

Table Source: (OFM-TG-02-2019, Revised 2022, pp. Appendix B, pg. B1)

### 11.1.2 Assigned Risk Levels

The purpose of assigning a risk level is to assist in the prioritization of the range of risks that were identified as part of this CRA. The results of the risk assignment process are presented in Table 59 Where possible, quantitative data was used to inform the risk assignment as described in the rationale in the table.

<sup>26</sup> (City of Mississauga CRA, 2017)

Table 59: Risk Assignment

| No. | Profile    | Identified Risk                                                                                                                                                 | Probability Level | Rationale                                                                                                                                                                                                                                                                                    | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                                        | Risk Level |
|-----|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 1   | Geographic | The road network predominately Hwy 401 bisecting the town, is a contributor to emergency call volume due to motor vehicle collisions and vehicle fires          | Almost Certain    | <ul style="list-style-type: none"> <li>Over the period of January 2018 – December 2022 MFRS has responded to 1950 rescue calls of which 92.05% are related to vehicle collisions.</li> </ul>                                                                                                 | Moderate          | <ul style="list-style-type: none"> <li>Potential for risk to life safety of occupants of motor vehicles</li> <li>Potential risk for property loss</li> <li>Could pose a threat to small local business</li> <li>Could pose a threat to the quality of the environment</li> <li>Consequence level could be impacted by the magnitude of a hazard event</li> </ul> | High       |
| 2   | Geographic | Since provincial highways and rail lines are designated dangerous goods routes, traffic carrying various hazardous materials passes through the town regularly. | Possible          | <ul style="list-style-type: none"> <li>Guelph Junction Railway operate various lines running through the municipality, which includes farmland and over water surfaces. The containers transported include dangerous goods.</li> <li>Highways 401, 407 and 25 pass through Milton</li> </ul> | Major             | <ul style="list-style-type: none"> <li>Significant loss of life</li> <li>Multiple property damage to significant portion of the town</li> <li>Long term disruption of farms, businesses, local employment, and tourism and/or Environmental damage that would result in evacuation of local residents, farms, and businesses</li> </ul>                          | Moderate   |

| No. | Profile                                        | Identified Risk                                                                                                                                                                                                                                                                                    | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                      | Risk Level |
|-----|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 3   | Building Stock and Past Loss and Event History | Group C residential occupancies represent 89.65% of the towns existing occupancies. Additionally, 83.51% of structure fires loss, 85.71% of the civilian fire related injuries and 100.00% of the fire related fatalities occurred in Group C Occupancies. (January 1, 2018, to December 31, 2022) | Almost Certain    | <ul style="list-style-type: none"> <li>The majority of the town's existing property stock is comprised of Group C - Residential Occupancies (89.65%)</li> <li>83.51% of structure fires loss over the five-year period from January 1, 2018, to December 31, 2022, occurred within Group C - Residential Occupancies.</li> <li>85.71% of the civilian fire related injuries and 100.00% of the fire related fatalities occurred in Group C Occupancies.</li> <li>In 10.83% of fires there was no smoke alarm present</li> <li>Incidents where a smoke alarm was present but failed to operate accounted for 13.33% which is higher than the provincial average</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Could pose a threat to small local businesses, and/or pose a threat to the quality of the environment</li> <li>Potential for vulnerable individuals including seniors and youth within Group C</li> <li>Potential for exposure risk depending on dwelling type and building age</li> </ul> | High       |

| No. | Profile        | Identified Risk                                                                                                                                                                                                                      | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                                                        | Risk Level |
|-----|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 4   | Building Stock | 8.51% (3631) of the building stock was constructed before 1975 preceding the adoption of the 1975 OBC and 16.51% (7046 properties) of the town's building stock was constructed before 1981, preceding the adoption of the 1981 OFC. | Almost Certain    | <ul style="list-style-type: none"> <li>Approximately 8.51% of the town's building stock was built preceding the adoption of 1975 OBC</li> <li>Approximately 16.51% of the town's building stock was built preceding the adoption of 1981 OFC</li> <li>the Town of Milton reported that in 10.83% of fires responded to, there was no smoke alarm present</li> <li>incidents where a smoke alarm was present but failed to operate accounted for 13.33%,</li> <li>the status of smoke alarms could not be conclusively determined in 30.00% of the incidents responded to by MFRS which is 4.71% higher than that of the province.</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Could pose a threat to small local businesses, and/or pose a threat to the quality of the environment</li> <li>Occupants could be vulnerable individuals including seniors and youth within Group C – Residential</li> </ul> | High       |

| No. | Profile                                    | Identified Risk                                                                                                                                   | Probability Level | Rationale                                                                                                                                                                                                                                                                                 | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                                                            | Risk Level |
|-----|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 5   | Building Stock & Past Loss & Event History | There are 85 properties within Milton that have been identified as having a potentially high fuel load and therefore an increased high fire risk. | Likely            | <ul style="list-style-type: none"> <li>There are 690 industrial occupancies (1.65% of property stock) - several with known high fuel load concerns</li> <li>There have been 23 industrial fires over the past 5 years (12.57% of all fires) resulting in over \$750k fire loss</li> </ul> | Major             | <ul style="list-style-type: none"> <li>Significant threat to businesses, local economy, and tourism</li> <li>Impact to environment could result in a short term, partial evacuation of local residents and businesses</li> <li>Prolonged disruptions to supply chains</li> <li>Will require increases to Effective Response force numbers for fire suppression operations</li> </ul> | High       |
| 6   | Building Stock                             | According to MPAC Data, there are 44 buildings over 100,000 square feet and two buildings over 1,000,000 square feet                              | Possible          | <ul style="list-style-type: none"> <li>There are 690 industrial occupancies (1.65% of property stock) - several with known high fuel load concerns</li> <li>There have been 23 industrial fires over the past 5 years (12.57% of all fires) resulting in over \$750k fire loss</li> </ul> | Major             | <ul style="list-style-type: none"> <li>Significant threat to businesses, local economy, and tourism</li> <li>Impact to environment could result in a short term, partial evacuation of local residents and businesses</li> <li>Prolonged disruptions to supply chains</li> <li>Will require increases to Effective Response force numbers for fire suppression operations</li> </ul> | Moderate   |

| No. | Profile        | Identified Risk                                                                                                                                                                                            | Probability Level | Rationale                                                                                                                                                                                | Consequence Level | Rationale                                                                                                                                                                                                                                                                        | Risk Level |
|-----|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 7   | Building Stock | There are 78 Properties identified by the Town as Heritage Properties. Historic areas can present a high fire risk due to their age and the materials used to construct the buildings, as well as exposure | Likely            | <ul style="list-style-type: none"> <li>78 Properties identified by the Town as Heritage Properties.</li> <li>These building are built prior to the adoption of the OBC or OFC</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Significant threat to businesses, local economy, and tourism</li> <li>Impact to environment could result in a short term, partial evacuation of local residents and businesses</li> <li>Loss is permanent – cannot be replaced</li> </ul> | Moderate   |
| 8   | Building Stock | The Town of Milton currently has 23 occupancies that have been identified as a potential vulnerable occupancy.                                                                                             | Possible          | <ul style="list-style-type: none"> <li>23 occupancies that have been identified as a potential vulnerable occupancy</li> <li>Occupants may have poorer fire safety habits</li> </ul>     | Major             | <ul style="list-style-type: none"> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> <li>potential for large loss of life, significant property damage</li> </ul>                                                       | Moderate   |

| No. | Profile        | Identified Risk                                                                                                                                                                                                                                     | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                             | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                  | Risk Level |
|-----|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 9   | Building Stock | The permitting of up to 3 additional dwelling units per residential property allows for increased occupants and increased risk in residential buildings. Additionally, MFRS doesn't have access to identifying these building prior to an incident. | Likely            | <ul style="list-style-type: none"> <li>By-laws allow for up to 3 additional dwelling units within the same residential building</li> <li>The Town does not currently have a tool to identify these ADU's</li> <li>There are potentially over 1400 applications for permits with the building division for the construction of these ADU's.</li> </ul> | Major             | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Potential for vulnerable individuals including seniors and youth within Group C buildings.</li> <li>Potential for exposure risk depending on dwelling type and building age</li> </ul> | High       |



| No. | Profile     | Identified Risk                                                                                                                                                                                                                    | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                         | Risk Level |
|-----|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 10  | Demographic | The percentage of the population aged 65 years and older in Milton is 10.47%. Additionally, 9.28% of the town's population falls between the ages of 55 and 64, gradually aging into the senior demographic of 65 years and older. | Almost Certain    | <ul style="list-style-type: none"> <li>Canada's aging population has been recognized as one of the most significant demographic trends.</li> <li>Seniors (those 65 years and over) are considered to represent one of the highest fire risk groups across the province based on residential fire death rate (fire deaths per million of population).</li> <li>There are 4 registered long-term care/retirement homes in Milton with capacity for approximately 570 people</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Potential for exposure risk depending on dwelling type and building age</li> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> </ul> | High       |
| 11  | Demographic | In the Town of Milton, the proportion of newcomers is 9.33% higher when compared to that of the province. (39.28% compared to Ontario at 29.98%)                                                                                   | Likely            | <ul style="list-style-type: none"> <li>The predominant languages other than English spoken by Milton residents are Urdu, Arabic, Spanish, Punjabi, and Tagalog</li> </ul>                                                                                                                                                                                                                                                                                                            | Moderate          | <ul style="list-style-type: none"> <li>Cultural background and language considerations remain crucial factors for fire service providers when developing and delivering fire prevention and public education programs.</li> </ul>                                                                                                                 | Moderate   |

| No. | Profile                     | Identified Risk                                                                                                                                                                                                                                        | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                       | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                         | Risk Level |
|-----|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 12  | Past Loss and Event History | For the period from January 1, 2018, to December 31, 2022, the Town of Milton experienced a total of 183 structure fires with 67.21% (123) of these fires occurring in Group C-Residential Occupancies, contributing to 83.51% of the total fire loss. | Almost Certain    | <ul style="list-style-type: none"> <li>Fires were responsible for 77.78% of the total loss for this period.</li> <li>85.71% of the civilian fire related injuries and 100.00% of the fire related fatalities occurred in Group C Occupancies.</li> <li>Milton has a 16.07% higher fire loss in group C occupancies than the province</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Potential for exposure risk depending on dwelling type and building age</li> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> </ul> | High       |

| No. | Profile                     | Identified Risk                                                                                                                                                                                                                                                                                               | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                      | Risk Level |
|-----|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 13  | Past Loss and Event History | For the period from January 1, 2018, to December 31, 2022, group F- Industrial occupancies accounted for 12.57% of the structure fires and 3.67% of the total structure fire loss but only represents 1.65% of the building stock. Milton had a 5.30% higher incidence of industrial fires than the province. | Likely            | <ul style="list-style-type: none"> <li>Group F industrial accounts for only 1.65% of the property stock but 12.57 % of the structure fires and 3.67% of fire loss.</li> <li>Milton had a 5.30% higher incidence of industrial fires than the province.</li> <li>There have been 23 industrial fires over the past 5 years resulting in over \$750k fire loss</li> <li>There are 85 properties within Milton that have been identified as having a potentially high fuel load and therefore an increased high fire risk.</li> <li>14.29% of the injuries were attributed to Group F industrial fires which is 11.41% higher than the province</li> </ul> | Major             | <ul style="list-style-type: none"> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> <li>potential for large loss of life, significant property damage, significant threat to businesses and local economy – depending on type of business</li> </ul> | High       |

| No. | Profile                     | Identified Risk                                                                                                                                                   | Probability Level | Rationale                                                                                                                                                                                                                                                                                                                                                                                     | Consequence Level | Rationale                                                                                                                                                                                                                                                                                                                                         | Risk Level |
|-----|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 14  | Past Loss and Event History | Compared to the province, Milton exhibited a 6.65% lower incidence of fires in Group C- Residential Occupancies but a 16.07% higher share of structure fire loss. | Likely            | <ul style="list-style-type: none"> <li>The town's percentage of fire loss 16.07% higher than the province</li> <li>incidents where a smoke alarm was present but failed to operate accounted for 13.33%,</li> <li>the status of smoke alarms could not be conclusively determined in 30.00% of the incidents responded to by MFRS which is 4.71% higher than that of the province.</li> </ul> | Moderate          | <ul style="list-style-type: none"> <li>Could pose a threat to the life safety of occupants</li> <li>Could result in moderate property loss</li> <li>Potential for exposure risk depending on dwelling type and building age</li> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> </ul> | Moderate   |
| 15  | Past Loss and Event History | In the Town of Milton 14.29% of the injuries were attributed to Group F industrial fires which is 11.41% higher than the province                                 | Likely            | <ul style="list-style-type: none"> <li>Group F industrial accounts for only 1.65% of the property stock but 12.57 % of the structure fires and 3.67% of fire loss.</li> <li>Milton had a 5.30% higher incidence of industrial fires than the province.</li> </ul>                                                                                                                             | Major             | <ul style="list-style-type: none"> <li>Potential presence and maintenance of fire protection equipment would influence consequence level</li> <li>potential for large loss of life, significant property damage, significant threat to businesses and local economy – depending on type of business</li> </ul>                                    | High       |

## 11.2 Risk Treatment

NFPA 1300 and the OFM TG-02-2019 apply the process of identifying a risk treatment option for an identified risk. The risk treatment options include avoidance, mitigation, acceptance, and transfer.

Table 60: Risk Treatment Options

| Treatment Option | Description                                                                                                                                               |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Avoid            | Implementing programs and initiatives to prevent a fire or emergency from happening.                                                                      |
| Mitigate         | Implementing programs and initiatives to reduce the probability and/or consequence of a fire or emergency.                                                |
| Accept           | After identifying and prioritizing a risk, the fire service determines that no specific programs or initiatives will be implemented to address this risk. |
| Transfer         | The fire service transfers the impact and/or management of the risk to another organization or body. (i.e. fire protection agreements, automatic aid)     |

Table Source: (OFM-TG-02-2019, Revised 2022, pp. Section 6, pg. 16)

Section 7 of TG 02-2019 discusses setting the levels of service. To assist with application of the Identified Risks in the CRA, municipalities must consider the “Establishment of goals and objectives, strategies, timelines, and evaluation for the proposed fire protection services to be provided.”<sup>27</sup> This includes the identification of programming or resource gaps and the plan to close those gaps. Typically, this articulated as part of a Fire Master Plan or Community Risk Reduction strategy.

Recommendations of a Fire Master Plan should focus on ways to proactively reduce risk through education, prevention, and enforcement with fire suppression as the fail-safe.

The Five Es is a framework outlined in NFPA 1300, and the Institution of Fire Engineers’ Vision 20/20 National Strategy for Fire Loss Prevention, is a tool that helps to provide a lens through which identified risks can be reviewed to inform and support the Fire Master Plan. Table 61 identifies and describes each of the 5 Es of risk mitigation.

<sup>27</sup> (OFM-TG-02-2019, Revised 2022, pp. Section 7, pg. 18) 8

Table 61: 5 E's of Risk Mitigation

| Mitigation Type     | Description                                                                                                                                                                                           |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Education           | Aims to provide information that creates awareness and knowledge and subsequently changes behaviour.                                                                                                  |
| Engineering         | When education does not change an individual's behavior, this component removes the human factor and introduces technology to improve safety such as smoke alarms.                                    |
| Enforcement         | Intended to correct negative human behaviour through legislation such as the Ontario Building Code and the Ontario Fire Code and the Provincial Offences Act.                                         |
| Economic Incentives | Provided to reinforce positive impacts (e.g., insurance discounts or tax levy reductions) and discourage negative impacts (e.g., fines and charges)                                                   |
| Emergency Response  | Necessary only if the first 4 Es are unsuccessful, and a fire incident occurs. The level of service for a community is determined by Council based on the needs and circumstances identified locally. |

Table Source: Adapted from (NFPA 1300, 2020, p. Annex A.6.3.3.2(4)) & (Vision 20/20, 2016)

Table 62 summarizes the identified risks and presents ways in which the risks can be addressed by MFRS and ultimately considered within the Fire Master Plan analysis and recommendations.

Table 62: Identified Risk Treatment

| Profile                                      | Identified Risk                                                                                                                                                                                                                                                                                    | Risk Level | Risk Treatment Option | Education | Enforcement | Engineering | Economic Incentives | Emergency Response |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|-----------|-------------|-------------|---------------------|--------------------|
| Geographic                                   | The road network predominately Hwy 401 bisecting the town, is a contributor to emergency call volume due to motor vehicle collisions and vehicle fires                                                                                                                                             | High       | Accept                | No        | No          | No          | No                  | Yes                |
| Geographic                                   | Since provincial highways and rail lines are designated dangerous goods routes, traffic carrying various hazardous materials passes through the town regularly.                                                                                                                                    | Moderate   | Accept                | No        | No          | No          | No                  | Yes                |
| Building Stock and Past Loss & Event History | Group C residential occupancies represent 89.65% of the towns existing occupancies. Additionally, 83.51% of structure fires loss, 85.71% of the civilian fire related injuries and 100.00% of the fire related fatalities occurred in Group C Occupancies. (January 1, 2018, to December 31, 2022) | High       | Mitigate              | Yes       | Yes         | Yes         | No                  | Yes                |

| Profile        | Identified Risk                                                                                                                                                                                                                      | Risk Level | Risk Treatment Option | Education | Enforcement | Engineering | Economic Incentives | Emergency Response |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|-----------|-------------|-------------|---------------------|--------------------|
| Building Stock | 8.51% (3631) of the building stock was constructed before 1975 preceding the adoption of the 1975 OBC and 16.51% (7046 properties) of the town's building stock was constructed before 1981, preceding the adoption of the 1981 OFC. | High       | Mitigate              | Yes       | Yes         | Yes         | No                  | Yes                |
| Building Stock | There are 85 properties within Milton that have been identified as having a potentially high fuel load and therefore an increased high fire risk.                                                                                    | Moderate   | Mitigate              | Yes       | Yes         | Yes         | No                  | Yes                |
| Building Stock | According to MPAC Data, there are 44 buildings over 100,000 square feet and two buildings over 1,000,000 square feet                                                                                                                 | Moderate   | Mitigate              | Yes       | Yes         | Yes         | Yes                 | Yes                |



| Profile        | Identified Risk                                                                                                                                                                                                                                     | Risk Level | Risk Treatment Option | Education | Enforcement | Engineering | Economic Incentives | Emergency Response |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|-----------|-------------|-------------|---------------------|--------------------|
| Building Stock | There are 78 Properties identified by the Town as Heritage Properties. Historic areas can present a high fire risk due to their age and the materials used to construct the buildings, as well as exposure                                          | Moderate   | Mitigate              | Yes       | Yes         | Yes         | Yes                 | Yes                |
| Building Stock | The Town of Milton currently has 23 occupancies that have been identified as a potential vulnerable occupancy.                                                                                                                                      | Moderate   | Mitigate              | Yes       | Yes         | Yes         | Yes                 | Yes                |
| Building Stock | The permitting of up to 3 additional dwelling units per residential property allows for increased occupants and increased risk in residential buildings. Additionally, MFRS doesn't have access to identifying these building prior to an incident. | High       | Mitigate              | Yes       | Yes         | Yes         | Yes                 | Yes                |

| Profile                   | Identified Risk                                                                                                                                                                                                                                       | Risk Level | Risk Treatment Option | Education | Enforcement | Engineering | Economic Incentives | Emergency Response |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|-----------|-------------|-------------|---------------------|--------------------|
| Demographic               | The percentage of the population aged 65 years and older in Milton represents 10.47% of the total population 9.28% of the town's population falls between the ages of 55 and 64, gradually aging into the senior demographic of 65 years and older.   | High       | Mitigate              | Yes       | Yes         | Yes         | No                  | Yes                |
| Demographic               | In the Town of Milton, the proportion of newcomers is 9.33% higher when compared to that of the province. (39.28% compared to Ontario at 29.98%)                                                                                                      | Moderate   | Mitigate              | Yes       | No          | No          | No                  | Yes                |
| Past Loss & Event History | For the period from January 1, 2018, to December 31, 2022, the Town of Milton experienced a total of 183 structure fires with 67.21 (123) of these fires occurring in Group C-Residential Occupancies, contributing to 83.51% of the total fire loss. | High       | Mitigate              | Yes       | Yes         | Yes         | No                  | Yes                |

| Profile                   | Identified Risk                                                                                                                                                                                                                                                                                               | Risk Level | Risk Treatment Option | Education | Enforcement | Engineering | Economic Incentives | Emergency Response |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|-----------|-------------|-------------|---------------------|--------------------|
| Past Loss & Event History | For the period from January 1, 2018, to December 31, 2022, group F- Industrial occupancies accounted for 12.57% of the structure fires and 3.67% of the total structure fire loss but only represents 1.65% of the building stock. Milton had a 5.30% higher incidence of industrial fires than the province. | High       | Mitigate              | Yes       | Yes         | Yes         | Yes                 | Yes                |
| Past Loss & Event History | Compared to the province, Milton exhibited a 6.65% lower incidence of fires in Group C-Residential Occupancies but a 16.07% higher share of structure fire loss.                                                                                                                                              | Moderate   | Mitigate              | Yes       | Yes         | Yes         | No                  | Yes                |
| Past Loss & Event History | In the Town of Milton 14.29% of the injuries were attributed to Group F industrial fires which is 11.41% higher than the province.                                                                                                                                                                            | High       | Mitigate              | Yes       | Yes         | Yes         | Yes                 | Yes                |

### 11.3 Risk Mapping

This section provides the base risk assignments and associated mapping to provide a spatial context to assist in developing appropriate risk reduction strategies for each line of defence. Table 63 & Table 64 below represent the base, assigned risks for both OBC Classification and Expected Growth by Neighbourhood area.

Table 63: Base Risk by OBC Classification

| OBC Classification                     | Number of Occupancies | Probability | Consequence  | Assigned Risk |
|----------------------------------------|-----------------------|-------------|--------------|---------------|
| Group A - Assembly                     | 133                   | Rare        | Major        | Moderate      |
| Group B- Care or Detention Occupancies | 32                    | Unlikely    | Major        | Moderate      |
| Group C - Single Family Residential    | 21,740                | Likely      | Moderate     | Moderate      |
| Group C - Multi Unit Residential       | 293                   | Likely      | Major        | High          |
| Group C- Row                           | 10,307                | Likely      | Major        | High          |
| Group D- Business & Personal Services  | 397                   | Unlikely    | Moderate     | Moderate      |
| Group E- Mercantile                    | 253                   | Unlikely    | Moderate     | Moderate      |
| Group F1- High Risk Industrial         | 4                     | Unlikely    | Catastrophic | High          |
| Group F2 - Med Risk Industrial         | 675                   | Unlikely    | Major        | Moderate      |
| Group F3 - Low Risk Industrial         | 11                    | Unlikely    | Moderate     | Moderate      |

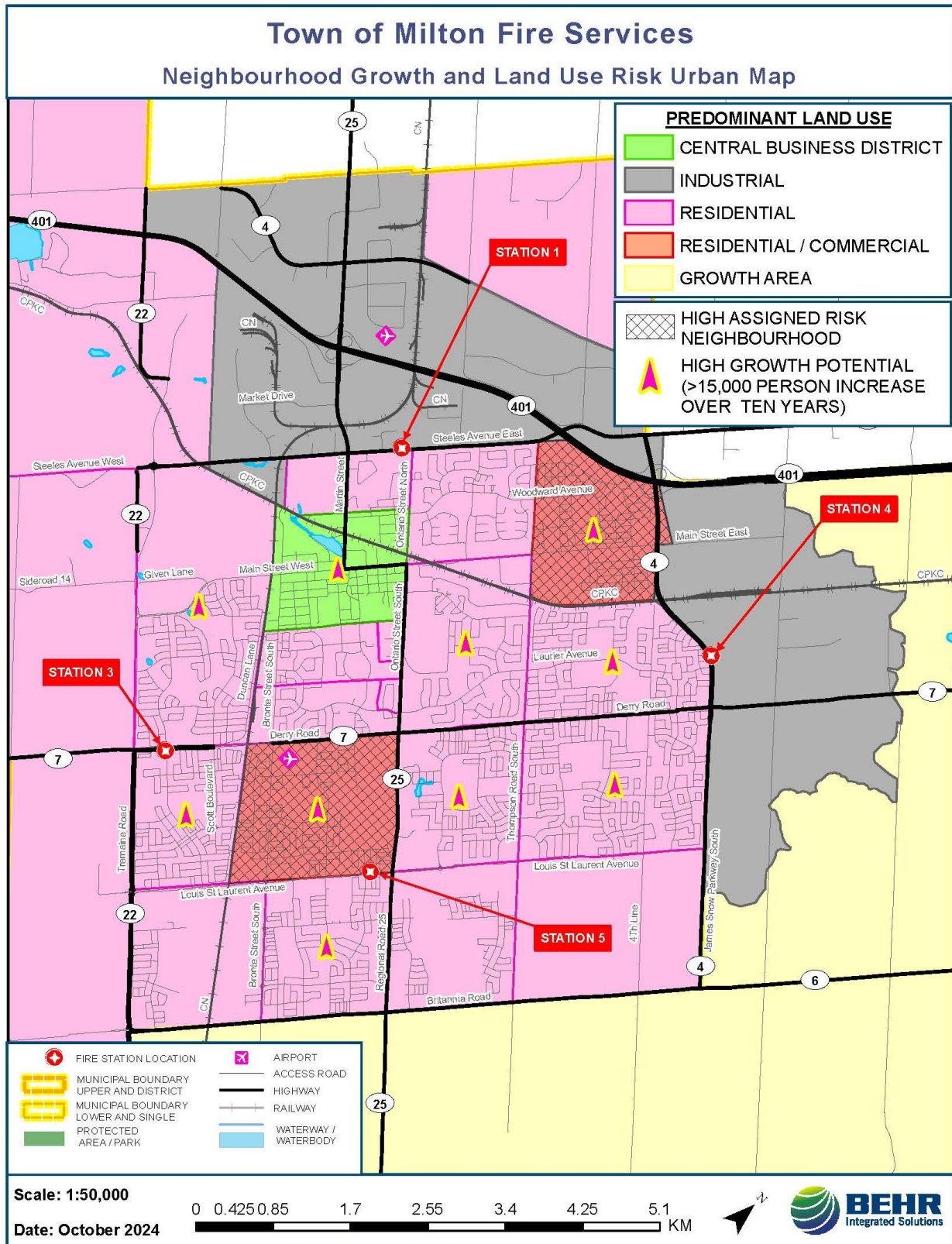
Table 64: Base Growth Area Risks by Neighbourhood<sup>28</sup>

| Neighbourhood       | 2023 Population | 2030 Population | Predominant Land Use              | Probability | Consequence | Assigned Risk |
|---------------------|-----------------|-----------------|-----------------------------------|-------------|-------------|---------------|
| 401 Industrial Area | 1,002           | 4,602           | Industrial                        | Unlikely    | Major       | Moderate      |
| Beaty               | 20,863          | 63,463          | Residential                       | Likely      | Moderate    | Moderate      |
| Bowes               | 130             | 897             | Residential                       | Possible    | Moderate    | Moderate      |
| Bronte Meadows      | 3,069           | 8,669           | Residential                       | Possible    | Moderate    | Moderate      |
| Clarke              | 16,288          | 49,788          | Residential                       | Likely      | Moderate    | Moderate      |
| Coates              | 11,920          | 44,074          | Residential                       | Likely      | Moderate    | Moderate      |
| Cobban              | 5,430           | 6,019           | Residential                       | Possible    | Moderate    | Moderate      |
| Dempsey             | 11,161          | 34,875          | Residential/<br>Commercial        | Likely      | Major       | High          |
| Derry Green CBP     | 83              | 301             | Business Park/<br>Industrial Area | Possible    | Major       | Moderate      |
| Dorset Park         | 5,931           | 19,431          | Residential                       | Possible    | Moderate    | Moderate      |
| Esquesing           | 624             | 940             | Residential                       | Possible    | Moderate    | Moderate      |
| Fallingbrook        | 2,176           | 5,576           | Residential                       | Possible    | Moderate    | Moderate      |
| Ford                | 13,083          | 33,583          | Residential                       | Likely      | Moderate    | Moderate      |
| Forest Grove        | 67              | 234             | Residential                       | Unlikely    | Moderate    | Moderate      |
| Harrison            | 13,105          | 45,405          | Residential                       | Likely      | Moderate    | Moderate      |
| Milton Heights      | 172             | 1,176           | Residential                       | Possible    | Moderate    | Moderate      |
| Mountain View       | 1,053           | 3,553           | Residential                       | Possible    | Moderate    | Moderate      |

<sup>28</sup> Compiled from Town of Milton Neighbourhood Growth Database and (Town of Milton Official Plan, 2024 (draft))

| Neighbourhood | 2023 Population | 2030 Population | Predominant Land Use                    | Probability | Consequence | Assigned Risk |
|---------------|-----------------|-----------------|-----------------------------------------|-------------|-------------|---------------|
| Nassagaweya   | 7,134           | 25,334          | Residential                             | Likely      | Moderate    | Moderate      |
| Nelson        | 1,318           | 5,118           | Residential                             | Possible    | Moderate    | Moderate      |
| Old Milton    | 5,322           | 21,522          | Central Business District               | Unlikely    | Major       | Moderate      |
| Scott         | 14,308          | 44,008          | Residential                             | Likely      | Moderate    | Moderate      |
| Timberlea     | 7,755           | 28,255          | Residential                             | Likely      | Moderate    | Moderate      |
| Trafalgar     | 1,110           | 9,110           | SHP Growth Area                         | Possible    | Moderate    | Moderate      |
| Valley View   | 190             | 520             | Residential                             | Likely      | Moderate    | Moderate      |
| Walker        | 1,146           | 1,362           | Residential                             | Unlikely    | Moderate    | Moderate      |
| Willmott      | 14,008          | 52,304          | Residential/<br>Residential Office Area | Likely      | Major       | High          |

Map 8: Neighbourhood Growth and Land Use Risk Urban Map



## APPENDICES

|             |                                        |     |
|-------------|----------------------------------------|-----|
| Appendix A: | List of Figures, Maps, and Tables..... | A-1 |
| Appendix B: | References .....                       | B-1 |



## Appendix A: List of Figures, Maps, and Tables

### Figures

|                                                                                                         |     |
|---------------------------------------------------------------------------------------------------------|-----|
| Figure 1: Community Risk Assessment Profiles and Sub-topics.....                                        | 4   |
| Figure 2: Risk Treatment Process .....                                                                  | 5   |
| Figure 3: Condition of Bridges & Culverts .....                                                         | 10  |
| Figure 4: Fire Propagation Curve .....                                                                  | 25  |
| Figure 5: Percent of Population by Age Group – Town of Milton and Ontario .....                         | 66  |
| Figure 6: 2011-2020 Provincial Residential Fire Death Rate by Age of Victim .....                       | 67  |
| Figure 7: Town of Milton Top Industries .....                                                           | 98  |
| Figure 8: Annual Call Volume – All Incidents January 1, 2018, to December 31, 2022 .....                | 110 |
| Figure 9: Total Call Volume by Month – All Incidents January 1, 2018, to December 31, 2022 .....        | 111 |
| Figure 10: Total Call Volume by Day – All Incidents January 1, 2018, to December 31, 2022 .....         | 112 |
| Figure 11: Total Call Volume by Time of Day – All Incidents January 1, 2018, to December 31, 2022 ..... | 113 |
| Figure 12: Risk Conclusions Application Process .....                                                   | 120 |

### Maps

|                                                               |     |
|---------------------------------------------------------------|-----|
| Map 1: Town of Milton Overview Map .....                      | 7   |
| Map 2: At Level Railway Crossings .....                       | 12  |
| Map 3: Current and Future High-Rises .....                    | 34  |
| Map 4: Higher Fuel Load locations.....                        | 41  |
| Map 5: Higher Fuel Load Locations Urban Centre .....          | 42  |
| Map 6: Vulnerable Occupancies Locations .....                 | 45  |
| Map 7: Vulnerable Occupancies Locations Urban Centre .....    | 46  |
| Map 8: Neighbourhood Growth and Land Use Risk Urban Map ..... | 145 |

### Tables

|                                                                       |      |
|-----------------------------------------------------------------------|------|
| Table 1: Summary of Identified Risks .....                            | iii  |
| Table 2: Summary of Key Findings .....                                | xiii |
| Table 3: Geographic Profile - Identified Risks and Key Findings ..... | 14   |
| Table 4: OBC Major Occupancy Classifications.....                     | 16   |

|                                                                                                                              |    |
|------------------------------------------------------------------------------------------------------------------------------|----|
| Table 5: OFM Fire Risk Sub-Model Major Building Classifications .....                                                        | 17 |
| Table 6: Existing Major Building Classification Summary .....                                                                | 22 |
| Table 7: Time to Reach 1 MW Fire Growth Rates in the Absence of Fire Suppression .....                                       | 24 |
| Table 8: Period of Construction of all Dwellings – Town of Milton and Ontario .....                                          | 26 |
| Table 9: Group C Residential Building Stock Comparison.....                                                                  | 27 |
| Table 10: Milton Share of Regional Phasing .....                                                                             | 29 |
| Table 11: Existing and Future High-Rises.....                                                                                | 32 |
| Table 12: Building Area .....                                                                                                | 35 |
| Table 13: Potential High Fire Risk Occupancies .....                                                                         | 36 |
| Table 14: Vulnerable Occupancies .....                                                                                       | 43 |
| Table 15: Heritage Properties .....                                                                                          | 48 |
| Table 16: Building Stock Profile – Identified Risks and Key Findings.....                                                    | 52 |
| Table 17: Critical Infrastructure Overview .....                                                                             | 60 |
| Table 18: Critical Infrastructure – Identified Risks and Key Findings .....                                                  | 62 |
| Table 19: Historic Growth in Population and Households – Town of Milton .....                                                | 63 |
| Table 20: Population Growth by Neighbourhood.....                                                                            | 64 |
| Table 21: Population by Age Group – Town of Milton and Ontario .....                                                         | 65 |
| Table 22: Gender Distribution by Age Group – Town of Milton .....                                                            | 69 |
| Table 23: Labour Force Status – Town of Milton and Ontario.....                                                              | 72 |
| Table 24: Educational Attainment – Town of Milton and Ontario .....                                                          | 73 |
| Table 25: Median Income of the Town of Milton and Ontario - 2020.....                                                        | 73 |
| Table 26: Economic Family Income Decile Group for the Population in Private<br>Households – Town of Milton and Ontario ..... | 74 |
| Table 27: Household Tenure – Town of Milton and Ontario .....                                                                | 75 |
| Table 28: Household Occupancy .....                                                                                          | 75 |
| Table 29: Household Suitability – Town of Milton and Ontario.....                                                            | 76 |
| Table 30: Shelter Costs – Town of Milton and Ontario.....                                                                    | 76 |
| Table 31: Median Costs – Town of Milton and Ontario .....                                                                    | 77 |
| Table 32: Immigration Status – Town of Milton and Ontario .....                                                              | 77 |
| Table 33: Knowledge of Official Language – Town of Milton and Ontario .....                                                  | 78 |
| Table 34: Commuting Destinations – Town of Milton and Ontario .....                                                          | 79 |
| Table 35: Time of Commute to Work.....                                                                                       | 80 |

|                                                                                                                             |     |
|-----------------------------------------------------------------------------------------------------------------------------|-----|
| Table 36: Indigenous Population – Town of Milton and Ontario .....                                                          | 81  |
| Table 37: Demographic Profile – Identified Risks and Key Findings .....                                                     | 82  |
| Table 38: Town of Milton Hazards .....                                                                                      | 84  |
| Table 39: Impacts of Hazards on Fire Protection Services .....                                                              | 84  |
| Table 40: Hazard Profile – Identified Risks and Key Findings .....                                                          | 87  |
| Table 41: Public Safety Response Agencies .....                                                                             | 88  |
| Table 42: Fire Protection Agreements .....                                                                                  | 92  |
| Table 43: Community Service Agencies .....                                                                                  | 95  |
| Table 44: Major Employers in the Town of Milton .....                                                                       | 99  |
| Table 45: Economic Profile – Identified Risks and Key Findings .....                                                        | 100 |
| Table 46: Total Fire Loss – Town of Milton .....                                                                            | 102 |
| Table 47: Structure Fires and Property Loss – Town of Milton and Ontario .....                                              | 102 |
| Table 48: Fires by Major Occupancy Type – 2018-2022 .....                                                                   | 104 |
| Table 49: Civilian Fire Fatalities and Injuries by OBC Major Occupancy Classification<br>– Town of Milton and Ontario ..... | 105 |
| Table 50: Reported Fire Cause – Town of Milton and Ontario – 2018-2022 .....                                                | 107 |
| Table 51: Source of Ignition – Town of Milton and Ontario – 2018-2022 .....                                                 | 108 |
| Table 52: Smoke Alarm Presence and Operation on the Floor of Fire Origin – Town of<br>Milton and Ontario– 2018-2022 .....   | 109 |
| Table 53: Total Number of Incidents – Summary - January 1, 2018, to December 31,<br>2022 .....                              | 114 |
| Table 54: Total Number of Incidents – Breakdown - January 1, 2018, to December 31,<br>2022 .....                            | 115 |
| Table 55: Past Loss & Event History Profile – Identified Risks and Key Findings .....                                       | 119 |
| Table 56: Probability Level .....                                                                                           | 121 |
| Table 57: Consequence Levels .....                                                                                          | 123 |
| Table 58: Probability & Consequence Risk Matrix .....                                                                       | 124 |
| Table 59: Risk Assignment .....                                                                                             | 125 |
| Table 60: Risk Treatment Options .....                                                                                      | 135 |
| Table 61: 5 E's of Risk Mitigation .....                                                                                    | 136 |
| Table 62: Identified Risk Treatment .....                                                                                   | 137 |
| Table 63: Base Risk by OBC Classification .....                                                                             | 142 |

|                                                         |     |
|---------------------------------------------------------|-----|
| Table 64: Base Growth Area Risks by Neighbourhood ..... | 143 |
|---------------------------------------------------------|-----|

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