Town of Milton

Fire Master Plan

Final Report

June 2021 – 18-8072

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Acronyms, Abbreviations, Definitions

Acronyms/Abbreviations	Definition
A.S.&E.	Academic Standards and Evaluation
A.H.J.	Authority Having Jurisdiction
A.O.D.A.	Accessibility for Ontarians with Disabilities Act
C.A.D.	Computer Aided Dispatch
C.A.A.T.	Colleges of Applied Arts and Technology
C.B.R.N.E.	Chemical, Biological, Radiological, Nuclear, and Explosive
C.E.M.C.	Community Emergency Management Coordinator
C.F.A.I.	Commission on Fire Accreditation International
C.F.E.M.	Comprehensive Fire Safety Effectiveness Model
C.F.P.O.	Chief Fire Prevention Officer
C.N.	Canadian National
C.O.	Carbon Monoxide
C.P.	Canadian Pacific
C.P.C.	Commission on Professional Credentialing
C.P.S.E.	Centre for Public Safety Excellent
C.R.A.	C.R.A.
C.R.R.P.	Community Risk Reduction Plan
C.T.O.	Chief Training Officer
D.C.A.	Development Charges Act
E.I.O.	Emergency Information Officer
E.&R.	Establishing & Regulating
E.M.C.P.A.	Emergency Management and Civil Protection Act
E.M.S.	Emergency Medical Service
E.V.T.	Emergency Vehicle Technician

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Acronyms/Abbreviations	Definition
F.D.M.	File Data Management
F.P.P.A.	Fire Prevention and Protection Act
F.M.P.	Fire Master Plan
F.U.S.	Fire Underwriters Survey™
G.I.S.	Geographic Information Systems
G.P.O.	General Performance Objectives
G.T.A.	Greater Toronto Area
H.I.R.A.	Hazard Identification Risk Assessment
H.R.E.M.S.	Halton Region Emergency Medical Services
H.R.E.P.P.	Halton Region Emergency Program and Plan
I.A.F.F.	International Association of Firefighters
I.C.S.	Incident Command System
I.F.S.A.C.	International Fire Service Accreditation Congress
I.F.S.T.A.	International Fire Service Training Association
M.A.E.S.D.	Ministry of Advanced Education and Skills Development
M.F.D.	Milton Fire Department
M.P.F.F.A.	Milton Professional Firefighters Association
M.T.O.	Ministry of Transportation
N.F.P.A.	Nation Fire Protection Association
N.I.S.T.	National Institute of Standards and Technology
O.B.C.	Ontario Building Code
O.C.I.O.	Office of the Chief Information Officer
O.F.C.	Ontario Fire Code
O.F.M.E.M.	Office of the Fire Marshal and Emergency Management
O.F.S.S.	Ontario Fire Service Standards
O.H.S.A.	Occupational Health and Safety Act

Acronyms/Abbreviations	Definition
P.C.C.	Private Career Colleges
P.D.A.	Physical Demands Analysis
P.F.S.G.	Public Fire Safety Guideline
R.M.S.	Records Management System
R.O.	Routine Order
R.T.C.	Regional Training Centres
S.C.B.A.	Self-Contained Breathing Apparatus
S.O.G.	Standard Operating Guidelines
S.O.P.	Standard Operating Procedure
S.R.A.	Simplified Risk Assessment
S.W.O.C.	Strengths, Weaknesses, Opportunities, and Challenges
T.A.P.P.-C.	The Arson Prevention Program for Children
T.R.A.	Tiered Response Agreement
U.S.	United States
E.M.S.	Emergency Medical Services
T.S.S.A.	Technical Standards & Safety Authority

Executive Summary

The primary purpose of this Fire Master Plan (F.M.P.) is to provide Council and senior staff with a strategic planning framework for the delivery of fire protection services within the Town of Milton (Town) for the next ten-year community planning horizon. Milton's commitment to strategic planning is evident in its Council-Staff Work Plan 2020-2023. Where applicable, this F.M.P. has been developed to align with the goals and actions of the Work Plan such as **"plan and build our community to accommodate growth while managing new service and infrastructure demands and balancing taxpayer affordability"** [1]**.**

The analyses presented within this F.M.P. provides a comprehensive review of the Town's current fire protection services in comparison to the municipality's current legislative requirements as required by the **Fire Protection and Prevention Act 1997** (F.P.P.A.) and **Occupational Health and Safety Act**, R.S.O. 1990 (O.H.S.A.). Where applicable, the analysis presented is informed by current industry guidelines as authored by the **Office of the Fire Marshal and Emergency Management** (O.F.M.E.M.), industry standards as authored by the **National Fire Protection Association** (N.F.P.A.) and our knowledge of current industry best practices.

In May 2018, the **Ministry of Community Safety and Correctional Services** (M.C.S.C.S.) adopted **Ontario Regulation 378/18 - C.R.A.** that requires every municipal fire department within the Province to develop a **Community Risk Assessment** (C.R.A.). This fire master planning process has included the preparation of a C.R.A. as a companion document to this F.M.P. (attached as **Appendix A**) including analysis of the nine mandatory profiles referenced within the new legislation. These profiles are geographic, building stock, critical infrastructure, demographics, hazards, public safety response, community services, economics, and past loss and event history. The information presented within the C.R.A. provides a comprehensive analysis of the existing fire risk within the community. The risk outcomes of the C.R.A. have been reviewed by the

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[1] Town of Milton Council-Staff Work Plan 2020-2023

current senior management team of the M.F.D., confirming that the risk outcomes of the community risk assessment process accurately reflect the fire risks of the Town.

The F.M.P. process also included internal and external stakeholder engagement. The internal stakeholder engagement process for this F.M.P. included discussions, telephone and email communication and/or one-on-one interviews with the C.A.O., Director of Finance and Accounting, Director of Planning and Development services, fire department senior management, executive members of the Milton Professional Firefighters Association, and two consultation sessions with the part-time firefighters.

In regards to external stakeholder engagement, an online public survey was available to the public from April 3, 2021 to May 2, 2021 through Let's Talk Milton. Of the participants who have accessed services provided by the Milton Fire Department, 25.0% indicated that they were "very satisfied", 11.1% were "satisfied", 6.9% were "somewhat satisfied" and 13.9% were "not satisfied" with the services provided. Some additional high-level results of the public survey included that 40.4% of participants indicated that the services provided by the Milton Fire Department are not meeting the needs of the community. This is a significant proportion of respondents. When asked how the services the Milton Fire Department provides could better meet the needs of the community, participants identified several areas for improvement including that Milton Fire Department is understaffed and that is placing the community as well as firefighters at additional risk. In addition, several participants indicated they would like to see the Milton Fire Department respond to an expanded range of medical calls.

The analysis within this F.M.P. has also included a review of the findings of the **2008 Fire Master Plan** (2008 F.M.P.) that has guided the delivery of fire protection services over the past ten years. With the support of Council there has been significant progress in implementing the recommendations of the 2008 F.M.P. However, the analysis within this F.M.P. will show that the realities of the community's fiscal responsibilities have not allowed the M.F.D. to maintain the same speed of growth as that of the community. As a result, the analyses within this F.M.P. will present strategic priorities and recommendations to respond to the increasing need for fire protection services particularly in the area of fire suppression emergency response services.

The continuing rapid community growth is challenging the ability of the M.F.D. to sustain and extend its delivery of fire suppression emergency response services within the expanding urban area. Increasing emergency call volume and an expanding building

stock that includes vulnerable occupancies such as seniors care facilities and high rise, high-risk buildings are further challenging the ability of the current fire suppression resources. For example, the fire risks associated with these types of building stock and the increasing volume of residential building stock are exceeding the capabilities of the part-time firefighters to provide an effective response time within the defined urban area. This is not uncommon within the fire service and relates directly to the amount of time it takes for the part-time firefighters to travel from their work or home, and assemble at the fire station. The result has been a higher demand to increase the number of full-time firefighters to provide an effective and efficient response based on the fire risks present. As discussed within the F.M.P., considerable growth is forecast for the Town over the horizon of the plan with a projected population of 219,900 people by 2031. Over this time, the fire department will need to continue to evolve to meet the needs of this growth.

This fire master planning process recognises the importance of sustaining the use of part-time firefighters as part of the initial response in the rural area of the community and in support of the full-time firefighters within the defined urban area. The sustainability strategy presented includes increasing the total number of part-time firefighters.

Under the leadership of the Fire Chief, the Milton Fire Department (M.F.D.) senior management team currently oversees the delivery of a wide range of fire protection services through the application of the **Comprehensive Fire Safety Effectiveness Model** (C.F.S.E.M.) supported by the O.F.M.E.M. This model reflects the primary objective of a fire department as being to provide the optimum level of fire protection services while ensuring an appropriate level of health and safety for firefighters. The C.F.S.E.M. prioritizes a strategy referred to as the **"three lines of defence"**. These include:

> i.   **Public Education and Prevention;**
>
> ii. **Fire Safety Standards and Enforcement; and**
>
> iii. **Emergency Response (Fire Suppression)**

Within the Province of Ontario the **"three lines of defence"** model has proven to be an effective strategy in reducing the number of fire-related fatalities and injuries, and reducing the overall impacts of fire while enhancing the safety of firefighters. The goals, objectives, and recommended actions presented within this F.M.P. are intended to

optimize the use of the **"three lines of defence"** model in providing the most cost effective and efficient level of fire protection services that provide the most value to the community. Throughout the Fire Master Plan, the risks as identified from the C.R.A. are presented with consideration for application to the first, second, or third line of defence.

The information presented within this F.M.P. will highlight the current emphasis that the M.F.D. places on public fire safety education. This includes the role of the public in maintaining working **Smoke Alarms** on every level of their home, having a **Carbon Monoxide Detector** and practicing **Home Escape Planning** as a core responsibility of the public as part of a comprehensive community fire safety plan.

Strategic Priorities, Goals

Subject to Council's consideration of the proposed Fire Master Plan, the following strategic priorities, goals, objectives, and recommended actions are presented for approval and implementation.

Strategic Priorities

The following strategies priorities are recommended as the strategic framework for the delivery of fire protection services within the Town of Milton:

I.   The sustained use of a C.R.A. to determine the fire safety risks within the Town of Milton as the basis for developing clear goals and objectives for all fire protection and emergency services provided by M.F.D.;

II.   Where applicable, the optimization of the first two lines of defence including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Town; and

III.   Emphasis on strategies that support the sustainability of fire protection and emergency services that provide the most effective and efficient level of services resulting in the best value for the community.

Administration Division

GOAL #1: Milton Fire Department will provide the appropriate level of resources, leadership capabilities, policies and systems to continue to meet the needs of a rapidly growing community based on the findings of a Community Risk Assessment.

Objective #1A: Use a Community Risk Assessment to help identify the needs and circumstances of Milton and inform decision-making with respect to community fire protection services to sustain compliance with O. Reg. 378/18 Community Risk Assessments.

Recommended Action: Conduct a review of the C.R.A. annually and when necessary, and revise the C.R.A. in line with the guidelines set out in O.F.M Technical Guideline-02-2019 and consider potential impacts on existing fire protection services.

Objective #1B: Maintain up-to-date documentation and procedures for all by-laws, agreements, Standard Operating Guidelines (SOG), Standard Operating Policies (SOP), records management systems, and job descriptions.

Recommended Action: Update and implement a regular review process of all applicable fire protection services by-laws including:

    a. The Establishing and Regulating By-law No. 026-2018;
    b. The current Rates and Fees By-law No. 072-2020 including:
        i. revisions to include cost recovery of additional specialized services such as Fire Safety Plans and providing Fire Extinguisher Training;
        ii. a review of the fees charged for fire inspections services and consider modifying or clarifying the fee charged;
    c. Fireworks By-law No. 037-2009, and
    d. Current fire protection agreements by-laws.

Recommended Action: Bring forward any revised by-laws for Council consideration and approval.

Recommended Action: Conduct a review of current agreements (fire protection services, mutual aid, automatic aid) with the intent to confirm the need and revise agreements to clearly define the scope of existing and planned services provided/received, to formalize in writing any informal agreements, and ensure applicable by-laws are in place.

Recommended Action: Establish a process for the regular review of existing Standard Operating Policies and Standard Operating Guidelines in order to develop new ones, where required, and clarify the application and definition of all Department Policies, Standard Operating Guidelines and Routine Operations.

Recommended Action: Develop records management protocols and systems for all records management practices within the department with consideration to the corporate requirements and training for all staff responsible for administrative support.

Recommended Action: Update department job descriptions, and include required N.F.P.A. Pro-Qual Standards where applicable, and implement a regular review cycle.

Objective #1C: Sustain the regular reporting of the services provided by the M.F.D. both internally and externally.

Recommended Action: Report to Council annually on the performance of the department, any applicable updates, and on the annual review of the Comprehensive Risk Assessment.

Recommended Action: Implement a dedicated Analyst resource in support of reporting, strategic initiatives, and data-driven decision making.

Objective #1D: Have appropriate administrative capacity as the department grows.

Recommended Action: Implement a process to monitor the administrative workload in support of maintaining appropriate levels of administrative capacity as the department grows.

Objective #1E: Have a fire department that is inclusive and reflects the diversity of the community.

Recommended Action: In conjunction with the Town's Diversity and Inclusivity Strategy, develop an internal fire department diversity and inclusion policy and committee that includes M.F.D. senior staff and review existing M.F.D. policies of procedures through the lens of inclusion.

Recommended Action: In consultation with the Human Resources Division, provide diversity, equity, and inclusion training to all staff.

FIRE PREVENTION DIVISION

Goal #2: The Milton Fire Department will enhance its fire prevention and public education programs based on the outcomes of a C.R.A in support of optimizing the first two lines of defence.

Objective #2A: Implement proactive fire prevention and public education programs and policies in alignment with the community risks.

Recommended Action: Develop and implement a Council-approved proactive inspection cycle and proactive public education cycle.

Recommended Action: Enhance the utilization of trained and qualified on-duty full-time firefighters for inspections and delivery of education programs.

Recommended Action: Develop a Fire Department Public Communication Policy in consultation with Strategic Communications.

Recommended Action: Develop a comprehensive strategy for managing false alarm calls that includes enhanced and targeted public education strategies, increased fire inspections and enforcement options.

Recommended Action: Develop a child/youth fire safety education program targeting grade 7/8 to increase the depth of the current public education program;

Recommended Action: Develop a Fire Prevention Policy that defines the purpose and objectives of each of the fire prevention related policies/guidelines including the proactive inspection cycle and proactive public education cycle. Present the policy to Council for approval and inclusion within the Establishing and Regulating By-law as an appendix.

Recommended Action: Increase the capacity of the Fire Prevention Division by adding one full-time Public Education Officer.

Recommended Action: Implement a process to monitor the workload and capacity of staff in the Fire Prevention Division in support of maintaining appropriate levels full-time personnel required to deliver fire prevention programs effectively.

Objective #2B: Prioritize the training of all fire prevention and public education staff.

Recommended Action: All staff designated as Chief Fire Officials should be trained through the Public Services Health & Safety Association related to the Chief Fire Official roles and responsibilities.

Recommended Action: Fire prevention staff be trained and qualified to the appropriate N.F.P.A. Pro-Qual standards suitable to their role.

Recommended Action: Train all full-time firefighters to the qualification of N.F.P.A. 1031 – Fire Inspector - Level I and NFPA 1035 – Fire and Life Safety Educator - Level I.

Operations Division

Goal #3: Milton Fire Department will provide emergency response services in alignment with its local needs and circumstances as confirmed though a Community Risk Assessment and with consideration to health and safety, industry best practices, future growth, and the services that provide the most effective and efficient level of services resulting in the best value for the community.

Objective #3A: Strive for continuous improvement through monitoring emergency response performance as compared to applicable industry best practices.

Recommended Action: Establish Council-approved performance benchmarks for emergency response and annually monitor and report to Council and the community including:

a. The proposed fire suppression performance objectives for the defined urban area being:

   i. Initial Arriving Company - Four firefighters arriving on scene within a four minute travel time to 90% of fire suppression incidents.

   ii. Single-Family Dwelling – Initial Full Alarm Assignment - 16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type

   iii. Apartment – Initial Full Alarm Assignment - 25 firefighters (26 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type

   iv. High-Rise – Initial Full Alarm Assignment - 38 firefighters (39 if building is equipped with a fire pump) arriving on scene within a ten minute and ten second travel time to 90% of fire suppression incidents in this occupancy type

b. The proposed fire suppression performance objective for the defined rural being:

v. Rural Demand Zone – 6 firefighters arriving on scene within a 14 minutes turnout time + travel time to 80% of fire suppression incidents in the defined rural area.

Objective #3B: Move towards the fire suppression staff resources that reflect the needs and circumstances of the community.

Recommended Action: In consultation with the Human Resources Division, develop a hiring strategy to fully staff the existing fire stations in alignment with industry best practices and proposed performance benchmarks for the existing fire stations including:

a. Phasing in an increase to 80 full-time suppression firefighters (from the existing 56 firefighters) to staff all four existing urban fire stations with a full complement of full-time firefighters (20 each). This requires the addition of 24 firefighters over the next four years.

b. Hiring four Platoon Chiefs to cover the four shifts required to provide 24/7 response coverage. This is in response to recent and forecast municipal and department growth.

c. Increasing the total approved complement of part-time firefighters from 65 to 90 including a minimum of 20 part-time firefighters for each of Station 1, 3, and 4, and 30 part-time firefighters for Station 2. This is in support of the initial full alarm assignment needs of the M.F.D., and to help respond to the staffing needs for high risk occupancy incidents (e.g. high rise building, long-term care facilities). This will also enhance the ability of the department to respond in the event of simultaneous calls, and is part of the strategy to support the departments staffing needs as the Town incrementally hires full-time firefighters over the coming years.

Objective #3C: Prepare for growth by planning for the need for increased fire suppression resources while balancing taxpayer affordability.

Recommended Action: Based on monitoring the actual timing of growth and with consideration to updated Community Risk Assessment, develop and implement a hiring strategy to prepare to respond to forecast growth so that the proposed new Station 6 and Station 7 can be fully staffed once they are built, including:

a. Planning for the addition of 20 full-time firefighters to staff each of the proposed Station 6 and 7 (40 additional full-time firefighters total) including any associated apparatus and equipment.

b. Increase total part-time firefighter complement from 90 to 110 by planning for the addition of a minimum of 20 part-time firefighters to staff proposed Station 6 including any associated apparatus and equipment

c. Planning for the construction of a sixth station (by 2026 or approximately 175,000 people) and a seventh station (by 2029 or approximately 210,000 people).

Objective #3D: Prioritize the sustainability of the composite model for the Town of Milton.

Recommended Action: Maintain the part-time District Chief model with consideration to transition to a span of control of two stations per part-time District Chief.

Recommended Action: Develop and implement a part-time firefighter scheduled on call program in consultation with the part-time firefighters to enhance the number and time it takes them to turn-out for an incident.

Recommended Action: Increase the overall approved complement of part-time firefighters as described in the above objectives.

Objective #3E: Move towards technical rescue service levels that reflects the needs and circumstances of the community as identified in the Community Risk Assessment.

Recommended Action: Develop a plan to operationalize proposed changes to technical rescue service levels including associated training, maintenance, and equipment costs.

Recommended Action: Transition towards establishing the proposed technical rescue service levels, to be approved by Council through an Establishing and Regulating by-law, being:

i. Hazardous Materials Response – Operations Level

ii. Vehicle Rescue – Technician Level

iii. High/low Angle Rope Rescue – Technician Level

iv. Surface Water Rescue - Technician Shore-Based

v. Ice Search and Rescue - Technician Shore-Based

vi. Machinery Rescue - Technician Level

vii. Confined Space Response - Operations Level

viii. Trench Rescue Response - Operations Level

ix. Structural Collapse - Operations Level

Recommended Action: Develop fire service agreements with neighbouring departments or other service providers for hazardous materials response, confined space rescue, trench rescue, and structural collapse.

Emergency Management

Goal #4: Milton Fire Department will provide municipal emergency planning services with consideration to its legislative requirements, industry best practices, and future growth.

Objective #4A: Maintain legislative compliance while preparing for future growth.

Recommended Action: Conduct a review of the Emergency Response Plan (E.R.P.) annually and when necessary, to sustain compliance with the Emergency Management and Civil Protection Act's legislative requirements. The annual review should include updating the E.R.P. in line with the most recent best practices as set out in Ontario's Incident Management System Guidance document (Version 2.0).

Recommended Action: Consider enhancing the emphasis on emergency preparedness and planning as a strategic priority of the Town and as part of its strategic planning process to prepare the future Council-Staff Work Plan.

Recommended Action: Consider transferring the C.E.M.C. position to a Deputy Fire Chief or another appropriate municipal employee in the short term, and tracking work load and desired emergency planning initiatives with a view to developing a business case for a full-time or part-time emergency management specialist that would include the role of C.E.M.C.

Communications Division

Goal #5: Milton Fire Department will provide a technically enhanced core communications system that continues to meet the need of a growing municipality and to provide support for the requirements in the fire department.

Objective #5A: Improve M.F.D. call answering and call processing times to meet the guidelines of NFPA 1221 and established performance benchmarks, with the ultimate objective of reducing overall total response time.

Recommended Action: Establish Council-approved performance benchmarks for call answering and call processing times and report to Council annually.

Recommended Action: Adopt NPFA 1061 – Standard for Professional Qualifications for Public Safety Telecommunications Personnel, and training, and qualify all staff involved in the call-taking and dispatching of services to Level I and II of the standards.

Recommended Action: Link the C.A.D. system with an automated Fire Station notification system.

Recommended Action: Staff the communications center with two Communications Technicians between the hours of 0800-2000 seven days a week by hiring two additional full-time Communication Technicians.

Recommended Action: As the municipality grows and the increase in demand occurs, M.F.D. should establish a staffing plan to ensure two people are on on-duty 24 hours a day, 7 days a week by hiring two additional full-time Communication Technicians.

Recommended Action: Explore the use of mobile data terminals on front-line apparatus to improve communications and information sharing.

Objective #5B: Review all mission critical infrastructure systems for reliability and currency and develop a 10-year capital replacement program for annual budgeting and for input to the development charge program.

Recommended Action: Complete a detailed analyses on the current C.A.D. and record management system (R.M.S.) to determine the need for upgrade/replacement and to determine the current and future support to be provided by the vendor.

Recommended Action: Develop a 10-year capital replacement plan for current and future mission critical infrastructure systems in communications including the potential need to upgrade or replace systems to conform to the new NG-911 requirements.

Recommended Action: Work with Halton Regional Police and current C.A.D. supplier to determine NG-911 compatibility requirements for the communications centre and develop the funding strategy to finance the mandatory updates.

Objective #5C: Conduct a detailed review of options to further explore the feasibility and opportunities for delivery of emergency fire dispatching and communications, exploring level of service, costing, infrastructure requirements and labour implications.

Recommended Action: Establish a working group of key stakeholders to investigate options for the current communications centre including status quo, shared infrastructure and fee for service contract.

Objective #5D: Develop and implement a quality assurance (Q.A.) and quality improvement program.

Recommended Action: Develop required Standard Operating Policies and Guidelines for the communication centre.

Recommended Action: Develop a supervision reporting structure for the Communications Centre to ensure appropriate direction or supervision 24/7.

Recommended Action: Establish 24/7 service and maintenance plans with the systems suppliers and the Infrastructure Technology department to ensure reliability of the systems.

Recommended Action: Adopt a quality assurance program that will be managed by the Division Chief of Support Services and report monthly to the Deputy Chief of Staff.

Training Division

Goal #6: M.F.D. will maintain a training program that supports all functions of the organization and at the appropriate levels defined in the services provided in the Establishing and Regulating by-law.

Objective #6A: Follow industry best practices regarding training qualifications for all department staff.

Recommended Action: Council adopt the appropriate professional standards, as applicable, to qualify staff in alignment with service levels as defined through an Establishing and Regulating By-law.

Recommended Action: Adopt the appropriate professional standards in alignment with applicable roles and responsibilities, including:

a. NFPA 1035 – Level II - Public Educators/ Fire Prevention Inspectors
b. NFPA 1035 – Level I - Firefighters
c. NFPA 1031 – Level II – Fire Prevention Inspectors.
d. NFPA 1031 – Level I – Firefighters
e. NFPA 1001 – Level II – Firefighters
f. NFPA 1041 – Level II – Training Division Staff/ Shift Training Instructors
g. NFPA 1041 – Level I – Company Officers
h. NFPA 1061 – Level I & II – Communication Technicians (Full-time and Part-time)
i. NFPA 1021 – Level I & II All Company Officers (Full-time, Part-time, Acting)
j. NFPA 1006 – As prescribed based on service delivery – Minimum Level I for all fire suppression staff

Objective #6B: In consultation with Human Resources Division, investigate and implement a Learning Management System, to allow for greater records management and remote/alternative training opportunities.

Recommended Action: Ensure that a records management system is in place to record and file all training and qualifications received by all staff members

Recommended Action: Provide alternative/remote training opportunities as applicable to all staff to ensure that all staff have the ability to train within their capabilities

Recommended Action: Develop a comprehensive training program that identifies a five year plan for qualifications and maintenance training, yearly plans and monthly requirements.

Objective #6C: Ensure that there are appropriate facilities and apparatus available to support the defined training needs.

> **Recommended Action:** Investigate the feasibility of an in-house facility to accomplish all the training and qualification needs prescribed by health and safety and within the scope of the services provided under the Establishing and Regulating By-law. As part of the feasibility study, examine facility rental opportunities and shared training centre with other partners in Halton Region, including other fire services, police and paramedic services.

> **Recommended Action:** Conduct annual live fire training for all fire suppression and command staff through a facility rental from a neighboring municipal fire service following NFPA 1403 – "Standard on Live Five Fire Training Evolutions."

Objective #6D: Staff the training division with a sufficient quantity, relevancy and diversity required to meet the training and development of all fire department staff today and in the future.

> **Recommended Action:** Utilize a mix of full time Training Officers and qualified Shift Training Instructors to deliver the variety of training and development required.

> **Recommended Action:** Hire one additional Training Officer to support the existing needs, planned initiatives and near term growth in suppression staff and applicable changes in service levels.

> **Recommended Action:** Implement a process to monitor the workload and capacity of staff in the Training Division in support of maintaining appropriate levels of resources required to deliver the training program effectively.

Facilities, Apparatus, and Equipment

Goal #7: Milton Fire Department will maintain stations, apparatus, and equipment in the appropriate quantity, in a ready state and reliable condition to meet the needs of the community and the operations of the fire department.

> **Objective #7A:** Maintain Emergency Service fleet and equipment to ensure operational readiness and reliability.

Recommended Action: Implement a fleet management system to track work orders, status of vehicle condition, and keep accurate and consistent records.

Recommended Action: Conduct a fleet analysis to determine the optimal fleet lifecycle based on costs to maintain an apparatus versus depreciation value of vehicle and industry best practices.

Recommended Action: Invest in/adopt an Asset Management Program that will align with the corporate Asset Management Program.

Recommended Action: Formalize and implement a Respiratory Protection Program to address the care, use and maintenance of respiratory equipment.

Recommended Action: Ensure that there are "service ready" vehicles to limit the impacts to incident responses when front line apparatus are taken out of service for training, maintenance or repair.

Objective #7B: Investigate the options to provide maintenance and repair services by enhancing the current process, including expanding the role of the current Fleet Mechanic/E.V.T.

Recommended Action: Obtain priority contracts with various repair vendors to ensure appropriate terms and conditions are outlined, which may include priority status.

Recommended Action: Establish a preventative maintenance program for all fleet and equipment.

Objective #7C: Investigate the opportunities of optimizing the fleet and equipment management program; exploring out-sourcing, shared services, and in-house models.

Recommended Action: Conduct a feasibility study investigating options for the delivery of maintenance and repair to fleet and equipment.

Recommended Action: Conduct workload review in the current system and in any proposed systems to determine the human resources required for maintenance as the fleet grows.

In support of the above listed recommended actions, an implementation plan has been developed that includes a proposed schedule, and estimated operating and capital costs. The full implementation plan is presented in Section 12 of this report. For

reference, those recommended actions that are considered a Council recommendation (i.e., that require direct Council approval related to policy decisions, financial commitments, or due diligence) are presented in **Table 1.**

Table 1: Recommendations for Council Consideration

Objective	Recommended Action	Proposed Schedule	Estimated Capital Budget Impact	Estimated Operating Budget Impact
1C	Implement a dedicated Analyst resource in support of reporting, strategic initiatives, and data-driven decision making	2022	Not Applicable	$125,000
2A	Develop and implement a Council-approved proactive inspection cycle and proactive public education cycle.	Not Applicable	Not Applicable	Not Applicable
2A	Develop a Fire Prevention Policy that defines the purpose and objectives of each of the fire prevention related policies/guidelines including the proactive inspection cycle and proactive public education cycle. Present the policy to Council for approval and inclusion within the Establishing and Regulating By-law as an appendix.	2022	Not Applicable	Not Applicable
2A	Increase the capacity of the Fire Prevention Division by adding one full-time Public Education Officer.	2021/2022	$80,700 (Vehicle & Equipment)	$138,088 (Compensation and Vehicle Costs)

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Objective	Recommended Action	Proposed Schedule	Estimated Capital Budget Impact	Estimated Operating Budget Impact
3A	Establish Council-approved performance benchmarks for emergency response and annually monitor and report to Council and the community including: a. The proposed fire suppression performance objectives for the defined urban area being: i. Initial Arriving Company - Four firefighters arriving on scene within a four minute travel time to 90% of fire suppression incidents. ii. Single-Family Dwelling – Initial Full Alarm Assignment - 16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type iii. Apartment – Initial Full Alarm Assignment - 25 firefighters (26 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type iv. High-Rise – Initial Full Alarm Assignment - 38 firefighters (39 if building is equipped with a fire pump) arriving on scene within a ten minute and ten second travel time to 90% of fire suppression incidents in this occupancy type b. The proposed fire suppression performance objective for the defined rural being: i. Rural Demand Zone – 6 firefighters arriving on scene within a 14 minutes turnout time + travel time to 80% of fire suppression incidents in the defined rural area.	Annually beginning in 2021	Not Applicable	Not Applicable
3B	In consultation with the Human Resources Division, develop a hiring strategy to fully staff the existing fire stations in alignment with industry best practices and proposed performance benchmarks for the existing fire stations including: Phasing in an increase to 80 full-time suppression firefighters (from the existing 56 firefighters) to staff all four existing urban fire stations with a full complement of full-time firefighters (20 each). This requires the addition of 24 firefighters over the next four years.	2022 to 2025	Protective Clothing - $52,200 annually for four years, ($208,800 total)	$3,372,880 (Compensation and Protective Clothing Lifecycle)

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Objective	Recommended Action	Proposed Schedule	Estimated Capital Budget Impact	Estimated Operating Budget Impact
3B	In consultation with the Human Resources Division, develop a hiring strategy to fully staff the existing fire stations in alignment with industry best practices and proposed performance benchmarks for the existing fire stations including: Hiring four Platoon Chiefs to cover the four shifts required to provide 24/7 response coverage. This is in response to recent and forecast municipal and department growth.	2025	$115,500 (Vehicle & Protective Clothing)	$692,568 (Compensation Plus Vehicle and Protective Clothing Costs)
3B	In consultation with the Human Resources Division, develop a hiring strategy to fully staff the existing fire stations in alignment with industry best practices and proposed performance benchmarks for the existing fire stations including: Increasing the total approved complement of part-time firefighters from 65 to 90 including a minimum of 20 part-time firefighters for each of Station 1, 3, and 4, and 30 part-time firefighters for Station 2. This is in support of the initial full alarm assignment needs of the M.F.D., and to help respond to the staffing needs for high risk occupancy incidents (e.g. high rise building, long-term care facilities). This will also enhance the ability of the department to respond in the event of simultaneous calls, and is part of the strategy to support the departments staffing needs as the Town incrementally hires full-time firefighters over the coming years.	2022/2023	Protective Clothing - $217,500	$296,750 (Compensation and Protective Clothing Lifecycle Cost)
3C	Based on monitoring the actual timing of growth and with consideration to updated Community Risk Assessment, develop and implement a hiring strategy to prepare to respond to forecast growth so that the proposed new Station 6 and Station 7 can be fully staffed once they are built, including: Planning for the addition of 20 full-time firefighters to staff each of the proposed Station 6 and 7 (40 additional full-time firefighters total) including any associated apparatus and equipment.	**Station 6:** 2026 **Station 7:** 2029	**Proposed Station #6:** New Class "A" Pump/Rescue and Equipment -- $950,000 Protective Clothing - $174,000 **Proposed Station #7:** New Class "A" 75 FT Quint and Equipment - $1,400,000 Protective Clothing - $174,000	**Proposed Station #6:** $2,923,567 (Compensation, Pump/Rescue Costs and Protective Clothing Lifecycle) **Proposed Station #7:** $2,923,567 (Compensation, Pump/Rescue Costs and Protective Clothing Lifecycle)

Objective	Recommended Action	Proposed Schedule	Estimated Capital Budget Impact	Estimated Operating Budget Impact
3C	Based on monitoring the actual timing of growth and with consideration to updated Community Risk Assessment, develop and implement a hiring strategy to prepare to respond to forecast growth so that the proposed new Station 6 and Station 7 can be fully staffed once they are built, including: Increase total part-time firefighter complement from 90 to 110 by planning for the addition of a minimum of 20 part-time firefighters to staff proposed Station 6 including any associated apparatus and equipment	2025/2026	**Proposed Station #6:** New Class "A" Pump/Rescue -- $950,000 Protective Clothing - $174,000	**Proposed Station #6:** $331,567 (Compensation and Vehicle/Protective Clothing Lifecycle)
3C	Based on monitoring the actual timing of growth and with consideration to updated Community Risk Assessment, develop and implement a hiring strategy to prepare to respond to forecast growth so that the proposed new Station 6 and Station 7 can be fully staffed once they are built, including: Planning for the construction of a sixth station (by 2026 or approximately 175,000 people) and a seventh station (by 2029 or approximately 210,000 people).	Station 6: 2026 Station 7: 2029	**Proposed Station #6:** Land purchase & design/construction - $6,815,000 Equipment – $270,000 **Proposed Station #7:** Land purchase & design/construction - $6,815,000 Equipment – $270,000	**Proposed Station #6:** $267,216 (Operating, Maintenance and lifecycle Costs) **Proposed Station #7:** $267,216 (Operating, Maintenance and lifecycle Costs)
4A	Consider enhancing the emphasis on emergency preparedness and planning as a strategic priority of the Town and as part of its strategic planning process to prepare the future Council-Staff Work Plan.	2024	Not Applicable	Not Applicable
5A	Staff the communications center with two Communications Technicians between the hours of 0800-2000 seven days a week by hiring two additional full-time Communication Technicians.	2022	Not Applicable	$250,000
5A	As the municipality grows and the increase in demand occurs, M.F.D. should establish a staffing plan to ensure two people are on on-duty 24 hours a day, 7 days a week by hiring two additional full-time Communication Technicians.	2025	Not Applicable	$250,000

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Objective	Recommended Action	Proposed Schedule	Estimated Capital Budget Impact	Estimated Operating Budget Impact
5B	Develop a 10-year capital replacement plan for current and future mission critical infrastructure systems in communications including the potential need to upgrade or replace systems to conform to the new NG-911 requirements.	2022	Not Applicable	Not Applicable
6A	Council adopt the appropriate professional standards, as applicable, to qualify staff in alignment with service levels as defined through an Establishing and Regulating By-law.	2022/2023	Not Applicable	Not Applicable
6D	Hire one additional Training Officer to support the existing needs, planned initiatives and near term growth in suppression staff and applicable changes in service levels.	2022	Not Applicable	$125,000

1.0 | Introduction

The preparation of this Fire Master Plan (F.M.P.) was initiated by the Town of Milton (Town) as a component of its strategic community planning and growth development process. Initiating this fire master planning process is also consistent with industry best practices that recommends a review and update of a community's F.M.P. based on a ten-year planning horizon. The Town's last F.M.P. was completed in 2008.

The primary focus of the analyses contained within this F.M.P. is to provide a comprehensive review of the current fire protection services provided by the Milton Fire Department (M.F.D.) in comparison to the Town's legislative requirements as required by the Fire Protection and Prevention Act, 1997 (F.P.P.A.) and Occupational Health and Safety Act, R.S.O. 1990 (O.H.S.A.). This analysis will be informed by comparison to current industry guidelines as authored by the Office of the Fire Marshal and Emergency Management (O.F.M.E.M.), industry standards as authored by the National Fire Protection Association (N.F.P.A.) and our knowledge of current industry best practices.

The analyses within this F.M.P. is also informed by the findings of the Community Risk Assessment (C.R.A.) created as a stand-alone document, but included as a convenience as **Appendix A – Community Risk Assessment** to this F.M.P. In May 2018, the Ministry of the Solicitor General (previously called the Ministry of Community Safety and Correctional Services) adopted **Ontario Regulation 378/18 – Community Risk Assessments** (**O. Reg. 378/18**) under the F.P.P.A., which requires every fire department to complete a C.R.A. The C.R.A. includes nine mandatory profiles that are intended to inform decisions about the provision of fire protection services within a community.

Under the leadership of the O.F.M.E.M. the Province of Ontario has developed what is known as the **"Comprehensive Fire Safety Effectiveness Model"**[2] that includes a fire protection planning strategy known as the **"Three Lines of Defence"**. The analysis within this F.M.P. seeks to optimize the utilization of the three lines of defence components including:

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[2] Office of the Fire Marshal and Emergency Management Public Fire Safety Guideline 01-02-01 Comprehensive Fire Safety Effectiveness Model

I.   **Public Education and Prevention;**

II. **Fire Safety Standards and Enforcement; and**

III. **Emergency Response.**

In our experience, the application of this strategy highlights the importance of recognizing that there are options to developing an effective community fire safety plan. Although emergency response (fire suppression) may be needed, there are other strategies that can be applied as elements of a broader community risk reduction strategy that can have a positive impact on reducing the need for emergency response and optimizing public safety within the community.

The primary objective of this F.M.P. is to present a comprehensive analysis of the Town's fire protection needs and circumstances as defined by the F.P.P.A. to support decision-making with respect to community fire protection services and programs.

| 2.0 | # Related Plans and Reports |

The following sections provide a high level overview of the plans and reports that have been reviewed and considered in developing this F.M.P. These documents include the Town of Milton Official Plan, the 2008 Fire Master Plan, Verdicts of Coroner's Juries and Town of Milton Council-Staff Work Plan 2020-2023.

| 2.1 | ## Town of Milton Council-Staff Work Plan 2020-2023 |

The Town of Milton's Council-Staff Work Plan 2020-2023 recognises that **"Milton is one of the fastest growing communities in Canada**[3] This plan reflects the Town's ongoing commitment to strategic community planning that began in the early 1990's with the creation of Destiny Milton 1. The analysis and methodology applied to this fire master planning process has considered the focus areas included within Council-Staff Work Plan 2020-2023, and where applicable, prioritized the strategic priorities of this F.M.P. including the following specific goals:

- **Focus Area #1: Planning for Growth**
  Goal: We will plan and build our community to accommodate growth while managing new service and infrastructure demands and balancing taxpayer affordability.

- **Focus Area #2: Increasing Revenue Potential**
  Goal: We will achieve sustainable new revenue streams.

- **Focus Area #3: Community Attractiveness and Competitiveness**
  Goal: We will improve Milton's attractiveness for prospective talent and investment.

- **Focus Area #4: Service Innovation**
  Goal: We will deliver services that address increased expectations and service requests and manage the need for new investment.

[3] Town of Milton Council-Staff Work Plan 2020-2023

2.2	**Fire Master Plan 2008**

The 2008 F.M.P. was presented to the Chair and Members of the Community Services Standing Committee on March 17, 2008 through Report FIRE-003-08. The 2008 F.M.P. included 18 recommendations to enable the M.F.D. to meet the fire protection needs of a growing community. The recommendations at that time included a wide range of initiatives including enhancing the use of technology such as the implementation of a computer aided dispatch system (C.A.D.), introducing enhanced fire prevention and public education programs including additional full-time staff resources and adopting performance measurers for the delivery of fire suppression services.

Under the leadership of Council and senior staff there has been significant effort towards implementing the identified recommendations, and specifically initiatives in the following areas:

- Enhanced public education and fire prevention programming;
- Hiring of 25 additional full-time firefighters; and
- Funding the capital investment costs to renew Fire Station 1, relocation and construction of Fire Station 3, construction of Fire Station 4, and the planned construction of Fire Station 5.

The strategies that were identified to enhance the department's public education and fire prevention programs are consistent with optimizing the use of the **"Three Lines of Defence".** The optimization of these programs was supported by recommendations for additional full-time staff resources in this division including a dedicated public education technician and two additional fire prevention inspectors. The 2008 F.M.P. recommended that in the short-term, these additional full-time resources could also be assigned fire suppression duties to further supplement the gap in fire suppression capabilities that was identified in 2008.

At the time of preparing the 2008 F.M.P., the applicable fire suppression performance benchmarks were identified as the N.F.P.A. 1710 Standard for first response (initial responding crew) and the Office of the Fire Marshal and Emergency Management – P.F.S.G. - 04-08-12 Staffing -Single Family Dwellings for the depth of response (total number of firefighters responding). The 2008 F.M.P. recommended that Council adopt these benchmarks as performance measures and specifically that the M.F.D. fire suppression performance be measured against the following:

- The first responding vehicle with a staff of four should arrive within four minutes of travel time, 90% of the time; and
- The arrival of ten firefighters within ten minutes of response time, 90% of the time.

These performance measures were recommended as a strategy that was intended to integrate the identified need for the renewal, relocation and construction of additional fire stations, and the proposed hiring of 60 additional full-time firefighters to enhance the fire suppression capabilities of the M.F.D. in response to continued community growth.

In summary, the 2008 F.M.P. identified a number of gaps in the department's ability to provide the applicable services and programs based on the fire risks within the community at that time, and the projected community growth over the next ten-year planning horizon. Although Council and senior staff have been supportive of the 2008 F.M.P. and its strategic implementation, this fire master planning process will identify where service levels gaps continue to increase faster than they can be addressed.

The analysis within this fire master planning process will also identify changes to industry guidelines, standards and legislation such as the rescinding of P.F.S.G. 04-08-12 Staffing – Single Family Dwellings by the O.F.M.E.M. that are further affecting the capabilities of the M.F.D. to sustain the level of fire protection services relative to industry guidelines and best practices.

2.3   Development Charges Background Study

At the time of writing, the Town of Milton has completed its Development Charges Background Study (March 3, 2021) and is in the process of updating its Development Charges By-law. The Town retained the services of Watson and Associates to prepare the Development Charges Background Study in order to comply with its legislative requirements as outlined in the Development Charges Act, 1997. The Study includes:

- Summary of the residential and non-residential growth forecast for the Town;
- Review of historical services standards and identification of future capital requirements to service the growth;
- Calculation of the development charges;
- DC policy recommendations and rules; and

- Draft Development Charge By-law(s). [4]

The Development Charges Background Study provides growth allocation information which is discussed further in **Section 7.9**. The Study also identifies a new Station 6 and 7; two Pump-Rescues; a 100 ft. aerial and small equipment and gear required in support of this growth.

2.4 Town of Milton Official Plan

The Town's current Official Plan addresses the challenges associated with unprecedented growth in the Town of Milton, while reinforcing the values of the Town. The Town is currently undergoing a review of its Official Plan to plan for and manage growth to 2051. In support of implementing the Official Plan, the Town has several Secondary Plans completed or underway. These plans include:

- Boyne Secondary Plan
- Trafalgar Secondary Plan
- Milton Education Village Secondary Plan
- Agerton Secondary Plan
- Britannia Secondary Plan (under way)

Further discussion on future growth can be found in **Section 7.9** of this Fire Master Plan. Growth has also been planned through the Milton Major Transit Station Area & Mobility Hub Study discussed below.

2.5 Milton Major Transit Station Area & Mobility Hub Study

The purpose of the Milton Major Transit Station Area & Mobility Hub Study (Study) is to guide the transformation of Milton's Mobility Hub into a mixed use destination. It will provide a transportation hub for both local residents and visitors while also remaining pedestrian friendly. Mobility hubs are places of connectivity with significant planned transit service and development potential.

This Study aims to:

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[4] Development Charges Background Study. Let's Talk Milton. Retrieved April 19, 2021 from https://www.letstalkmilton.ca/developmentcharges

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- Establish a long-term vision for the redevelopment of the Milton GO Station and surrounding lands, with an emphasis on improving circulation while prioritizing active transportation;
- Ensure that intensification achieves provincially mandated density targets; and
- Provide direction related to land use and transportation policy, infrastructure investment, community facilities, urban design and public realm improvements, and implementation and phasing tools.

The Study acknowledges that the demand for fire protection services will increase as future development and population increase. This Study proposes the following recommendations related to the Milton Fire Department:

1. Future facilities, personnel, equipment and services will be needed to supplement emergency response in the Study Area. The Fire Department should continuously monitor growth and evaluate their ability to respond;

2. Priorities include increased personnel resources to improve response depth and response timeliness; additional capacity of equipment to support increased vertical response challenges (e.g., equipment carts); and additional staff training to support increased vertical response challenges (e.g., high-rise training);

3. The resulting area should become a focus for enhanced public fire and life safety education;

4. Pedestrian friendly principles should be encouraged as a way to discourage and limit vehicle traffic. For the delivery of effective and efficient fire protection, the timely arrival of fire apparatus, personnel and equipment is critical; and

5. Fire protection systems (e.g., alarms and sprinklers) will be critical for safety. Additional fire inspections and code enforcement to ensure the adequate maintenance of fire protection systems is recommended.

2.6 | **Verdicts of Coroner's Juries (2016 and 2017, 2018)**

Mandated under the Coroners Act, 1990, coroners specialize in death investigation for certain deaths as identified under the Act. In Ontario, the Office of the Chief Coroner has a mandate to: **"…serve the living through high quality death investigations and inquests to ensure that no death will be overlooked, concealed or ignored. The findings are used to generate recommendations to help improve public safety and prevent deaths in similar circumstances"[5].**

As a result of a fatal fire in 2012 in Whitby, and a second fatal fire in the Town of East Gwillimbury in 2013, the Office of the Chief Coroner initiated an inquest to determine the events surrounding all of the fire-related deaths that occurred. It included all of the various aspects related to fire safety, before and during a fire situation, and local emergency services response to a fire. The intent of an inquest such as this is designed to focus public attention on the circumstances of a death through an objective examination of facts. The findings of this inquest in 2016 resulted in 33 recommendations to a range of organizations and stakeholders within Ontario including municipalities.

A second inquest was initiated by the Office of the Chief Coroner in May 2017 into the deaths of Adam Brunt, a 30 year old firefighting student, and Gary Kendall, a 51 year old firefighter, who both died during ice rescue training courses. The separate incidents that claimed the lives of Brunt and Kendall occurred five years apart, however the training instructor was the same in both tragedies. The incidents led to fifteen jury recommendations including that all ice/cold swift water rescue services training be put in abeyance until such time as the recommendations of the jury were addressed. The findings of the inquest highlight the need for stringent training requirements for firefighters to facilitate any type of rescue where water or ice is present. Information provided to fire departments across the Province by the O.F.M.E.M. through Communique 2017-06, dated October 10, 2017, which encouraged municipalities to

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[5] Ministry of the Solicitor General. *Office of the Chief Coroner.* Last modified February 8, 2020. Retrieved March 29, 2021 from
http://www.mcscs.jus.gov.on.ca/english/DeathInvestigations/office_coroner/coroner.html

assess their delivery of these types of specialized rescue services and specifically their respective Establishing and Regulating By-law.

More recently, a third inquest (2018) was initiated by the Office of the Chief Coroner into the deaths of Matthew Robert Humeniuk, Michael Isaac Kritz, Stephanie Joelle Bertrand, Kathryn Missen who died of either natural or accidental deaths following 911 calls.

Our review of these recommendations and their relevance to this fire master planning process highlight the importance of the **"three lines of defence"** identified within this F.M.P. In our view, each of the recommendations is important and relate to enhancing public safety. Recommendations made as a result of the Whitby/East Gwillimbury Inquest are provided for reference as **Appendix B – Verdict of Coroner's Jury** to this report.

3.0 Fire Master Planning Process

The development of this F.M.P. has been informed by **P.F.S.G. 03-02-13 Master Planning Process for Fire Protection Services**. This includes analysis of community fire risk and future community growth. The efficiency and effectiveness of each division within the M.F.D. have been analyzed, along with emergency response and station locations, staffing resources and deployment procedures, fire prevention and public education programs, apparatus and all related requirements, and service agreements. In our view, the guiding principles of P.F.S.G. 03-02-13, including the following, are applicable to this fire master planning process:

- The residents of any community are entitled to the most effective, efficient and safe fire services possible.
- The content of existing collective agreements will be respected and the collective bargaining process will be recognized as the appropriate channel for resolving labour relations issues under collective agreements and the Fire Protection and Prevention Act.
- Collective bargaining issues affecting public safety will be identified.
- Those responsible must work within these parameters in making recommendations for improving municipal fire services.

This F.M.P. has also been informed by **P.F.S.G. 01-01-01 Fire Protection Review Process** that identifies a number of factors to be considered in conducting the fire protection review process including:

- The overall objective of any fire protection program is to provide the optimum level of protection to the community, in keeping with local needs and circumstances.
- Extensive research has demonstrated that there are a variety of factors that will have an impact on the fire department's capacity to fulfill this objective.
- Conversely, there are many different options that a municipality may pursue to improve the efficiency and effectiveness of its fire protection system.
- Local circumstances will have a profound effect on which factors are most important for any one municipality, and what options are available for its fire protection system.
- Selecting among these options is an extremely complex task.

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Success will require a combination of specialized expertise in fire protection, and a thorough appreciation of your municipality's economic, social and political circumstances. **Figure 1** reflects the framework for developing a Fire Master Plan for optimizing public fire safety.
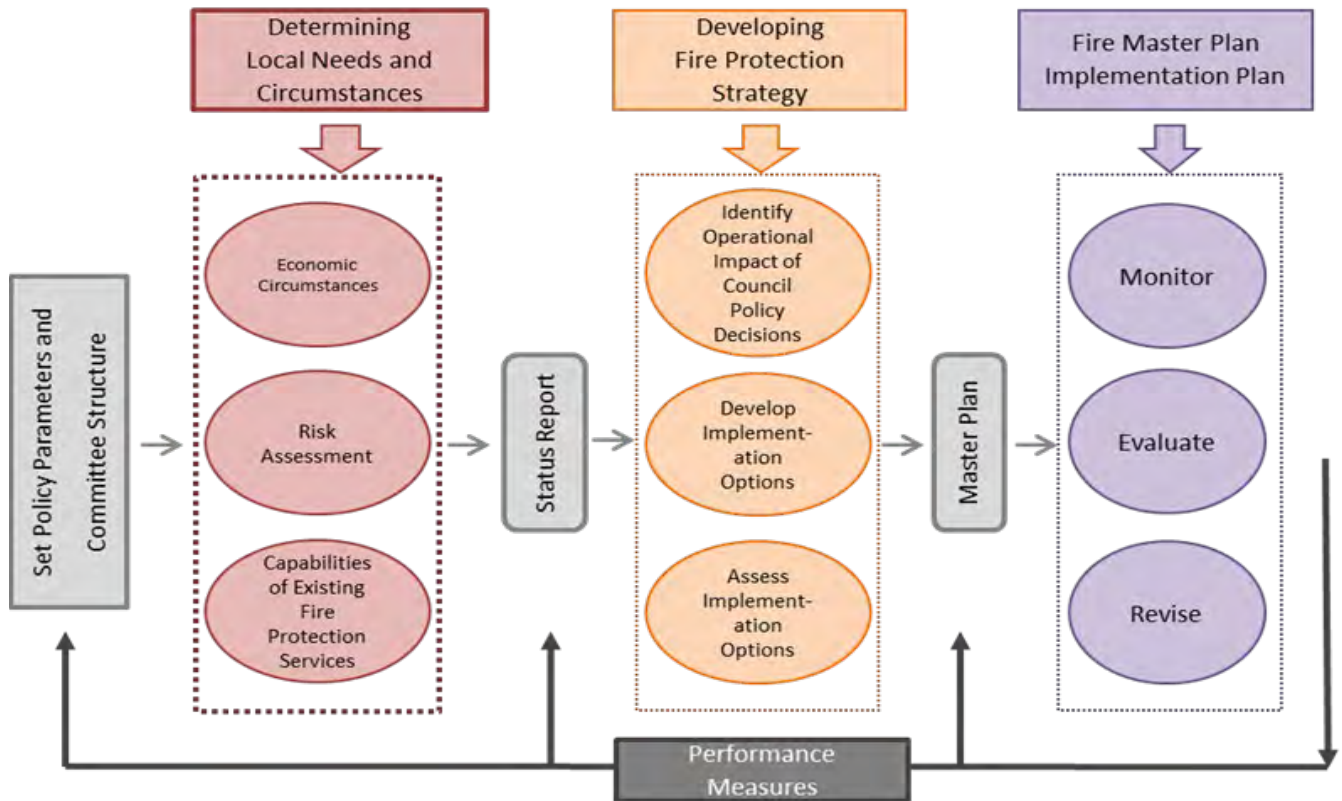
Figure 1: Fire Master Plan Framework

3.1   Applicable Legislation, Guidelines, Standards and Industry Best Practices

In addition to the Community Risk Assessment, the analysis and findings of this fire master planning process have been informed by the applicable legislation including the **Fire Protection and Prevention Act, 1997** (F.P.P.A.) the **Occupational Health and Safety Act, R.S.O. 1990** (O.H.S.A.), guidelines as authored by the **Office of the Fire Marshal and Emergency Management** (O.F.M.E.M.), industry standards as authored by the **National Fire Protection Association** (N.F.P.A.), and Dillon's knowledge of current industry best practices, as garnered from our experience in working with other municipalities across Canada.

3.1.1   **Fire Protection and Prevention Act, 1997**

Within the Province of Ontario, the relevant legislation for the operation of a fire department is contained within the Fire Protection and Prevention Act, 1997 (F.P.P.A.). In addition to promoting fire prevention and public safety, the F.P.P.A. is also the Act under which the **Ontario Fire Code** (O.F.C.) is regulated. While all legislation should be read and understood in its entirety, **Table 2** includes applicable sections of the F.P.P.A. for reference purposes to this fire master planning process.

Table 2: F.P.P.A. Definitions – Part I

Item	Description
Definitions	1.(1) In this Act,
	"fire chief" means a fire chief appointed under section 6 (1), (2) of (4); ("chef des pompiers")
	"fire code" means the fire code established under Part IV; ("code de prevention des incendies")
	"fire department" means a group of firefighters authorized to provide fire protection services by a municipality, group of municipalities or by an agreement made under section 3; ("service d' incendie")
	"Fire Marshal" means the Fire Marshal appointed under subsection 8 (1); ("commissaire des incendies")
	"fire protection services" includes fire suppression, fire prevention, fire safety education, communication, training of persons involved in the provisions of fire protection services, rescue and emergency services and the delivery of all those Services; ("services de protection contre les incendies")
	"municipality" means the local municipality as defined in the Municipal Act, 2001; ("municipalite")
	"prescribed" means prescribed by regulation ("prescript")
	"regulation" means a regulation made under this Act; ("reglement")
	"volunteer firefighter" means a firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance; ("pompier volontaire")

Item	Description
Application of definition of firefighter	(3) The definition of firefighter in subsection (1) does not apply to Part IX. 1997, c. 4, s. 1 (2)
Automatic aid agreements	(4) For the purposes of this Act, an automatic aid agreement means any agreement under which, (a) a municipality agrees to ensure the provision of an initial response to fires and rescues and emergencies that may occur in a part of another municipality where a fire department in the municipality is capable of responding more quickly than any fire department situated in the other municipality; or, (b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and other emergencies that may occur in a part of another municipality where a fire department situated in the municipality is capable of providing the quickest supplemental response to fires, rescues and other emergencies occurring in the part of the other municipality. 1997, c. 4, s. 1 (4)

Table 3: F.P.P.A. Definitions – Part II

Item	Description
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.
Services to be provided	(3) In determining the form and content of the program that it must offer under clause (1)(a) and the other fire protection services that it may offer under clause (1)(b), a municipality may seek the advice of the Fire Marshal.
Automatic aid agreements	(6) A municipality may enter into an automatic aide agreement to provide or receive the initial or supplemental response to fires, rescues and emergencies.

Item	Description
Review of municipal fire services	(7) The Fire Marshal may monitor and review the fire protection services provided by municipalities to ensure that municipalities have met their responsibilities under this section, and if the Fire Marshal is of the opinion that, as a result of a municipality failing to comply with its responsibilities under subsection (1), a serious threat to public safety exists in the municipality, he or she may make recommendations to the council of the municipality with respect to possible measures the municipality may take to remedy or reduce the threat to public safety.
Failure to provide services	(8) If a municipality fails to adhere to the recommendations made by the Fire Marshal under subsection (7) or to take any other measure that in the opinion of the Fire Marshal will remedy or reduce the threat to public safety, the Minister may recommend the Lieutenant Governor in Council that a regulation be made under subsection (9).
Regulation	(9) Upon the recommendation of the Minister, the Lieutenant Governor in council may make regulations establishing standards for fire protection services in municipalities and requiring municipalities to comply with the standards.
Fire departments	(1) A fire department shall provide fire suppression services and may provide other fire protection services in a municipality, group of municipalities or in territory without municipal organization. 1997, c. 4, s. 5 (1).
Same	(2) Subject to subsection (3), the council of a municipality may establish more than one fire department for the municipality. 1997, c. 4, s. 5 (2)
Exception	(3) The council of a municipality may not establish more than one fire department if, for a period of at least 12 months before the day this Act comes into force, fire protection services in the municipality were provided by a fire department composed exclusively of full-time firefighters. 1997, c. 4, s. 5 (3)
Same	(4) The councils of two or more municipalities may establish one or more fire departments for the municipalities. 1997, c. 4, s. 5 (4)
Fire chief, municipalities	6. (1) If a fire department is established for the whole or part of a municipality or for more than one municipality, the council of the municipality or the councils of the municipalities, as the case may be, shall appoint a fire chief for the fire department.

Item	Description
Same	(2) The council of a municipality or the councils of two or more municipalities may appoint a fire chief for two or more fire departments.
Responsibility to council	(3) A fire chief is the person who is ultimately responsible to the council of a municipality that appointed him or her for the delivery of fire protection services.
Powers of a fire chief	(5) The fire chief may exercise all powers assigned to him or her under this Act within the territorial limits of the municipality and within any other area in which the municipality has agreed to provide fire protection services, subject to any conditions specified in the agreement.

Table 4: F.P.P.A. Definitions – Part III

Item	Description
Appointment of Fire Marshal	8 (1) There shall be a Fire Marshal who shall be appointed by the Lieutenant Governor in Council.
Powers of Fire Marshal	9.(1) the Fire Marshal has the power, (a) to monitor, review and advise municipalities respecting the provision of fire protection services and to make recommendations to municipal councils for improving the efficiency and effectiveness of those services; (b) to issue directives to assistants to the Fire Marshal respecting matters relating to this Act and the regulations; (c) to advise and assist ministries and agencies of government respecting fire protection services and related matters; (d) to issue guidelines to municipalities respecting fire protection services and related Matters; (e) to co-operate with anybody or person interested in developing and promoting the principles and practices of fire protections services; (f) to issue long service awards to persons involved in the provision of fire protection services; and, (g) to exercise such other powers as may be assigned under this Act or as may be necessary to perform any duties assigned under this Act.

Item	Description
Duties of Fire Marshal	9.(2) It is the duty of the Fire Marshal, (a) to investigate the cause, origin and circumstances of any fire or of any explosion or condition that in opinion of the Fire Marshal might have caused a fire, explosion, loss of life, or damage to property; (b) to advise municipalities in the interpretation and enforcement of this Act and the regulations; (c) to provide information and advice on fire safety matters and fire protection matters by means of public meetings, newspaper articles, publications, electronic media and exhibitions and otherwise as the Fire Marshal considers available; (d) to develop training programs and evaluation systems for persons involved in the provision of fire protection services and to provide programs to improve practices relating to fire protection services; (e) to maintain and operate a central fire college; (f) to keep a record of every fire reported to the Fire Marshal with the facts, statistics and circumstances that are required under the Act; (g) to develop and maintain statistical records and conduct studies in respect of fire protection services; and, (h) to perform such other duties as may be assigned to the Fire Marshal under this Act.

The F.P.P.A. includes a series of important Ontario Regulations (O. Reg.) that are very applicable to this fire master planning process, including:

- **O. Reg. 213/07** – Ontario Fire Code (O.F.C.);
- **O. Reg. 365/13** - Mandatory assessment of requests and complaints;
- **O. Reg. 364/13** - Mandatory inspections and fire drills in Vulnerable Occupancies; and
- The new **O. Reg. 378/18** – Community Risk Assessments.

3.1.2   **Occupational Health and Safety Act, R.S.O. 1990**

The **Occupational Health and Safety Act, R.S.O. 1990** requires every employer to, "take every precaution reasonable in the circumstances for the protection of the worker"[6]. The O.H.S.A. provides for the appointment of committees, and identifies the **Ontario Fire Services Section 21 Advisory Committee** as the advisory committee to the Minister of Labour with the role and responsibility to issue guidance notes to address firefighter-specific safety issues within Ontario.

Firefighter safety must be a high priority considering all of the activities and services to be provided by a fire department. This must include the provision of department policies and procedures, or Operating Guidelines (O.G.s) or alternatively Operating Procedures (O.P.s) that are consistent with the direction of the O.H.S.A. Section 21 Guidance Notes for the fire service.

3.2   Applicable Industry Standards

3.2.1   **National Fire Protection Association Standards**

The **National Fire Protection Association** (N.F.P.A.) is an international non-profit organization that was established in 1896. The organization's mission is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education. With a membership that includes more than 70,000 individuals from nearly 100 nations, N.F.P.A. is recognized as one of the world's leading advocates of fire prevention and an authoritative source on public fire safety.

N.F.P.A. is responsible for 300 codes and standards that are designed to minimize the risk and effects of fire by establishing criteria for building, processing, design, service, and installation in the United States, as well as many other countries. It has more than 200 technical code and standard development committees that are comprised of over 6,000 volunteer seats. Members vote on proposals and revisions in a process that is accredited by the American National Standards Institute (A.N.S.I.).

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[6] Occupational Health and Safety Act, R.S.O. 1990, c. O.1 Part III s. 25(2)(h)

Over the past decade, the Ontario fire service has been transitioning to the use of N.F.P.A. standards to guide many of the services they provide.

An example of this would be the transition process from the previous Ontario Fire Services Standards to the N.F.P.A. Professional Qualifications (N.F.P.A. Pro-Qual) Standards announced by the O.F.M.E.M. in 2014. Where applicable, this F.M.P. will identify the specific N.F.P.A. standards that have been referenced. **Table 5** lists a sample of standards by division that may be described or referenced throughout this plan.

Table 5: Summary of Applicable N.F.P.A. Standards

Division	Applicable N.F.P.A. Standards
Fire Prevention	• **N.F.P.A. 1730**- Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations (2019 Edition) • **N.F.P.A. 1031** – Standard for Professional Qualifications for Fire Inspector and Plans Examiner (2014 Edition) • **N.F.P.A. 1035** – Standard for Professional Qualifications for Fire and Life Safety Educator, Public Information Officer, and Juvenile Firesetter Intervention Specialist (2015 Edition) • **N.F.P.A. 1033** – Standard for Professional Qualifications for Fire Investigator (2014 Edition)
Training	• **N.F.P.A. 1041** – Standard for Fire Service Instructor Professional Qualifications (2019 Edition) • **N.F.P.A. 1403** - Standard on Live Fire Training Evolutions (2018 Edition)
Fire Suppression	• **N.F.P.A. 1710** - Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (2020 Edition) • **N.F.P.A. 1001** - Standard for Firefighter Professional Qualifications (2019 Edition) • **N.F.P.A. 1021** – Standard for Fire Officer Professional Qualifications (2020 Edition) • **N.F.P.A. 1142** - Standard on Water Supplies for Suburban and Rural Fire Fighting (2017 Edition)

Division	Applicable N.F.P.A. Standards
Communications	• **N.F.P.A. 1221** - Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems (2019 Edition) • **N.F.P.A. 1061** - Professional Qualifications for Public Safety Telecommunications Personnel (2018 Edition)
Mechanical	• **N.F.P.A. 1901** - Standard for Automotive Fire Apparatus (2016 Edition) • **N.F.P.A. 1911** - Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles (2017 Edition) • **N.F.P.A. 1071** - Standard for Emergency Vehicle Technician Professional Qualifications (2020 Edition)

3.2.2   National Institute of Standards and Technology

The **National Institute of Standards and Technology (N.I.S.T.)** was founded in 1901 as a non-regulatory agency within the United States (U.S.) Department of Commerce. N.I.S.T.'s mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life.

In April of 2010, N.I.S.T. released their Technical Note #1661 "**Report on Residential Fireground Field Experiments**" reflecting a collaborative research analysis conducted by leading fire service agencies. The analysis within this report investigated the effects of varying crew sizes, apparatus arrival times and response times on firefighter safety, overall task completion and interior residential tenability using realistic residential fires.

The result of a similar study identified in Technical Note #1797 "**Report on High-Rise Fireground Field Experiments**" was released in April 2013 that assessed the deployment of firefighting resources to fires in high-rise buildings. These studies are both examples of the technical research and analyses that are taken into consideration in order to develop and update the N.F.P.A. standards referenced within this F.M.P.

3.2.3   Commission on Fire Accreditation International

The **Centre for Public Safety Excellence** (C.P.S.E.) serves as the governing body for the two organizations that offer accreditation, education and credentialing: the Commission

on Fire Accreditation International (C.F.A.I.) and the **Commission on Professional Credentialing** (C.P.C.).

The **Commission on Fire Accreditation International** (C.F.A.I.) defines itself through its Mission: "to assist the fire and emergency service agencies throughout the world in achieving excellence through self-assessment and accreditation in order to provide continuous quality improvement and the enhancement of service delivery to their communities."[7]

The objective of the C.F.A.I. program is to define an accreditation system that is a credible, achievable, usable, and realistic model. The ultimate C.F.A.I. goal is to provide an accreditation process to improve the abilities of municipalities to both understand and recognize their respective community fire risks, provide balanced public/private involvement in reducing these risks and improve the overall quality of life for community members using the accreditation model. Of importance to this fire master planning process is the C.F.A.I. strategy that seeks to achieve "continuous improvement" in the delivery of fire protection services.

3.3   Applicable Public Fire Safety Guidelines

The F.P.P.A. also includes defining the roles and responsibilities of the O.F.M.E.M. This includes assigning specific powers to the O.F.M.E.M. that include "To issue guidelines to municipalities respecting fire protection services and related matters"[8]. At this time, the O.F.M.E.M. is conducting a comprehensive review of all P.F.S.G.s. During this review process, the O.F.M.E.M. has informed the fire service that the current P.F.S.G.s may be referred to for reference purposes. Where applicable, this F.M.P. will identify relevant P.F.S.G.s for reference.

3.3.1   Three Lines of Defence

Under the leadership of the O.F.M.E.M., the Province of Ontario has developed what is known as the Comprehensive Fire Safety Effectiveness Model (C.F.S.E.M.) as detailed

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[7] Commission on Fire Accreditation International. Municipal Technical Advisory Service Institute for Public Service. Reviewed October 27, 2020. Retrieved April 19 from https://www.mtas.tennessee.edu/reference/commission-fire-accreditation-international

[8] Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4 Part III s. 9 (d)

through **P.F.S.G. 01-02-01**. This includes a fire protection planning strategy known as the **Three Lines of Defence**. Historically, the fire service has focused on firefighters and fire suppression. The Three Lines of Defence model recognizes that there are steps that can be taken to reduce the risk of a fire including the probability of a fire occurring and the consequence of that fire.

The Three Lines of Defence model includes:

I.   **Public Education and Prevention**;
II. **Fire Safety Standards and Enforcement**; and
III. **Emergency Response**.

These are further defined as:

I.   **Public Education and Prevention:**
     Educating residents of the community on means for them to fulfill their responsibilities for their own fire safety is a proven method of reducing the incidence of fire. Only by educating residents can fires be prevented and can those affected by fires respond properly to save lives, reduce injury and reduce the impact of fires.

II. **Fire Safety Standards and Enforcement:**
     Ensuring that buildings have the required fire protection systems, safety features, including fire safety plans, and that these systems are maintained, so that the severity of fires may be minimized.

III. **Emergency Response:**
     Providing well trained and equipped firefighters directed by capable officers to stop the spread of fires once they occur and to assist in protecting the lives and safety of residents. This is the failsafe for those times when fires occur despite prevention efforts.

The C.F.S.E.M. emphasizes the importance and value of preventing a fire. This is important from both an economic and public safety perspective. At the same time, the C.F.S.E.M. ensures an appropriate level of health and safety for firefighters. The model also recognizes that developing programs and providing resources to implement the first line of defence (a proactive public education and fire prevention program) can be the most effective strategy to reduce and potentially minimize the need for the other lines of defence.

The analysis and recommendations contained within this F.M.P. prioritize the application of the "**Three Lines of Defence**" model for two main reasons. First, the scope of this F.M.P. is not limited to fire suppression in that this plan also considers and provides a review of fire prevention and public education with consideration to optimizing the first two lines of defence.

Second, this plan is informed by a Community Risk Assessment, as required by O. Reg. 378/18 – Community Risk Assessment.

3.4   Strategic Priorities, Goals, Objectives, and Recommended Actions

This F.M.P. is intended to provide Council and senior staff with a strategic planning tool to assist in the decision-making process for providing fire protection services over the next ten-year community planning horizon.

The fire master planning process is intended to provide a strong focus on developing and implementing strategies for providing the most effective and efficient delivery of fire protection services that provide the most value to a community. Through the experience of our clients, we have found that identifying guiding principles, or strategic priorities, to guide the decision-making process is a valuable tool for a municipal Council when considering the recommendations of a Fire Master Plan.

Our analyses in preparing this F.M.P., including assessing compliance with applicable legislation, related reports and plans, current operations of the M.F.D., and knowledge of current industry best practices have been utilized to identify the following strategic priorities for Council's consideration as part of this fire master plan process.

The following strategies priorities are recommended as the strategic framework for the delivery of fire protection services within the Town of Milton:

I.   **The sustained use of a C.R.A. to determine the fire safety risks within the Town of Milton as the basis for developing clear goals and objectives for all fire protection and emergency services provided by M.F.D.;**

II.   **Where applicable, the optimization of the first two lines of defence including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Town; and**

III. **Emphasis on strategies that support the sustainability of fire protection and emergency services that provide the most effective and efficient level of services resulting in the best value for the community.**

At the conclusion of the analysis for each division, an overarching goal is presented followed by supporting objectives and recommended actions.

3.5 Stakeholder Consultation Process

This F.M.P. was directly informed by consultation with senior staff representing the Fire Department and other departments within the Town organizational structure. In our experience this engagement process is essential to both the development and ownership of the F.M.P. as it is considered for implementation. The information provided by senior staff is informative into defining the "**local needs and circumstances**" both internally and externally to the Fire Department.

3.5.1 Town and Fire Department Staff Engagement

The staff engagement process for this F.M.P. included discussions, telephone and email communication and/or one-on-one interviews with the following individuals:

- Chief Administrative Officer;
- Director of Finance and Accounting;
- Director of Planning and Development Services;
- Director of Human Resources;
- Fire Chief/C.E.M.C.;
- Deputy Fire Chief- Operations;
- Deputy Fire Chief- Staff;
- Executive members of the Milton Professional Firefighter's Association; and
- Firefighter Consultation Sessions (Full-time and Part-time).

At the request of the Fire Chief, fire department staff engagement was expanded to include two engagement sessions with the part-time firefighters, which included Dillon presenting the fire master planning process, and an open-discussion providing the opportunity for part-time firefighters to inform this F.M.P. The part-time firefighter consultation sessions took place on March 11 and 12, 2020.

3.5.2 | **Online Public Survey**

The Milton community was engaged in a public survey through the online community engagement platform, Let's Talk Milton. Let's Talk Milton allows participants to review project information at their leisure to comment, ask questions, and contribute to the project. The online survey was available to the public from April 03, 2021 to May 2, 2021. Community feedback garnered through the survey has been utilized to inform several areas of this Fire Master Plan. The survey had 174 participants though it should be noted that responses to all questions were not mandatory. Some high-level results of the public survey included:

- The majority of participants are aware of the range of services provided by the Milton Fire Department;
- 40.4% of participants indicated that the services provided by the Milton Fire Department are not meeting the needs of the Milton community;
- 75.1% of participants have not had to call 9-1-1 or needed emergency response provided by the Milton Fire Department;
- Of the participants who have accessed the services provided by the Milton Fire Department, 25.0% indicated that they were "very satisfied", 13.9% were "not satisfied", 11.1% were "satisfied" and 6.9% were "somewhat satisfied" with the services provided;
- The majority of participants would like to receive public safety information from the Milton Fire Department through school programs, fire department presence at community events, and through social media (Facebook);
- 95.4% of participants have a working smoke alarm on every storey of their residence and outside all sleeping areas;
- 11.5% of participants do not have a home fire escape plan; and
- In total, 48.3% of participants indicated that in the event of an emergency, they are not prepared to take care of themselves or their family for a minimum of 72 hours.

When asked how the services the Milton Fire Department provides could better meet the needs of the community, participants provided the following feedback identifying several areas for improvement:

- Milton Fire Department is understaffed and that is placing the community as well as firefighters at additional risk;

- Participants would like to see more full-time firefighters on the force;
- Relationship with community could be improved; and
- Several participants indicated they would like to see the Milton Fire Department respond to an expanded range of medical calls.

The full results of the public survey can be found in **Appendix C – Online Public Survey Results** to this Plan.

3.6   Community Risk Assessment

This section summarizes key aspects of the C.R.A. and how the risk conclusions of the C.R.A. inform the comprehensive analysis of the existing, and future fire protection needs of the Town of Milton through the development of a Fire Master Plan.

In May 2018, the Ministry of the Solicitor General (previously the Ministry of Community Safety and Correctional Services) adopted **O. Reg. 378/18** under the F.P.P.A. O. Reg. 378/18 came into effect on July 1st 2019 and requires all municipalities in Ontario to develop a C.R.A. 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**"[9]. As required by O. Reg. 378/18, a C.R.A. must include a comprehensive analysis of nine mandatory profiles including:

- Geographic Profile;
- Building Stock Profile;
- Critical Infrastructure Profile;
- Demographic Profile;
- Public Safety and Response Profile;
- Community Services Profile;
- Hazard Profile;
- Economic Profile; and
- Past Loss and Event History Profile.

The Community Risk Assessment conducted for the Town of Milton as part of this fire master planning process includes all nine profiles outlined in O. Reg. 378/18, however it

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[9] Ontario Regulation 378/18: Community Risk Assessments, Mandatory Use, Section 1 (b).

was drafted prior to the availability of Provincial guidance on the development process of a C.R.A. The F.P.P.A. assigns duties to the Office of the Fire Marshal and Emergency Management (O.F.M.E.M.) to **"advise municipalities in the interpretation and enforcement of this Act and the regulations"**[10]. The O.F.M.E.M. has developed Technical Guideline-02-2019 (**T.G.-02-2019**) to assist municipalities and fire departments in the process to develop a C.R.A. and to utilize the completed C.R.A. to inform the municipality's decisions with regard to complying with the F.P.P.A. This F.M.P. recommends that the M.F.D. conduct a review of the C.R.A. annually and when necessary, to sustain compliance with O. Reg. 378/18 and that the annual review include updating the C.R.A. in line with the guidelines set out in T.G.-02-2019.

The Town of Milton C.R.A. is attached as an appendix to this F.M.P. (**Appendix A**) and outlines the methodology and sources of information used to assess community fire risk in the Town of Milton. The risk outcomes of the C.R.A. have been reviewed by the current senior management team of the M.F.D., confirming that the risk outcomes of the community risk assessment process accurately reflect the fire risks of the Town.

3.6.1   Methodology

The process of assessing community fire risk is receiving increased attention within the fire protection industry in North America. The methodology included within a C.R.A. is fundamental to the development of a strategic F.M.P. Assessing community fire risk is an important element of informing the understanding of local needs and circumstances as required by the F.P.P.A., which can then be aligned to the service levels established by the municipality. The results of a C.R.A. directly inform the recommendations within this F.M.P., and are used to identify existing service gaps across divisions, with particular connections to fire prevention and public education, training and emergency response (e.g. suppression).

The methodology to develop the C.R.A. can be broken down into three broad stages that begin with data collection (Stage 1). This is followed by Stage 2 which includes analyses within the context of the nine mandatory profiles included within **O. Reg. 378/18.** The analyses results and conclusions are then identified as either a **"key risk"** or a **"key finding"**. Within the context of this C.R.A., a **"key risk"** is an analysis outcome for

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[10] Fire Protection and Prevention Act, 1997, Part III Fire Marshal, Section 9.2(b).

which there is sufficient and appropriate information to inform an assessment of fire risk based on probability and consequence. The analyses and information available provides the opportunity to quantify the fire risk through a risk assignment process that concludes there is an existing fire related risk to the community. This is referred to as a risk assignment process where a risk level of high, moderate, or low is assigned. In simple terms, risk is defined as:

Risk = Probability x Consequence

Similar to a key risk, a **"key finding"** is a risk related conclusion of the analysis that will inform service levels and other strategies. However, it is not put through the risk assignment process, in part because there is insufficient quantitative data to do so. For example, a number of **"key findings"** included within the C.R.A. are those identified through mapping analysis which more meaningfully illustrate a spatial priority area.

The third and final stage of the C.R.A. brings all of the risk assessment outcomes together and frames how they can be used through three layers to inform this F.M.P.

| 3.6.1.1 | **Key Risks** |

Of the risk analysis outcomes presented throughout the C.R.A., some have been labelled as a **"key risk"**. Within the C.R.A., these risks have risk levels assigned. This informs the F.M.P. in two ways: first, it will help guide the prioritization of the fire risk analysis outcomes when it comes to the development of and implementation of the F.M.P. and second, it informs the risk model developed for assessing emergency response capabilities. The findings of this layer are presented within this F.M.P. in the table format displayed below:

C.R.A. Key Risks Analysis Outcomes	CRA Identified Risk Level
Identified Key Risk	Low/Moderate/High

| 3.6.1.2 | **Risk Categorization** |

When it comes to aligning service levels with risks that define local needs and circumstances, it is important to recognize that not all risk analysis outcomes align with the services provided by a fire department in the same way. For this reason, within the C.R.A., the risk outcomes – **"key risks"** and **"key findings"** - are categorized based on

how they can be used to inform the activities, strategies, and services provided by the M.F.D. This categorization is then directly used within this F.M.P. The categories used for this process are based on the three lines of defence: Public Fire Safety Education; Fire Safety Standards and Enforcement, and Emergency Response and presented in similar table format:

C.R.A. Key Risks/Key Findings Analysis Outcomes	Line of Defence for Consideration
Identified Key Risk or Key Finding	1st, 2nd, or 3rd Line of Defence

4.0	# Municipal and Milton Fire Department Overview

Milton is one of the fastest-growing communities in Canada. The population percentage change from 2011 to 2016 was 30.5%. Located in Halton Region, it is known for its rich natural heritage, vibrant cultural diversity, unique urban and rural character, and lifestyles. It is home to 110,128 residents (per the 2016 Census) [11] with a mid-2021 forecast population of 137,600 (per the 2021 Development Charges Study). The Town's population is forecast to grow to 219,900 by the year 2031. Milton is a place of possibility, welcoming new residents, businesses and visitors on a daily basis. People choose Milton because of its beautiful natural setting, rural hamlets, proximity to a broad employment market, safe and attractive neighbourhoods, excellent services and recreation facilities and strong civic pride. Milton has a diverse labour force comprised of manufacturing, retail trade, wholesale trade, social assistance and healthcare encompassing a large geographical area. Milton is committed to managing its continuous growth and is taking the necessary steps to guide its development and ensure the needs and circumstances of the Town's future are met.

The M.F.D. is recognized as a composite fire department. The total complement of human resources within the department includes 74 full-time staff (career) and 58 part-time staff including those assigned to administrative and communication (fire dispatch) roles as well as firefighters (see **Table 6**, **Section 5.3 – Existing Department Organizational Structure).**

The M.F.D. is organized into divisions that include administration, emergency operations, support services, training, fire prevention and public education. Fire protection services are currently provided from five fire stations that are strategically located within the Town that includes a geographical area of approximately 373 square kilometres. A fifth station was approved for construction in partnership with the Region of Halton Paramedic Services as a joint operating facility housing both fire and ambulance services and opened in January 2021.

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[11] Statistics Canada, 2016 Census

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5.0 | Administration Division

The Fire Chief is ultimately responsible for the administration and overall operation of the M.F.D. The Fire Chief reports directly to the Chief Administrative Officer (C.A.O.) and ultimately to Council. The Fire Chief is supported by the Deputy Fire Chief-Operations and the Deputy Fire Chief–Staff. The Coordinator of Administration reports directly to the Fire Chief and has responsibility for overseeing the daily administrative functions of the department.

The core functions of this Division include:

- Processing and analyzing department statistics;
- Data entry and analysis of emergency response calls;
- Reporting data to the Office of the Fire Marshal;
- Managing department Records Management Systems;
- Provision of customer service;
- Assistance with applications for burn permits;
- Provision of fire reports, maintaining Standard Operating Procedure and Guideline Manuals; and
- Oversight of all department accounts receivable and payables.

This section of the F.M.P. describes the roles and responsibilities of the current staff resources available within the Administration Division to achieve these core functions. This section also presents the current department organizational structure, vision and mission, by-laws and agreements, policies and guidelines, records management, performance measures and proposed strategic priorities.

5.1 | Establishing and Regulating By-Law No. 026-2018

An Establishing, Maintaining, and Operating By-law, (commonly referred to as an "Establishing and Regulating By-law"), should provide clear and accurate policy direction as to how a municipal council intends its fire protection services to operate. The O.F.M.E.M. provides a description of the primary issues to be addressed, as well as a template for developing such a by-law within **P.F.S.G. 01-03-12 Sample Establishing and Regulating By-law**. The key features of such a by-law as identified by the O.F.M.E.M. include:

- General functions and services to be provided;
- The goals and objectives of the department;
- General responsibilities of department members;
- Method of appointment to the department;
- Method of regulating the conduct of members;
- Procedures for termination from the department;
- Authority to proceed beyond established response areas; and
- Authority to effect necessary department operation.

The current Establishing and Regulating By-law for the M.F.D. was approved by Council on March 19, 2018. Consultation with senior department staff indicates that this recent update of By-Law No. 026-2018 focused on providing more clarity to "Appendix B" and specifically the core services identified for "Specialized Emergency Responses".

It is not uncommon for changes to occur within the organization and operation of a fire department that incrementally shift away from the foundation of an Establishing and Regulating By-law. Implementing a regular process to review any organizational change impacting roles and responsibilities, or revisions to operating procedures that impact fire protection service levels should consider the potential impact on the Establishing and Regulating By-law. These decisions need to consider whether the by-law provides the authority for the change.

5.2   Department Mandate, Vision and Primary Goals

Whether in the context of a municipal corporation, a business, a not-for-profit organization, or a fire department, vision and mission statements are tools that can provide strategic direction and unified goals that can be shared with all stakeholders. A successful vision statement should identify a vision for the future, while a mission statement identifies the goals and objectives of an organization, its stakeholders, and the services provided.

The current Establishing and Regulating By-law No. 026-2018 includes the following mandate, vision and goals for the M.F.D.

5.2.1	**Mandate**

The mandate of the M.F.D. is to provide fire protection services and emergency response, public fire and life safety education and fire prevention initiatives to protect the lives and property of the citizens, businesses and visitors to the Town of Milton.

5.2.2	**Vision**

The vision of the M.F.D. is to be well planned, well trained and a well-equipped emergency response agency where the safety and well-being of all involved in any emergency response is paramount.

5.2.3	**Primary Goals**

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

5.3 Existing Department Organizational Structure

The Establishing and Regulating By-Law No.026-2018 provides the authority for the fire department to be organized into divisions and provides examples of what these may include. The current organizational structure of the department identifies the assignment of staff resources presented in **Table 6** and illustrated in **Figure 2**.

Table 6: Existing Department Staff Resources

Division	Role	# Full-time staff resources	# Full-time (M.P.F.F.A.)	# Part-time Resources
Administration Division	Fire Chief	1	0	0
Administration Division	Deputy Fire Chief	2	0	0
Administration Division	Coordinator, Fire Administration	1	0	0
Administration Division	Administration Support Clerk	1	0	0
Support Services Division	Division Chief of Support Services	0	1	0
Support Services Division	Support Services Technician	0	1	0
Support Services Division	Communication Technician	0	4	4
Support Services Division	Fleet Mechanic/Emergency Vehicle Technician	0	1	0
Fire Prevention Division	Division Chief of Fire Prevention	0	1	0

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Division	Role	# Full-time staff resources	# Full-time (M.P.F.F.A.)	# Part-time Resources
Fire Prevention Division	Fire Prevention Inspector	0	2	0
Training Division	Division Chief of Training	0	1	0
Training Division	Captain - Training	0	1	0
Training Division	Training Technician	0	1	0
Emergency Operations	District Chief	0	0	3
Emergency Operations	Captain	0	12	4
Emergency Operations	Firefighters Qualified as Acting Captain	0	12	0
Emergency Operations	Lieutenants	0	0	3
Emergency Operations	Firefighters	0	32	44
Not Applicable	Total	5	69	58

Figure 2: Existing Department Organizational Structure
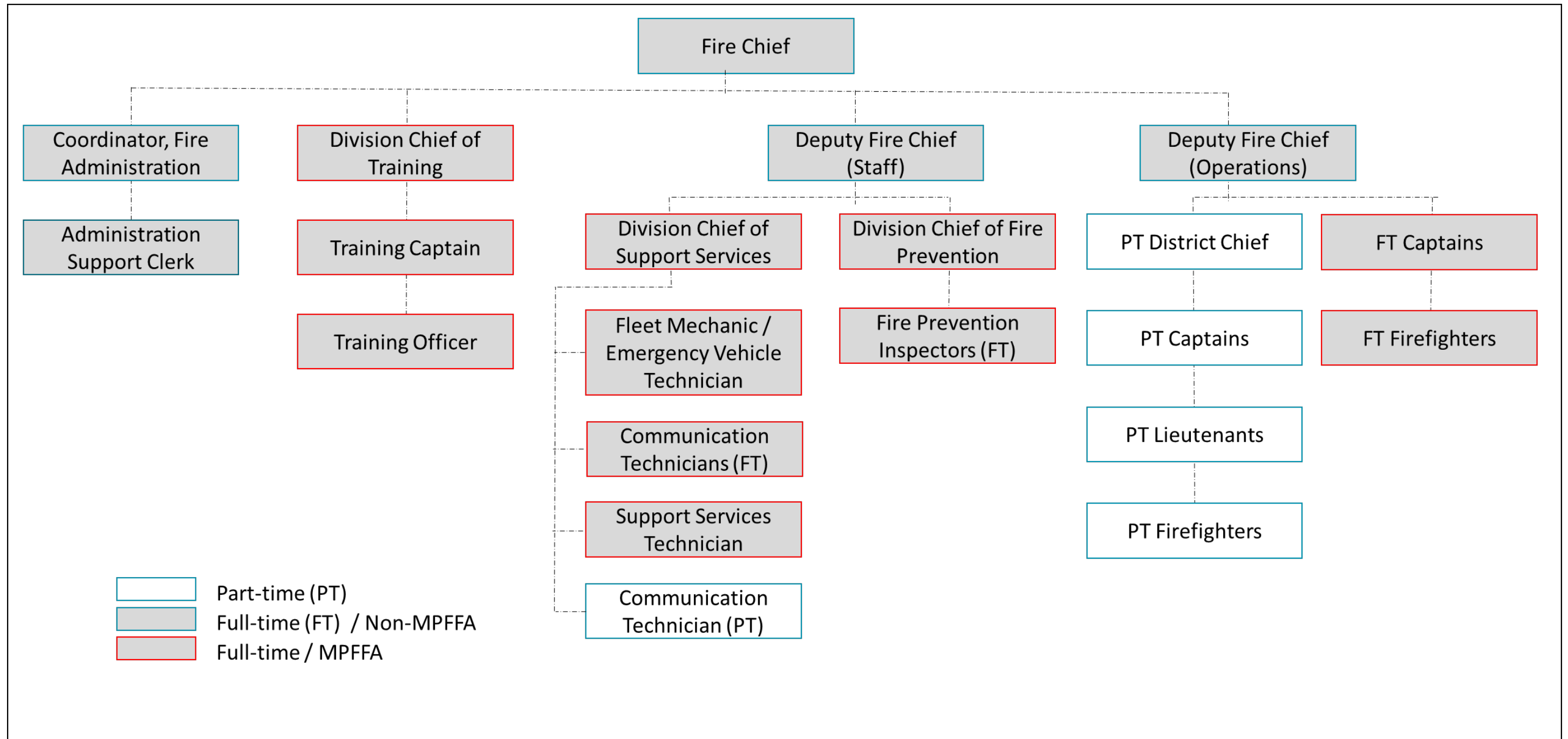
| 5.4 | **Existing Administration Division Staff Resources** |

The full-time staff currently assigned to the Administration Division include the Fire Chief, Deputy Fire Chief-Operations, Deputy Fire Chief–Staff, Coordinator Fire Administration, one full-time Administration Support Clerk, and a vacant contract position for a part-time Administration Support Clerk. These positions are not affiliated with the Milton Professional Firefighters Association (M.P.F.F.A.).

| 5.4.1 | **Fire Chief** |

The Fire Chief is appointed by Council through By-law No. 068-2020 passed on August 24, 2020. Having appointment by-laws are consistent with the provisions of the F.P.P.A. in order for a council to designate the individuals assigned to these positions and to provide them with the authority to fulfill their roles and responsibilities as designated by the F.P.P.A. The authority of the Fire Chief is clearly defined within the Fire Department Establishing and Regulating By-law (By-law No. 026-2018). In addition, the Fire Chief has been delegated the authority to present a by-law to Council for approval to designate the Town's Deputy Fire Chiefs and the Town's C.E.M.C. The key responsibilities and authority of the Fire Chief as summarized by the most recently dated job description (July 2017) include:

- Directs and manages the development of a composite force which includes; contract interpretation and union negotiations, property negotiations, strategic station and resource allocation, emergency planning, training and professional development and health & safety based on the type and level of service acceptable to Council;

- Overall administration of Fire Department operations and functions, including but not limited to, fire prevention and public education services, fire suppression, investigation and inspections, search and rescue, auto extrication, hazardous materials response, and agreements to other local emergency services;

- Overall administration function including the management of human resources, financial (capital and operations) including life cycle management of assets, communication/media relations and public affairs, and information technological support;

- Executes strategy, develops and implements new programs, procedures, services and policies that address emerging needs, expectations, and operational priorities;

- Conducts long and short term financial management, planning and reporting, established, administers and monitors financial management and prepares annual budgets in conjunction with other Departments within the Town;
- Presents reports and information/recommendations pertaining to the operation of the Fire Department and emergency Management at Strategic Management, Committee and Council meetings;
- Responds to inquiries pertaining to the activities of the Fire Department from the general public, internal departments, other levels of government, businesses and elected officials;
- Responsible for the continuous development and improvement of all departmental services to N.F.P.A. standards;
- Compiles with and assumes appropriate supervisory responsibility for all health and safety practices of the Fire Department in accordance with standards operating guidelines and the Occupational Health and Safety Act; and
- Acts as the C.E.M.C., ensures that the Fire Department and municipal emergency compliance with emergency management legislation for emergency response and ensures incident command and/or incident management system is implemented at major emergency scenes.

Both of the Deputy Fire Chiefs are authorized by the Fire Department Establishing and Regulating By-law (By-law No. 026-2018) to act on behalf of the Fire Chief in case of absence or vacancy. The M.F.D. has instituted a rotational Chief Officer on call system in January 2021, which has been identified on an operational log that gets circulated daily so that a Chief Officer is available to the administrative or operational needs of the department.

5.4.2 Deputy Fire Chief-Staff

The Deputy Fire Chief – Staff is appointed by Council through By-law No. 069-2020. This position reports directly to the Fire Chief and has primary responsibility for overseeing the Fire Prevention Division and the Support Services Division which includes communications, support services, and fleet/mechanical. Although there are two Deputy Fire Chiefs within the department there is currently only one common job description for both positions. The most recent job description for Deputy Fire Chief is dated July, 2017 and highlights the following key responsibilities:

- Manages fire department personnel through leadership, evaluation, monitoring, communications, and planning so that staff function safely, efficiently and effectively while maintaining effective labour relations;

- Supervises and coordinates the activities of the Fire Prevention, Support Services, Training and Emergency Operations divisions in the delivery of efficient and effective programs identifying process improvement needs;

- Assists in the strategic planning and goal setting for departmental long range operational needs with respect to equipment, programs and personnel while assisting in the review, development and implementation of policies and procedures and/or operational guidelines;

- Assists the Fire Chief with the capital and operating budgets by identifying and recommending priorities for requirements and monitoring such budgets while attending Committee and Council meetings participating on various related committees with other Town Departments and outside agencies;

- Conforms with and assumes appropriate supervisory responsibility for development and implementation of policies and procedures and/or operational guidelines for the department ensuring compliance with N.F.P.A. standards and the Occupational Health and Safety Act;

- Attend major occurrences; takes discretionary assumption of command at fire scenes and other emergencies;

- Acts as the Town's Alternate C.E.M.C.; helps ensure that the municipal emergency plans are developed, coordinated and maintained to ensure compliance with emergency management legislation.

5.4.3   Deputy Fire Chief-Operations

The Deputy Fire Chief – Operations is appointed by Council through By-law No. 10-96. This position reports directly to the Fire Chief and has the primary responsibility of overseeing the full-time and part-time staff assigned to the Operations Division. The most recent job description for Deputy Fire Chief dated July, 2017 as presented in the preceding section is also applicable to this position.

5.4.4   Coordinator Fire Administration

The Coordinator Fire Administration reports directly to the Fire Chief and is responsible for overseeing the administrative support for the department and providing any

administrative and technical support to the Fire Chief including all confidential matters. The job description for this position was last updated in August 2017 and provides clear definition of the primary duties this individual is responsible for. Examples of the primary functions of this position include:

- Provides administrative and technical support to the Fire Chief;
- Record Management Systems Administrator;
- Emergency Response – Statistical Information; and
- Supervise Administrative Staff and leadership.

5.4.5 | Administration Support Clerk

The department currently has one full-time Administration Support Clerk. This role provides administrative and clerical support to the various Divisions within the department, respond to general public inquiries, including reception, and serve as the customer service representatives for the fire department. The most recent job description, dated July 2017, states that the Administrative Support Clerk is to:

- Provide secretarial and administrative assistance for the department;
- Data Entry of Records and financial/accounting;
- Provides customer service support; and
- Maintains division's files and records, indexing, filing, retrieving and archiving files for storage in accordance with Corporate Records Management System and protocols.

When assessing the overall workload within a business environment or a fire department it is very important to ensure the required skills and competencies match the need. For example, as a composite fire department the M.F.D. has a total staffing of 132 full-time and part-time personnel, each of whom require scheduling, payroll and training records. In addition to this resource, there is a vacant contract position for a part-time Administration Support Clerk. This position has not been re-filled due to the workload impacts of the COVID-19 pandemic whereby there is reduced demand for customer service needs.

Our review indicates that although the one full-time administrative support resources provides administrative capacity, there is cause to continue to track the workload of these positions to inform the need for additional administrative support to keep pace

with the growing needs of the department and the growth of the community. The increasing need for administrative support is a common theme within the fire service. In our experience, this need is being driven by the increasing demands for records management and reporting and additional administrative support services will be required as the department grows to meet the needs of the community.

5.5 | Job Descriptions

The analysis within this F.M.P. presents a summary of the current job descriptions for most positions within the department. The analysis also presents information related to the evolution of training standards and qualifications for fire department personnel that includes the Province of Ontario adopting the National Fire Protection Association Pro-Qual Standards to replace the previous Ontario Fire Services Standards. As such, it is recommended that for all positions identified within the N.F.P.A. Pro-Qual Standards that the current job descriptions be revised to include the applicable training qualifications for each position.

As the department continues to grow and transition into a larger, more urban oriented department and implement the recommended action of this F.M.P., M.F.D. may want to give consideration to the allocation of portfolios and applicable roles and responsibilities of the management team. In relation, it is recommended that the M.F.D. implement a regular review cycle for all job descriptions in order to have up-to-date job descriptions that reflect the services provided by the department, roles and responsibilities, and required training and qualifications consistent with industry best practices.

5.6 | Administrative Workspace

The majority of the Administration Division is located at Station #3 at 610 Savoline Boulevard (Headquarters). The workspace includes a number of offices, including those of the Fire Chief, Deputy Chief- Staff, Coordinator Fire Administration and Administrative Support Clerk.

The Fire Prevention Division is also located at Station #3. The Division Chief of Fire Prevention has an individual office and the two Fire Prevention Inspectors share an office at this location.

The Support Services Division is also located at Station #3. The Division Chief of Support Services has an office and an office is also provided for the Support Services Technician.

There is an open space in the front public area of the facility. A counter for public inquiries separates the public area from an open common workspace. The workspace is equipped with controlled access entry and is divided by cubicles for three individuals. This workspace is unassigned, although one workstation is established for an IT support person. The facility is A.O.D.A. compliant.

The Deputy Chief - Operations and the Training Division (including the Division Chief of Training) work out of Station #1 located at 405 Steeles Avenue. In our experience, it is not common for the management team of a fire department to be operating out of different facilities.

Based on our review of the current administrative workspace of the M.F.D. reflects that of a modern and well equipped facility, meeting the current needs of the Administration Division and the M.F.D. However, as discussed throughout this report, the department is growing and evolving which results in an increase need in day-to-day management as well as increased strategic oversight. The ability of the management team to collaborate in implementing this change may be bolstered by working out of the same facility.

5.7   Municipal By-laws

The Municipal Act, R.S.O. 1990 requires a municipality to enact a number of by-laws to operate a municipality and specifically their fire services. In addition to meeting this legislative responsibility, by-laws provide the community with important information regarding the level of service that a municipality intends to provide. By-laws such as the Establishing and Regulating referenced in **Section 5.1** of this F.M.P. provide municipal staff with the authorization to provide these services, as well as the responsibility to achieve the prescribed service level. Other municipal by-laws common to a municipal fire service include appointment by-laws, and fees for service by-laws, as discussed below. For reference to the Appointment By-law for the Fire Chief and the Deputy Fire Chiefs, see **Sections 5.4.1 – Fire Chief, 5.4.2 – Deputy Fire Chief - Staff** and **5.4.3 – Deputy Fire Chief – Operations**

Implementing a regular process to review any organizational change impacting roles and responsibilities, or revisions to operating procedures that impact fire protection service levels should consider the potential impact on all by-laws related to the fire protections services provided by the Milton Fire Department. As such, this fire master plan recommends that the Fire Chief implement a regular process for the review of all

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applicable fire protection services by-laws. This should include striving towards consistency in their application and interpretation in all areas of the department.

| 5.7.1 | **Delegation of Authority By-law No. 123-2017 - Fire Chief** |

Passed on December 11, 2017, By-Law No. 123-2017 delegates various authorities to the Fire Chief. Within the By-Law the Fire Chief has been appointed with the authority to present a by-law to Council for approval, without the requirement of a staff report, to designate the Town's Deputy Fire Chief(s) and to designate the Town's C.E.M.C.

| 5.7.2 | **Rates and Fees By-Law No.072-2020** |

The rates and fees by-law became effective September 21st, 2020. This by-law enables the Town to recover costs for the provision of fire prevention, inspection, and enforcement, including building, planning and other services. By-law No. 072-2020 Schedule I identifies the services provided by the M.F.D. for which fees are charged. Recoverable rates and fees used by the fire department include but are not limited to the following key areas:

- Response to Ministry of Transportation (M.T.O.) Incidents;
- Response to incidents categorized as "other";
- Attendance at special events;
- Review and approval of Risk and Safety Management Plans; and,
- Permit issuance, installation, application fees and signage.

Our review indicates that the current rates and fees by-law does not identify fees for the review of Fire Safety Plans or for the provision of fire extinguisher training. The review of Fire Safety Plans can be a time consuming task that in our experience, other municipalities charge for this work. The same is true of fire extinguisher training. Local businesses and industry partners are often willing to pay for the fire department for this training.

Our review also identified that fire inspections are charged out at an hourly rate of $128.32 (effective January 2020), exclusive of H.S.T. The current practice does not identify whether the hourly rate applies to all requests, complaints, annual and licencing fire safety inspections and whether the hourly rate is limited for prevention staff time spent performing the actual inspection and/or if it also includes time spent preparing documentation. In our experience, many municipalities set a flat rate for inspections

which may include one follow up inspection, with subsequent follow up inspections being invoiced in addition to the initial fee.

There is a range of options for what and how to charge for fire inspections services. It is recommended that the M.F.D. undertake a review of the type and number of inspections done annually for the past few years and to consider the method for recovering fire inspection services. Charges can be set by type and size of occupancy, type of construction (e.g. new or retrofit), type of inspection and generally should reflect the level of effort required for the inspection. If an hourly rate approach is confirmed, to provide additional clarity for what the hourly rate is applies to for greater transparency.

5.7.3   **Burning Regulation By-Law No. 048-2011**

By-law No. 048-2011 is dated May 30, 2011 and reflects a by-law to prescribe times for setting fires and precautions to be observed to prevent the spread of fires. It details the requirements for open air burning, application process for an open air permit and identifies those exempt from the provisions of the By-law.

Division B, Article 2.4.4.4. of the O.F.C. prohibits open air burning unless it is approved (by the Chief Fire Official) or the burning consists of a small, confined fire that is supervised at all times and used to cook food on a grill or barbecue. In our view, the By-law reflects the current industry practices.

By Law 048-2011 requires residents to obtain a permit prior to starting any outdoor fire. The cost to obtain a permit is $51.00, which is valid from January-December in the year in which the permit is issued. Permits can be conveniently purchased on-line or by visiting M.F.D. Headquarters during regular business hours (currently closed due to COVID-19 restrictions). The M.F.D. has created a public awareness video on the topic of open air burning safety, providing residents with safety tips as well as requirements for outdoor, brush and agricultural burning within the community. Information relating to open air burning is easily accessed on the Town's website.

5.7.4   **Fireworks By-law No. 037-2009**

This by-law was passed March 30th, 2009 and is known as By-law No. 037-2009. The by-law sets out to prohibit and regulate the sale, storage, display and discharge of fireworks in keeping with industry best practices.

5.7.5 | **Fire Routes By-law No. 48-82**

This by-law was passed August 16th, 1982 and has since been amended. It sets out certain private roadways as designated fire routes and parking violations with respect to fire routes and fire hydrants. Our review indicates the Fire Route By-law is in keeping with industry best practices.

5.7.6 | **House Numbering By-law No. 026-2010**

This by-law was passed March 29th, 2010 and is known as By-law No. 026 – 2010. It sets out to provide for the numbering of lots and buildings within the Town and provides the Chief Fire Official with authority to recommend a change in a municipal address number if he or she believes the level of service would be improved.

5.8 | Development Charges By-law No. 053-2016 and No. 100-2016

By-laws No. 053-2016 and No. 100-2016 outline the Town's Development Charges. The current development charge by-laws were passed in June and December 2016, and will expire June 28, 2021. The Town of Milton collects and administers development charges in compliance with the Development Charges Act (D.C.A.), 1997, as amended. The D.C.A. enables the Town of Milton to impose fees on development and re-development to cover the increased cost of providing physical and social services due to population growth.

Under the D.C.A., fire protection services are one of the non-discounted municipal services. This means that municipalities can fully recover the cost of growth related increases in services (as opposed to funding through municipal revenue streams). This F.M.P. includes analysis of the future fire station, apparatus and equipment needs of the M.F.D. related to projected future community growth.

5.9 | Agreements

There are multiple approaches that municipalities can take within the fire service to share or procure services. These approaches include mutual aid, automatic aid, tiered response, and dispatch agreements. Municipalities with full-time firefighters also enter into Collective Agreements with the respective firefighters association. This section outlines the fire-related agreements in place for the Town of Milton.

| 5.9.1 | **Fire Protection Agreements** |

While similar in spirit to mutual aid agreement, fire protection agreements (or automatic aid agreements) have two fundamental differences: 1) fire suppression services under a fire protection agreement are dispatched automatically (under a mutual aid agreement, such services must be requested); and 2) one party may agree to compensate the other for services received from the other. Fire protection agreements are designed to provide/receive constant, seamless assistance from the closest available resource, without consideration of municipal boundaries.

Fire protection agreements provide an advantage to the general public in terms of enhancing the level of public safety. By supplying seamless service through the elimination of artificial service boundaries related to municipal boundaries. In the case of an emergency, the person experiencing the emergency receives fire services from the closest available provider. There are additional benefits to fire protection agreements which include:

- Reduction of the critical element of time elapsed between the commencement of a fire and the application of an extinguishing agent to the fire by dispatching the closest available assistance;
- Reduction of life, property and environmental losses; and
- Improvement of public and firefighter safety by providing more resources in a timely manner.

The Town of Milton has entered into fire protection agreements with the City of Mississauga, the Town of Halton Hills, the Town of Oakville, and the City of Burlington. The details of those agreements are outlined in **Table 7**. Delegation of Fire Protection Agreements for the Town of Milton are provided for through By-Law No. 033-2014.

Table 7: Fire Protection Services Agreements

Municipality	Agreement Description
Fire Protection Services Agreement- City of Mississauga	The fire protection services agreement between the Corporation of the Town of Milton and the Corporation of the City of Mississauga is dated July 4, 2017. The agreement outlines the terms and conditions under which the City of Mississauga provides fire protection services to Milton. Under the agreement, "fire protection services" includes fire suppression, rescue and emergency response services." The agreement will renew after its first five year term for one further five year term unless either party provides written notice six months prior to expiration of its intention not to renew. Requests for assistance are to be made through Mississauga's Joint Fire Communication Centre.
Fire Protection Services Agreement- Town of 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. The agreement continues to renew year after year, unless either party provides 120 days written notice of its intention to terminate the agreement. The rates and fees set out in the agreement may be reviewed annually with any changes be included in an amending agreement.
Municipal Fire Protection Agreement- Town of 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. Under the agreement, the Town of Milton has agreed to pay the Town of Oakville at the rate of $450.00 per hour for pumper/ladder and rescue apparatus and crew, $300.00 per hour for water supply apparatus and crew, $200.00 for support vehicles and crew and $150.00 per hour for command vehicles and command officer. This rate structure is referenced as being provincially recognized, however are not reflective of current Ministry of Transportation rates for emergency response vehicle recovery.

Municipality	Agreement Description
Automatic Aid Agreement- City of 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.

Consultation with the M.F.D. highlighted several other agreements with neighbouring municipalities that have not yet been formalized through written agreement (including Puslinch, Eramosa, and Hamilton). All agreements (formal and informal) between the Town of Milton and neighbouring municipalities for the provision of fire protection services as well as tanker shuttle rural water supply into other municipalities are shown in **Figure 3**, below.

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Figure 3: Milton Fire Department Response Zones

ROCKWOOD

H

PUSLINCH

HALTON HILLS

B

HAMILTON
Flamborough

M

MISSISSAUGA

BURLINGTON
WEST

BURLINGTON
EAST

OAKVILLE

FIRE SERVICE AGREEMENT (FSA) ZONE
Other Fire - Response into Town of Milton - Upon Request

FIRE SERVICE AGREEMENT (FSA) ZONE
Milton Fire - Initial Response into Other Municipality

FIRE SERVICE AGREEMENT (FSA) ZONE
Milton Fire - Response into Other Municipality - Upon Request

SUPPLEMENTAL AID ZONE
Milton Fire - Rural Water Supply (Tanker Shuttle) into Other Municipality

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In light of the recent changes and proposed changes to services and staffing within the M.F.D., as well as the changes within the municipalities with whom the Town of Milton has agreements with, these agreements should be reviewed and revised to ensure they accurately reflect the existing and planned services to be provided and/or received by the Town. Amendments to the agreements may want to consider the anticipated changes within each department party to the agreements.

Recognizing the amount of effort required to review and negotiate the agreements, it would be prudent to develop a plan to do these comprehensive reviews over a reasonable period of time. This F.M.P. also recommends that the M.F.D. formalize the agreements which it currently has with neighbouring municipalities for which there is currently no written and signed agreement.

5.9.2 Mutual Aid Agreement

Mutual aid agreements are pre-determined plans that allow participating fire departments to request assistance from a neighbouring fire department. O.F.M.E.M. P.F.S.G. 04-05-12 Mutual Aid outlines the requirements for participation in a mutual aid agreement such as having all appropriate by-laws in place including by-laws that establish the fire departments, appoint fire chiefs, and authorize fire departments to leave their jurisdiction. Mutual aid agreements reflect a reciprocal provision of services; there are no fees involved in mutual aid. Per P.F.S.G. 04-05-12 Mutual Aid, there are two main scenarios when mutual aid can be enacted:

1. "A fire department may ask for mutual aid assistance when it is at the scene or has information that immediate assistance is required.
2. Fire departments may immediately request a simultaneous response from a participating fire department where distance and/or conditions dictate."

The Town of Milton participates in the Halton Region Mutual Aid Agreement as approved through By-law 070-2006. Other parties to the agreement include the Town of Halton Hills, the Town of Oakville, and the City of Burlington.

5.9.3 Medical Tiered Response Agreement

Within the Province of Ontario, emergency response to incidents involving medical aid by the local fire department is commonly included within a regional tiered response agreement (T.R.A.). These agreements are valuable in defining the emergency medical

levels of service that a fire department will provide in the context of the regionally based provision of ambulance services. Such agreements are in place as a means to ensure efficient response by appropriate agencies.

The Town of Milton is a party to the Halton Region Tiered Response Agreement, along with Halton Region Emergency Medical Services (H.R.E.M.S.), the Halton Regional Police Services (H.R.P.S.) and of the Town of Oakville, the City of Burlington and the Town of Halton Hills. This agreement outlines the specific conditions that call for a multi-agency response as well as the notification criteria required of each participant, yet also allows for each Municipal Fire Service involved to determine whether or not to allocate resources to assist E.M.S. if current fire emergencies do not allow for tiered response.

Within the agreement, the H.R.E.M.S. is to notify the M.F.D. in the case of:

- Obvious Immediate Threat of Respiratory Arrest or Cardiac Arrest (occurring within Town boundaries); and
- Motor vehicle collisions involving personal injury or entrapment.

The H.R.P.S. is to notify the M.F.D. in the case of:

- Chemical, Biological, Radiological, Nuclear and Explosives (C.B.R.N.E.) resulting from criminal intent/action; and
- Motor vehicle collisions involving entrapment.

The M.F.D. is to notify E.M.S. in the instance of:

- Structure Fires;
- Hazardous Material Incidents/C.B.R.N.E.;
- Evacuations;
- Medical calls including lift assist; and
- Rescue.

The M.F.D. is to notify H.R.P.S. in the instance of:

- Structure fires;
- Hazardous materials incidents/C.B.R.N.E.;
- Evacuations; and
- Rescue.

5.10 | Operating Policies, Guidelines and Routine Operations

Current industry best practices reflect the use of Operating Policies (O.P.) as a tool to communicate <u>very</u> specific direction to staff related to how specific tasks <u>are</u> to be completed to safely and effectively deliver fire protection services. Operating Guidelines (O.G.) are used to communicate guidance to staff on how specific tasks <u>should</u> be completed to safely and effectively deliver fire protection services. In comparison, O.P. are intended to provide minimal room for interpretation or application whereas O.G. recognise that there can be a need for interpretation or variance as a result of the conditions that may be present.

The M.F.D. has developed an extensive list of Standard Operating Policies (S.O.P.), Standard Operating Guidelines (S.O.G.) and Routine Operations (R.O.) to provide direction to staff within the various divisions of the department including administration, communications, fire prevention, emergency operations and training. Standard Operating Policy No. AD-001 S.O.P. "Standard Operating Policy, Standard Operating Guideline Revision & Drafting" implemented on November 2, 2014 provides very clear direction on the purpose and procedures for developing and approving S.O.P.s and S.O.G.s. This policy identifies defined terms in the following sections:

> 2.3.1 "Shall" indicates a mandatory requirement; and

> 2.3.2 "Should" indicates a recommendation or that which is advised but not required.

The use of the word "shall" is consistent with industry best practices for a department policy and the word "should" is consistent with developing an operating guideline. In addition to S.O.P.s and S.O.G.s the M.F.D. also utilizes documents referred to as Routine Operations to provide direction to staff. Our review indicates that Standard Operating Policy No. AD-001 SOP does not reference the use of Routine Operations, however many of the Routine Operations that were reviewed indicate within the purpose section that they are to establish standard operating guidelines.

Our review of the departments current Policy Index indicates that M.F.D. has developed a comprehensive list of department S.O.P.s, S.O.G.s and R.O.s that reflect the content of what would be expected within a department such as the M.F.D. In our experience, there are a number of revisions that should be prioritized to clarify the application of these documents. These include the following:

I.   Individual manuals and corresponding indexes should be developed to separate those documents that define Department Policies, Standard Operating Guidelines and Routine Operations;

II.   Routine Operations that are presented as Standard Operating Guidelines should be revised and included within the departments Standard Operating Guideline Manual; and

III.   The contents of all Department Policies, Standard Operating Guidelines and Routine Operations; should be reviewed to ensure there is no duplication and that the formats are clarified to ensure there is no overlap such as within the title section that currently refers to "Policy/Guideline" in the same document.

It was identified by the department that there is a need for the consistent application and definition of Department Policies, Standard Operating Guidelines and Routine Operations and that the M.F.D. is currently in the process of making these documents more consistent.

Our review has also identified that many of the current S.O.P. and S.O.G. have not been reviewed or updated in the past five years. As a result, many of the current S.O.P. and S.O.G. refer to outdated information. In our experience, this is not uncommon within the fire service due to other workload priorities and the speed at which revisions to legislation, regulations and practices are evolving within the fire service. Although these challenges are real, it must be recognized that the department and the Town will be held accountable to their legislative requirements to maintain the accuracy of this documentation at all times.

In the past the department has utilized a number of strategies to develop and maintain S.O.P. and S.O.G., one of which was assembling a group of department staff to develop or review a specific department practice. In our experience, the development of a formal committee with a mandate to oversee the development of these documents as well as initiating a regular review process has proven to be effective in sustaining the department's legislative requirements. In our view this strategy should be considered with priority given to the findings of this F.M.P. and all Section 21 Guidance Notes where applicable.

For ease of reference, we have included all SOP/SOG specific recommendations below and additional information can be found in subsequent sections. We recommend the

following with respect to the review or development of specific Standard Operating Policies and Standard Operating Guidelines:

- Development of a Standard Operating Guideline for responding to all fire inspection requests and complaints;
- Development of a consolidated Standard Operating Guideline containing the goals and objectives for all services related to vulnerable occupancies within the Town.
- Revision of F.P.-007 Fire Pre-Planning- Facility Familiarization to include extended pre-planning procedures and pre-planning and enforcement related to F.P.-001 S.O.P. Firebreak Lots in Subdivisions;
- Development of a department policy for reviewing and approving Fire Safety Plans that includes establishing the required qualifications and that this policy be incorporated into to the proposed Fire Prevention Policy.
- Development of a Routine Operation, Standard Operating Guideline or Department Policy to identify the roles and responsibilities and required training and qualifications of department staff to conduct plans review.
- Inclusion of F.P.-002- Smoke Alarm Program within the proposed Fire Prevention Policy and updated to include:
  - o Revising the current Smoke Alarm Program to include assessing Carbon Monoxide Alarm compliance requirements;
  - o Prioritizing the delivery of the revised Smoke Alarm Program to areas of the community where extended emergency response times may be present including the defined rural area of the Town;
  - o Identifying specific annual goals and objectives for the revised Smoke Alarm Program including identifying the number of homes to be attended, and further enhanced data collection requirements to track all elements of the program;
- Development of a Standard Operating Guideline for the Seniors Smoke Alarm Program and inclusion in the proposed Fire Prevention Policy;
- Development of a Standard Operating Guideline providing direction to all staff in how to track the distribution of all public fire safety information to the public.
- Development of Standard Operating Guidelines / Policies regarding all aspects of the Communications Division operations.

5.11 | Annual Reports

The O.F.M.E.M.'s "Optimizing Public Fire Safety" model recognizes the importance of ongoing monitoring, evaluation, and revisions to the fire protection services approved by Council. Fire services across the province have utilized Annual Reports to Council as a tool to provide a high degree of accountability and transparency on behalf of the Fire Chief in reporting to the community and Council on the level of fire protection services provided. This regular reporting process is also an ideal opportunity to report on key performance indicators, update the C.R.A. and fire related by-laws. The process can also provide further value in identifying changes or trends within the community.

Annual reports can include highlights, such as public education events, program successes, as well as the number and type of emergency response calls. The reports can further be organized by division, providing details on staff, programs, changes and accomplishments.

Maintaining the information within a Comprehensive Risk Assessment as part of an annual report also enhances the level of information provided to Council and the public. In addition to the reporting benefit, the practice of issuing an annual report helps to ensure that risk assessments remain up to date, enhancing the M.F.D. s understanding and presenting to Council any evolving trends within the community.

While annual reports have numerous benefits, they do require a considerable amount of resources to complete including data collection, inter-divisional communication, analysis, document design, reviews and approvals. Care in refining language and graphics used in an annual report is especially important if they are to be used as a tool for communicating level of service to the public. The demanding nature of the process in the context of the day-to-day operations of a department can be challenging to handle without sufficient resources.

Our research into developing this F.M.P. indicates that the M.F.D. recognizes the value and importance of annual reporting. Industry best practices support the continuation of this initiative as well as including the additional performance measures included within this F.M.P. Developing the expanded Annual Report including the annual review of the Comprehensive Risk Assessment is an effective strategy for the department in monitoring ongoing performance and identifying evolving trends that may require identifying a change in services or programs to Council.

5.12 | **Departmental Records Management**

An important component of fire department administration is overseeing records management and reporting. Records management plays a role in every division of a department, including, but not limited to, operations emergency response, firefighter training records, as well as measuring the effectiveness of fire prevention and public education programs.

P.F.S.G. 04-60-12 Records Management provides a comprehensive overview of an effective and efficient records management program that includes the appropriate use and protocol by division of the records management systems in place; record retention schedules; standards for record quality; protocols for record security and integrity of hard-copy and electronic records; and outline other applicable codes, standards or industry best practices that apply (e.g., Municipal Act, 2001, Municipal Freedom of Information and Protection of Privacy Act, 1990).

At the time of the 2008 F.M.P. the M.F.D. was adapting to the implementation of a new Computer Aided Dispatch (C.A.D.), which has now been integrated into the department's Records Management System (R.M.S.) and related File Data Management (F.D.M.) Software. The 2008 F.M.P. recommended the addition of an Analyst to help support the G.I.S. and C.A.D. functions for the fire department. At present, the need for this role is fulfilled by a range of resources across department and Town staff including the Coordinator Fire Administration, Division Chief, and Corporate I.T. and G.I.S. With the evolving needs of the Town and the fire service industry in regards to community risk assessments, data driven decision making, and the use of technology for regular department operations, there is still value in a dedicated Analyst role. As discussed throughout this F.M.P., there are also a number of strategic investigations and related decisions that have to be made regarding communications, records management, integration and implementation of N.G.-911, reporting and the planning, design and implementation of future stations where an Analysts role could add depth to the required resources to carry out these functions.

M.F.D. is also required to follow certain corporate records management protocols and systems and to bring alignment and coordination between the needs of the M.F.D and the corporate requirements.

5.13 | **Milton P.T.S.D. Prevention Plan**

There is an increased risk of first responders to suffer from Post-Traumatic Stress Disorder due to the nature of their work. Under the Supporting Ontario's First Responders Act, there is a presumption that a diagnosis of P.T.S.D. for certain workers, is work related. The Town of Milton, as an employer of workers covered by the Supporting Ontario's First Responders Act, is required to have a Post-Traumatic Stress Disorder Prevention Plan. Under the Act, details relating to the Plan are to be shared within the workplace in an effort to prevent P.T.S.D. Our research into this F.M.P. indicates that the Town of Milton has established a Post-Traumatic Stress Disorder (P.T.S.D.) Prevention Plan. The plan outlines the signs, symptoms and risk factors associated with P.T.S.D. and the various responsibilities assigned to various staff within the M.F.D. for the prevention, intervention and recovery of those affected.

The Town is currently compliant with the Supporting Ontario's First Responders Act. As an area of ongoing research and development, workplace wellness should be considered as an ongoing priority for the Fire Department. Behavioural Health is a critical component that requires funding and employer support to positively impact workplace wellness, the Fire Department is encouraged to investigate and consider enhancing its current program. This should include investigating other research and standards such as the National Standard of Canada **CAN/CSA-Z1003-13 'Psychological Health and Safety in the Workplace'.** This is a voluntary standard that specifies requirements for a documented and systematic approach to develop a psychologically healthy and safe workplace. The key components of compliance with this Standard are a) a workplace stress audit, B) Mental Health training for supervisors, C) a crisis response plan, and D) an internal support system.

To enhance its level of care and support for its first responders, the M.F.D. can consider partnering with Wounded Warrior Canada (W.W.C.). W.W.C. provides clinical support and a variety of mental health resources such as group-based trauma programs, animal assisted therapy, resiliency training and research to individuals and families affected by operational stress injuries.

5.14 | **Inclusion and Diversity**

Inclusiveness is the action of creating an environment that fosters diversity - an environment where the thoughts, ideas, and perspectives of many different people are

well received, valued, and accepted. Diversity is all the ways we are unique as individuals - it is the variety of dimensions, qualities, and characteristics that make up who we are. Inclusiveness is also about involving many different types of people and removing barriers in the workplace, so an organization can generate new ideas and become even more innovative in the work that they do.

Industry best practices suggests planning and targeting recruitment efforts around the needs of the fire department and the characteristics of the community of which it serves. The Town of Milton is a uniquely diverse and multicultural community. By providing a workplace where there are equitable opportunities for development and where people feel engaged and respected in the workplace, will only add more value to the Milton Fire Department workforce as it will be a reflection of the community which it serves.

It was identified as part of the research completed for this Fire Master Plan that there are currently no internal fire department policies pertaining to the department's diversity and inclusion efforts with regards to recruitment and retention of firefighters for the Town. Outside of the fire department, the M.F.D. is a partner of the Halton Multicultural Council (H.M.C.) which is comprised of a group of volunteers from a number of cultural groups to provide social programs to the community. The H.M.C. strives to:

- Welcome newcomers and prepare them for life in Canada; and
- Prepare the community to welcome immigrant newcomers and refugees.

The four Fire Departments of Halton region, which includes the M.F.D., have developed a committee to assist H.M.C. with their programs with respect to Fire Safety. The committee's main goal is fire safety through education.

Recognizing that there is currently no internal fire department policies regarding diversity, this fire master plan supports the development of a Milton Fire Department recruitment strategy that includes diversity and inclusion considerations in order to achieve a more diverse and inclusive fire department for the Town of Milton.

To aid in these efforts, the M.F.D. may also wish to consider:

- Providing diversity, equity and inclusion training to staff;
- Developing an internal fire department diversity and inclusion policy in conjunction with the Town's Diversity and Inclusivity strategy;

- Developing a diversity and inclusion committee that includes M.F.D. senior management staff; and
- Reviewing existing M.F.D. policies and procedures through the lens of diversity and inclusion.

5.15 Administration Division Summary and Recommendations

Our review of the Administration Division including the roles and responsibilities of the Fire Chief and two Deputy Fire Chiefs reflects that of an organization in transition. We define this transition as an organization (fire department) that is evolving from its historical roots as a volunteer fire department into a modern fire service attempting to sustain and expand its historical levels of service within an environment of rapid community growth.

These observations remain consistent with those of the 2008 F.M.P. that recommended that "The evolution and growth of the composite department to one that has an increasingly reliance on career firefighters will require emphasis on succession planning and senior officer development. The department should be proactive in managing this change" [12].

Under their leadership, the senior staff team, with the support of Council have attempted to implement the recommendations of the previous 2008 F.M.P. However, the realities of the community's fiscal responsibilities have not allowed the department to maintain the same speed of growth as that of the community. In our view, the senior staff team recognizes the need for change and the importance of this fire master planning process to provide insight into the path forward.

The next ten years are forecast to continue the rapid pace of growth and the department leadership will have to meet that growth with additional resources, leadership capabilities, policies and systems to continue to meet the needs of the community. To support the senior staff team, this F.M.P. identifies objectives that focus on managing incremental changes within the department that support a strategic path towards further identifying the core services required based on the findings of the C.R.A.

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[12] 2008 Fire Master Plan Recommendation #1- Senior Officer Development

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and providing the most cost effective and efficient level of fire protection services that provide the most value to the community.

5.15.1 Goals, Objectives, and Recommendations

GOAL #1: Milton Fire Department will provide the appropriate level of resources, leadership capabilities, policies and systems to continue to meet the needs of a rapidly growing community based on the findings of a Community Risk Assessment.

Objective #1A: Use a Community Risk Assessment to help identify the needs and circumstances of Milton and inform decision-making with respect to community fire protection services to sustain compliance with O. Reg. 378/18 Community Risk Assessments.

Recommended Action: Conduct a review of the C.R.A. annually and when necessary, and revise the C.R.A. in line with the guidelines set out in O.F.M Technical Guideline-02-2019 and consider potential impacts on existing fire protection services.

Objective #1B: Maintain up-to-date documentation and procedures for all by-laws, agreements, Standard Operating Guidelines (SOG), Standard Operating Policies (SOP), records management systems, and job descriptions.

Recommended Action: Update and implement a regular review process of all applicable fire protection services by-laws including:

    a. The Establishing and Regulating By-law No. 026-2018;
    b. The current Rates and Fees By-law No. 072-2020 including:
        iii. revisions to include cost recovery of additional specialized services such as Fire Safety Plans and providing Fire Extinguisher Training;
        iv. a review of the fees charged for fire inspections services and consider modifying or clarifying the fee charged;
    c. Fireworks By-law No. 037-2009, and
    d. Current fire protection agreements by-laws.

Recommended Action: Bring forward any revised by-laws for Council consideration and approval.

Recommended Action: Conduct a review of current agreements (fire protection services, mutual aid, automatic aid) with the intent to confirm the

need and revise agreements to clearly define the scope of existing and planned services provided/received, to formalize in writing any informal agreements, and ensure applicable by-laws are in place.

Recommended Action: Establish a process for the regular review of existing Standard Operating Policies and Standard Operating Guidelines in order to develop new ones, where required, and clarify the application and definition of all Department Policies, Standard Operating Guidelines and Routine Operations.

Recommended Action: Develop records management protocols and systems for all records management practices within the department with consideration to the corporate requirements and training for all staff responsible for administrative support.

Recommended Action: Update department job descriptions, and include required N.F.P.A. Pro-Qual Standards where applicable, and implement a regular review cycle.

Objective #1C: Sustain the regular reporting of the services provided by the M.F.D. both internally and externally.

Recommended Action: Report to Council annually on the performance of the department, any applicable updates, and on the annual review of the Comprehensive Risk Assessment.

Recommended Action: Implement a dedicated Analyst resource in support of reporting, strategic initiatives, and data-driven decision making.

Objective #1D: Have appropriate administrative capacity as the department grows.

Recommended Action: Implement a process to monitor the administrative workload in support of maintaining appropriate levels of administrative capacity as the department grows.

Objective #1E: Have a fire department that is inclusive and reflects the diversity of the community.

Recommended Action: In conjunction with the Town's Diversity and Inclusivity Strategy, develop an internal fire department diversity and inclusion policy and committee that includes M.F.D. senior staff and review existing M.F.D. policies of procedures through the lens of inclusion.

Recommended Action: In consultation with the Human Resources Division, provide diversity, equity, and inclusion training to all staff.

6.0 Fire Prevention Division

The minimum legislative requirements for the delivery of fire protection services are outlined within the F.P.P.A., and include **"Establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention"[13]** and **"Provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances."[14]**

To further assist municipalities in understanding the definition of what the minimal acceptable fire prevention and public education programs are, the O.F.M.E.M. developed **P.F.S.G. 04-40-03** and **04-40-12 Selection of Appropriate Fire Prevention Programs**. Although the P.F.S.G.s are currently under review, they continue to provide valuable insight into identifying the minimal acceptable fire prevention and public education programs including:

- Simplified Risk Assessment;
- A smoke alarm program;
- Fire safety education material distributed to residents/occupants; and
- Inspections upon complaint, or when requested to assist with code compliance.

In our view, one of the reasons that the O.F.M.E.M. is currently conducting a review of all P.F.S.G.s is to update them to reflect changes to applicable legislation impacting the delivery of fire prevention and public education programs. Examples of such changes include revised smoke alarm and carbon monoxide alarm requirements and the new O. Reg. 378/18 requiring all municipalities to develop a C.R.A.

The analysis within this section has been informed by our knowledge of the current applicable legislation, including the new Ontario Regulation 378/18, the P.F.S.G.s developed by the O.F.M.E.M., and the applicable standards developed by the N.F.P.A. Collectively, this information is applied within this F.M.P. in defining the local **"needs and circumstances",** as required by the F.P.P.A., for the delivery of fire prevention and public education programs within the Town of Milton.

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[13] F.P.P.A., 1997 Part II, Section 2. (1) (a)

[14] F.P.P.A., 1997 Part II, Section 2. (1) (b)

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Integrating risk analysis into the fire master planning process, as provided by the new Ontario Regulation 378/18: C.R.A.s, empowers a municipality with the opportunity to assess alternative community risk reduction strategies. These may include options such as enhancing a fire inspection program within a specific building occupancy classification; developing a specific public education program for an identified at risk demographic within the community, such as seniors; or introducing local requirements for residential sprinklers. These types of risk reduction and risk mitigation strategies recognize that there are proactive alternatives to increasing fire suppression capability within a community.

6.1 Fire Prevention and Public Education Industry Best Practices

The fire prevention and public education services provided by the Milton Fire Department should be guided by industry best practices and the most current legislative requirements. Primarily, these include the mandatory requirements of the F.P.P.A, N.F.P.A. 1730 Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations and the N.F.P.A. Fire and Life Safety Ecosystem.

6.1.1 N.F.P.A. 1730: Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations (2019 Edition)

N.F.P.A. has recently updated the Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations. This standard establishes its criteria through six chapters:

1. Organization;
2. Community Risk Assessment;
3. Fire Prevention Inspection and Code Enforcement Activities in Existing Occupancies;
4. Plan Review;
5. Investigations; and
6. Public Education Programs.

The focus of this standard is to ensure that a fire prevention division has a Community Risk Reduction Plan (C.R.R.P.) in place and that it is based on the local "**needs and circumstances**" established through a Community Risk Assessment. A C.R.R.P. is then

used to establish resources and programs that are designed to mitigate and/or reduce identified fire risk. For example, the N.F.P.A. 1730 standard identifies a minimum fire inspection frequency cycle which could be refined based on the local context. The supporting appendices of N.F.P.A. 1730 provide exercises to identify staffing resource needs, taking into account required tasks and time demands.

Evaluating community risk and identifying risk reduction strategies is also consistent with the optimization of the "three lines of defence" and the strategic priorities of this F.M.P. that include:

I. **The sustained use of a C.R.A. to determine the fire safety risks within the Town of Milton as the basis for developing clear goals and objectives for all fire protection and emergency services provided by M.F.D.; and**

II. **Where applicable, the optimization of the first two lines of defence including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Town.**

The analysis and methodology included within this F.M.P. integrates the intent of developing a C.R.R.P. as referenced within N.F.P.A. 1730. Where applicable, this F.M.P. will present risk reduction and risk mitigation strategies to optimize the use of the "**three lines of defence**" in response to the identified "**key findings**" and "**identified risk**" included in the C.R.A. to enhance the existing fire prevention and public education programs and services provided by the M.F.D. The focus of the N.F.P.A. 1730 Standard is consistent with the current industry trends to further emphasize fire prevention and public education services and programs through the application of the first four "E's" (education, enforcement, engineering and economic incentive) of community risk reduction and risk mitigation planning.

6.1.2 | **N.F.P.A. Fire and Life Safety Ecosystem**

The N.F.P.A. Fire and Life Safety Ecosystem is a framework of eight elements that work in conjunction with one another with the collective goal of risk reduction. Together, they promote the prevention of fires and other hazard-related loss, injuries and fatalities. The eight components that comprise this framework include:

1. Government responsibility;
2. Development and use of current codes;

3. Referenced standards;
4. Investment in safety;
5. Skilled workforce;
6. Code compliance;
7. Preparedness and emergency response; and
8. Informed public.

This ecosystem is premised on the notion that the cause of all life safety incidents can be traced back to the breakdown of one or more of these components. The Fire and Life Safety Ecosystem recognizes that fire prevention is multifaceted and there are various key components that need to work in tandem in order to cultivate an environment and culture of fire safety. This F.M.P. supports a multifaceted approach to fire prevention and, where applicable, will present strategies to enhance existing fire prevention and public education programs and services provided by the M.F.D.

6.2 | Milton Fire Prevention and Public Education Services

The current core functions of the Fire Prevention Division include the following:

- Oversee the Burn Permit process;
- Conduct fire safety inspections and code enforcement;
- In consultation with the Building Department, conduct new subdivision and site plan reviews;
- Review and approve fire safety plans;
- Pre-planning of building occupancies;
- Conduct and report on fire investigations; and
- Develop and deliver the department's public education program.

6.3 | Existing Fire Prevention and Public Education Staff Resources

The Deputy Fire Chief of Staff is directly responsible for overseeing the services and programs delivered by this division. The Division Chief of Fire Prevention reports directly to the Deputy Fire Chief of Staff and is responsible for the daily operations and supervision of all fire prevention division staff. This includes two full-time Fire Prevention Inspectors who are responsible for conducting fire inspections, fire investigations and the provision of the department's public education program.

6.3.1	**Division Chief of Fire Prevention**

Through the data collection process we reviewed a job description for the position of Division Chief of Fire Prevention, last revised March 2021. The Division Chief of Fire Prevention reports to the Deputy Fire Chief of Staff, providing functional supervision to the Fire Prevention Division. The Division Chief of Fire Prevention is responsible for the leadership and departmental management and administration of the fire prevention division, including inspections and code/by-law enforcement, public education, fire investigations, professional development and training of division personnel.

6.3.2	**Fire Prevention Inspectors**

The current job description for the Fire Prevention Inspectors was last updated in December 2013. It is our understanding that this job description applies to both of the current Fire Prevention Inspectors. The primary roles and responsibilities of this position are identified as follows:

- Conducting regular fire safety inspections as well as specialized inspections upon request, complaint or if evidence suggests a hazardous situation exists;
- Evaluating and monitoring fire safety plans by reviewing, modifying and approving submitted plans;
- Developing, implementing and evaluating public education programs;
- Performing public relations by setting up displays , preparing and distributing promotional materials and providing presentations to the general public;
- Examining, investigating and/or coordinating fire scene investigations by reviewing incident reports; and
- Performing other duties, as assigned.

6.4 Applicable Training and Qualifications

In 2013, the O.F.M.E.M. announced that the Ontario fire service would be adopting the N.F.P.A. Pro-Qual Standards to replace the previous Ontario Fire Services Standards (O.F.S.S.). The previous O.F.S.S. had been developed by the Ontario Fire Chiefs Association (O.A.F.C.) in partnership with the O.F.M.E.M. to provide guidance on the training and qualifications of fire department staff.

To assist municipalities in this transition, a "Grandfathering Policy" was developed by the O.F.M.E.M. to facilitate the process of implementing the N.F.P.A. Pro-Qual Standards. The O.F.M.E.M. grandfathering policy stated that "in order to exempt anyone from having to start over in any program and in order to give recognition for training and education already completed and for experience already gained".[15] The N.F.P.A. Pro-Qual Standards are now recognized as the industry best practices for training and qualifications related to the delivery of public education and fire prevention programs and services within the Province of Ontario.

6.4.1 | **Applicable N.F.P.A. Pro-Qual Standards**

The applicable N.F.P.A. Pro-Qual Standards as they pertain to roles and responsibilities of fire prevention and public education staff are outlined in **Table 8**. These standards reflect current industry best practices in Ontario.

Table 8: Applicable N.F.P.A. Pro-Qual Standards

N.F.P.A. Standard	Qualification	Description
N.F.P.A. 1031 – Standard for Professional Qualifications for Fire Inspector and Plans Examiner	Fire Inspector I	An individual at the first level of progression who has met the job performance requirements specified in this standard for Level I. The Fire Inspector I conducts basic fire inspections and applies codes and standards.
N.F.P.A. 1031 – Standard for Professional Qualifications for Fire Inspector and Plans Examiner	Fire Inspector II	An individual at the second or intermediate level of progression who has met the job performance requirements specified in this standard for Level II. The Fire Inspector II conducts most types of inspections and interprets and applies applicable codes and standards.

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[15] O.F.M.E.M. 2013 Grandfathering Policy

http://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/Communiques/OFM_Com_20 14-04at.html

N.F.P.A. Standard	Qualification	Description
N.F.P.A. 1031 – Standard for Professional Qualifications for Fire Inspector and Plans Examiner	Fire Inspector III	An individual at the third and most advanced level of progression who has met the job performance requirements specified in this standard for Level III. The Fire Inspector III performs all types of fire inspections, plans review duties, and resolves complex code- related issues.
N.F.P.A. 1033 – Standard for Professional Qualifications for Fire Investigator	Fire Investigator	An individual who has demonstrated the skills and knowledge necessary to conduct, coordinate and complete fire investigations.
N.F.P.A. 1035 – Standard for Professional Qualifications for Fire and Life Safety Educator, Public Information Officer, and Juvenile Firesetter Intervention Specialist	Fire and Life Safety Educator I	The individual who has demonstrated the ability to coordinate and deliver existing educational programs and information.
N.F.P.A. 1035 – Standard for Professional Qualifications for Fire and Life Safety Educator, Public Information Officer, and Juvenile Firesetter Intervention Specialist	Fire and Life Safety Educator II	The individual who has demonstrated the ability to prepare educational programs and information to meet identified needs.
N.F.P.A. 1035 – Standard for Professional Qualifications for Fire and Life Safety Educator, Public Information Officer, and Juvenile Firesetter Intervention Specialist	Fire and Life Safety Educator III	The individual who has demonstrated the ability to create, administer, and evaluate educational programs and information.

At a minimum, all staff resources conducting fire inspections should have the skills and competencies included within the N.F.P.A. 1031 – Fire Inspector Level I. It is recommended that staff performing fire inspections involving more complex issues and

requiring interpretation of various legislation and O.F.C. and O.B.C. requirements be qualified to N.F.P.A. 1031- Fire Inspector Level II. In our experience, successful completion of courses in addition to N.F.P.A. 1031 Level I and II requirements including O.F.C. Parts 2 & 6, Part 4, Parts 3 & 5, Courtroom Procedures, and Effective Inspections of Commercial Cooking Equipment are necessary to ensure fire prevention and public education division staff are trained to effectively perform their role and responsibilities.

Staff responsible for conducting fire investigations should have the skills and competencies included in N.F.P.A. 1033- Standard for Professional Qualifications for Fire Investigator.

At a minimum, all staff resources responsible for developing and delivering public education programs should have the skills and competencies included within the N.F.P.A. 1035 – Fire and Life Safety Educator I.

Only personnel designated as Chief Fire Officials (C.F.O.) have the authority to approve fire alternative solutions, compliance alternatives, compliance equivalency, fire safety plans, life safety studies and fire drill scenarios. Fire chiefs are designated as C.F.O.s by virtue of their position. It is industry best practice that any delegation of such authority be done in writing. Recent legislated changes require all Chief Fire Officials approving fire safety plans for buildings containing care occupancies, care and treatment occupancies or retirement homes, to successfully complete mandatory training as approved by the Fire Marshal. At this time, the only training that has been approved by the O.F.M.E.M. is offered through Public Services Health & Safety Association (P.S.H.S.A.).

6.5 Existing Fire Prevention Division Training and Qualifications

As part of the data collection process for this F.M.P, documentation provided by the M.F.D. was utilized to determine the level of training of fire prevention and education division resources. **Table 9** summarizes the current training of the staff resources available to deliver fire prevention and public education programs and activities.

All fire prevention personnel have been trained to N.F.P.A. 1031, Standard for Professional Qualifications for Fire Inspector and Plan Examiner, Level I (Division Chief of Fire Prevention pending) and there are two staff who have been trained to N.F.P.A. 1031, Level II. There are two staff trained to N.F.P.A. 1035, Level I and two staff trained to N.F.P.A. 1035 – Public Information Officer.

Table 9: Existing Fire Prevention Division Staff Training and Qualifications

Position	Deputy Chief, Staff	Division Chief of Fire Prevention*	Fire Prevention Inspector 1	Fire Prevention Inspector 2
N.F.P.A. 1031, Level I	**Yes**	No	**Yes**	**Yes**
N.F.P.A. 1031, Level II	No	No	**Yes**	**Yes***
N.F.P.A. 1031, Level III	No	No	No	No
N.F.P.A. 1035, Level I	No	No	**Yes**	**Yes**
N.F.P.A. 1035, Level II	No	No	**Yes***	No
N.F.P.A. 1035, Level III	No	No	No	No
N.F.P.A. 1035, Public Information Officer	**Yes**	No	**Yes**	No
N.F.P.A. 1033	No	No	**Yes**	**Yes**
Commercial Cooking	No	No	**Yes**	**Yes**
Courtroom Procedures	No	No	**Yes**	No
B.C.I.N. Legal Course	No	No	No	No
B.C.I.N. Fire Protection Course	No	No	No	No

Source: M.F.D.,

*Note, senior fire department personnel indicated that the position of Division Chief of Fire Prevention has replaced the former position of Captain, Fire Prevention. This position is currently vacant and therefore the training and qualifications of this position are currently unknown until the position is filled.

** Scheduled for 2020 but class cancelled due to COVID, rescheduling for 2022 next available offering.

***Courses completed, final reporting pending.

With regards to the approval of fire safety plans, all fire prevention staff should receive training through the Public Services Health & Safety Association (P.S.H.S.A.). Staff report FIRE 005-06 Delegation of Authority-Chief Fire Official dated May 1, 2006, identifies the positions of Deputy Fire Chief and Chief Fire Prevention Officer as having been delegated the authority granted a Chief Fire Official under the F.P.P.A. This fire master plan recommends that all individuals designated as Chief Fire Officials receive training through the Public Services Health & Safety Association related to Chief Fire Official roles and responsibilities.

This training is available through an e-learning course available by contacting the P.S.H.S.A. There is value in ensuring multiple individuals attain this training in order to facilitate vacation, sick time and succession planning.

This analysis highlights where additional training and qualifications should be pursued to further enhance the skills and competencies of the existing fire prevention division staff. In our experience, this should be considered a priority for the Town in order to minimize any potential liability related to the delivery of the current fire prevention and public education programs and services provided by the department.

6.6   Training and Qualification Objectives for Fire Prevention and Education Division Staff

Based on our review of the applicable the N.F.P.A. Pro-Qual Standards and our knowledge of current industry best practices **Table 10** outlines the recommended training and qualifications for those staff assigned to develop and deliver the M.F.D. public education and fire prevention services. These recommendations recognize that in some instances specific training and qualifications are not currently readily available such as the N.F.P.A. 1031 – Fire Inspector Level III. When training for these higher standards becomes available it should be made accessible to department senior staff such as the Deputy Fire Chief – Staff and Division Chief of Fire Prevention.

Table 10: Training and Qualification Objectives for Fire Prevention and Education Division Staff

Divisional Task	Proposed Professional Qualifications
Public Education Program Design and Evaluation	N.F.P.A. 1035 - Fire and Life Safety Educator Level II
Public Education Program Implementation	N.F.P.A. 1035 - Fire and Life Safety Educator Level II
Media Interviews and Advisories	N.F.P.A. 1035 - Public Information Officer
Fire Inspections	N.F.P.A. 1031 – Fire Inspector Level II B.C.I.N.- General Legal and Fire Protection
Investigations	N.F.P.A. 1033 – Investigator
Fire Safety Plan Approval	As approved by the O.F.M.E.M. (P.S.H.S.A. Course)
Plan Examiner	N.F.P.A. 1031 – Plan Examiner Level II

In our view, the achievement and maintenance of these proposed professional qualifications should be considered a job performance requirement for those roles and responsibilities where applicable.

6.7   Division Workspace

The Fire Prevention Division is located at Station #3 at 610 Savoline Boulevard (Headquarters). The workspace for this division includes a separate office for the Division Chief of Fire Prevention and a shared office for the two Fire Prevention Inspectors. All workspaces are modern, providing ample desk and storage space as well as printing and copying equipment and storage for supporting materials.

In addition to office space, this facility is equipped with a large conference room which can be used to meet with the public or external agencies. Research indicates that this workspace complies with A.O.D.A. requirements and is sufficient for current staffing needs. In our view, this current space is meeting the requirements of this division, however there is limited flexibility to accommodate further expansion for additional full-time staff resources in the future.

6.8	**Fire Prevention Policy**

A fire prevention policy is a valuable tool, reflective of current industry best practices and providing clear direction and clarification to department personnel. The policy communicates the council approved service expectations for the prevention and public education division. Policies, particularly in the area of fire prevention and public education activities and programs are necessary to define performance goals and objectives; inform trend analysis; and inform ongoing monitoring of these services to the public.

The components of a fire prevention policy are provided in **P.F.S.G. 04-45-12 Fire Prevention Policy** which presents a framework for developing a fire prevention policy. An example of the purpose of a fire prevention policy includes:

- To establish policies and procedures for fire department personnel for fire prevention, public education programs and activities as a primary means of protecting lives and property from fire
- To maintain compliance with the minimum fire prevention and public education activities as required by the F.P.P.A, 1997

A fire prevention policy should also describe the following fire prevention and fire safety education programs and services such as:

- Fire inspection activities
- Fire code enforcement
- Fire and life safety education
- Fire investigation and cause determination
- Fire loss statistics
- Fire department operational guidelines identifying how, when and where activities will be conducted

The M.F.D. has developed a Fire Prevention Policy Manual that includes seven department policies/standard operating guidelines related to the delivery of specific fire prevention and public education programs. As referenced within **Section 5.10 - Operating Policies, Guidelines and Routine Operations** of this F.M.P. these documents interchange their reference to policies and guidelines, and in some instances within the

same document e.g. F.P.-003 – Fire Safety Inspections. This is contrary to current industry best practices.

Many of these polices/guidelines exceed a time frame of ten years since their last update or revision. In many instances this means they do not reflect current legislation or industry best practices. There is also no reference to an overriding Fire Prevention Policy that would define the purpose and relationship of each of these individual policies/guidelines to an overarching Council approved document as described by P.F.S.G. 04-45-12.

In our experience, a Fire Prevention Policy is a valuable tool reflecting current industry best practices in providing clear direction and clarification to department staff communicating the Council approved services expectations of all fire prevention and public education services. Policies, particularly in the area of fire prevention and public education activities and programs are necessary to define performance goals and objectives; inform trend analyses; and inform ongoing monitoring of these services to the public.

Our review of the seven current fire prevention and public education policies/guidelines identified a number of specific concerns regarding their accuracy. These are providing in the following sections.

6.8.1 | **F.P.-002 – Smoke Alarm Program**

Ontario Regulation 52/15 made under the Provincial Offences Act (P.O.A.) authorizes a municipality to issue a Certificate of Offence and Offence Notice (Ticket) to a homeowner for failure to install and maintain working smoke alarms as required by the O.F.C. FP-002-Smoke Alarm Program identifies the total fine payable for this offence as $235.00.

6.8.2 | **F.P.-003 – Fire Safety Inspections**

F.P. - 003 references the O.F.C. Section 1.1.1.1. This reference should be revised to reference Article 1.2.1.1., identifying the responsibility of the owner to comply with the O.F.C. The references to O.F.M.E.M. Technical Guideline 01-2000 and Technical Guideline 02-2003 should also be updated to reflect the current O.F.M.E.M. Technical Guideline 01-2012, which addresses Fire Safety Inspections and Enforcement. This policy refers to the use of inspection reports and written reports. Current industry best

practices reflect the use of fire safety inspection orders to replace this type of documentation.

F.P.-003 also makes reference to conducting pro-active annual inspections of the hospital and nursing homes that are now mandatory requirements identified within Ontario Regulation 364/13. This should be revised to reflect the current regulations.

6.8.3	**F.P.-004 – Fire Safety Complaints**

As indicated within our review of F.P.-003 this policy also refers to the use of inspection reports and written reports. Current industry best practices reflect the use of fire safety inspection orders to replace this type of documentation. Inspection orders are now considered an industry best practice as inspection reports have been found to be unenforceable in some jurisdictions as they are not expressly authorized under the F.P.P.A.

6.9	**Fire Prevention Division Activity and Workload Tracking**

N.F.P.A. 1730 Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations further supports the use a Fire Prevention Policy as described in the preceding section. A comprehensive Fire Prevention Policy reflects current industry best practices to establish the level of service to be provided by the Fire Prevention Division including specific objectives for public education, inspections, code enforcement, plan review, and investigations. N.F.P.A. 1730 also supports the use of personnel and resource tracking in order to determine needed resources to meet the established level of service. It is not uncommon that fire departments do not have a sense of the capability of their current resources to meet service levels due to a lack of data and tracking of historic effort. This is commonly compounded by the lack of performance measures in place against which to track work load effort.

Tracking and reporting for the M.F.D. Fire Prevention Division activities have historically been completed at a high level with reporting presented in the Annual Reports. This includes the number of inspections per year, number of public education events, number of investigations completed, the number of plans examinations completed, file searches completed, fireworks training and permits provided, and municipal licenses provided. In our experience this historical practice recognises the importance the M.F.D.

has placed on communicating to Council and the community. This review indicates that there are currently limitations to the details on workload reporting as a result of the depth of data that is collected. In our experience, there would be value in collecting further data with respect to fire prevention and public education initiatives in order to enhance the current reporting process. This could include collecting the following information:

- Number of Part I Offence Notices issued;
- Number of Part III Charges filed;
- Number of O.F.C. convictions registered;
- Number/percentage of properties inspected in compliance at time of inspection;
- Number/percentage of inspections that led to Fire Safety Inspection Orders being issued;
- Number of Fire Safety Inspection Orders issued;
- Number of re-inspections required per property;
- Breakdown (by number/percentage) of properties inspected by O.B.C. occupancy type;
- Breakdown (by number/percentage) of enforcement options used throughout the year;
- Number of Orders to Close, Authorizations to Close and Immediate Threat to Life issued;
- Percentage/number of occupancies inspected that were/were not compliant with smoke alarm legislation; and
- Percentage of occupancies/number inspected that were/were not compliant with carbon monoxide legislation.

This list is not intended to be exhaustive, but to provide samples of the types of data that the N.F.P.A. 1730 standard has identified. To establish needed resources, N.F.P.A. 1730 presents example tracking tables for fire prevention inspection and code enforcement, plan review, investigations, and public education. The example tracking tables include information like separating inspections by occupancy type, identifying the number of facilities in use, task time, inspection frequency, and resulting total time. Other tables include similar information including number of tasks, time per task, commute time, other time (including administrative functions), and a resulting total.

Overall, this Fire Master Plan recommends that the M.F.D. expand the current workload reporting of the Fire Prevention Division to inform the total number of full-time personnel required to deliver fire prevention programs effectively.

6.10 Existing Fire Inspection Program

At a minimum, a fire inspection program must comply with the requirements of the following regulations and directive:

- Ontario Regulation 365/13: Mandatory Assessment of Complaints and Requests for Approval
- Ontario Regulation 150/13 - Enhancing Fire Safety in Occupancies Housing Vulnerable Ontarians
- Ontario Regulation 364/13 – Mandatory Inspection – Fire Drill in Vulnerable Occupancy
- Fire Marshal's Directive 2014-03: Inspections of All Buildings

A fire inspection program is a key element of the first two lines of defence. M.F.D. is complying with its legislative requirements for conducting fire inspections by providing fire inspections based upon receipt of a request or a complaint and completing annual inspections of care occupancies, care and treatment occupancies and retirement homes.

6.10.1 Request or Complaint Inspections

On receipt of a request or a complaint, the M.F.D. initiates a process to comply with its legislative requirements. Our research and consultation with senior department staff indicates that the current process is driven by the historical practices of the department.

To enhance the department practices in regards to fire safety inspections, it is recommended that the M.F.D. develop a standard operating guideline for responding to complaints and requests for fire inspections in keeping with the requirements of Ontario Regulation 365/13: Mandatory Assessment of Complaints and Requests for Approval and Fire Marshal's Directive 2014-03: Inspections of All Buildings. In our view, this could be achieved by documenting the department's current process that defines the steps to be followed once a request or complaint is received including the time frame for responding.

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6.10.2 | **Enhancing Fire Safety in Occupancies Housing Vulnerable Ontarians, Ontario Regulation 150/13**

Ontario Regulation 150/13 - Enhancing Fire Safety in Occupancies Housing Vulnerable Ontarians was filed on May 9, 2013. This regulation introduced amendments to the O.F.C. that came into force on January 1, 2014. The O.F.M.E.M. led the development of this new regulation in consultation with a Technical Advisory Committee of industry experts. This regulation is intended to enhance fire safety in occupancies that house vulnerable occupants. The legislation applies to care, care and treatment and retirement homes that are regulated under the Retirement Homes Act.

In addition to **Ontario Regulation 150/13- Enhancing Fire Safety in Occupancies Housing Vulnerable Ontarians**, **Ontario Regulation 364/13 – Mandatory Inspection – Fire Drill In Vulnerable Occupancy** requires that a fire inspector observe a fire drill scenario representing the facility's lowest staffing complement (as approved by the Chief Fire Official), conducts a fire safety inspection (utilizing the Annual Inspection Checklist which forms part of O.F.M.E.M. Directive 2014-002: Vulnerable Occupancies – Fire Drill Scenarios, Fire Drill Observations, Fire Safety Inspections, as a minimum level of inspection and then update the as a minimum level of inspection), and then update the O.F.M.E.M.'s Vulnerable Occupancy Registry, as appropriate. In addition, there is also a requirement for mandatory training for C.F.O.s responsible for approving fire safety plans as mentioned previously in this section.

The proposed fire inspection cycles presented within this F.M.P. includes the requirements for the annual inspection of each building affected by this legislation. **Table 11** presents the **"key risks"** identified by the C.R.A. related to the current vulnerable occupancies and vulnerable populations in the Town of Milton.

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Table 11: Identified Key Risks for Vulnerable Occupancies/Populations

C.R.A. Key Risks Analysis Outcomes	First Line of Defence (For consideration within the Proposed Public Education Program	Second Line of Defence (For consideration within the proposed Enforcement Program)
There are 19 registered vulnerable occupancies within the Town of Milton.	Yes	Yes
E.C. Drury School for the Deaf, Maplehurst Correctional Complex and the Vanier Centre for Women present unique life-fire safety risks.	Yes	Yes

The department has completed the required registration process for all of the identified Vulnerable Occupancies. Further reporting and updates will be required as further fire inspections and fire drill scenarios are performed.

The findings of the C.R.A. further highlight the importance of proactive education, inspection and enforcement strategies to mitigate the potential risk to occupants of a vulnerable occupancy. In our view, this further supports the benefits of developing a standard operating guideline to consolidate and define the goals and objectives of the department's programs and activities related to the applicable legislation and fire safety strategy for all vulnerable occupancies within the Town.

6.10.3   **Routine Fire Inspections**

In comparison to responding to a request or complaint, routine fire inspections are proactive inspections conducted by the department in response to identified fire risks. Our research indicates that the M.F.D. does not currently have an existing fire safety inspection cycle, although it does maintain a list of facilities which it routinely inspects, including those where a mandatory annual inspection is required by **Ontario Regulation 150/13** - **Enhancing Fire Safety in Occupancies Housing Vulnerable Ontarians**.

Table 12 presents the **"key risks"** identified by the C.R.A. that should be further considered within the department's routine fire inspection and enforcement program.

Table 12: Identified Key Risks for Routine Fire Inspections and Enforcement

C.R.A. Key Risks Analysis Outcomes	Second Line of Defence (For consideration within the proposed Enforcement Program)
94.7% of the Town's existing building stock is comprised of Group C – Residential Occupancies.	Yes
22% of the Town's residential building stock is comprised of row housing, higher than the provincial total of 9%. Attached dwellings have a higher risk of a fire spreading to an adjacent exposed building.	Yes
The M.F.D. has identified 22 occupancies with a height in excess of 18 metres, which have been defined as high-rise buildings.	Yes
There are 19 registered vulnerable occupancies within the Town of Milton.	Yes
E.C. Drury School for the Deaf, Maplehurst Correctional Complex and the Vanier Centre for Women present unique life-fire safety risks.	Yes
Group F – Industrial occupancies account for 10% of structural fire loss within the Town. This is 3% more than the provincial proportion at 7%.	Yes
Although occurring at a lower proportion compared to the Province, Group C – Residential occupancies account for 67% of structure fire loss within the Town.	Yes
19 out of 20 reported fire related civilian injuries occurred in Group C – residential occupancies.	Yes
Of the fires occurring within the Town from 2012-2016, 19% of fires occurred as a result of other electrical/mechanical in Milton, approximately 15% higher than that of the Province.	Yes

In addition,**Table 13** presents the **"key findings"** identified by the C.R.A. that should be further considered within the department's routine fire inspection and enforcement program.

Table 13: Identified Key Findings for Routine Fire Inspections and Enforcement

C.R.A. Key Findings Analysis Outcomes	Second Line of Defence (For consideration within the proposed Enforcement Program)
A building not classified under the Ontario Building Code account for 2.86% of the Towns building stock.	Yes
Group F – Industrial occupancies represent 1.48% of the Town's total building stock.	Yes
There a number of buildings that present an increased fire risk due to their large floor areas. Some of these facilities store dangerous goods.	Yes
There are a number of properties within the Town that have fuel load concerns, primarily linked to building supplies.	Yes
Group A – Assembly occupancies account for 7% of structure fire loss within the Town. This is 3% higher than the Province (4%).	Yes
The cause of 22% of fires occurring in Milton between 2012 and 2016 was unknown, not reported.	Yes
The Town has key employers that contribute to the economic vitality and well-being of the community. If a fire were to occur at one of these facilities it could have a negative impact on the financial vitality of the Town.	Yes
There are a number of significant developments planned for Milton's future that are likely to play an integral role in the Town's economy. If a fire were to occur at one of these facilities it could have a negative impact on the financial vitality of the Town.	Yes

6.10.4 Fire Safety Audits

F.P.-006-SOP Fire Safety Audits describes the purpose and policy of the M.F.D. for on duty fire suppression crews to conduct fire safety audits. This program utilizes on-duty full-time firefighters to facilitate a fire safety audit of building occupancy types identified by the Fire Chief. Our review of this S.O.G. identified that the procedures utilize the

words "audit" and "inspection" interchangeably throughout the document. Care should be given to accurately identify the tasks expected within this procedure. Within the fire service there is a significant difference between the term "audit" and "inspection" that should be clarified in this S.O.P. Our review indicates that this procedure also refers to the "Chief Fire Prevention Officer". This title should also be revised to reflect the correct position.

The utilization of on-duty full-time firefighters is becoming an increasingly utilized strategy to optimize the available staff resources for delivering fire prevention and public education programs. One approach to developing such a staff resource strategy being implemented by other municipalities within the G.T.A. is to develop a recruit training program whereby new firefighter recruits are provided training to have the appropriate skills and competencies to provide fire prevention and public education services in addition to the required firefighter training. The M.F.D.'s senior management team is aware of this new trend and is currently investigating its implementation.

This recruit training strategy includes providing the required training to qualify new full-time firefighters to the required qualification of the N.F.P.A. 1031 – Fire Inspector I, and N.F.P.A. 1035 – Fire & Life Safety Educator I. The introduction of this type of training and qualifications for on-duty firefighters would provide the opportunity for the M.F.D. to consider revising F.P.-006-SOP Fire Safety Audits to include fire inspections of specific occupancy types. The introduction of fire inspections by on-duty firefighters should provide clear direction as to what inspections are to be completed, to what degree the inspections are to be conducted, and the prioritization of inspections based upon the findings of the C.R.A. Specific detail should be provided to the on-duty firefighters participating in this program, for example, in regards to record keeping.

6.10.5 | Fire Safety Enforcement

Historically, enforcement was not commonly used by municipalities working with property owners to achieve compliance with the O.F.C. This trend is changing across the province with the support of the O.F.M.E.M., in part through its Technical Guideline – T.G.-01-2012 "Fire Safety Inspections and Enforcement". This guideline is intended to assist municipalities in efficiently and effectively meeting its fire inspection and enforcement responsibilities.

Dillon's review of this guideline indicates that it supports the direction of the first two lines of defence as a means to optimize the level of fire protection services within a community. This technical guideline provides municipalities with strategies – particularly related to enforcement of the O.F.C. – in situations where achieving compliance has or may be difficult to achieve. F.P.-003 – Fire Safety Inspections includes a section on enforcement reflecting the department's use of enforcement as a tool.

The M.F.D. is utilizing T.G.-01-2012 as a guide including the use of inspection orders. As previously indicated, this F.M.P. recommends updating the applicable Department Polices and Standard Operating Guidelines to reflect the department's current practices.

In reviewing examples of the inspection order data completed by the M.F.D. it appears that the fire prevention division is having some success in achieving compliance through the use of fire safety inspection orders. There were however a number of entries that showed continued non-compliance after re-inspection. In these instances ensuring a timely, comprehensive and consistent follow up process for all O.F.C. violations will further reduce the department's liability.

6.10.6 Fire Investigations and Cause Determination

Investigating the origin and cause of a fire is an important component of informing public education and fire prevention programming needs. N.F.P.A. 1033 Standard for Professional Qualifications for Fire Investigators sets outs the required skills and knowledge to competently conduct fire scene investigations. Where fires meet specific criteria, the local fire department can request assistance from the O.F.M.E.M. to conduct these investigations. The criteria and process for this request are contained in Fire Marshal's Directive 2019-002, which was updated in May 2019.

The findings of fire investigations can help a fire department develop public education and fire prevention initiatives tailored to the fire incidents experienced locally. For example, should it be discovered through the investigation process that fires in multi-unit dwellings are spreading beyond the room unit of origin within a jurisdiction, reviewing the department's fire safety inspection protocol for multi-unit residential occupancies specifically relating to fire separations, or increasing public education messaging around the importance of keeping fire doors closed at all times, may be warranted.

Our review indicates that the department has several Routine Operations that reference the department's current practice to conduct fire investigations, collection of evidence, documentation, safety and duties of staff. As referenced within previous section of this F.M.P., consideration should be given to whether these documents should be presented as Routine Operations, Standard Operating Guidelines or Department Policies. Further review of these documents should also consider the required training and qualifications of all staff conducting fire investigations.

| 6.10.7 | **Fire Safety Plans** |

Fire Safety Plans are required for select occupancy types identified within the O.F.C. These occupancies include Group A – Assembly occupancies, and Group B – Care or Detention occupancies. All remaining major occupancy groups (e.g., Group C – Residential, Group F – Industrial, etc.) also require fire safety plans depending on their occupancy load or other building-related features such as storeys below grade. The O.F.C. also details the content requirements of a fire safety plan (O.F.C. Section 2.8.2.1). These requirements include emergency procedures in the case of a fire such as use of the fire alarm, notifying the fire department, and instruction and evacuation of occupants. Fire safety plans must also designate supervisory staff, and detail holding of fire drills, control of fire hazards, and maintenance of building facilities. Fire Safety Plans provide an avenue for the training of building staff in the case of a fire incident; for example, care providers at a long-term care facility would know their role in an evacuation procedure.

It is important to note that recent legislated changes require all Chief Fire Officials approving fire safety plans for buildings containing care occupancies, care and treatment occupancies or retirements homes, to successfully complete mandatory training as approved by the Fire Marshal. At this time, the only training that has been approved by the O.F.M.E.M. is offered through Public Services Health & Safety Association (P.S.H.S.A.). At the time of preparing this report all fire prevention division staff have successfully completed this required training.

Staff who are assigned responsibilities such as approving fire safety plans should be formally registered as Assistants to the Fire Marshal and formally delegated as Chief Fire Officials (C.F.O.). There are currently five M.F.D. personnel who registered as Assistant to the Fire Marshal under staff report **FIRE 005-06 Delegation of Authority-Chief Fire Official** dated May 1, 2006. This report identifies the positions of Deputy Fire Chief and

Chief Fire Prevention Officer as having been delegated the authority granted a Chief Fire Official under the F.P.P.A. Upon consultation with senior M.F.D. staff it was identified that this document is out of date and requires updating and that the Fire Chief is the only designated Chief Fire Official. These practices of registering staff as Assistants to the Fire Marshal and the formal delegation of authority as Chief Fire Official are recognised industry best practices.

Research into preparing this F.M.P. did not identify a Routine Operation, Standard Operating Guideline or Department Policy describing the department's current practice for the review and approval of Fire Safety Plans, or the required training, qualifications, and authority of staff.

6.10.8 Building Pre-Incident Planning

In comparison to a Fire Safety Plan, the process of pre-incident planning within the fire service is intended to provide a proactive awareness within fire departments about key building features, possible hazards, and other pertinent characteristics about an existing occupancy. Pre-incident planning is typically conducted by on-duty fire suppression staff with information provided from a variety of sources including existing information from the Town, information gathered from the building owner, and site visits. The value of a building pre-incident plan is to provide site specific education and information to fire suppression crews in advance of responding to an emergency incident.

The primary purpose of pre-plans is to assist fire suppression staff with formulating a plan and increasing awareness of the sites hazards on the way to the incident. **F.P.-007 Fire Pre-Planning- Facility Familiarization** outlines the protocol for suppression crews to follow when initiating and carrying out pre-planning activities. F.P.-007 also outlines when the fire prevention division is to be contacted if in the course of a site visit a fire safety hazard is encountered. We are aware that some departments in the province utilize software technology specific for this application to support fire suppression staff in conduct the pre-plan and documenting the findings. This may be an avenue for further consideration by the M.F.D. to enhance the current practice.

The findings of the C.R.A. identify **"key risks"** and **"key findings"** that should be considered within an enhanced pre-planning program. For example, the C.R.A. identifies that 31% of the Town's residential building stock was built prior to the introduction of the current O.B.C. and O.F.C. This means many of these residential buildings may

include older construction methods such as "balloon frame" construction whereby the exterior walls extend from the first floor to the roof with no fire stops. It would be valuable for on-duty crews to identify these occupancies and consider developing pre-incident plans.

The C.R.A. also identifies the high volume of growth in the Town that is predicted to continue for some time into the future. The department has developed **F.P.-001 S.O.P. Firebreak Lots in Subdivisions** to provide instruction to builders regarding firebreak requirements during construction. In our experience, the use of firebreaks is critical to the mitigation of the extension of a fire in a subdivision while under construction. **Table 14** and **Table 15** presents the **"key risks"** and **"key findings"** of the C.R.A. that area applicable for consideration with an enhanced preplanning program.

Table 14: Identified Key Risks for Pre-Planning

C.R.A. Key Risks Analysis Outcomes	Second Line of Defence (For consideration within the proposed Enforcement Program)
31% of the Town's residential building stock was built prior to the introduction of the Ontario Building Code and Fire Code.	Yes
The Town is continuing to experience a high volume in growth of residential occupancies and development that can be vulnerable to fire while under the construction process.	Yes

Table 15: Identified Key Findings for Pre-Planning

C.R.A. Key Findings Analysis Outcomes	Second Line of Defence (For consideration within the proposed Enforcement Program)
As development intensification continues in and around the Town, traffic congestion will become an increasingly significant consideration from the perspective of providing emergency response.	Yes

C.R.A. Key Findings Analysis Outcomes	Second Line of Defence (For consideration within the proposed Enforcement Program)
There are a number of significant developments planned for Milton's future that are likely to play an integral role in the Town's economy. If a fire were to occur at one of these facilities it could have a negative impact on the financial vitality of the Town.	Yes

The findings of the C.R.A. provide valuable insight into identifying the fire related risks within the community, and specifically the types of building occupancies that should be prioritized for pre-planning. In our view, there would be added benefit to updating **F.P.-007 S.O.P. Fire Pre-Planning**- **Facility Familiarization** to include extended pre-planning procedures and pre-planning and enforcement related to **F.P.-001 S.O.P. Firebreak Lots in Subdivisions**.

6.10.9   Plans Review

Plans review and approval of site plans for new construction or site alterations from the perspective of fire protection is a critical component of fire prevention. The involvement of fire departments across the province in the plans review and the site plan review process varies. Plans can be reviewed for sprinkler, fire alarm, and kitchen suppression systems; and, site plan and subdivision approval for items affecting fire services such as access and water supply.

At present, the Building Services division of the Town of Milton's Development Services Department manages building plans and site plans review. The fire department may be contacted to review building or site plans; however a process has not been formalized. Our research indicates that the current process for reviewing new construction plans received by the Town's Building Services division includes their review, and if necessary as a result of their review of the fire safety systems, or fire department access contacting the fire department for input. In our experience, current municipal best practices reflect the importance of coordinating the plans review process between departments, including building and fire. Building departments typically have a stronger focus on the building codes in comparison to the fire code, however, in our view, there needs to be a broader municipal strategy that considers that in the longer-term the fire

department will be inspecting many of these buildings on an ongoing basis, and therefore having an understanding and input into the planning of the fire and life safety systems from the onset of design and construction can be beneficial.

Research indicates that there are currently no formal policies or procedures in place regarding the current building and site plans review process. M.F.D. staff are not currently required to be trained or qualified to review plans. The development of a Routine Operation, Standard Operating Guideline or Department Policy describing the department's current practice of plans review and coordination with the Town's Development Services Department would be beneficial to identifying the services the M.F.D. provides and could provide in this area.

A proactive and effective relationship with the Town's Building Services division would be an example of current industry best practices that provides a critical opportunity for M.F.D. prevention and education staff to be involved in the design/construction process. This approach helps to ensure early understanding and compliance of the fire safety elements of the O.B.C. and the O.F.C. An established relationship with occupants/owners in these early stages enhances the ability of the M.F.D. to maintain compliance with the O.F.C. over the long term. As the Town of Milton continues to experience growth, an inter-departmental relationship should be supported.

6.10.10   False Alarms

The findings of the C.R.A. and our review of the department's historical emergency response data indicate that for the period from 2012 to 2016 false alarms as defined by the O.F.M.E.M. response types accounted for 25% of the departments emergency call volume. This indicates that false alarm calls result in a significant demand on the current resources of the M.F.D. As referenced previously, the Town of Milton has adopted a cost recovery strategy for nuisance alarms in its Rates and Fees By-law. The M.F.D. has also developed comprehensive public education pamphlets in an effort to further educate the public and business owners about the issue.

The findings of the C.R.A. indicate that the percentage of false alarms in the Town of Milton during the period from 2012 to 2016 represented 25% of total call volume by O.F.M.E.M. response type, 8% higher than the province. **Table 16** presents the **"key findings"** of the C.R.A. that area applicable for consideration.

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Table 16: Identified Key Findings for False Alarms

C.R.A. Key Findings Analysis Outcomes	Second Line of Defence (For consideration within the proposed Enforcement Program)
Based on O.F.M.E.M. Response Types, M.F.D. call volumes are comprised of 8% more false fire calls, 5% more CO false calls, 5% more property fires/explosions calls and 9% more other response calls and 38% less medical calls.	Yes

In our experience, these findings support further consideration of a more comprehensive strategy that includes an enhanced and targeted public education campaign, and increased fire inspections of properties where repeat false alarms occur. The findings of the C.R.A. appear to indicate that the current cost recovery strategy may not be significant enough to further mitigate the occurrence of false alarms within the Town.

An enhanced and targeted public education campaign may include more robust language relating to enforcement options available to the Town to reduce false alarms, including but not limited to charging building owners or managers for not maintaining fire alarm systems in accordance with the O.F.C. Jurisdictions including the City of Toronto and the City of London have chosen to use media releases and press conferences to share the cost to tax payers related to false alarms and the penalties for conviction under the Fire Code as a method of educating the public.

6.11 Proposed Fire Inspection Program

The analysis of the existing fire inspection program provided by the M.F.D. indicates that the department is currently complying with the municipality's legislative requirements for providing fire prevention and public education services.

The applicable industry guidelines, standards and best practices presented within this F.M.P. acknowledge that the optimization of fire prevention and public education services and programs is one of the most effective and efficient strategies to mitigating the fire risks present and to providing a safer community. Through its leadership in recognising the need to address the new **Ontario Regulation 150/13** as part of this fire

master planning process, the Town has also acknowledged the importance of an effective and efficient fire inspection program.

In addition to the recommendations provided within this F.M.P. regarding the existing fire inspection program, we are recommending that Council consider the adoption of specific performance goals and objectives related to the prioritization and frequency of fire inspections within the community. The proposed fire inspection cycles have been informed by the findings of the C.R.A. and specifically the following identified high risks:

- The Town is continuing to experience a high volume in growth of residential occupancies and development that can be vulnerable to fire while under the construction process;
- The M.F.D. has identified 22 occupancies with a height in excess of 18 metres, which have been defined as high-rise buildings;
- There are 19 registered vulnerable occupancies within the Town of Milton;
- E.C. Drury School for the Deaf, Maplehurst Correctional Complex and the Vanier Centre for Women present unique life-fire safety risks; and
- Group F – Industrial occupancies account for 10% of structural fire loss within the Town. This is 3% more than the provincial proportion at 7%.

The proposed fire inspection cycles (performance objectives) shown in **Table 17** prioritize the identified high risk occupancies within the community and specifically the Town's legislative requirements including those identified by **Ontario Regulation 150/13 - Enhancing Fire Safety in Occupancies Housing Vulnerable Ontarians.** In our experience, the transition to the proposed fire inspection cycles will require the department to consider the workload of its current resources, options for utilization of other existing staff resources such as on duty Operations Division staff resources and the need for additional staff resources within the Fire Prevention Division. An important element of this transition will be consideration of the recommended training and qualification requirements of all staff assigned to conduct fire inspections and related tasks. Additional information regarding workload tracking of fire prevention staff can be found in **Section 6.9 – Fire Prevention Division Activity Workload Tracking** of this report.

Table 17: Proposed Fire Inspection Cycle

Occupancy Classification (O.B.C.)	Buildings	Current Fire Inspection Frequencies	Proposed Fire Inspection Frequencies (Performance Objectives)
Group A – Assembly	Schools, Recreation Centres (Arenas), Curling/Golf Centres	Upon Request/Complaint	1 - 2 Years*
Group A – Assembly	Licensed Properties, Nursery/Day Care Facilities, Churches, Special Occasion Permits	Upon Request/Complaint	1 – 2 Years
Group B – Care or Detention	B2, B3, Retirement Homes, Group Homes	Annual	Annual
Group B – Care or Detention	Other Group B	Upon Request/Complaint	1 – 2 Years
Group C – Residential	Apartments regulated by Part 9.3 of the O.F.C. (Boarding, Lodging, and Rooming Houses)	Upon Request/Complaint	2 – 3 Years
Group C – Residential	Apartments regulated by Part 9.5 of the O.F.C. (Buildings up to and including 6 Storeys in Building Height with Residential occupancies)	Upon Request/Complaint	2 – 3 Years

Occupancy Classification (O.B.C.)	Buildings	Current Fire Inspection Frequencies	Proposed Fire Inspection Frequencies (Performance Objectives)
Group C – Residential	Apartments regulated by Part 9.6 of the O.F.C. (Buildings Higher than 6 Storeys in Building Height With Residential Occupancies)	Upon Request/Complaint	2 – 3 Years
Group C – Residential	Apartments regulated by Part 9.8 of the O.F.C. (Two Unit Residential Occupancies)	Upon Request/Complaint	Upon Request/Complaint
Group C – Residential	Hotels regulated by Part 9.9 of the O.F.C.	Upon Request/Complaint	2 – 3 Years
Group C – Residential	Condominiums / Apartments Known as Primarily Seniors Residences	Upon Request/Complaint	Annual
Group C – Residential	Home Inspection Program	Upon Request/Complaint	Door- to- Door and Upon Request/Complaint
Group D - Business	Business and Personal Services Occupancies	Upon Request/Complaint	3 – 5 Years
Group E - Mercantile	Mercantile Occupancies	Upon Request/Complaint	3 – 5 Years
Group F - Industrial	Factories and Complexes	Upon Request/Complaint	1 – 2 Years

*Town owned facilities to be inspected on an annual basis, all other 1-2 years

During the process of developing this fire master plan, the full-time staff at Station 3 were moved to the newly opened Station 5. Given the change in turnout time and the overall impact on total response time, consideration should be given to proactively enhancing public education and inspections in the Station 3 response area.

6.12   Proposed Fire Inspection Program Staff Resource Strategy

The proposed strategic priorities presented within this F.M.P. are intended to optimise the utilization of the first two lines of defence in providing the most effective and efficient fire protection services within the Town of Milton including:

"Where applicable the optimization of the first two lines of defence including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Town"

Implementing the recommendations presented within this F.M.P. related to enhancing the department's current fire inspection program including implementing the proposed fire inspection cycles will have a direct impact on the workload of the current staff resources assigned to this area. A large number of fire departments in Ontario, and specifically in the G.T.A. are responding to this pressure to enhance their fire inspection programs by expanding the utilization of on-duty full-time firefighters. This strategy recognizes that subject to receiving the required training and qualification, an on duty full-time firefighter could be qualified to conduct certain components of a fire inspection program. This strategy does not diminish the need to have dedicated fire prevention inspectors who are qualified to conduct more complex fire inspections and enforcement. At a minimum, this would require the assigned on-duty full-time firefighters to attain the skills and competencies included within the **N.F.P.A. 1031 – Fire Inspector Level I**. Many fire departments are now including this qualification as a part of a full-time firefighters recruit training program. The utilization of on-duty full-time firefighters will assist the department in implementing the proposed fire inspection program including implementing the proposed fire inspection cycles.

There will however be a need to also consider the addition of another full-time fire inspector in the future to meet the workload demands of the growing community and building stock. As recommended in **Section 6.9 – Fire Prevention Division Activity and Workload Tracking**, the M.F.D. can expand the current workload reporting of the Fire

Prevention Division to inform the total number of full-time personnel required to deliver fire prevention programs effectively and build the business case for the hiring of additional fire inspectors.

6.13   Existing Public Education Program

Research conducted in developing this F.M.P. supports the optimization of public education programs as a strategic priority for the M.F.D. in response to the findings of the C.R.A. This strategy is further supported by the experience of other municipalities that has proven that expanding and enhancing public education efforts can be an effective strategy to mitigate emergency call volume and increase the overall level of fire safety within a community.

The delivery of the department's current public education program is overseen by the Division Chief of Fire Prevention and primarily delivered by the two Fire Prevention Inspectors. Our research indicates that the two Fire Inspectors are qualified to the level of skill and competency included within the N.F.P.A. 1035 – Fire and Life Safety Educator I standard.

The department currently provides a wide range of public education programs that target specific demographics and fire safety issues within the community. Examples of these include:

- A fire safety program that targets grade three students within the community;
- Fire extinguisher training;
- Fire station tours;
- Cooking for teens;
- Community fire safety presentations; and
- A dedicated senior's home smoke alarm program.

Due to the health and safety restrictions imposed by the COVID-19 pandemic, station tours have temporarily been closed to the public and all public education is taking place online through the department's website and social media platforms. Some of the training mentioned in this divisional analysis is now being offered virtually.

The M.F.D. is a strong advocate of developing partnerships in support of fire prevention and public education programs. Examples of these include partnerships with Union Gas, the Spectra Energy Foundation and the Town of Halton Hills. Partnerships such as these

have allowed the department to purchase four mascots that are an invaluable tool for attracting and teaching children the benefits of fire safety education. Through a partnership with the Halton Hills Fire Department (H.H.F.D.) the M.F.D. has also been able to share the cost of purchasing a Fire Safety House.

This mobile Fire Safety House provides a unique opportunity for participants and students to be presented with home fire safety education in an environment that simulates typical fire safety concerns with the home. Use of the fire safety house is currently limited to scheduling the time available with the H.H.F.D. and the availability of the Fire Inspectors.

The findings of the C.R.A. include **"key risks"** and **"key findings"** where existing or additional public education programming should be considered as part of the department's risk reduction strategies. These are presented within the following sections including where further risk reduction strategies should be considered.

6.13.1 Smoke Alarm and Carbon Monoxide Alarms

Under the authority of the F.P.P.A., the Ontario Fire Code requires a working smoke alarm to be installed on each level of a dwelling unit, as well as outside of all sleeping areas. Responsibility for installation and maintenance of the smoke alarm lies with the owner/landlord. To assist the fire department in fulfilling its responsibility for the provision of a smoke alarm program, **P.F.S.G. 04-40B-03: Smoke Alarm Program** outlines the objectives of an effective one. These objectives include all or a combination of the following:

- Providing smoke alarm and home fire escape planning information;
- Promoting regular testing and maintenance of smoke alarms;
- Providing or replacing smoke alarms and/or batteries;
- Encouraging residents to regularly maintain their smoke alarms;
- Educating residents about the legal requirements for smoke alarms;
- Enforcement of all legislation relating to smoke alarms;
- Effectively tracking and evaluating your smoke alarm program; and
- Modifying the program where necessary to ensure success.

Ontario Regulation 194/14- Carbon Monoxide Alarms made under the F.P.P.A. came into force on October 15, 2014 introducing new requirements for the installation,

testing and maintenance of Carbon Monoxide Alarms (C.O. Alarms). As a result, fire departments within the province have also been tasked with monitoring compliance with this new regulation. Current industry best practices indicate that fire services are revising their previous home smoke alarm programs to include assessing compliance with this new regulation.

Historically, home smoke alarm programs across the province were dominated by door-to-door campaigns provided by on-duty firefighters within their respective emergency response coverage areas. Where necessary, firefighters would install a smoke alarm that was either provided by a private sector donor, or in many cases provided by the municipality. The primary objective was to ensure a working smoke alarm was in place on every floor of the residence before the fire department left the building. Changes to smoke alarm legislation coupled with the O.F.M.E.M.'s introduction of a "zero tolerance policy" resulted in many fire departments stepping away from the traditional door-to-door programs in favor of programs that focused on public education campaigns and providing smoke alarms, if requested.

The importance of smoke alarms and carbon monoxide alarms are illustrated by the **"key risks"** identified in **Table 18** and **"key findings"** of the C.R.A. presented in **Table 19.** This information confirms that residential occupancies account for 94.7% of the Town's building stock, and that this occupancy type accounts for 67% of the structure fire loss within the community. This information also indicates all but one of the fire related injuries over the period from 2012 to 2016 occurred in a residential occupancy, and that in a large number of the residential occupancy incidents the M.F.D. responded to, there was either no smoke alarm present, or it was found not to be operational.

Table 18: Identified Key Risks – Smoke Alarms/C.O. Alarms

C.R.A. Key Risks Analysis Outcomes	First Line of Defence (For consideration within the proposed Public Education Program)
94.7% of the Town's existing building stock is comprised of Group C – Residential Occupancies	Yes

C.R.A. Key Risks Analysis Outcomes	First Line of Defence (For consideration within the proposed Public Education Program)
Although occurring at a lower proportion compared to the Province, Group C – Residential occupancies account for 67% of structure fire loss within the Town.	Yes
19 out of 20 reported fire related civilian injuries occurred in Group C – residential occupancies.	Yes
Based on the analysis of smoke alarms present and operating, the information available indicates that there is a potential risk that in 38% of the instances there was either no smoke alarm present or it was not operational.	Yes

Table 19: Identified Key Findings – Smoke Alarms/C.O. Alarms

C.R.A. Key Findings Analysis Outcomes	First Line of Defence (For consideration within the proposed Public Education Program)
Over 15 years (2001-2016) Milton's total population increased by 250% and the number of residential dwellings in the Town increased by 233%.	Yes

The department's current Home Smoke Alarm Program is described within **F.P.-002-Smoke Alarm Program**. This document identifies that the department "Smoke Alarm Program" shall consist of the following elements:

- A formal public smoke alarm program campaign conducted in accordance with the O.F.M.E.M. Guideline and administered by the Fire Prevention and Public Education Division;

- Provision of smoke alarms and/or batteries to residents either by request or upon discovery of contraventions to the smoke alarm requirements of the O.F.C.;

- Smoke alarm 'in-service inspections' with suppression crews. Smoke alarm installation and maintenance information provided via various media and distributed during public education events; and

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- Public service announcements in our local media and via our fire station sign boards.

F.P.-002 was last revised in 2014 when the department revised its smoke alarm program, shifting its emphasis from the number of homes attended to actual engagement with residents. This shift has resulted in fewer homes being visited due to the level of interaction that is being encouraged between fire department personnel and residents. This interaction provides for a greater level of public education to take place while also promoting a professional and approachable image of the M.F.D. The current Smoke Alarm Program provides for meaningful interaction between on-duty fire crews and the public. In our view, there is significant value to this program in addressing the identified **"key risks"** and **"key findings"** associated with residential occupancies within the Town. Historically, the Smoke Alarm Program runs from late June each year until Fire Prevention Week at the beginning of October (prior to the COVID-19 pandemic).

Previous references to F.P.-002 – Smoke Alarm Program included within this F.M.P. include a recommendation to update specific elements of this guideline. The analysis presented within this section highlights the importance of this program in responding to the identified **"key risks"** and **"key findings"** included within the C.R.A. In our experience, this guideline should be further revised to reflect current industry best practices including the following components:

- Revising the current Smoke Alarm Program to include assessing Carbon Monoxide Alarm compliance requirements;
- Prioritizing the delivery of the revised Smoke Alarm Program to areas of the community where extended emergency response times may be present including the defined rural area of the Town; and
- Identifying specific annual goals and objectives for the revised Smoke Alarm Program including identifying the number of homes to be attended, and further enhanced data collection requirements to track all elements of the program.

Once completed, the revised Standard Operating Guideline goals and objectives should be included within the proposed Fire Prevention Policy and presented to Council for consideration and approval.

6.13.2 | **Alarmed and Ready – Seniors Smoke Alarm Program**

In addition to the F.P.-002- Smoke Alarm Program, the department provides a dedicated smoke alarm program to applicable seniors who reside in owner-occupied single family dwellings. This program is made available to members of the community to assist people because of age, physical or mental limitations, or financial reasons or who are not able to install and maintain a smoke alarm in their home.

The value of this program is supported by the **"key risks"** identified in **Table 20** and **"key findings"** of the C.R.A. presented in **Table 21**. This information identifies that 22% of the Town's current demographic includes people between the ages of 45 and 64 who may soon be in need of this type of program. The C.R.A. also identifies this same demographic were responsible for the highest percentage of ignitions over the period 2012 to 2016.

Table 20: Identified Key Risks – Seniors Smoke Alarm Program

C.R.A. Key Risks Analysis Outcomes	First Line of Defence (For consideration within the proposed Public Education Program)
People between the ages of 45 and 64 who are aging towards the seniors demographic of 65 or over make up 22% of Milton's population.	Yes

Table 21: Identified Key Findings – Seniors Smoke Alarm Program

C.R.A. Key Findings Analysis Outcomes	First Line of Defence (For consideration within the proposed Public Education Program)
Individuals aged 40-64 were the highest proportion of individuals reported as persons associated with ignitions reported in the M.F.D. Fire Loss data from 2012-2016.	Yes

Research into preparing this F.M.P. did not identify a specific Department Policy, Standard Operating Guideline or Routine Operation identifying the goals and objectives and direction to staff related to delivering this program. In our experience, this program is an example of current industry best practices in response to identifying at risk individuals and developing specific programs that respond to that risk.

Seniors are recognised as a vulnerable demographic within the community. **Figure 4** illustrates the results of an analysis completed by the O.F.M.E.M.'s Fire Statistics from 2006 to 2015 that show that seniors are at an increased risk of fatality compared to other age groups.

Figure 4: Residential Fire Death Rate by Age of Victim in Ontario, 2006 to 2015
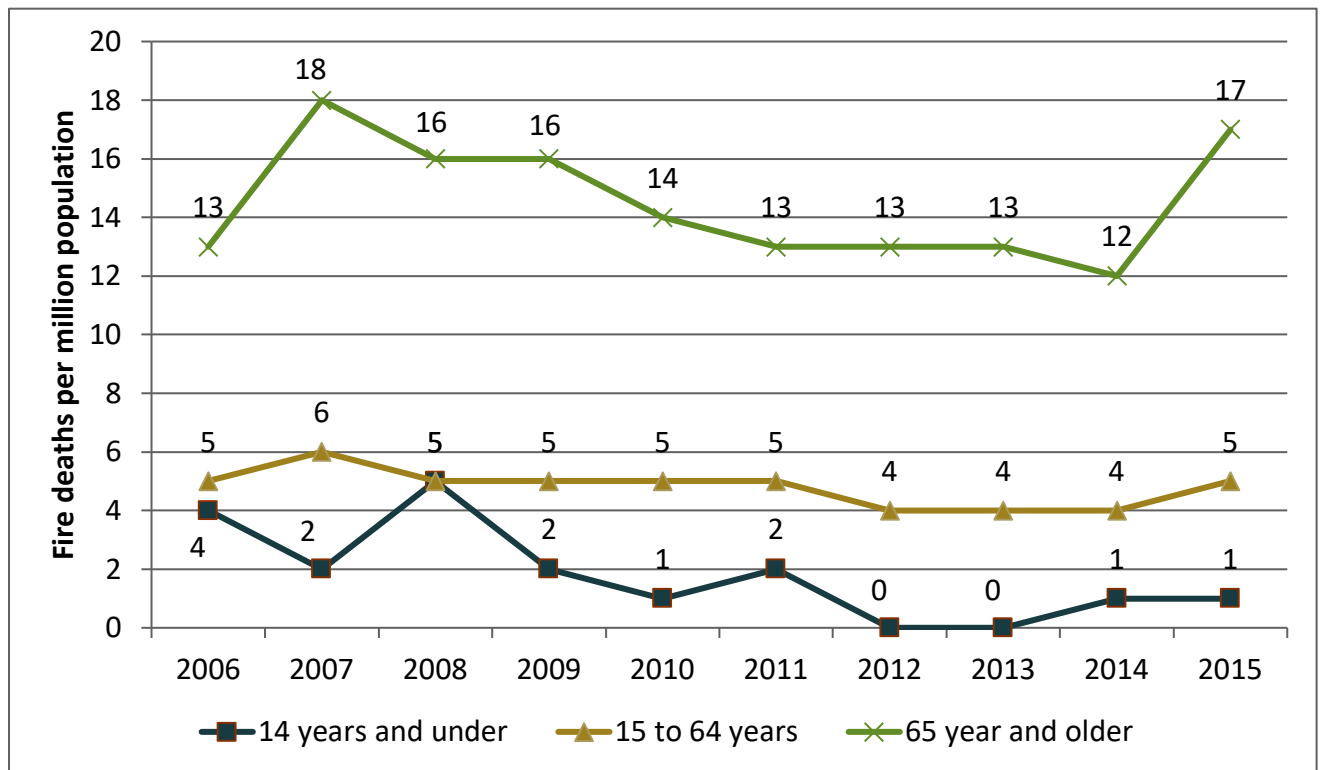
(Source: O.F.M.E.M.)

In our view, a specific Standard Operating Guideline should be developed for this program. It should include defined goals and objectives, and reference the components recommended in the previous section for the department Smoke Alarm Program as well as being included within the proposed Fire Prevention Policy and presented to Council for consideration and approval.

6.13.3 **Town of Milton Media Relations Policy and Social Communications Policy**

The Town of Milton is committed to building professional relationships with members of the media and as such has created a Media Relations Policy that outlines the responsibilities and procedures the Town will follow to ensure professionalism and consistency when engaging in these working relationships. The Policy indicates who is authorized to make statements to the media on the Town's behalf, the terms and conditions associated with proactive and reactive media relations. The policy specifies the individuals designated as the primary media contact for emergency situations and fire-related incidents. In the case of fire incidents, the Fire Chief or a designated Deputy is authorized to release information to the media pertaining to public safety. All media

inquiries related to emergency events or situations are to be directed to the designated Public Information Officer.

The Town's Social Media Communications Policy provides a framework which guides designated Town officials in their conduct and contributions to various social media outlets and tools. All social media communications are administered through a single corporate account for Facebook, Twitter and YouTube and are approved beforehand and monitored on a daily basis by Corporate Services Strategic Communications staff.

In our experience the optimization of communications to the public both during and immediately following an emergency incident has become an extremely valuable tool for enhancing public safety. There are numerous examples of fire and emergency services gathering critical information through monitoring of social media while en-route to an emergency, and providing direct feedback to those involved on how to proceed or manage the incident. There are similar examples of the importance of issuing media releases during and immediately after an incident to promote public safety in response to a specific issue or broader public fire safety messages.

It is recommended that the fire department in consultation with Strategic Communications develop a Fire Department Public Communication Policy for use by authorized fire department staff in managing the response to an emergency incident. This should include the time frame from receiving the call until normal operations have resumed and ongoing communications with the public would fall under the Town's current Communications Policies.

6.13.4 Distribution of Fire Safety Information

The legislative requirements to distribute fire safety information are also informed by the O.F.M.E.M. who have developed **P.F.S.G. 04-40C-03 Distribution of Public Fire Safety Education Materials** to assist municipalities in interpreting the requirements of the F.P.P.A. This review indicates that the M.F.D. distributes a wide range of fire safety information that includes the utilization of web-based information, social media forums, and the distribution of hard copy fire safety information/pamphlets. In our view, the current practices of the M.F.D. reflect those of current industry best practices and include the following initiatives:

6.13.4.1   Department Website

The department's website located at http://www.miltonfire.ca/en/index.asp provides valuable information related to home fire safety, smoke alarms, carbon monoxide alarms and community programs offered by the M.F.D. In our experience, the department's website represents an industry best practice in distributing fire safety information to a broad range of demographics within the community.

6.13.4.2   Hard Copy Fire Safety Information

Printed fire safety information is provided by the department as part of formal programs and activities and attending public events. This includes distributing pamphlets and fire safety information related to smoke alarms, home escape planning and carbon monoxide alarms. The department also provides tours of the fire stations on a regular basis as part of its public education programing that also includes the distribution of fire safety information based on the demographic participating in the tour.

6.13.4.3   Community Events

In addition to the door to door component of the departments smoke alarm program (Home Safe Home), fire department personnel have historically attended a variety of popular retail locations, community events and public parks throughout the Town of Milton during weekends. Crews are encouraged to interact with the public, sharing public safety messaging, answering questions, and distributing public education materials. Members of the M.F.D. are active participants in many events throughout the community. These events generally include representation including fire prevention resources, on-duty firefighters and part-time firefighters. These events provide the opportunity to provide a display of fire suppression apparatus as a draw for younger participants, while also offering an organized display of public education materials in conjunction with the nature of the event.

Due to COVID-19 travel restrictions and health considerations, most events in Milton have been cancelled until further notice at the time this report was written with the exception of a few events which have been transitioned to a virtual platform.

The department was able to provide historical statistical data for many of the programs and activities where public fire safety information is currently distributed to the public.

For example, in 2017, the M.F.D. greeted approximately 2,100 people through attending community events, an increase from 1,180 people in 2016. This is an important due diligence task on behalf of the department for tracking the municipality's legislative requirements in this area. Our review suggests there are a number of these programs and activities where this tracking process is not in place. It is recommended that the department consider implementing a process for tracking the distribution of all public fire safety information that is distributed.

6.14 Proposed Public Education Programs and Cycles

In terms of enhancing the current public education programs and activities and optimizing the first two lines of defence, there are two key priorities: enhance and expand public education programs; and establish a public education cycle that is prioritized based on risk.

6.14.1 Enhanced Child/Youth Education Program

The department currently prioritizes the delivery of its Grade 3 public education program. This program typically targets a demographic of children between the ages of 7 to 9 depending on their birth date. The findings of the C.R.A. indicate that 26% of Milton's current population (2016 Census) is comprised of children/youth between the ages of 0 to 14. This is 9% higher than that of the province. Based on the Town's projected community growth it is anticipated that the total number of children/youth within this category will continue to increase. **Table 22** identifies the **"key risks"** related to children/youth between the ages of 0 to 14.

Table 22: Identified Key Risks – Related to Children/Youth

C.R.A. Key Risks Analysis Outcomes	First Line of Defence (For consideration within the proposed Public Education Program)
In comparison to the Province, Milton's total population contains a high proportion of persons aged 0 to 14 (26% versus 17%).	Yes

Findings of the C.R.A. and the community's projected growth support the development of enhanced public education programming that also targets children/youth in either grade 7 or grade 8. This would reflect current industry best practices that target

formalized public education programs for children/youth while they are still in the elementary level school system. Teaching children/youth fire safety education during their early development years has proven to be an effective strategy towards changing human behaviour as they age. Other emergency services across the province such as the police services have utilized this strategy to educate children/youth through programs such as the Drug Abuse Resistance Education (D.A.R.E.) program.

The implementation of this program will require further consideration of the available resources in the fire prevention division. This will be discussed within the proposed organizational structure of the department to be presented in later section of this F.M.P.

6.14.2 Enhanced Adult Fire Safety Program

The M.F.D. has developed an effective Seniors Smoke Alarm Program that is supported through a community partnership. **Table 23** identifies the **"key risks"** and **Table 24** identifies the **"key findings"** included within the C.R.A. related to the evolving senior's population within the community. This analysis indicates that 22% of the Town's current population (2016 Census) is between the ages of 45 and 64 who area aging towards the senior's demographic of 65 or over. A similar age category of persons between the age of 40 and 64 are associated with the highest percentage of fire ignitions over the period from 2012 to 2016 representing 20% of the incidents. The key findings also indicate that 33% of this population was male.

Table 23: Identified Key Risks – Related to Adults

| C.R.A. Key Risks Analysis Outcomes	First Line of Defence (For consideration within the proposed Public Education Program)
People between the ages of 45 and 64 who are aging towards the seniors demographic of 65 or over make up 22% of Milton's population.	Yes

Table 24: Identified Key Findings – Related to Adults

C.R.A. Key Findings Analysis Outcomes	First Line of Defence (For consideration within the proposed Public Education Program)
Individuals aged 40-64 were the highest proportion of individuals reported as persons associated with ignitions reported in the M.F.D. Fire Loss data from 2012-2016.	Yes
According to M.F.D. fire loss data for 2012-2016, the person associated with the ignition source was male for 33% of instances compared to females in 9% of instances.	Yes

In our view, this information supports the need to consider developing a dedicated adult/seniors fire safety education program. The M.F.D. has shown an ability to develop community partnerships to support many of its programs. This may also be an effective strategy for consideration towards developing and implementing the proposed adult/seniors fire safety education program.

As referenced in the previous section, the implementation of this program will also require further consideration of the available resources in the fire prevention division.

6.14.3   Proposed Public Education Cycle

Building on the proactive programs and partnerships in place, there is an opportunity to further define objectives for public education. Implementing goals and objectives for conducting public fire safety education activities and programs is consistent with responding to the strategic priorities identified within this F.M.P. This would include developing regularly scheduled public education programs and activities (cycles) for providing fire safety education to the various occupancy classifications identified in the C.R.A. Developing a cycle provides the opportunity to prioritize the delivery of fire safety education programs based on the results of the C.R.A. specifically for the vulnerable demographics identified.

Dillon's research into developing fire safety program delivery cycles looked at the relevant N.F.P.A. standards, P.F.S.G.s and industry best practices. **Table 25** reflects the proposed public fire safety education activities and program delivery cycles utilizing the

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Ontario Building Code (O.B.C.) occupancy classifications. These are presented to form a component of the proposed performance objectives for each of the formalized public education programs identified above.

Table 25: Proposed Public Safety Education Activities and Programs Delivery Cycle Objectives

Occupancy Classification(O.B.C.)	Buildings	Proposed Fire Safety Program Delivery Cycle Objectives
Group A – Assembly	Schools, Recreation Centres (Arenas), Curling/Golf Centres	1 – 2 Years
Group A – Assembly	Licensed Properties, Nursery/Day Care Facilities, Churches, Special Occasion Permits	1 – 2 Years
Group B – Care or Detention	B2, B3, and Retirement Homes	Annual
Group B – Care or Detention	Other Group B- including Maplehurst Correctional Complex and Vanier Centre for Women	1 – 2 Years
Group C – Residential	Apartments regulated by Part 9.3 of the O.F.C.	1 – 2 Years
Group C – Residential	Apartments regulated by Part 9.5 of the O.F.C.	1 – 2 Years
Group C – Residential	Apartments regulated by Part 9.8 of the O.F.C.	1 – 2 Years

Occupancy Classification(O.B.C.)	Buildings	Proposed Fire Safety Program Delivery Cycle Objectives
Group C – Residential	Hotels, Motels, and occupancies regulated by Part 9.9 of the O.F.C.	3 – 4 Years
Group C – Residential	Home Inspection Program	Annually
Group D - Business	Business and Personal Services Occupancies	Upon Request
Group E - Mercantile	Mercantile Occupancies	3 – 4 Years
Group F - Industrial	Factories and Complexes	3 – 4 Years

Recognizing the enhanced public education programs and cycles to sustain the Town's legislated responsibilities, it is recommended that the proposed Fire Prevention Policy include the programs listed below and the goals and performance objectives of each program, and that the M.F.D. report on the number of activities conducted annually within each program including:

- Media releases and public safety announcements;
- Smoke alarm, CO alarm, and home escape planning;
- Public fire and life safety events and displays;
- Awareness and targeted education programs, such as students, seniors, and fire-safe living; and
- Fire Prevention Week, community event activities.

6.15 Proposed Public Education Program Staff Resource Strategy

The M.F.D. does not currently have a staff resource dedicated to the delivery of the department's public education program. These duties are currently shared amongst the existing staff within the fire prevention division with the assistance of on-duty

firefighters for specific programs. Public education related to fire risks has proven to be one of the most effective strategies towards enhancing community fire safety. The recommendations of the F.M.P. support the need to broaden the scope of the department's current public education program including implementing the proposed public education cycles.

In our view, the hiring of a dedicated full-time Public Education Officer qualified to the requirements of the **N.F.P.A. 1035 - Fire and Life Safety Educator Level II** should be considered a priority of the M.F.D.

6.16 Fire Prevention/Public Education Staff Resource Implementation Strategy

The analysis within this F.M.P. recommends that the Town prioritize the hiring of a full-time Public Education Officer. These recommendations are based upon the current workload capacity of the existing staff resources assigned to this division and the implementation of the proposed fire inspection cycles and public education cycles presented within this F.M.P.

In addition to informing the proposed public education and fire prevention cycles, the N.F.P.A. 1730 Standard on Organization and Deployment of Fire Prevention Inspection, and Code Enforcement, Plan Review, Investigation, and Public Education Operations provides valuable insight into applying methodology for analyzing the number of personnel required to achieve a defined service level (cycle). At present, the department does not track or collect the data required to fully assess the workload capacity of staff within this division. The implementation of this type of a workload management process would be beneficial to assessing the staff resources required and implementation time frame to achieve the proposed public education and fire prevention cycles.

In our view, there is sufficient existing need to prioritize the hiring of the proposed full-time Public Education Officer. The implementation of a workload management process as included within the N.F.P.A. 1730 Standard would provide further supporting data for the proposed additional Fire Prevention Inspector and other future staff resources within this Division.

| 6.17 | **Fire Prevention Division Summary and Recommendations** |

The analysis presented within this F.M.P. confirms that the Town of Milton is currently achieving its legislative requirements identified within the F.P.P.A. for the delivery of public education and fire prevention programs.

The Town of Milton is recognised as a community that has, and continues to be impacted by rapid community growth. As such, sustaining and enhancing the fire prevention and public education programs provided by the M.F.D. should be considered a core element of the Town's strategic growth planning. This is supported by the recommended strategic priorities presented within this F.M.P. including:

"Where applicable the optimization of the first two lines of defence including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Town".

This F.M.P. has been informed by the findings of a C.R.A. in recognition of the new Ontario Regulation 378/18 that came into force on July 1, 2019. In our view, commissioning the completion of the C.R.A. as a component of this fire master planning process further confirms the Town's commitment to strategic community planning.

The analysis and recommendations presented regarding the M.F.D. Fire Prevention Division further confirm a broader department challenge related to maintaining and updating Department Policies, Standard Operating Guidelines and Routine Operations. In our experience, this is not an uncommon challenge; however, the increasing number of legal proceedings within the province related to the delivery of fire protection services warrant further enhanced due diligence in this area on behalf of the municipality.

| 6.17.1 | **Goals, Objectives, and Recommendations** |

Goal #2: The Milton Fire Department will enhance its fire prevention and public education programs based on the outcomes of a C.R.A in support of optimizing the first two lines of defence.

> **Objective #2A:** Implement proactive fire prevention and public education programs and policies in alignment with the community risks.

> > **Recommended Action:** Develop and implement a Council-approved proactive inspection cycle and proactive public education cycle.

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Recommended Action: Enhance the utilization of trained and qualified on-duty full-time firefighters for inspections and delivery of education programs.

Recommended Action: Develop a Fire Department Public Communication Policy in consultation with Strategic Communications.

Recommended Action: Develop a comprehensive strategy for managing false alarm calls that includes enhanced and targeted public education strategies, increased fire inspections and enforcement options.

Recommended Action: Develop a child/youth fire safety education program targeting grade 7/8 to increase the depth of the current public education program;

Recommended Action: Develop a Fire Prevention Policy that defines the purpose and objectives of each of the fire prevention related policies/guidelines including the proactive inspection cycle and proactive public education cycle. Present the policy to Council for approval and inclusion within the Establishing and Regulating By-law as an appendix.

Recommended Action: Increase the capacity of the Fire Prevention Division by adding one full-time Public Education Officer.

Recommended Action: Implement a process to monitor the workload and capacity of staff in the Fire Prevention Division in support of maintaining appropriate levels full-time personnel required to deliver fire prevention programs effectively.

Objective #2B: Prioritize the training of all fire prevention and public education staff.

Recommended Action: All staff designated as Chief Fire Officials should be trained through the Public Services Health & Safety Association related to the Chief Fire Official roles and responsibilities.

Recommended Action: Fire prevention staff be trained and qualified to the appropriate N.F.P.A. Pro-Qual standards suitable to their role.

Recommended Action: Train all full-time firefighters to the qualification of N.F.P.A. 1031 – Fire Inspector - Level I and NFPA 1035 – Fire and Life Safety Educator - Level I.

7.0 | Operations Division

The M.F.D. is recognised as a "composite" or combination fire department defined as "having emergency service personnel comprising less than 85 percent majority of either volunteer or career membership"[16]. The fire suppression division of the M.F.D. is overseen by the Deputy Fire Chief of Operations and includes 56 full-time (career) and an approved complement of 65 part-time (volunteer) firefighters, with 51 active part-time firefighters. There is also a Training Captain and Training Officer who are cross trained to support the fire suppression deployment model when required.

In addition to fire suppression related services the M.F.D. respond to a wide range of other types of incidents including motor vehicle collisions within the community and on Highway 401, technical rescues related to confined spaces in construction projects and other designated spaces, water/ice incidents on local waterways and stormwater retention areas, high-level and rope rescues on the Niagara Escarpment, and medical related responses.

There have been a number of significant changes within the fire service related to the delivery of fire suppression services since the Town completed its last F.M.P. in 2008. These changes focus on the current transition within the industry to the use of risk-based analysis in determining the required fire suppression deployment model. Previous fire suppression deployment guidelines such as the P.F.S.G. 04-08-12 "Staffing – Single Family Dwellings" referenced in the Town's 2008 F.M.P. have since been rescinded by the O.F.M.E.M.

The research and analysis presented within this F.M.P. provide a comprehensive review of current industry best practices related to delivering fire suppression services within the Town of Milton. This analysis considers options in adopting the most effective and efficient fire suppression deployment model that provides the most value to the community. This includes utilizing the findings of the C.R.A. and further utilization of the first two lines of defence identified by the Comprehensive Fire Safety Effectiveness

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[16] N.F.P.A. 1720 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments – Section 3.3.15 Fire Department

Model including optimizing public education and fire prevention programs, and the further use of fire safety standards and enforcement.

7.1 | Existing Fire Suppression Deployment Model

In response to the recommendations of the 2008 F.M.P. the Town has been investing in both the capital needs (fire stations), and operating needs (additional full-time firefighters) to operate the M.F.D. This has included the relocation and construction of a new Station 3 in 2013, the rehabilitation of Station 1 completed in 2019, and the new addition of Station 5, located at 7825 Louis St. Laurent Avenue, which opened in early 2021.

Since 2008, the Town has also hired an additional 36 full-time firefighters to enhance the fire suppression deployment capabilities of the M.F.D. However, it is important to note that the realities of the community's fiscal responsibilities have not allowed the department to maintain the same speed of growth for staffing as that of the community. Further discussion on staffing can be found throughout the fire suppression analysis.

The M.F.D. currently provides fire suppression services from five fire stations strategically located throughout the Town as shown in **Figure 5**.

Figure 5: Existing Fire Station Locations (2021)

TOWN OF MILTON
FIRE MASTER PLAN UPDATE

FIGURE 5
EXISTING FIRE STATION LOCATIONS (2021)

● Existing Fire Station
━━ Railway
▦ Urban Boundary

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF,
TOWN OF MILTON

MAP CREATED BY: TK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:90,000

0   1   2   4 km

PROJECT: 187286   STATUS: DRAFT   DATE: 2021-06-03
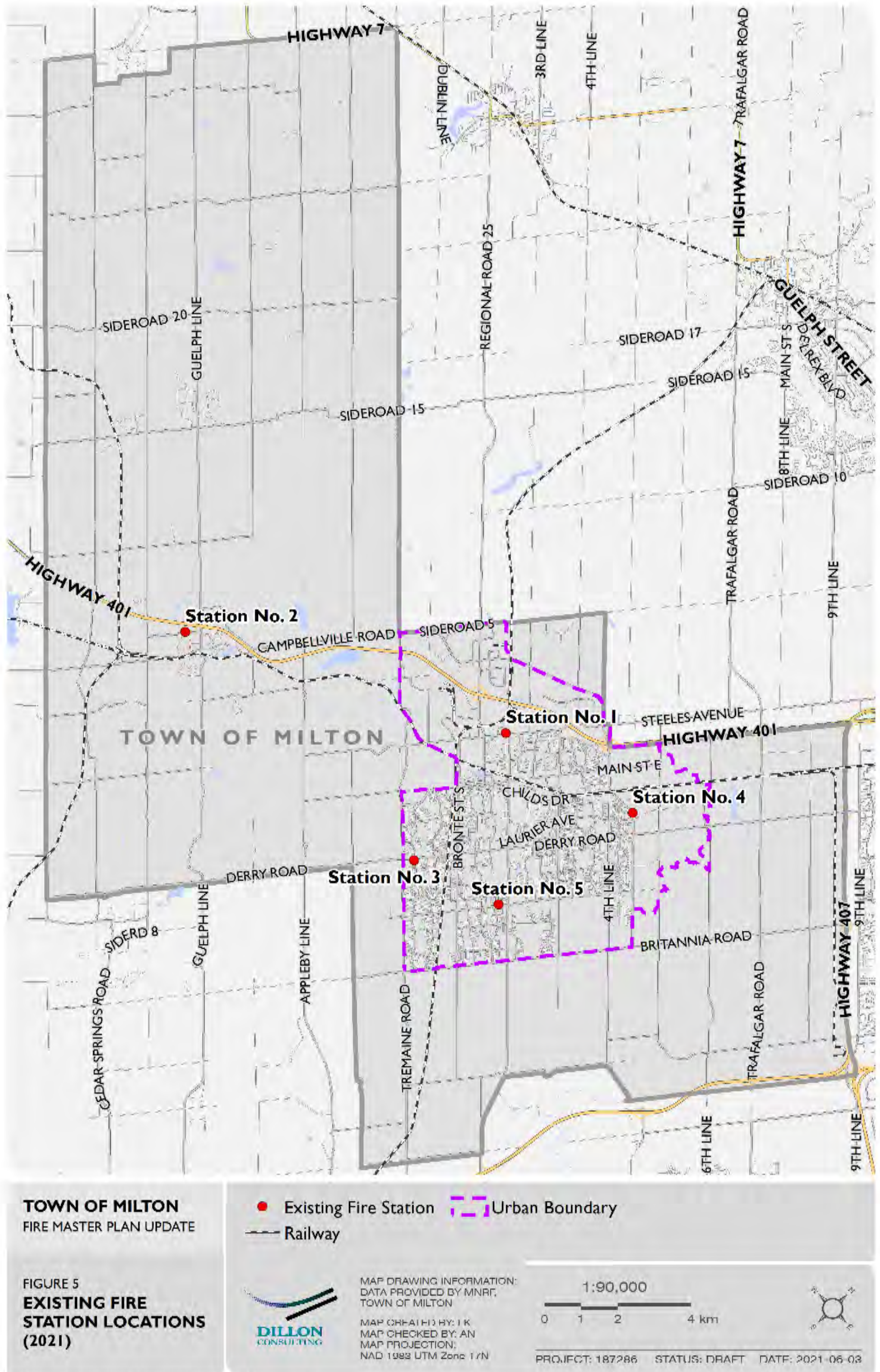
7.1.1   **Existing Fire Suppression Resources**

The existing fire suppression deployment model has evolved from the historical volunteer fire department into its current "composite" operating model including both full-time and part-time firefighters. **Table 26** illustrates the existing distribution of full-time and part-time firefighters by station. Station 1 is currently the only station staffed by a combination of both full-time and part-time firefighters. Station 2 and 3 are staffed by only part-time firefighters and Station 4 and 5 are staffed by only full-time firefighters.

It should be noted that there have been numerous evolutions over the past few years in regards to how and where both full-time and part-time firefighter resources have been allocated. For example, Station 1 has historically been staffed with a minimum staffing of four full-time firefighters from 6 AM to 6 PM. As of May 2021, this has transitioned to full complement of 20 full-time firefighters and Station 4 has transitioned to a complement of 16 full-time firefighters. In addition, the full-time firefighters located at Station 5 were previously assigned to Station 3. Similarly, the part-time firefighters have also been reassigned in response to the available complement and supervisory capabilities.

Table 26: Existing Fire Stations and Fire Suppression Resources

Station No.	Address	Number of Part-Time Firefighters	Number of Full-time Firefighters
1	405 Steeles Avenue	20	20
2	2665 Reid Side Road	17	0
3	610 Savoline Boulevard	17	0
4	7825 James Snow Parkway South	0	16
5	7825 Louis St. Laurent Avenue	0	20
Total	Not applicable	54	56

The department currently deploys one apparatus staffed with four full-time firefighters from Stations 1 and 5 at all times, which is achieved by having a full complement of 20

firefighters assigned to these stations. Station 4, which has a complement of 16 firefighters, will have a minimum of three full-time firefighters on duty (with consideration to sick time, vacation, etc.) the majority of the time.

In regards to historical minimum staffing of part-time apparatus, an analysis was completed to determine what percent of the time a part-time apparatus is staffed with four firefighters for the daytime versus the nighttime. (Daytime hours were defined as between 08:00 and 18:00 hours, and nighttime between the hours of 18:00 and 08:00.) The average over the five year period of 2015 to 2019 is shown in **Table 27**. Note that this is based on historical staffing, when Station 4 would have been staffed with part-time firefighters. Overall, at no time of day is four part-time firefighters guaranteed and there is a decrease in staffing during the day-time which is common with part-time firefighters.

Table 27: Percent of Time on Average a Part-time Apparatus Staffed with Four Firefighters (2015 to 2019)

Station	Daytime	Nighttime
Station 1	73%	82%
Station 2	55%	85%
Station 3	77%	81%
Station 4	91%	90%

In addition, when the data is reviewed by year, there is a wide range of percentages across both the daytime and the nighttime for Stations 1, 2, and 3. This is due, in part, to changes in complement size or allocation, and is impacted by who chooses to respond.

This analysis further highlights the importance of deploying full-time firefighters within the defined urban area (Stations No. 1, 3, 4 and 5) as there is no guarantee that the part-time firefighters will be able to staff their assigned apparatus with the minimum number of part-time firefighters required at all times. Note that this analysis does not consider turnout time; further discussion on minimum staffing and turnout time can be found in **Section 7.8.2.1 Existing Minimum Staffing and Turnout Time.**

7.2   **Importance of Time with Respect to Fire Growth**

Understanding how a fire grows from the time of ignition is a critical element of assessing a municipality's fire protection program including the application of the "three lines of defence". Research conducted by the O.F.M.E.M. and National Research Council of Canada indicates that a fire in a non-sprinklered residential occupancy can spread from the room where the fire originates in ten minutes or less. Tests have shown that the fire can extend from the room of origin in as little as three minutes, under fast fire growth conditions.

Fire growth rates, defined by the Society of Fire Protection Engineers as slow, medium and fast, are listed in **Table 28**. The fire growth rates are measured by the time it takes for a fire to reach a one megawatt (M.W.) fire. This is roughly equivalent to an upholstered chair burning at its peak. A two M.W. fire is approximately equal to a large upholstered sofa burning at its peak.

Table 28: Time to Reach 1 M.W. and 2 M.W. Fire Growth Rates in the Absence of Fire Suppression

Fire Growth Rate	Time in Seconds to Reach 1M.W.	Time in Seconds to Reach 2 M.W.
Slow	600 seconds	848 seconds
Medium	300 seconds	424 seconds
Fast	**150 seconds**	**212 seconds**

(Source: "Operational Planning: An Official Guide to Matching Resource Deployment and Risk", Office of the Fire Marshal and Emergency Management, January 24, 2011, p. 4)

In less than ten-minutes from ignition a fire can reach the point of "flashover" representing a point in the fires growth and intensity that all of the combustible items within a given space reach a temperature that is sufficiently high enough for them to auto-ignite. The graph in **Figure 6** illustrates the importance of the time period prior to the fire department being notified and alerted to deploy fire suppression resources.

Within this pre-fire department notification period the presence of working smoke alarms, carbon monoxide alarms and public education that has guided the residents of the building to develop and practice a home escape plan are critical elements to the life safety of the occupants. It is within this pre-fire department notification period that the first two lines of the **"three lines of defence"** are critical to the life safety of the occupants.

Figure 6: Example Fire Propagation Curve
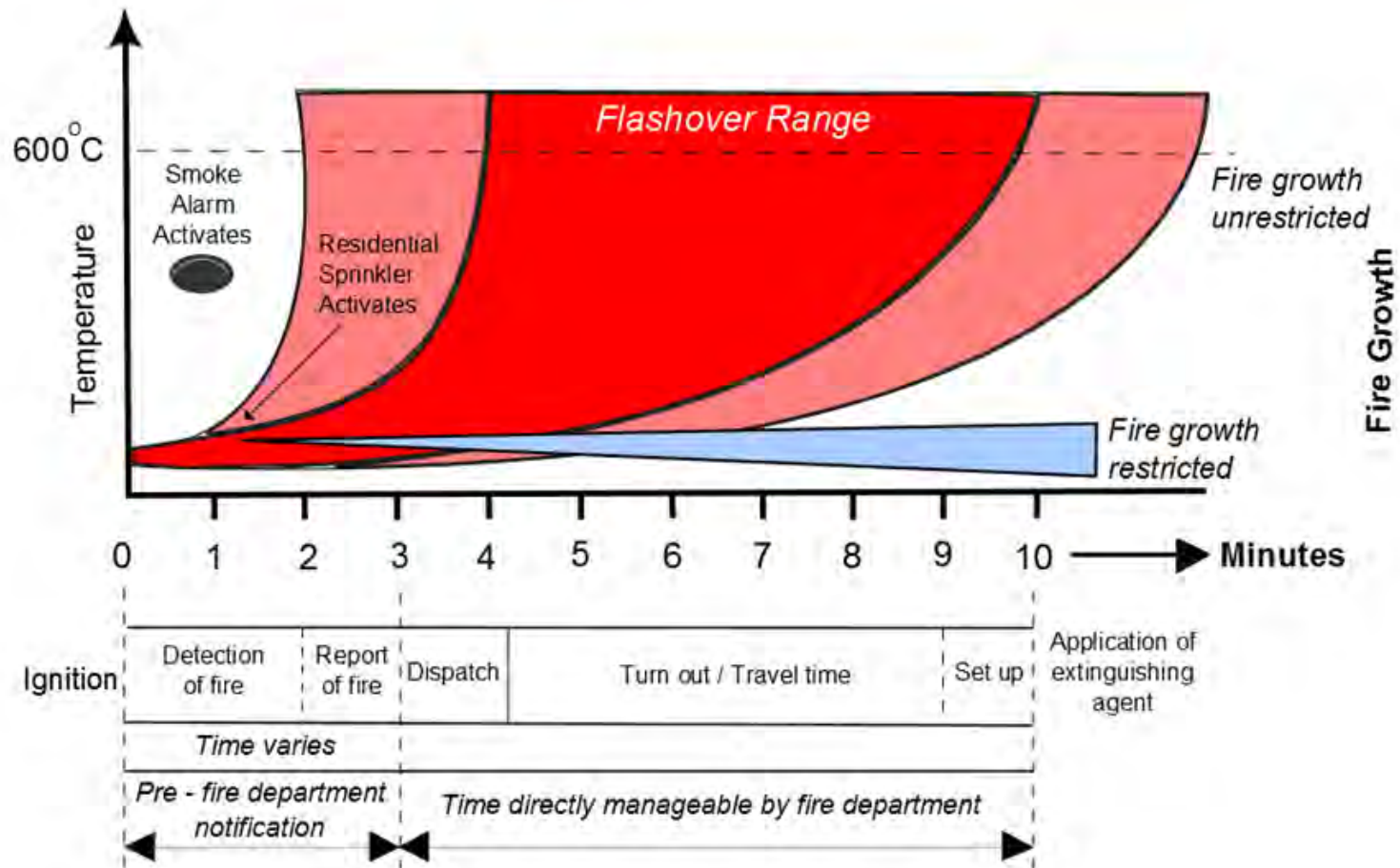
Reference: Fire Underwriters Survey "Alternative Water Supplies for Public Fire Protection: An Informative Reference Guide for Use in Fire Insurance Grading" (May 2009) and NFPA "Fire Protection Handbook" (2001)

The fire propagation curve reflects the importance of time during the Detection 'detection – report' stage. This is the time period not impacted by any actions by the fire department. The time period controlled by the fire department begins when the call is initially received by dispatch and includes several other components leading up to the initiation of intervention by fire operations staff.

Understanding factors such as "growth rate" and "time" in terms of how quickly a fire can reach a critical stage such as flashover are important considerations in assessing fire operations performance targets. For example, where areas of the community may have extended response times due to long travel times, the potential for the fire to have spread from the room of origin or to have already reached a flashover state will be significantly higher.

In these situations, consideration should be given to the first two lines of defence including the provision of more public education and fire prevention activities as a means to inform the public on how to be prepared and react in the event of a fire.

7.3   Emergency Response Time Components

Within the fire service, **"Total Response Time"** is calculated by assessing three primary factors that include the following:

Dispatch Time + Turnout Time + Travel Time = Total Response Time

Each component play an important role in overall response time and, if within a fire department's control, there is an opportunity to improve overall response time by improving the individual components. This section provides an overview of each of the components.

Overall, emergency response times are measured and analyzed according to percentile ranking (i.e. percentage of responses meeting a specified timeframe). The 90th percentile (i.e. where 90% or 90 out of 100 responses meet a specific response time target) is a common industry best practice for reporting and understanding emergency first responder performance. Fire and emergency services commonly measure and report 90th or 80th percentile response time data for system planning and resource deployment purposes.

7.3.1	**Dispatch Time**

In Canada, the Canadian Radio-television and Telecommunications Commission (C.R.T.C.) regulates the carriers who supply the network to direct, and connect 911 calls to regional centres across Ontario. Within the Town of Milton, this service is provided by Halton Regional Police. Calls initiated by the public through the use of the 911 system are typically directed to a regional 911 centre first, and then rerouted to the applicable fire department. It is important to recognize this element of Ontario's 911 emergency dispatching process.

This is because the applicable **N.F.P.A. 1221 Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems (2019 Edition)** applies only when the Authority Having Jurisdiction (A.H.J.), in this instance being the M.F.D., takes control of the "Emergency Event Processing/Dispatching" process.

The **N.F.P.A. 1710 - Standard for Organization and Deployment of Fire Suppression Operations by Career Fire Departments (2020)** defines alarm processing time (dispatch time) as "The time interval from when the alarm is acknowledged at the communication center until response information begins to be transmitted via voice or electronic means to emergency response facilities (E.R.F.s) and emergency response units (E.R.U.s)."

N.F.P.A. 1710 standard requires that "the fire department shall establish a performance objective of having an alarm processing time of not more than 64 seconds for at least 90% of the alarms and not more than 106 seconds for at least 95% of the alarms processed, as specified by N.F.P.A. 1221" .[17]

7.3.2	**Turnout Time**

Turnout time is defined within the by the **N.F.P.A. 1710 - Standard for Organization and Deployment of Fire Suppression Operations by Career Fire Departments** as:

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[17] It should be noted that N.F.P.A. 1221 (2019) Section 7.4.3 identifies that emergency alarm processing for the highest prioritization level of calls shall be completed within 60 seconds 90 percent of the time. This is different than the performance benchmark referenced in N.F.P.A. 1710 (2020) of 64 seconds 90 percent of the time. For the purposes of this Fire Master Plan, we have applied the performance benchmark referenced in the most recent N.F.P.A. document which is the 2020 edition of N.F.P.A. 1710.

"The time interval that begins when the emergency response facilities (E.R.F.s) and emergency response unit (E.R.U.s) notification process begins by either an audible alarm or visual annunciation of both and ends at the beginning point of travel time."[18]

In a composite fire department such as the M.F.D. that utilizes part-time firefighters, turnout time is a critical component of assessing the overall emergency response capabilities of the department. In comparison to full-time firefighters who are assigned to a specific fire station, are on duty at the fire station and ready to respond, the part-time firefighters must first be alerted to respond, then travel in their own vehicle to the fire station, and then prepare to respond. Within the fire service the impact of turnout time is one of the most significant operational differences between the use of full-time and part-time firefighters.

This standard identifies a performance benchmark of 80 seconds or less for all fire-related incidents and 60 seconds or less for medical/resuscitator calls. The general industry definition of firefighter turnout time is defined as the preparation time required between the emergency call being received at the fire station and the time the truck and firefighters leave the station.

7.3.3   Travel Time

Travel time is defined within the by the **N.F.P.A. 1710 Standard for Organization and Deployment of Fire Suppression Operations by Career Fire Departments** as:

"The time interval that begins when a unit is en route to the emergency incident and ends when the unit arrives at the scene."[19]

Analyses of the components of total response time for M.F.D. can be found throughout **Section 7.0 Operations Division** and within **Section 9.0 Communications (Fire Dispatch).**

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[18] N.F.P.A. 1710 Standard for Organization and Deployment of Fire Suppression Operations by Career Fire Departments – Section 3.3.53.8

[19] N.F.P.A. 1710 Standard for Organization and Deployment of Fire Suppression Operations by Career Fire Departments – Section 3.3.53.7

7.4 | **Current Fire Suppression Deployment Guidelines, Standards and Best Practices**

Within the Province of Ontario there is no specific legislated standard that a community must achieve with regard to the type of firefighter (career/volunteer/part-time) or the number of firefighters required to respond to any given incident. The F.P.P.A. does however require that a municipal Council assess their fire protection resources based on determining its local "needs and circumstances."[20]

Over the past decade there has been a transition within the fire service industry across North America to the utilization of community risk-based analysis. In Ontario, this has culminated with the introduction of Ontario Regulation 378/18: Community Risk Assessments which requires all municipalities in Ontario to develop a C.R.A. prior to July 1, 2024. A C.R.A. helps Council define municipal needs and circumstances. The regulation also requires municipalities to "use its community risk assessment to inform decisions about the provisions of fire protection services"[21] Community risk-based analysis is used to determine the appropriate level of firefighter deployment based on the critical tasks to be performed to effectively, efficiently and safely conduct fire suppression operations.

The O.F.M.E.M. is the agency responsible for overseeing the delivery of fire protection services within the Province of Ontario, and N.F.P.A. is the most highly recognized fire service association in North America. These agencies cumulatively represent the authorities for identifying the applicable fire suppression deployment benchmarks for the Town of Milton. In addition to these two authorities, valuable information is also available from the experience of other provinces and agencies. The following sections present the findings of research into the existing fires suppression deployment guidelines, standards and industry best practices that are applicable to this fire master planning process.

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[20] F.P.P.A., 1997 Part II Municipal Responsibilities Section 2. (1) (b)

[21] Ontario Regulation 378/18: Community risk Assessments, Mandatory Use, Section 1 (b).

| 7.4.1 | **Office of the Fire Marshal & Emergency Management** |

Public Fire Safety Guideline 04-08-10 – Operational Planning: An Official Guide to Matching Resource Deployment and Risk was released by the O.F.M.E.M. in January of 2011. This guideline is intended to be an element of a municipalities risk management process. This guideline states that "The purpose of this guideline is to encourage municipalities and fire departments to use this tool so that they can make informed decisions regarding the delivery of fire suppression services."[22]

This guideline includes a "Critical Task Matrix" that is defined by the O.F.M.E.M. as "The critical Task Matrix is based on the Incident Management System (I.M.S.). It will assist in identifying fireground staffing capabilities based upon low, moderate, high and extreme risk levels within your community. The O.F.M.E.M. has identified the critical tasks from the Incident Management System that are used during fireground operations. These tasks are consistent with applicable legislation, industry best practices and the Ontario Fire College Curriculum."[23] The matrix recognizes that within the I.M.S. that:

- Upon arrival and rapid size-up, the incident commander can upgrade or downgrade response

- Crews can be reassigned to other tasks once original assignments are complete;

- Response protocols can be established with specific risk levels used to assist with pre-planning to obtain more resources based on the escalating nature of the emergency;

- Fire departments perform rescue and building personnel conduct evacuations according to their approved fire safety plans; and,

- Some tasks will never be assigned based on the tactical approach chosen by the incident commander (offensive versus defensive).

The matrix identifies the lower effectiveness response level (L.E.R.L.) and upper effectiveness response level (U.E.R.L.) indicating the range of firefighters required to effectively, efficiently and safely conduct the identified suppression fireground critical

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

[23] P.F.S.G. 04-08-10 Operational Planning: An Official Guide to Matching Resource Deployment and Risk

tasks associated with each level of risk present. For example, the range of firefighters required to respond to a fire in a single family residential dwelling (Group C- Residential Occupancy) identified within the C.R.A. as a moderate risk occupancy would be from 16 to 43 firefighters. Whereas the response to a registered care facility (Group B- Care or Detention Occupancy) identified within the C.R.A. as a high risk occupancy would be from 36 to 83 firefighters.

| 7.4.2 | **N.F.P.A. 1710 Standard (2020 Edition)** |

The N.F.P.A. develops and manages a series of codes and standards which guide fire protection service delivery across North America.

In contrast to the O.F.M.E.M. Critical Task Matrix, the **N.F.P.A. 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (2020 Edition)** provides fire suppression staffing performance benchmarks for municipalities that utilize only career (full-time) firefighters.

The N.F.P.A. 1710 Standard is designed for municipalities that, as a result of many factors, are predominately operating their fire department utilizing only career (full-time) firefighters.

Relevant references from N.F.P.A. 1710 include the following:

- This standard applies to the deployment of resources by a fire department to emergency situations when operations can be implemented to save lives and property[24]
- The standard is a benchmark for most common responses and a platform for developing the appropriate plan for deployment of resources for fires in higher hazard occupancies or more complex incidents[25]

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[24] N.F.P.A. 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (2020 Edition) Chapter 1 Administration, Application Section 1.3.1

[25] N.F.P.A. 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (2020 Edition) Chapter 1 Administration, Application Section 1.3.2

These N.F.P.A. 1710 references support the strategic priority of saving lives and property, as well as recognizing the standard as a **"benchmark"** for determining the appropriate level of resources based on the complexity and level of fire risk present. This standard identifies minimum firefighter deployment benchmarks based on the fire risks present within a range of building occupancy types.

It is important to note that this N.F.P.A. 1710 Standard is designed for application within a broad range of jurisdictions across North America. This standard was not specifically developed for the delivery of fire suppression services within the Province of Ontario that has a more stringent Fire Code and Building Code than may be found in other jurisdictions. For example, **Ontario Regulation 364/13** requires mandatory annual fire inspections and fire drills in vulnerable occupancies designated as a care and treatment occupancy, a care occupancy or a retirement home. Ontario also has mandatory requirements for sprinkler system installation in vulnerable occupancies, and requirements for enhanced fire and life safety systems in other building occupancies such as high-rise buildings.

It is also important to note that the N.F.P.A. 1710 Standard requires that the fire suppression deployment model be informed by a formal Community Risk Assessment. [26] In Ontario, the development of a C.R.A. is now a mandatory requirement for all municipalities to comply with O. Reg. 378/18: Community Risk Assessments.

The N.F.P.A. 1710 Standard includes the following fire suppression deployment models based on the type of building occupancy and potential fire risks present:

- Initial Arriving Company
- Second Arriving Company
- Single-Family Dwelling Initial Full Alarm Assignment
- Open-Air Strip Shopping Center Initial Full Alarm Assignment
- Apartment Initial Full Alarm Assignment
- High-Rise Full Alarm Assignment

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[26] N.F.P.A. 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (2020 Edition) Chapter 5 Fire Department Services, Section 5.2.1.1 Fire Suppression Capabilities

7.4.2.1 | **Initial Company – "Initial Response"**

The Initial Arriving Company is commonly referenced within the fire service as the initial responding apparatus deployed to respond to an emergency incident. Fire service leaders and professional regulating bodies have agreed that until a sufficient number of firefighters are initially assembled on-scene, initiating tactics such as entry into the building to conduct search and rescue, or initiating interior fire suppression operations **are not** safe practices. If fewer than four firefighters arrive on scene, they must wait until a second apparatus, or additional firefighters arrive on scene to have sufficient staff to commence these initial activities.

Within the N.F.P.A. 1710 Standard an **'Initial Arriving Company'** is referenced as an 'Engine Company' with a minimum staffing of four firefighters whose primary functions are to pump and deliver water and perform basic firefighting at fires, including search and rescue.

An Initial Arriving Company of four firefighters once assembled on-scene is typically assigned the following operational functions: the officer in charge shall assume the role of Incident Commander; one firefighter shall be designated as the pump operator; one firefighter shall complete the task of making the fire hydrant connection; and the fourth firefighter shall prepare an initial fire attack line for operation.

The assembly of four firefighters on the fire scene provides sufficient resources to safely initiate **limited fire suppression, <u>or</u> rescue operations**.

This first crew of four firefighters is also able to conduct the strategic operational priority of "size-up" whereby the officer in-charge can evaluate the incident and where necessary, request additional fire suppression resources that may not have been dispatched as part of the initial alarm.

The N.F.P.A. 1710 fire suppression deployment model for the initial arriving company requires a minimum of four firefighters arriving on scene with an 'Engine Company' within a four minute (240 seconds) travel time to 90% of the fire suppression incidents.

Fire scene responsibilities of an **Initial Company** are highlighted in **Figure 7.**

Figure 7: Initial Arriving Company – Initial Response
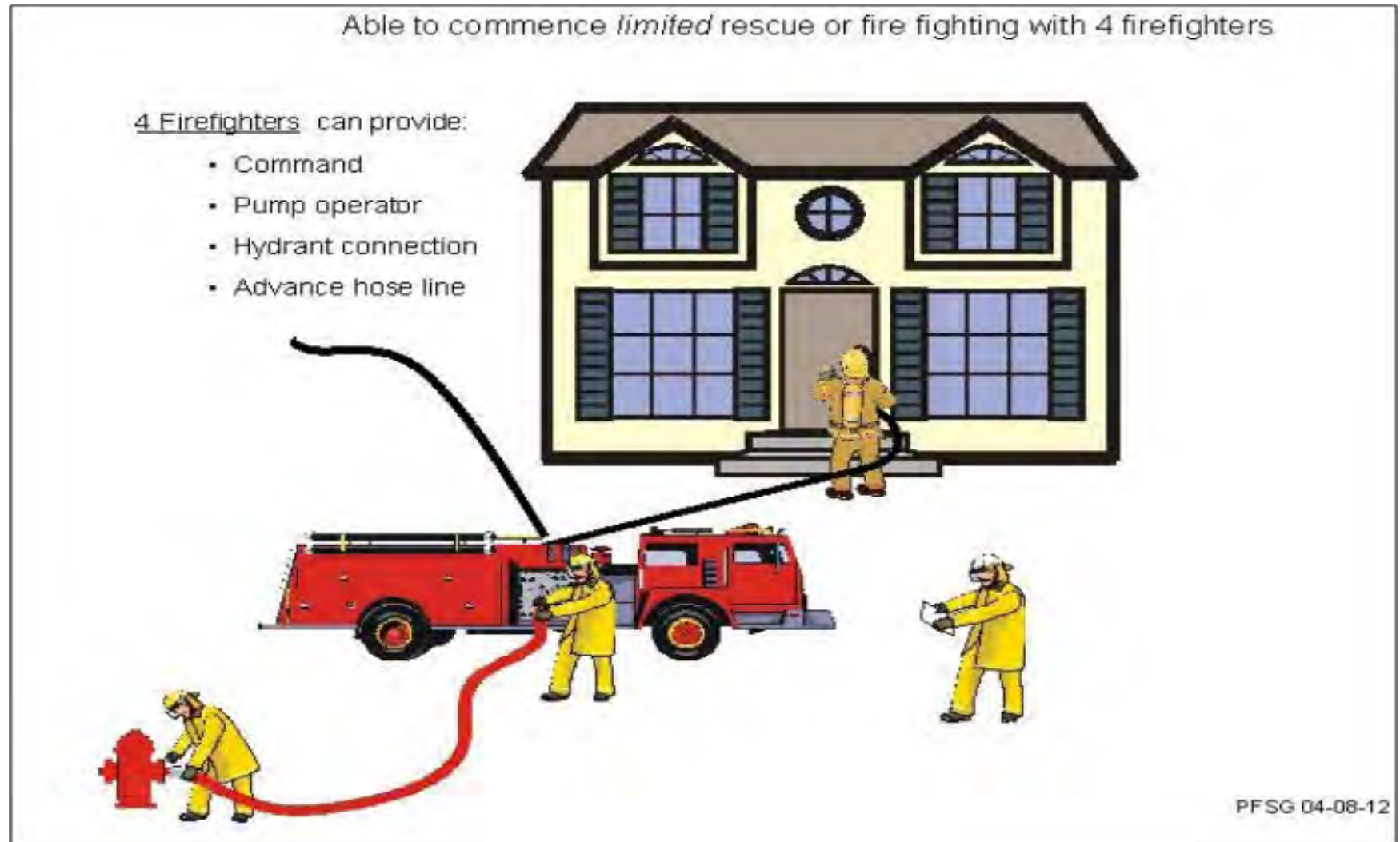
(Office of the Fire Marshal, Ontario, Public Fire Safety Guideline 04-08-12, December, 2001)

7.4.2.2   **Second Arriving Company**

The N.F.P.A. 1710 Standard (2020 Edition) includes a new performance benchmark for the deployment and arrival of the second responding apparatus. The standard does not reference a specific type of apparatus for the second arriving company but does require that it be staffed with a minimum of four firefighters. The term 'company' in this standard can be defined as "being usually organized and identified as engine companies, ladder companies, rescue companies, squad companies or multi-functional companies"[27]

The N.F.P.A. 1710 fire suppression deployment model for the second arriving company requires a minimum of four firefighters arriving on scene with a 'Second Company' within a six minute (360 seconds) travel time to 90% of the fire suppression incidents.

7.4.2.3   **Single-Family Dwelling - Initial Full Alarm Assignment**

In comparison to the deployment of an 'Initial Arriving Company,' the term **'Initial Full Alarm Assignment'** refers to "Those personnel, equipment, and resources ordinarily dispatched upon notification of a structure fire"[28]. An initial full alarm assignment represents the 'total' number of firefighters initially deployed to a structure fire.

In this deployment standard, a single-family dwelling is defined as "a typical 2,000 ft^2 (186 m^2) two-story single-family dwelling without basement and with no exposures"[29]. This definition is a further example of the broad definitions utilized by the N.F.P.A. that in this instance may not necessarily represent the definition of a typical single-family

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[27] N.F.P.A. 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (2020 Edition) Chapter 3 Definitions, Section 3.3.15

[28] N.F.P.A. 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (2020 Edition) Chapter 3 Definitions, Section 3.3.40 Initial Full Alarm Assignment

[29] N.F.P.A. 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (2020 Edition) Chapter 5 Fire Department Services, Section 5.2.4.1.1

dwelling in Ontario. Most single- family dwellings in Ontario have basements to accommodate heating systems.

The N.F.P.A. 1710 fire suppression deployment model for an initial full alarm assignment to a single-family dwelling includes a minimum deployment of 16 firefighters (17 if an aerial device is used) described as the **'total effective response force'** arriving on scene within an eight minute (480 second) travel time to 90% of the fire suppression incidents in this occupancy type.

7.4.2.4   **Open-Air Strip Shopping Center – Initial Full Alarm Assignment**

In this deployment standard an open-air strip shopping center is defined as ranging in size from 13,000 ft^2 (1203 m^2) to 196,000 ft^2 (18,209 m^2). This deployment model is described as having a total effective response force of a minimum of 27 firefighters (28 if an aerial device is used).

This deployment model includes "the establishment of an initial medical care component consisting of at least two members capable of providing immediate on-scene medical support and transport that provides rapid access to civilians or members potentially needing medical treatment"[30].

In the Town of Milton these services are provided by the Region of Halton Paramedic Services. As such the total effective response force to be provided by the M.F.D. would be a minimum of 25 firefighters (26 if an aerial device is used) arriving on scene within an eight minute (480 second) travel time to 90% of the fire suppression incidents in this occupancy type.

7.4.2.5   **Apartment – Initial Full Alarm Assignment – Depth of Response**

In this deployment standard an apartment is defined as a typical 1200 ft^2 (111 m^2) apartment within a three-story garden style apartment building. This deployment model is also described as having a total effective response force that includes a minimum of 27 firefighters (28 if an aerial device is used) and includes the same establishment of

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[30] N.F.P.A. 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (2020 Edition) Chapter 5 Department Services, Section 5.2.4.1 (9)

initial medical care as described in the open-air strip shopping center initial full alarm assignment deployment model that would be provided by paramedic services.

The applicable deployment model for the M.F.D. would include an initial minimum deployment of 25 firefighters (26 if an aerial device is used) described as the 'total effective response force' arriving on scene within an eight minute (480 second) travel time to 90% of the fire suppression incidents in this occupancy type.

7.4.2.6   **High-Rise – Initial Full Alarm Assignment – Depth of Response**

In this deployment model a high-rise building is described as having the highest floor greater than 75 feet (23 metres) above the lowest level of fire department vehicle access. This deployment model is described as having a total effective response force that includes a minimum 42 firefighters (43 if the building is equipped with a fire pump) and includes the same establishment of initial medical care as described in the open-air strip shopping center initial full alarm assignment deployment model.

The applicable deployment model for the M.F.D. would include an initial minimum deployment of 38 firefighters (39 firefighters if the building is equipped with a fire pump) described as the 'total effective response force' arriving on scene within a 10 minutes and 10 second (610 second) travel time to 90% of the fire suppression incidents in this occupancy type.

7.4.3   **N.F.P.A. 1720 Standard (2020 Edition)**

The N.F.P.A. 1720 standard further supports the minimum initial response staffing to include four firefighters including **"Initial firefighting operations shall be organized to ensure that at least four fire fighters are assembled before interior fire suppression operations are initiated in a hazardous area".** This particular standard recognizes that the four firefighters may not arrive on the same vehicle, but that there must be four on the scene prior to initiating any type of interior firefighting operations.

Within this standard the N.F.P.A. identifies five different categories described as 'Demand Zones' that relate to the type of risk that may be found within a typical community; either by population density, travel distance, or special circumstances. This standard then identifies a minimum level of firefighters that would be recommended for each of these fire demand zones. **Table 29** presents the N.F.P.A. 1720 (2020 Edition) standard minimum staffing levels by fire demand zone.

Table 29: N.F.P.A. 1720 Demand Zones and Staffing

Fire Demand Zones	Demographics	Minimum # of Firefighters Responding	Response Time (Turnout + Travel) in Minutes	Performance Objective
Urban Area	>1000 people per square mile	15	9	90%
Suburban Area	500-1000 people per square mile	10	10	80%
Rural Area	<500 people per square mile	6	14	80%
Remote Area	Travel Distance + or – 8 miles	4	Dependent upon travel distance	90%
Special Risks	To be determined by Fire Department	To be determined by Fire Department	To be determined by Fire Department	90%

The N.F.P.A. 1720 standard utilizes population density as a factor in evaluating the minimum number of firefighters recommended for depth of response. As a standard primarily for use by volunteer fire departments it recognizes lower population densities are typically found in smaller communities in comparison to much higher population densities found in large urban centres.

The N.F.P.A. 1720 standard identifies an initial response deployment of four firefighters to effectively, efficiently and safely conduct initial fire suppression operations. The N.F.P.A. 1720 standard identifies a minimum deployment range of four to 15 firefighters depending on the risks associated with fire demand zones to effectively, efficiently and safely conduct initial fire suppression operations.

7.4.4 | **Vertical Response Times**

High-rise structure fires are unique in the method of fire suppression, as detailed in a publication by the N.F.P.A. called **Structural Firefighting: Strategy and Tactics**.[31] When a fire is located above the eighth floor, exterior suppression methods are no longer effective. In these cases, fire suppression is mainly undertaken inside the building. Firefighters create a staging floor; usually two floors below the fire floor. Firefighters will travel to and from the staging area and the fire floor or evacuation floors. The staging area is the location of all safety and suppression equipment needed to combat the fire. Firefighters must get this equipment to the staging area. When fire service access elevators cannot be used firefighters climb the stairs with the equipment. Even in the best conditions climbing the stairs takes time. The average vertical response time, average time it takes for a firefighter to climb the stairs, is shown in **Table 30.** To climb to the tenth floor it would take a firefighter on average three minutes.

Table 30: Vertical Response

Floors	Average Time per Floor in Seconds
1-10	20.8
11-20	27.8
21-30	33.6
31-40	45.9
41-48	59.0

Source: Structural Firefighting: Strategy and Tactics

Ascending with equipment can be physically exhausting. When dedicated fire service access elevators cannot be used additional alarms must be ordered to set-up stairway support to ensure firefighters have enough stamina for fire suppression after ascending. Stairway support is a system to carry equipment to the staging area. A firefighter is usually positioned every two floors and ascends two floors with equipment where the

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[31] Source: Klaene, Bernard, Sanders, Russell, "Structural Firefighting: Strategy and Tactics," Jones & Bartlett Learning, 2007.

next firefighter pick up the equipment. This gives each firefighter a rest period during their two floor descent.

The Town of Milton currently has a number of mid-rise and high-rise buildings and is expecting to see more of these housing types developed over the horizon of this plan and beyond. Further discussion on growth can be found in **Section 7.9 - Future Fire Station Requirements Based on Community Growth.** This is particularly important to the fire department as these types of buildings present unique challenges in the event of a fire related to vertical response. Further development of mid-rise and tall buildings within the Town of Milton should consider the existing and future fire suppression capabilities of the M.F.D.

7.4.5 Commission on Fire Accreditation International

The Centre for Public Safety Excellent (C.P.S.E.) serves as the governing body for the two organizations that offer accreditation, education and credentialing within the fire service across North America: the Commission on Fire Accreditation International (C.F.A.I.) and the Commission on Professional Credentialing (C.P.C.).

The Commission on Fire Accreditation International (C.F.A.I.) defines itself through its mission: "to assist the fire and emergency service agencies throughout the world in achieving excellence through self-assessment and accreditation in order to provide continuous quality improvement and the enhancement of service delivery to their communities."

The objective of the C.F.A.I. program is to define an accreditation system that is a credible, achievable, usable, and realistic model. The ultimate C.F.A.I. goal is to provide an accreditation process to improve the abilities of municipalities to both understand and recognize their respective community fire risks, provide balanced public/private involvement in reducing these risks and improve the overall quality of life for community members using the accreditation model.

The '**Principles of Accreditation**' are defined by the C.F.A.I. as follows:

- **Accreditation:** A process by which an agency evaluates and recognizes a program of study as meeting certain predetermined standards or qualifications. It applies only to institutions or agencies and their programs of study or their services;
- **Certification/Professional Designation:** Certification is a process whereby an individual is tested and evaluated in order to determine his or her mastery of a

specific body of knowledge. Professional designation is similar to certification and is proven by which an individual is evaluated based upon experience, education and related accomplishments and is awarded a designation based upon this third party evaluation; and

- **Standardization:** A process by which a service is assessed against some fixed standard of performance and quality.

The **"C.F.A.I. Accreditation Model"** is comprised of the following required elements:

- Organizational Self-Assessment;
- Standards of Cover;
- Community Risk Analysis; and
- Strategic Plan.

Of interest to this fire master planning process is the importance of **"continuous improvement"** that is recognized by the C.F.A.I. accreditation process. In our view the development of the C.R.A. and this F.M.P. support Council's commitment to sustaining and improving the services provided by the M.F.D.

7.5 | 2008 F.M.P. Proposed Fire Suppression Performance Benchmarks

Establishing and Regulating By-Law No. 026-2018 for the M.F.D. sets forth the current fire suppression and emergency response core services in "Appendix B". This by-law identifies the following core fire suppression service goals and objectives:

1. Core services (response and support) with respect to fire suppression will include basic firefighting (no rescue component), structural firefighting (including rescue), vehicle firefighting, grass and brush firefighting.
2. Core services (response and support) with respect to vehicle responses will include vehicle accidents, vehicle extrication and transportation incidents involving vehicles, buses, trucks and trains.
3. Emergency pre-hospital care and medical acts or other first aid/CPR services (response and support) shall be maintained as per local protocol as appropriate and instituted as per the latest Emergency Services Agreement (nee-tiered response agreement) and appropriate to the needs of the municipality as recommended by the Fire Chief and as agreed.

The 2008 F.M.P. recommended that Council adopt the following emergency response performance measures for delivering these core fire suppression services:

- The first responding vehicle with a staff of four should arrive within four minutes of travel time, 90% of the time; and
- The arrival of ten firefighters within ten minutes of response time, 90% of the time.

Collectively these performance measures represented a combination of the N.F.P.A. 1710 initial response performance measures for the first responding apparatus, and the depth of response performance measure that were contained in the previous O.F.M.E.M. **P.F.S.G. 04-08-12 Staffing – Single Family Dwelling** guideline. However, these performance measures were not adopted by Council and as such there are currently no specific Council approved emergency response performance targets or benchmarks for assessing the response time goals and objectives related to providing these core services.

7.6 Community Risk Assessment

Table 31 presents the **"key risks"** identified by the C.R.A. that should be further considered within the department's delivery of fire suppression services (Operations Division).

Table 31: Identified Key Risks for Emergency Response Program.

C.R.A. Key Risks Analysis Outcomes	Third Line of Defence (For consideration within the proposed Emergency Response Program)
69% of the Town's residential construction has occurred since 2001 and includes new light weight wood construction methods and materials.	Yes
There are substantial shifting commuting populations throughout the year. This population shift may impact collision calls and the demand for fire protection services.	Yes

Source: 2018 Town of Milton C.R.A.

In addition, **Table 32** presents the **"key findings"** identified by the C.R.A. that should be further considered within the department's emergency response program.

Table 32: Identified Key Findings for Emergency Response Program

C.R.A. Key Findings Analysis Outcomes	Third Line of Defence (For consideration within the proposed Emergency Response Program)
Annual call volume increased by 14% from 2013 to 2017.	Yes
Analysis of call volume by day of week for the period of 2013 to 2017 indicates that the highest proportion of calls occurs on Fridays.	Yes
Analysis of call volume by time of day for the period of 2013-2017 indicates that calls decline at 10pm and remain at the lowest levels until approximately 6am.	Yes
Analysis of call volume by time of day for the period of 2013 to 2017 indicates that the highest call volume occurs between the hours of 4pm and 6pm.	Yes
Based on analysis of M.F.D. Response Types, Public Assistance calls account for the highest proportion of call types responded to within the Town over a five year period from 2013-2017.	Yes
There were more property fires/explosions in May and June during 2013-2017 when compared to other months of the year.	Yes
Analysis of call volume by day of week (property fires/explosions) for the period of 2013-2017 indicates that the highest proportion of calls occurs on Saturdays.	Yes
Analysis of the property fire/explosion occurrences for the years 2013-2017 indicate the highest volume of calls for this response type is 4pm and 6pm, followed by 11am-12pm.	Yes

C.R.A. Key Findings Analysis Outcomes	Third Line of Defence (For consideration within the proposed Emergency Response Program)
There can be longer emergency response times for fire suppression services in rural areas as a result of the size of the geographical area and other geographical elements within the Town.	Yes
Incidents on Highway 401 can cause increased traffic congestion resulting in longer response times both on the highway and within the Town.	Yes
At-grade rail crossings can negatively impact part-time firefighters responding to the fire station as well as the response of apparatus particularly in the rural area.	Yes
Milton has a mix of woodland areas as well as grasslands on the lower slopes of the escarpment. Emergency incidents might include forest fires or grass fires.	Yes
The top five identified hazards within the Town include freezing rain/ice storms, energy emergency (supply), explosion/fire, snowstorm/blizzard and flood-urban flood.	Yes
The only hospital in Milton is a significant distance from the Town's rural community to the north; however, the closest major hospitals to Milton's rural residents are St. Joseph's and Guelph General Hospital.	Yes
Electrical malfunctions at substations/transformers would leave a large portion of the Town without power. Electrical malfunctions at transformers sometimes include electrical arcs, fires and oil ignition which pose as a special risk to residents, property and the environment.	Yes
Public safety response agency statistics are reflective of an increased demand for service in a growing community.	Yes

7.7   Updated (2021 Proposed) Fire Suppression Performance Targets

Based on our review of current industry guidelines, standards and best practices and in consultation with the Fire Chief, the analysis within this F.M.P. has identified the fire

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suppression performance targets that would be considered applicable given the level of fire risk identified by the C.R.A.

7.7.1 | **Defined Urban and Rural Areas (N.F.P.A. 1710 & 1720)**

The defined urban and rural area boundaries were derived from the Town of Milton and Region of Halton Official Plans. The applicable N.F.P.A. 1710 and 1720 urban and rural areas were identified. The rural area is defined as the geographic area positioned outside of the urban extent which is calculated by taking the difference between the total municipal area of the Town of Milton and the urban area. To determine existing population density in the urban and rural areas, Census data from the 2016 Statistics Canada data base was extracted using census analytics software called Beyond 20/20 and mapped by dissemination area (D.A.). By clipping the D.A.s to the urban area and apportioning population to each D.A., the 2016 population was calculated for the urban and rural areas. The population in urban and rural areas divided by the size of their respective geographies (in square miles to match the N.F.P.A. guideline) was calculated to define the applicable existing population density, as shown in **Table 33** below.

Table 33: Population Density Calculations (Census 2016)

Metric	Defined Urban Area	Defined Rural Area	Total
Population	117,638	7,062	124,700
Square Miles/KM	35.2/56.7	192.2/309.2	227.4/366
Population Density	3,341.9/2,077	36.8/23	548.5/2,099

The results indicate that the N.F.P.A. 1710 standard (2020 Edition) is the current applicable industry best practice for the deployment of fire suppression services within the defined urban area of the Town, and that the N.F.P.A. 1720 Rural Area Demand Zone performance benchmarks are the most applicable for the defined rural area.

7.7.2 | **Proposed Urban Area Fire Suppression Performance Objectives**

In our view the N.F.P.A. 1710 "Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the

Public by Career Fire Departments[32]" provides the most applicable industry best practice for evaluating the fire suppression deployment capabilities of the M.F.D. within the **defined urban area** of the Town. **Table 34** identifies the proposed performance objectives identified in N.F.P.A. 1710.

Table 34: Proposed Fire Suppression Performance Objectives – Defined Urban Area

N.F.P.A. Response Types – Defined Urban Area	Proposed Fire Suppression Performance Objectives
Initial Arriving Company	Four firefighters arriving on scene within a four minute travel time to 90% of fire suppression incidents.
Single-Family Dwelling – Initial Full Alarm Assignment (Moderate Risk Occupancy)	16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type
Apartment – Initial Full Alarm Assignment (High Risk Occupancy)	25 firefighters (26 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type
High-Rise – Initial Full Alarm Assignment (High Rise – High Risk Occupancy)	38 firefighters (39 if building is equipped with a fire pump) arriving on scene within a ten minute and ten second travel time to 90% of fire suppression incidents in this occupancy type.

It is recommended that the proposed fire suppression performance objectives for the defined urban area be utilized to monitor and report to Council and the community being:

- Initial Arriving Company - Four firefighters arriving on scene within a four minute travel time to 90% of fire suppression incidents.
- Single-Family Dwelling – Initial Full Alarm Assignment - 16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type

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[32] N.F.P.A. 1710, 2020 edition referenced within this MFP

- Apartment – Initial Full Alarm Assignment - 25 firefighters (26 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type
- High-Rise – Initial Full Alarm Assignment - 38 firefighters (39 if building is equipped with a fire pump) arriving on scene within a ten minute and ten second travel time to 90% of fire suppression incidents in this occupancy type

7.7.3 Proposed Rural Area Fire Suppression Deployment Benchmarks

In our view the N.F.P.A. 1720 "Standard for the Organization and Deployment of Fire suppression Operations, Emergency medical Operations, and Special Operations to the Public by Volunteer Fire Departments" provides the most applicable industry best practice for evaluating the fire suppression deployment capabilities of the M.F.D. within the **defined rural area** of the Town. **Table 35** identifies the proposed performance objective identified in N.F.P.A. 1720:

Table 35: Proposed Fire Suppression Performance Objectives – Defined Rural Area

N.F.P.A. Response Type – Defined Rural Area	Proposed Fire Suppression Performance Objective
Rural Demand Zone	6 firefighters arriving on scene within a 14 minute turnout time + travel time to 80% of fire suppression incidents.

It is recommended that the proposed fire suppression performance objective for the defined rural area included within the proposed F.M.P. be utilized to monitor and report to Council and the community being:

- Rural Demand Zone – 6 firefighters arriving on scene within a 14 minutes turnout time + travel time to 80% of fire suppression incidents in the defined rural area.

7.8 Existing Emergency Response Deployment Capability Analysis

The following sections detail our analysis of the existing emergency response deployment capabilities of the M.F.D. The analysis was carried out using Esri's Network Analyst, a Geographical Information System (G.I.S.) tool developed specifically for the purpose of assessing networks, such as roads. Various modelling scenarios were developed to assess the M.F.D existing response coverage, including initial arriving

company and initial full alarm assignment capabilities by measuring against the proposed performance benchmarks.

7.8.1 Modelling Methodology

The Esri Network Analyst tool was used to create a model of the current Milton road network to simulate the emergency response coverage of the M.F.D. navigating the Town's road network.

The existing (2021) road network was informed by spatial information from the Town of Milton. Posted speed limits were assigned based on the Ontario Road Network. The future road network utilizes the Milton Transportation Master Plan (M.T.M.P.) and applicable secondary plans.

The M.T.M.P information was digitized and geo-referenced with consideration to historical emergency response call data for the period from January 1, 2013 to December 31, 2019. An iterative process was then applied to adjust the speeds throughout the road network to calibrate the 2021 model to reflect historic travel times and emergency response performance of first responding units for all calls with an emergency response code. The calibrated model was also compared to the capabilities of other G.T.A. municipalities.

To ensure our analysis excluded outliers and included calls only pertaining to fire incidents, the data was filtered and organized into an appropriate format. Outliers in the data include turnout times with times less than thirty seconds or greater than thirty minutes (1,800 seconds). Misnomers were also reclassified to ensure our outputs were consistent. Training and fire prevention vehicles were filtered out to represent call statistics accurately.

7.8.2 Application of Proposed Fire Suppression Deployment Benchmarks

The calibrated road network, combined with the station locations and response time objectives were used to build 'response polygons' around each station. These polygons represent the geographical area where the response objective is achieved within the model in regards to staffing and/or a specified amount of time (e.g. travel time).

7.8.2.1   **Existing Minimum Staffing and Turnout Time**

The core elements of determining the M.F.D.'s current fire suppression capabilities include the minimum number of staff consistently deployed on each apparatus, and the turnout time for the part-time firefighters to respond to the fire station and prepare to deploy. The proposed N.F.P.A. 1710 Fire Suppression Performance Objectives for the Defined Urban Area calculate turnout time separately. Whereas the proposed N.F.P.A. 1720 Fire Suppression Performance Objectives for the Defined Rural Area includes the turnout time for the part-time firefighters.

As presented previously within this F.M.P., **turnout time** begins when the part-time firefighters are alerted to respond to the fire station by pager or cell phone and ends when they get to the fire station and have prepared to respond in an apparatus. The turnout time of the part-time firefighters is much longer than the full-time.

Table 36 illustrates the existing minimum staffing for each apparatus from each of the fire stations as well as the historical (2015 to 2019) turnout time for the applicable full-time and part-time firefighters to assemble in preparation to respond.

Table 36: Existing Apparatus Staffing and Turnout Time

Station	Apparatus Assignment	Minimum Full-time Staff Deployment	Full-time Turnout Time (Seconds)	Part-time Staff Deployment (80% of the Time)	Part-time Staff 80th Percentile Turnout Time (Seconds) (mm:ss)
1	Pump/Rescue 11	4	167	Not applicable	Not applicable
1	Pump 12	Not applicable	Not applicable	4	575 (9:35)
1	Aerial 16	Not applicable	Not applicable	4	669 (11:09)
1	Tanker 15	Not applicable	Not applicable	2	662 (11:02)

Station	Apparatus Assignment	Minimum Full-time Staff Deployment	Full-time Turnout Time (Seconds)	Part-time Staff Deployment (80% of the Time)	Part-time Staff 80th Percentile Turnout Time (Seconds) (mm:ss)
1	Rescue 14	Not applicable	Not applicable	5	850 (14:10)
2	Pump 21	Not applicable	Not applicable	4	902 (15:02)
2	Pump/Tanker 22	Not applicable	Not applicable	2	957 (15:57)
2	Tanker 25	Not applicable	Not applicable	2	964 (16:04)
3	Pump 32	Not applicable	Not applicable	4	818 (13:38)
3	Aerial 36	Not applicable	Not applicable	4	744 (12:24)
3	Tanker 35	Not applicable	Not applicable	2	889 (14:49)
4	Pump/Rescue 41	3	167	Not applicable	Not applicable
5	Aerial 56	4	167	Not applicable	Not applicable

7.8.3 Scenario #1: Existing Emergency Response Deployment Capability

The findings of the existing minimum staffing and turnout time analysis were applied to the calibrated G.I.S. Model to determine the existing **initial arriving company** and **initial full alarm assignment-single family dwelling** response capabilities within the defined

urban area, and the **rural demand zone** capabilities within defined rural areas of the Town.

7.8.3.1 | **Existing Initial Arriving Company Capabilities - Defined Urban Area (NFPA 1710)**

This scenario assessed the proposed initial response deployment performance benchmark **"Four firefighters arriving on scene within a four minute travel time to 90% of fire suppression incidents".** This scenario recognises that as a result of their extended turnout time the part-time firefighters assigned to the stations within the defined urban are not able to respond to their assigned fire station within a timeframe that would allow them to support the initial response.

As such this deployment model includes the full-time firefighters assigned to Pump/Rescue 11 at Station 1, Aerial 56 assigned to Station 5 and Pump/Rescue 41 assigned to Station 4 with a minimum of four full-time firefighters assigned to both Station 1 and Station 5.

Figure 8 illustrates that during the M.F.D. is currently able to assemble a minimum of four full-time firefighters on scene within a four minute travel time to 39% of defined urban area, and 50% of the historical (2015-2019) calls within the defined urban area.

Figure 8: Existing Initial Arriving Company Capabilities - Defined Urban Area (N.F.P.A. 1710)
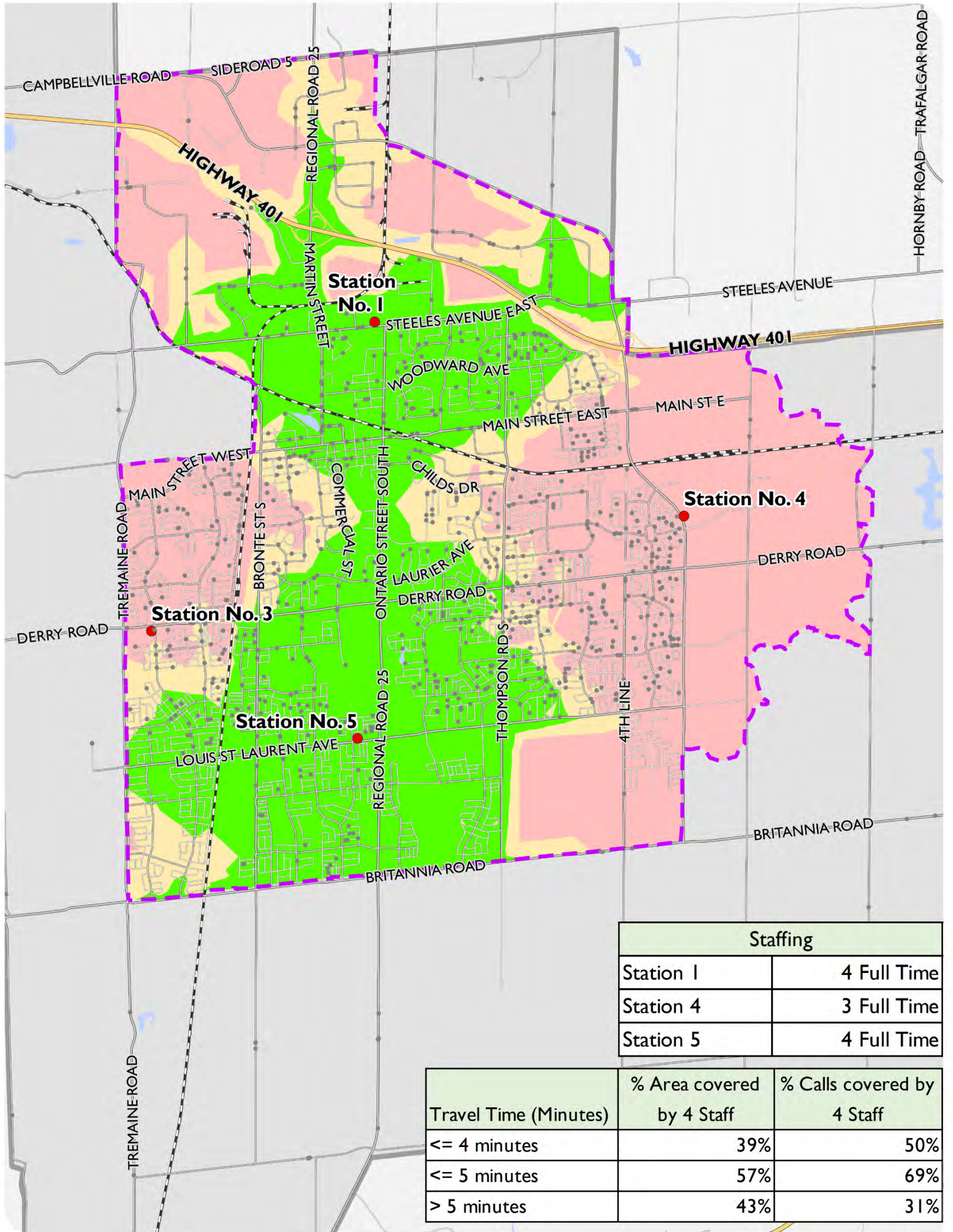
Staffing	
Station 1	4 Full Time
Station 4	3 Full Time
Station 5	4 Full Time

Travel Time (Minutes)	% Area covered by 4 Staff	% Calls covered by 4 Staff
<= 4 minutes	39%	50%
<= 5 minutes	57%	69%
> 5 minutes	43%	31%

TOWN OF MILTON
FIRE MASTER PLAN UPDATE

FIGURE 9
**EXISTING CONDITIONS -
INITIAL ARRIVING
COMPANY CAPABILITIES -
DEFINED URBAN AREA
(NFPA 1710)**

· Historical Call (2015 - 2019)
● Existing Fire Station
Urban Boundary
Railway

Travel Time
≤ 4 Minutes at Network Speed
≤ 5 Minutes at Network Speed
> 5 Minutes at Network Speed

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:40,000

0   500   1,000   2,000 m

PROJECT: 187286   STATUS: DRAFT   DATE: 2021-06-03

FILE LOCATION: I:\GIS\188072 - Milton FMP\mxd\2021\Accessible_Figures\Fig9_Existing Initial Arriving Company Capabilities - Defined Urban Area.mxd

7.8.3.2 | **Existing Initial Full Alarm Assignment Capabilities – Defined Urban Area (N.F.P.A. 1710)**

This analysis also assessed the proposed initial full alarm assignment performance benchmark for single-family dwellings of **"16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents".**

Figure 9 indicates that during this time frame the M.F.D. is currently unable to achieve the proposed performance benchmark to respond to a fire in a Single-Family Dwelling – Initial Full Alarm Assignment (Moderate Risk Occupancy) that includes 16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents.

During this time frame the M.F.D. is able to assemble a depth of response of **eleven** full-time firefighters within an eight minute travel time to 26% of the defined urban area, and 45% of the historical (2015-2019) calls that occurred in the urban area. Due to their turnout times, the part-time firefighters are currently not able to respond quickly enough to assist the full-time firefighters in achieving the depth of response performance benchmark.

This analysis highlights that the M.F.D. is currently unable to assemble the total number of firefighters identified within the proposed emergency response performance benchmarks for an Initial Full Alarm for a Single Family Dwelling (Moderate Risk), an Apartment (High Risk Occupancy) or a High-Rise (High Rise – High Risk Occupancy).

Figure 9: Existing Initial Full Alarm Assignment Capabilities - Defined Urban Area (N.F.P.A. 1710)

Staffing	
Station 1	4 Full Time
Station 4	3 Full Time
Station 5	4 Full Time

# of Firefighters On Scene within 8 minutes of Travel Time	% Area Covered	% Calls Covered
< 4	5%	0%
4	25%	15%
≥ 7	44%	40%
11	26%	45%
16	0%	0%
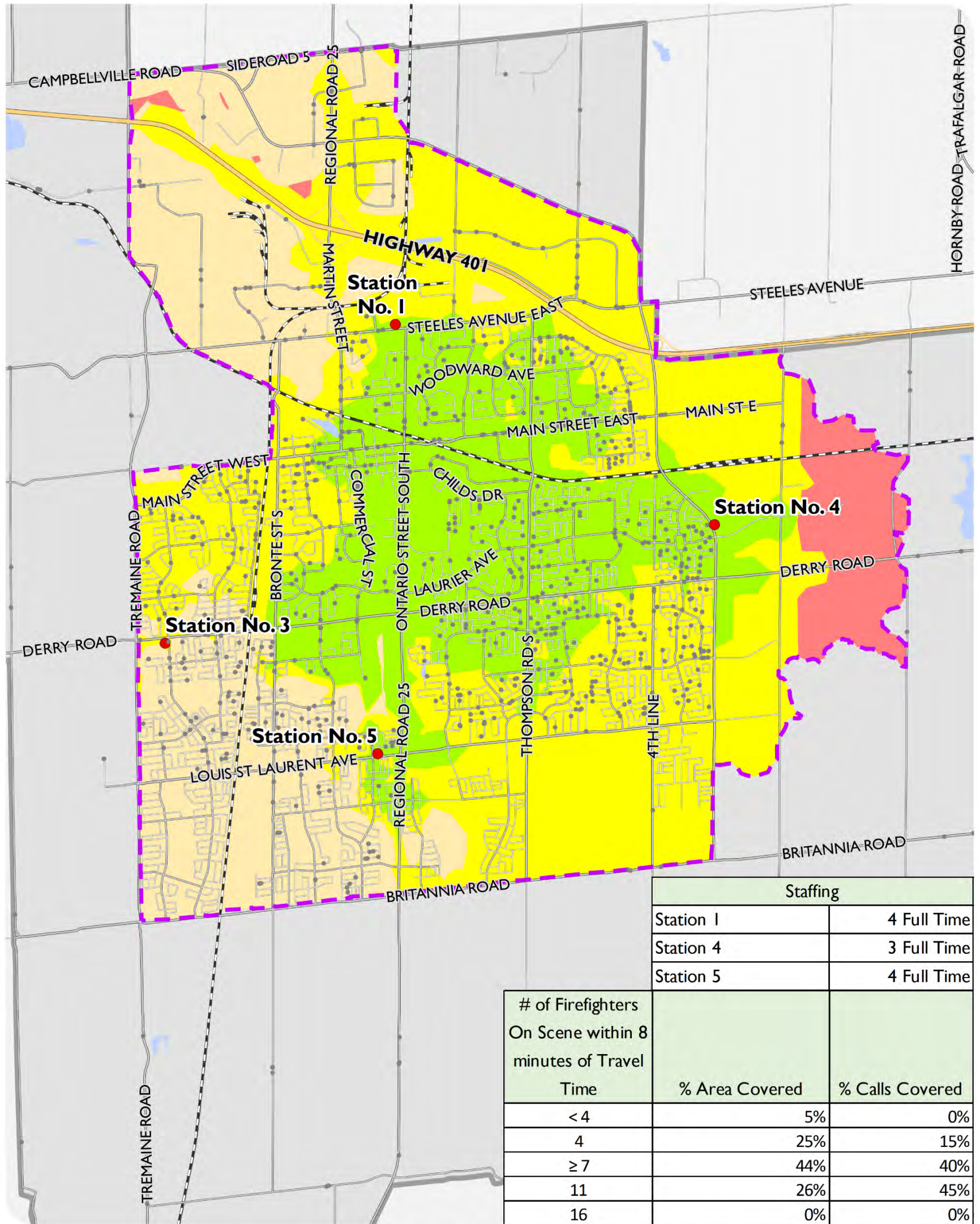
TOWN OF MILTON
FIRE MASTER PLAN UPDATE

- Historical Call (2015 - 2019)
- ● Existing Fire Station
- - ·- Railway
- Urban Boundary

Number of Staff on Scene within 8 Minutes of Travel Time
- ≥ 11
- ≥ 7
- ≥ 4
- < 4

FIGURE 10

EXISTING CONDITIONS - FULL ALARM ASSIGNMENT CAPABILITIES - DEFINED URBAN AREA (NFPA 1710)

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:40,000

0   500   1,000   2,000 m

PROJECT: 187286   STATUS: DRAFT   DATE: 2021-06-03

FILE LOCATION: I:\GIS\188072 – Milton FMP\mxd\2021\Accessible_Figures\Fig10_Existing Full Alarm Assignment Capabilities – Defined Urban Area.mxd

7.8.3.3   **Existing Response Capabilities – Defined Rural Area (N.F.P.A. 1720)**

The research of current fire suppression deployment guidelines, standards and best practices that was completed to develop this F.M.P. identified a proposed performance benchmark of **"6 firefighters arriving on scene within a 14 minute turnout time + travel time to 80% of fire suppression incidents".** This proposed performance benchmark recognises the extended turnout times associated with the use of part-time firefighters by including the elements of a **"14 minute turnout time + travel time"** and a requirement of only **"6 firefighters".**

Our analysis of the minimum staffing and turnout times (2015-2019) shown in **Table 36** indicates that the turnout times of the part-time staff apparatus assigned to Station 2 (Campbellville) all exceed the proposed 14 minute benchmark. Some of the apparatus with part-time firefighters responding from Station 1 and Station 3 have historically been able to turnout in less than 14 minutes 80 percent of the time. Depending on the apparatus, this means that there is some portion of time available to travel to contribute to the 14 minutes turnout time + travel time. The remaining time ranges from less than 30 seconds to travel to 265 seconds to travel, resulting in an overall minimal impact on coverage.

Figure 10 illustrates where the applicable part-time firefighters and full-time firefighters responding from the stations located within the defined urban area are able to assemble a response of **"6 firefighters arriving on scene within a 14 minute turnout time + travel time"** to 19% of the defined rural area, and 36% of the historical (2015-2019) calls that occurred in the rural area.

Figure 10: Existing Response Capabilities – Defined Rural Area (N.F.P.A. 1720)
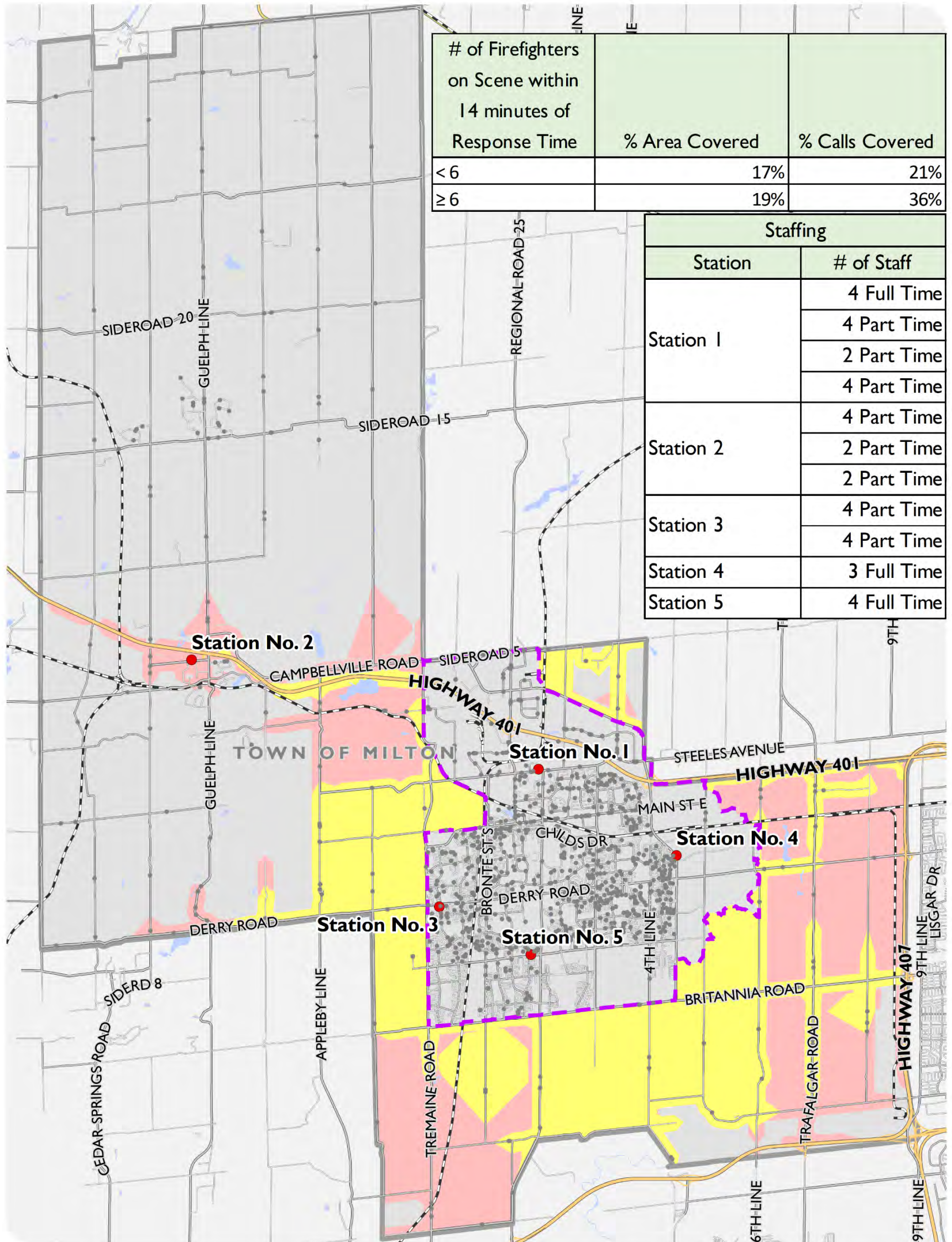
# of Firefighters on Scene within 14 minutes of Response Time	% Area Covered	% Calls Covered
< 6	17%	21%
≥ 6	19%	36%

Staffing	
Station	# of Staff
Station 1	4 Full Time
	4 Part Time
	2 Part Time
	4 Part Time
Station 2	4 Part Time
	2 Part Time
	2 Part Time
Station 3	4 Part Time
	4 Part Time
Station 4	3 Full Time
Station 5	4 Full Time

SIDEROAD 20

SIDEROAD 15

REGIONAL ROAD 25

GUELPH LINE

Station No. 2

CAMPBELLVILLE ROAD   SIDEROAD 5

HIGHWAY 401

TOWN OF MILTON   Station No. 1

STEELES AVENUE

HIGHWAY 401

MAIN ST E

CHILDS DR   Station No. 4

BRONTE ST S

DERRY ROAD

Station No. 3   Station No. 5

4TH LINE

9TH LINE

DERRY ROAD

SIDERD 8

APPLEBY LINE

CEDAR SPRINGS ROAD

TREMAINE ROAD

BRITANNIA ROAD

TRAFALGAR ROAD

HIGHWAY 407

6TH LINE

9TH LINE

LISGAR DR

TOWN OF MILTON
FIRE MASTER PLAN UPDATE

FIGURE 11
EXISTING RESPONSE CAPABILTIES DEFINED RURAL AREA (NFPA 1720)

• Historical Call (2015 - 2019)
● Existing Fire Station
Urban Boundary
Railway

Total Staffing for Station Coverage
< 6
≥ 6

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MILTON
MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:90,000
0   1   2   4 km

PROJECT: 187286   STATUS: DRAFT   DATE: 2021-06-03

FILE LOCATION: I:\GIS\188072 - Milton FMP\mxd\2021\Accessible_Figures\Fig11_Existing Conditions NFPA 1720 Defined Rural Area.mxd

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7.8.3.4 **Summary of Scenario #1 - Existing Emergency Response Deployment Capability**

As referenced previously within this F.M.P. the senior staff team with the support of Council have attempted to implement the recommendations of the previous 2008 F.M.P. that included developing a four station urban area model (excluding Station 2) and the hiring of 60 additional full-time firefighters. This would have resulted in a total complement of 80 full-time firefighters to staff Stations 1, 3, 4 and Station 5 with a minimum of four full-time firefighters at all times. As of May 2021, the total complement of full-time firefighters has reached 56. The Town has successfully completed the proposed four urban area fire station location model with the construction of Station 5. Based on the 2008 FMP recommendations a further 24 full-time firefighters would be required to staff the existing stations including Station No.5.

The realities of the community's fiscal responsibilities have not allowed the department to maintain the same speed of growth (increased staffing) as that of the community. In response, the department has optimized the use of public education and fire prevention activities based on available resources. This is consistent with the identified **"three lines of defence"** strategy.

In addition to the existing gap of 24 full-time firefighters this FMP highlights changes to the proposed fire suppression performance targets since completion of the 2008 FMP, and specifically changes to the initial full alarm assignment (depth of response) requirements. **Analysis of the department's existing emergency response deployment capabilities highlights the increasing gap in the department's emergency response capabilities in comparison to the proposed fire suppression performance targets.**

Table 37 illustrates a summary of the existing emergency response deployment capabilities of the M.F.D. in comparison to the proposed defined urban and rural area fire suppression deployment benchmarks.

Table 37: Summary of Proposed Defined Urban and Rural Area Fire Suppression Deployment Benchmarks

Scenario	EMERGENCY RESPONSE DEPLOYMENT MODEL	DEFINED URBAN AREA Initial Arriving Company (Min. 4 Firefighters Arriving On-scene in 4 min. or less 90% of the time)	DEFINED URBAN AREA Initial Full Alarm Assignment (min. 16 Firefighters Arriving On-scene in 8 min. or less 90% of the time)	DEFINED URBAN AREA Initial Full Alarm Assignment (min. 26 Firefighters Arriving On-Scene in 8 min. or less 90% of the time)	DEFINED RURAL AREA Rural Demand Zone Emergency Response (min. 6 Firefighters Arriving On-scene in 14 min. or less 80% of the time)
Scenario #1	Existing Capabilities	39% of Area 50% of Calls	0% Of Area 0% Of Calls	0% Of Area 0% Of Calls	19% Of Area 36% Of Calls

This summary highlights the department's fire suppression capabilities in the urban area and rural area based on the identified performance benchmarks.

The following sections will present recommended actions for Council's consideration towards the implementation of further improvements to the fire suppression capabilities of the M.F.D. as a result of the existing challenges identified. In our view these findings further support the proposed strategic priorities included within this F.M.P. and specifically:

i. The sustained use of a C.R.A. to determine the fire safety risks within the Town of Milton as the basis for developing clear goals and objectives for all fire protection and emergency services provided by M.F.D.; and

ii. Where applicable the optimization of the first two lines of defence including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Town.

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7.9 **Future Fire Station Requirements Based on Community Growth**

To confirm the growth assumptions for this study, Dillon consulted with Town planning staff and reviewed the Halton Region 2020 Allocation Program (six year program), and the DC Background Study (March 2021). The growth in Milton is rapid. The forecast population growth over the next ten years is an additional 82,300 people.[33] **Table 38** provides an overview of the primary growth areas including approximate timing, and information on designated land use, forecast population information, and the area mapped and illustrated in **Figure 11** which shows the future urban expansion areas for the Town**.**

Table 38: Growth Area Descriptions

Growth Area	Anticipated Timing	Description
Derry Green Business Park (Map Area A)	Imminent	• Designated for employment uses including business park area, industrial area, and prestige office uses. • Development is in the third phase with much of this employment area already built out.
Boyne Secondary Plan Area (Map Area B)	Imminent	• Designated for residential uses including a housing mix target of 48% low-density, 35% medium-density, and 17% high-density residential. Also includes mixed use nodes and residential/office areas. • Part of this area has already been developed. • Most of the remaining area has development applications in place and growth has been allocated through the Halton Region 2020 Allocation Program. • Forecast population of 38,700 in the next ten years and 48,900 by full build out.

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[33] Forecast population information referenced in this section is from Schedule 2 of the DC Background Report (March 3, 2021). Forecast numbers have been rounded for ease of interpretation.

Growth Area	Anticipated Timing	Description
Trafalgar Secondary Plan Area (Map Area C)	Imminent to Medium Term	• Designated for residential uses including a housing mix target of no more than 55% of residential units being single-detached and semi-detached units. • Growth for much of this area has been allocated through the Halton Region 2020 Allocation Program. • Forecast population of 12,600 in the next ten years and 25,100 by full build out.
Milton Education Village (Map Area D)	Imminent to Medium Term	• Designated for institutional/employment uses as well as medium- and high-density residential uses. Anticipated to include post-secondary educational facilities and long-term care facilities. • Potential for the northern portion of the area to develop in the shorter term. • Forecast population of 5,200 in the next ten years and 8,600 by full build out.
Britannia Secondary Plan Area (Map Area E)	Medium to Long Term	• The Town is currently developing a Secondary Plan for this area. To be planned as a complete community primarily for residential uses with the potential for a range and mix of housing types. • No growth for this area was allocated through the Halton Region 2020 Allocation Program. • Forecast population of 7,000 in the next ten years and 46,500 by full build out.

Growth Area	Anticipated Timing	Description
Agerton Secondary Plan (Map Area F)	Medium to Long Term	• The Draft Agerton Secondary Plan has not received Council endorsement but a Preliminary Preferred Land Use Concept was endorsed by Council in March 2019. • The southern portion of the area is planned as a mixed use area in support of a potential GO Station. The northern portion of the site is planned for employment uses with office priority. • No growth for this area was allocated through the Halton Region 2020 Allocation Program. • Forecast population of 3,500 in the next ten years and 7,000 by full build out.
Sherwood Survey (Map Area G)	Short Term	• The Sherwood Survey area includes the growth area south of Highway 401 and north of Steeles Avenue (Milton Heights). • Some of this area has development applications in place and includes growth allocations from the Halton Region 2020 Allocation Program.
Southwest Milton Employment Area (Map Area H)	Unconfirmed	• This area includes the site of the proposed Milton Logistics Hub Project (east of Tremaine Road and bordered by Britannia Road and Lower Base Line). On January 21, 2021 the federal government issued a decision to approve the project subject to numerous conditions. This project would include a railway yard with more than 20 km of track and see a maximum of 880 trucks entering the site daily. • This project is opposed by Halton Region and the Town of Milton. In April 2021, a 2018 court case was reinitiated in opposition to this project. • There is the potential for this project to impact the planned land uses in the remainder of the growth area (west of Tremaine).

Growth Area	Anticipated Timing	Description
South of No. 5 Side Road/North of James Snow Parkway (Map Area I)	Short to Medium-Term	• Planned for employment uses, there is the potential for this area to experience development in the short to medium term.
Intensification/Infill	Ongoing	• Intensification and infill is forecast to be an ongoing component of population growth for the Town. • Forecast population growth of 6,600 in the next ten years and 30,500 by full build out.

The growth assumptions outlined above reflect the current best available information. **As part of the implementation of this F.M.P., it will be important to monitor how growth materializes and adjust F.M.P. implementation accordingly including updates to the Community Risk Assessment.** Of particular importance will be to monitor the pace of growth and any proceedings regarding the Milton Logistics Hub Project should that project be implemented.

Figure 11: Town of Milton – Urban Expansion Area
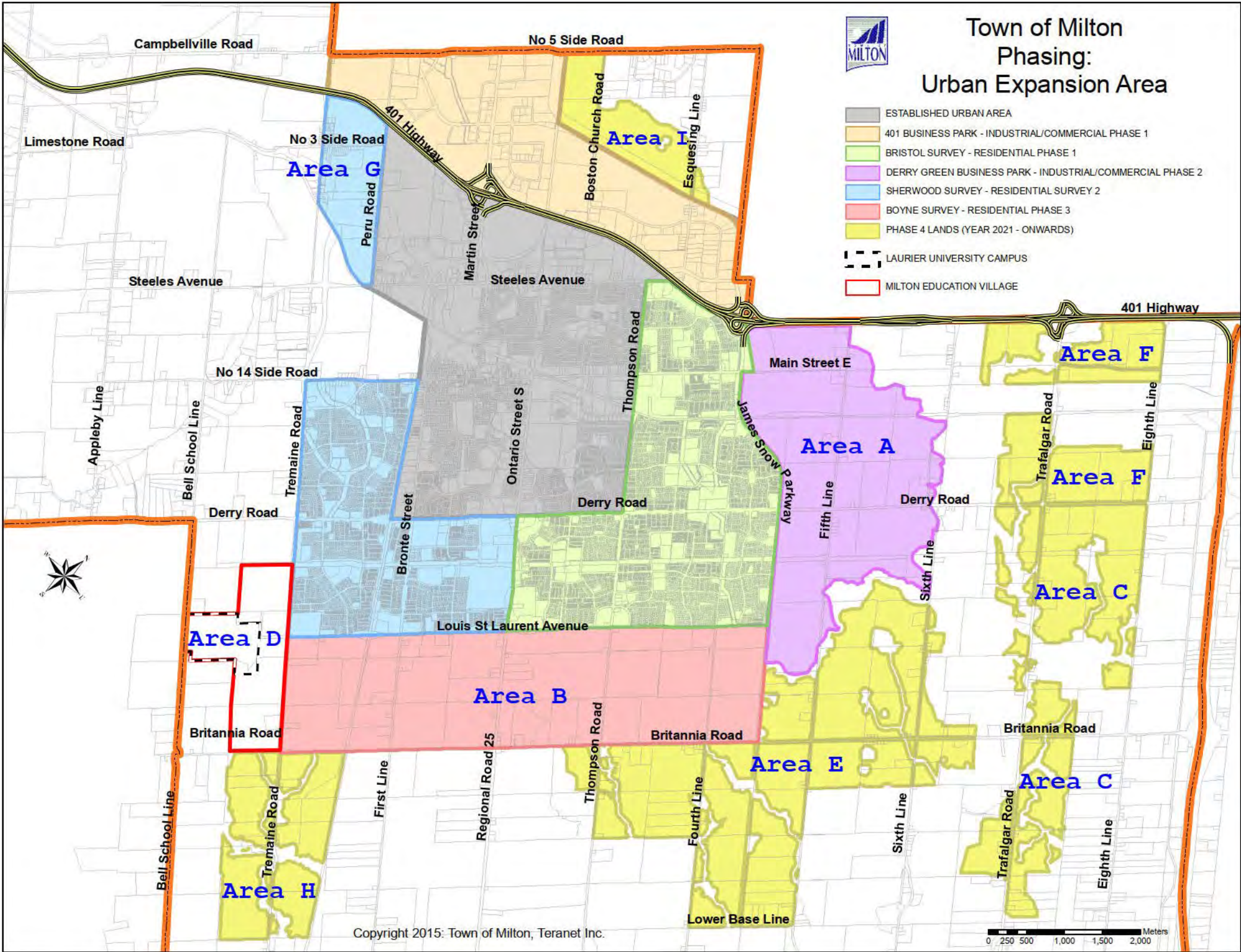
(Source: Town of Milton)

7.9.1	**Future Urban Service Area**

Based on the above information provided by the Town, **Figure 12** illustrates the future defined urban and rural area boundaries that were developed to inform the future fire station needs of the Town.

The analysis to assess the proposed future fire station location needs of the Town utilizes the future defined urban and rural area boundaries. These include a larger geographical urban area and a smaller geographical rural area. This is important to note when comparing the existing station coverage response capabilities with those of the future station response coverage areas due to the revised size of each areas. It is also important to note that the analysis of emergency calls for the future station locations only refers to the historical call locations for the period 2013-2019 and does not predict where the future emergency calls will occur as a result of planned future population/employment growth and additional building stock.

Figure 12: Expanded Defined Urban Area
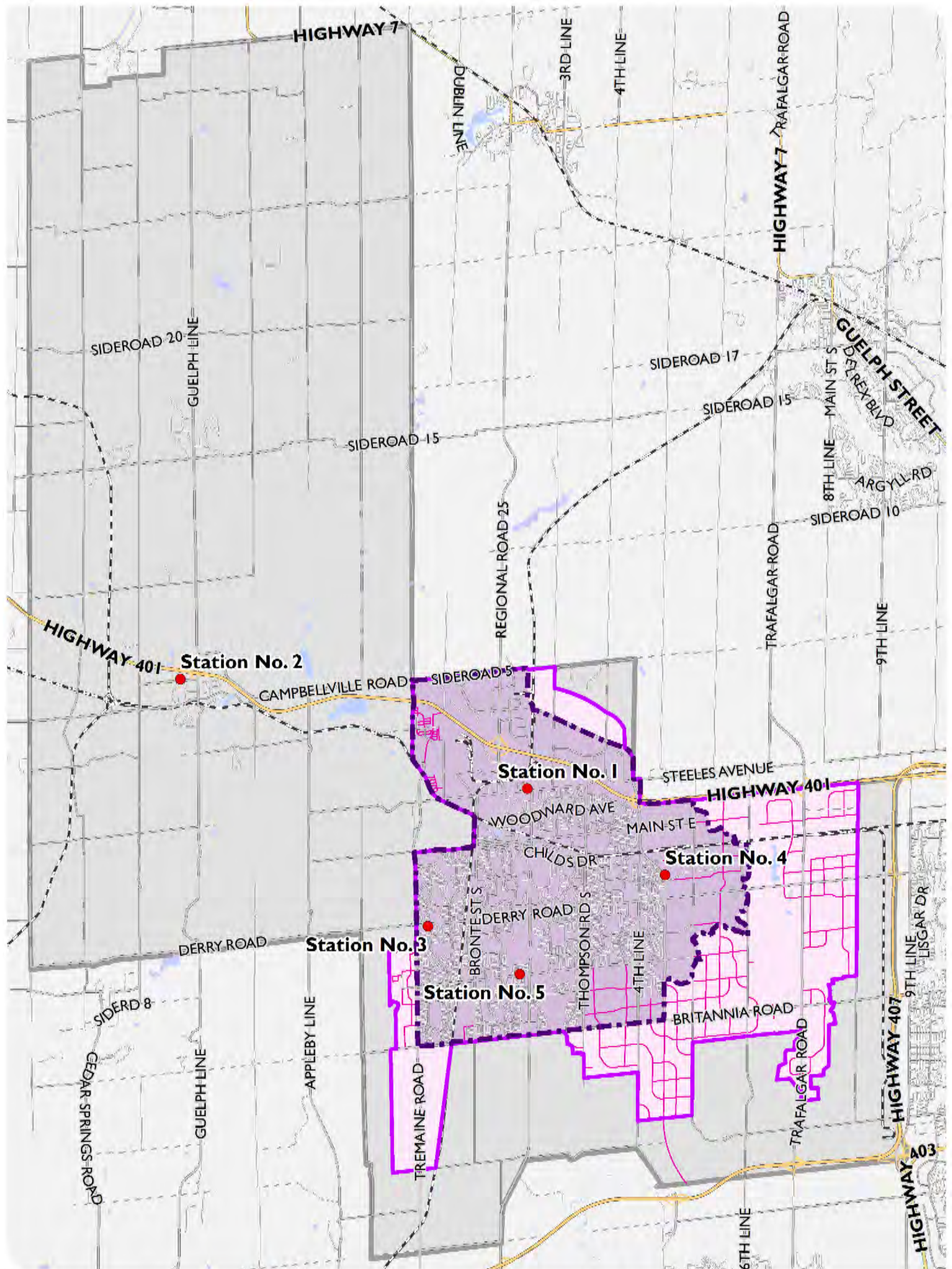
TOWN OF MILTON
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FIGURE 13
EXPANDED DEFINED URBAN AREA

● Existing Fire Station
— Future Road
-- Railway

⬛ Urban Boundary (Current)
⬜ Urban Boundary (Future)

MAP DRAWING INFORMATION:
DATA PROVIDED BY MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:90,000

0   1   2   4 km

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| 7.9.2 | **Scenario #2 – Existing Urban Stations - Increased Firefighter Complements** |

As previously noted, there is a complement of 16 full-time firefighters at Station 4 which means that this station cannot contribute to the initial arriving company capabilities as it does not have four full-time firefighters on duty most of the time. This scenario explores the addition of full-time-firefighters to Station 4, resulting in a full complement of 20 full-time firefighters (an addition of four firefighters) as well as the addition of a full complement of 20 full-time firefighters to Station 3. It also provides high-level consideration to increasing the complement of part-time firefighters.

| 7.9.2.1 | **Future Initial Arriving Company Capabilities - Defined Urban Area (NFPA 1710) – Full Complement of Full-time Firefighters at Stations 4 and 3** |

The Initial Arriving Company Capabilities – Defined Urban Area (1710) for this scenario includes an incremental increase in staffing of four firefighters at Station 4 first, followed by the addition of 20 firefighters to Station 3. This analysis assessed the proposed initial response performance benchmark of **"Four firefighters arriving on scene within a four minute travel time to 90% of fire suppression incidents"**.

Figure 13 is based on an assumed deployment model of a minimum on duty staffing of four full-time firefighters at all times at Station 1, 4, and 5, supported by a complement of part-time firefighters. This analysis was conducted to demonstrate the improvement in initial arriving company capabilities with an increase in staffing at Station 4 as compared to existing conditions. With this staffing, the M.F.D. is predicted to be able to assemble a minimum of four full-time firefighters on scene within a four minute travel time to 43% of the future defined urban area, and 73% of the historical (2015-2019) calls.

Figure 14 is based on an assumed deployment model whereby the four existing fire stations within the defined urban area including Stations 1, 3, 4 and 5 are operational with a minimum on duty staffing of four full-time firefighters at all times supported by a complement of part-time firefighters.

Figure 14 indicates that the M.F.D. is predicted to be able to assemble a minimum of four full-time firefighters on scene within a four minute travel time to 52% of the future defined urban area, and 84% of the historical (2015-2019) calls.

Figure 13: Future Initial Arriving Company Capabilities - Defined Urban Area (N.F.P.A. 1710) – Full Complement of Full-time Firefighters at Station 4 (Scenario 2)

Staffing	
Station 1	4 Full Time
Station 4	4 Full Time
Station 5	4 Full Time

Travel Time (Minutes)	% Area covered by 4 Staff	% Calls covered by 4 Staff
<= 4 minutes	43%	73%
<= 5 minutes	63%	89%
> 5 minutes	37%	11%
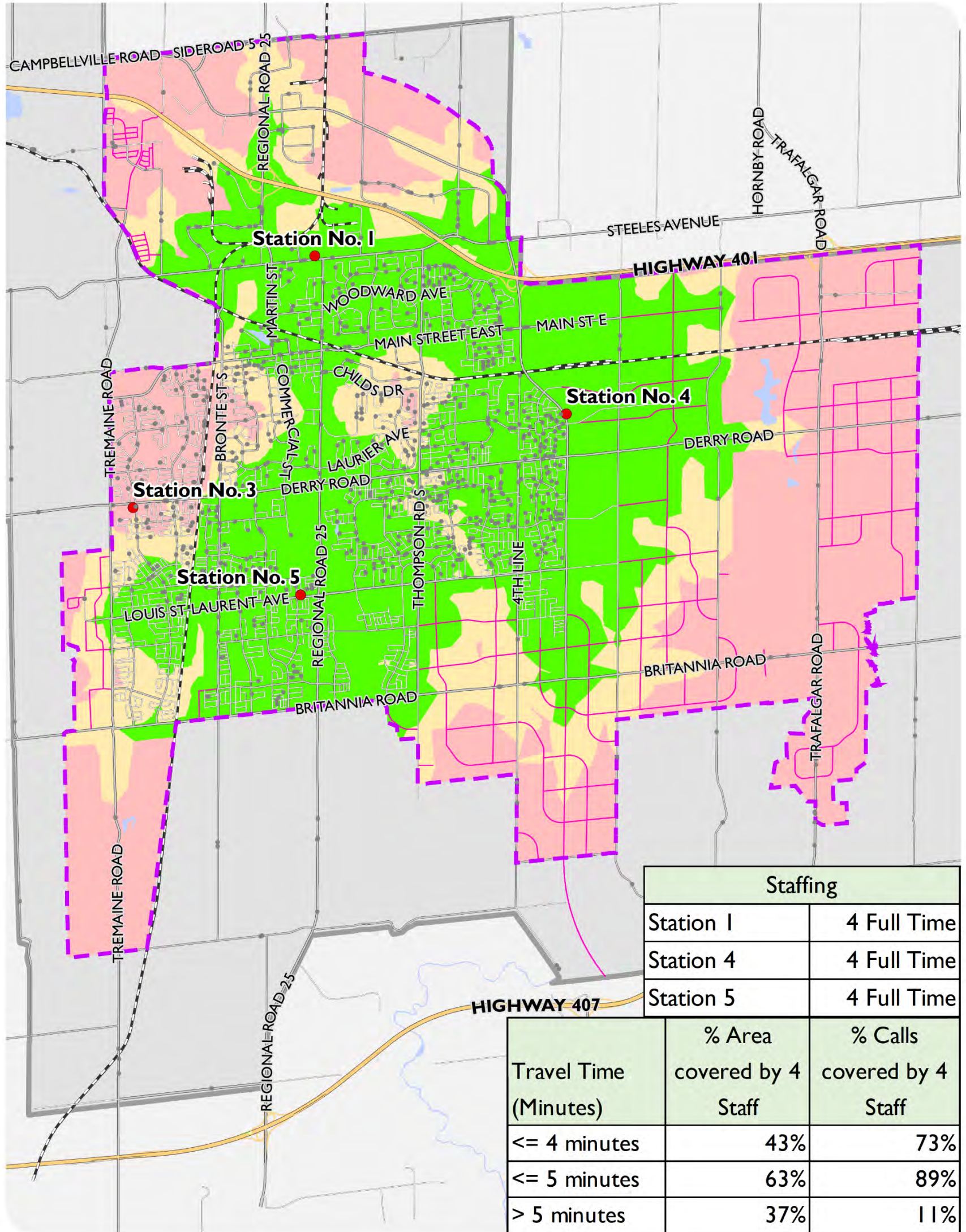
TOWN OF MILTON
FIRE MASTER PLAN UPDATE

FIGURE 14
FUTURE INITIAL ARRIVING COMPANY CAPABILITIES - DEFINED URBAN AREA AT STATION 4 (SCENARIO 2)

• Historical Call (2015 - 2019)
● Existing Fire Station
— Future Road
-·-· Railway
▨ Urban Boundary (Future)

Travel Time
� green ≤ 4 Minutes at Network Speed
▨ ≤ 5 Minutes at Network Speed
▨ > 5 Minutes at Network Speed

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, TOWN OF MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

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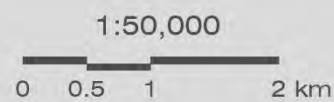
PROJECT: 187286   STATUS: DRAFT   DATE: 2021-06-03

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Figure 14: Future Initial Arriving Company Capabilities - Defined Urban Area (N.F.P.A. 1710) – Full Complement of Full-time Firefighters at Station 4 and Station 3 (Scenario 2)

Staffing	
Station 1	4 Full Time
Station 3	4 Full Time
Station 4	4 Full Time
Station 5	4 Full Time

Travel Time (Minutes)	% Area covered by 4 Staff	% Calls covered by 4 Staff
<= 4 minutes	52%	84%
<= 5 minutes	67%	96%
> 5 minutes	33%	4%

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FIGURE 15

FUTURE INITIAL ARRIVING COMPANY CAPABILITIES - DEFINED URBAN AREA SCENARIO 2A AT STATION 4 AND STATION 3 (SCENARIO 2)

Legend:
- Historical Call (2015 - 2019)
- ● Existing Fire Station
- —— Future Road
- -··- Railway
- ▪▪▪ Urban Boundary (Future)

Travel Time
- ≤ 4 Minutes at Network Speed
- ≤ 5 Minutes at Network Speed
- > 5 Minutes at Network Speed

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF,
TOWN OF MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

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7.9.2.2   **Future Initial Full Alarm Assignment Capabilities – Defined Urban Area (N.F.P.A. 1710) – Full Complement of Full-time Firefighters at Station 4 and 3**

This analysis assessed the proposed initial full alarm assignment performance benchmark for single-family dwellings of **"16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents".** This deployment model assumes that the four existing fire stations within the defined urban area including Stations 1, 3, 4 and 5 are operational with a minimum on duty staffing of four full-time firefighters at all times supported by a complement of part-time firefighters.

Figure 15 indicates that with this deployment model the M.F.D. would have sufficient firefighters to respond to a fire in a Single-Family Dwelling – Initial Full Alarm Assignment (Moderate Risk Occupancy) including the initial full alarm assignment performance benchmark of **"16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents"** to 10% of the defined future urban area, and 31% of the historical (2015-2019) calls.

This analysis highlights that the M.F.D. would continue to be unable to assemble the total number of firefighters identified within the proposed emergency response performance benchmarks for an Apartment – Initial Full Alarm Assignment (High Risk Occupancy) and a High-Rise – Initial Full Alarm Assignment (High Rise – High Risk Occupancy).

The analysis of the future response capabilities within the defined urban area for this and all scenarios **does not** include any potential improvement of the response capabilities of the part-time firefighters which may occur as a result of the recommendations of this F.M.P. These recommendations include increasing the total complement of full-time firefighters for the department and implementing a scheduled on-call program which could improve turnout time and the number of firefighters responding. With improvements in turnout time, the part-time firefighters may be able to contribute to Initial Full Alarm Assignment Capabilities. At a minimum, it is anticipated that they could contribute to the staffing required for significant structure fires or in the event of a High Rise – High Risk Occupancy, for example. They could also be dispatched to be in-station in the event of simultaneous calls or to provide additional support services.

Further discussion on the proposed part-time firefighter organizational model can be found in **Section 7.10.1**.

Figure 15: Future Initial Full Alarm Assignment Capabilities - Defined Urban Area (N.F.P.A. 1710) – Full Complement at Station 4 and Station 3 (Scenario 2)

Staffing	
Station 1	4 Full Time
Station 3	4 Full Time
Station 4	4 Full Time
Station 5	4 Full Time

# of Firefighters On Scene within 8 minutes of Travel Time	% Area Covered	% Calls Covered
< 4	6%	0%
4	26%	3%
8	43%	34%
12	14%	32%
16	10%	31%
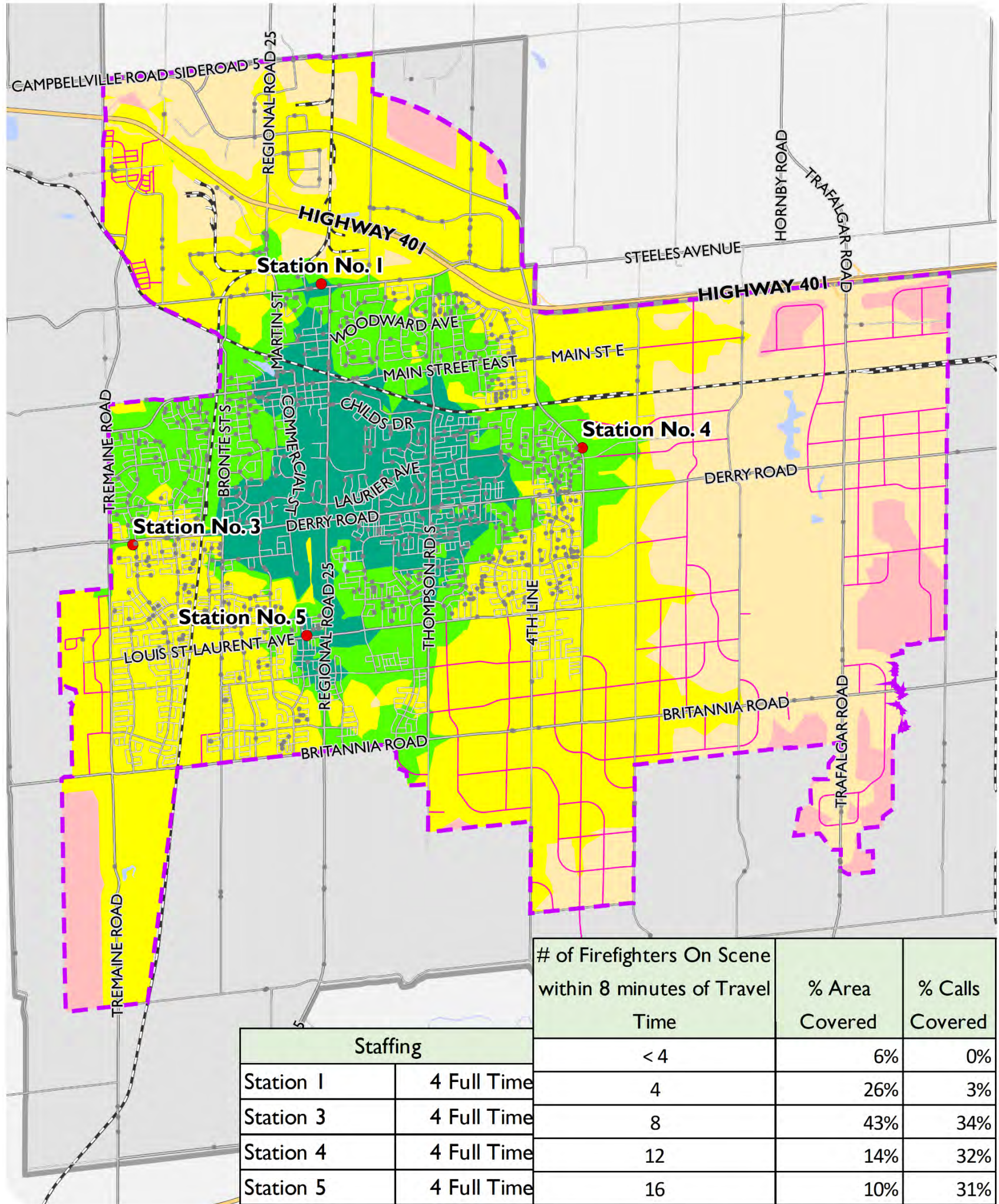
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FIGURE 16
FUTURE FULL ALARM ASSIGNMENT CAPABILITIES - DEFINED URBAN AREA AT STATION 4 AND STATION 3 (SCENARIO 2)

Legend:
- Historical Call (2015 - 2019)
- Existing Fire Station
- Future Road
- Railway
- Urban Boundary (Future)

Number of Staff on Scene within 8 Minutes of Travel Time
- 16
- ≥ 11
- ≥ 7
- ≥ 4
- < 4 Firefighters

MAP DRAWING INFORMATION:
DATA PROVIDED BY MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

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7.9.2.3 **Future Response Capabilities – Defined Rural Area (N.F.P.A. 1720) - Full Complement of Full-time Firefighters at Stations 4 and 3**

The future response capabilities is based on a deployment model of apparatus staffed with full-time firefighters responding from stations within the defined future urban area including the proposed complements at Stations 1, 3, 4, and 5. It also includes those apparatus with part-time firefighters responding from Station 1 and Station 3 which have historically been able to turnout in less than 14 minutes 80 percent of the time (consistent with existing conditions).

Figure 16 indicates that the M.F.D. would be able to assemble a response of **"6 firefighters arriving on scene within a 14 minute turnout time + travel time to 80% of fire suppression incidents"** to 21% of the defined rural area and 42% of the historical (2015-2019) calls that occurred in this area. As previously noted, the defined rural area is being reduced as a result of the planned growth of the defined urban area.

As discussed in **Section 7.9.2.2**, the analysis of the future response capabilities within the defined rural area does not include any potential improvement of the response capabilities of the part-time firefighters, including those assigned to Station 2 (Campbellville), which may occur as a result of the recommendations of this F.M.P. With increased part-time firefighter total complement and potentially improved turnout times due to an implemented schedule on-call program, the ability to for six firefighters to arrive on scene within 14 minutes of turnout time and travel time to 80% fire suppression incidents could be improved.

Further discussion on the proposed part-time firefighter organizational model can be found in **Section 7.10.1**.

Figure 16: Future Response Capability – Defined Rural Area – – Full Complement at Station 4 and Station 3 (Scenario 2)

# of Firefighters on Scene within 14 minutes of Response Time	% Area Covered	% Calls Covered
< 6	9%	12%
≥ 6	21%	42%

Staffing	
Station	# of Staff
Station 1	4 Full Time
	4 Part Time
	2 Part Time
	4 Part Time
Station 2	4 Part Time
	2 Part Time
	2 Part Time
Station 3	4 Full Time
	4 Part Time
	4 Part Time
Station 4	4 Full Time
Station 5	4 Full Time
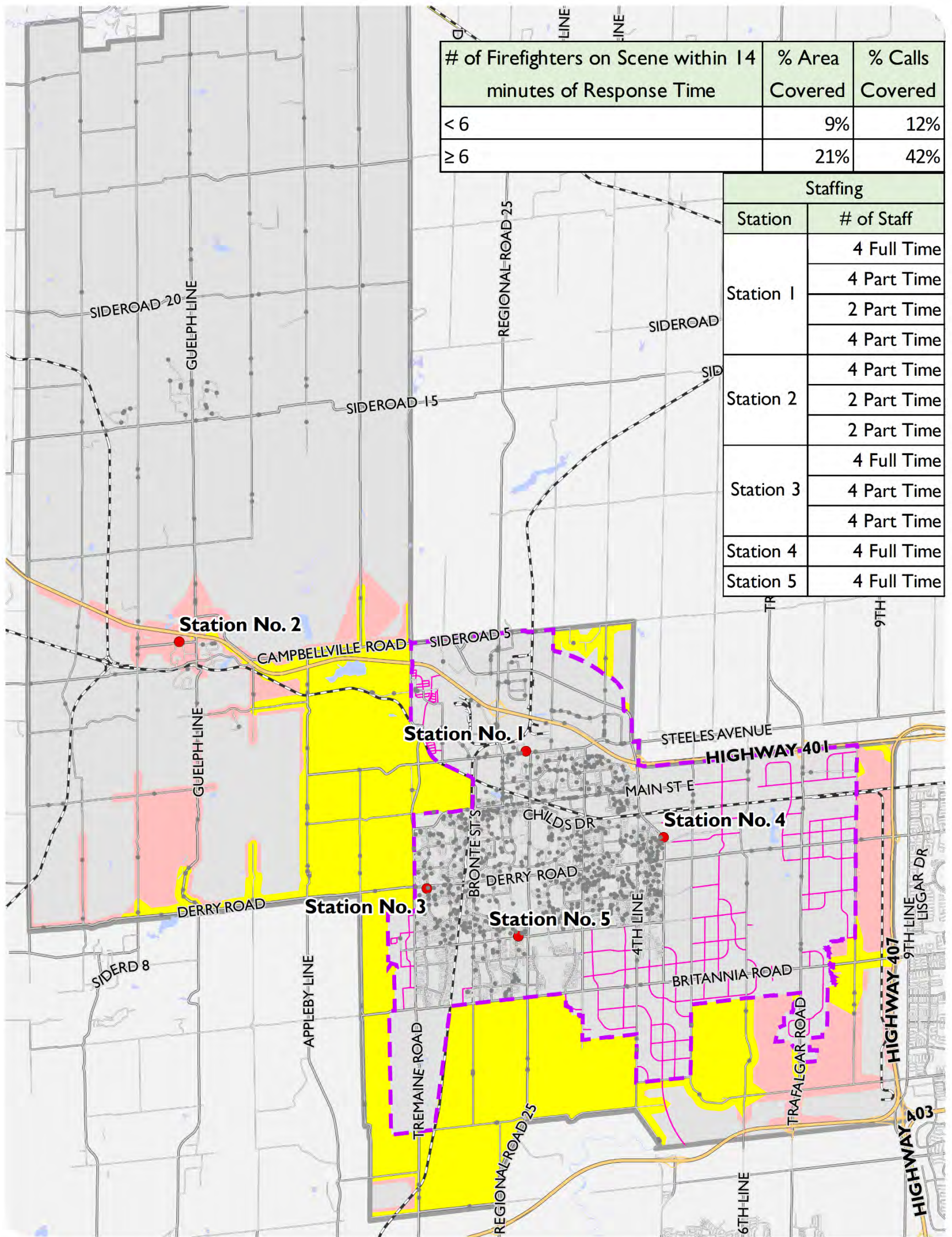
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FIGURE 17
FUTURE RESPONSE CAPABILITY – DEFINED RURAL AREA – FULL COMPLEMENT AT STATION 4 AND STATION 3 (SCENARIO 2)

FILE LOCATION: I:\GIS\188072 - Milton FMP\mxd\2021\Accessible_Figures\Fig17_Future Scenario 2B Rural.mxd

- Historical Call (2015 - 2019)
- Existing Fire Station
— Future Road
–·– Railway

Urban Boundary (Future)
Total Staffing for Station Coverage
< 6
≥ 6

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MAP DRAWING INFORMATION:
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MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:90,000
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7.9.2.4 **Summary of Scenario #2 – Future Emergency Response Deployment Capability -
Existing Urban Stations - Full Complement of Full-time Firefighters**

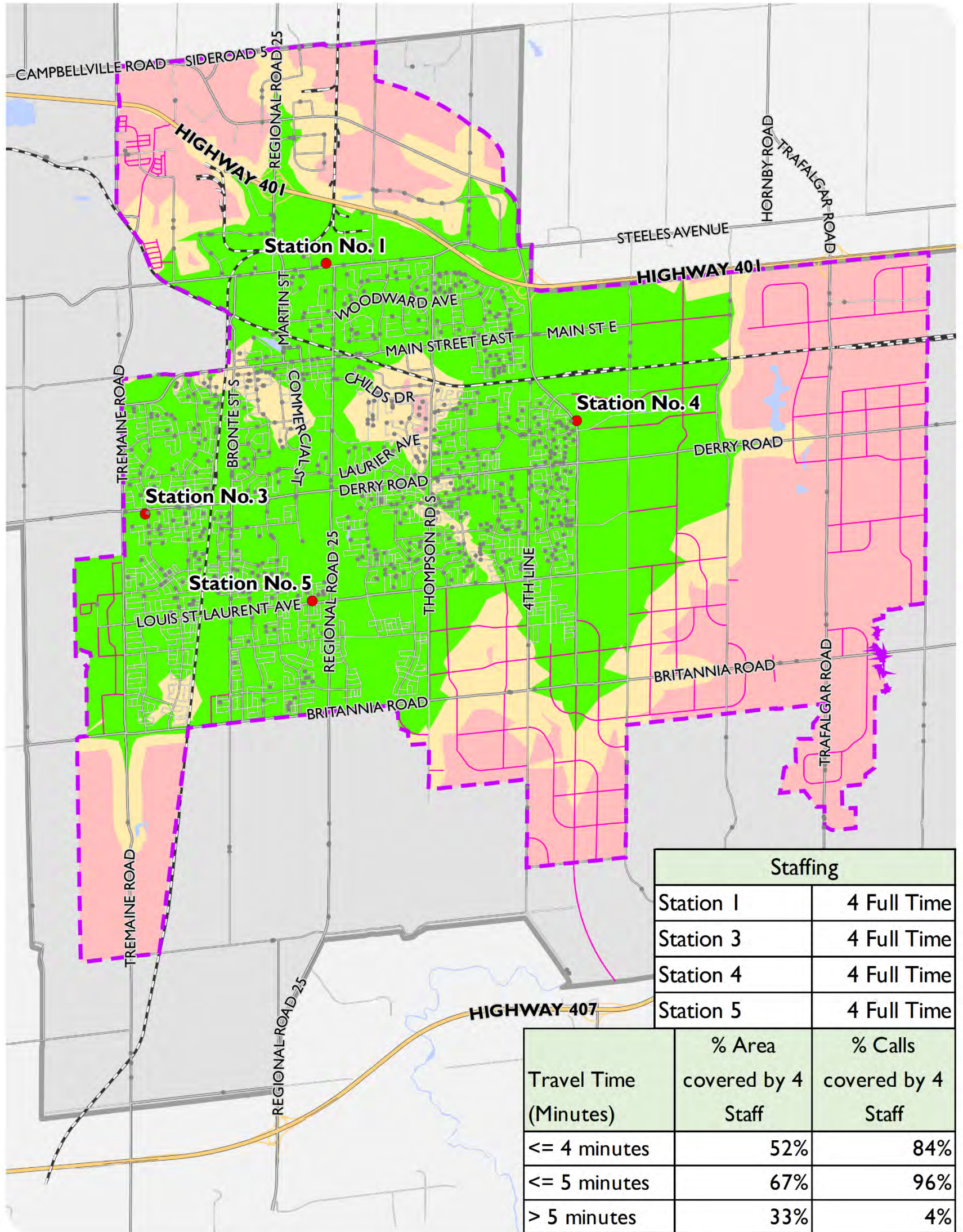**Table 39** illustrates a summary of the predicted future emergency response deployment capabilities of the M.F.D. for Scenario 2. This includes assuming that Station 4 has increased staffing to a full complement allowing for a minimum of on duty staffing of four full-time firefighters at all times. This reflects a significant improvement of historic calls covered (+23%) and some improvement to area covered (+4%) as compared to existing conditions.

This scenario also includes assuming that all four of the existing station in the defined urban area including Stations 1, 3, 4, 5 are **operational including a minimum on duty staffing of four full-time firefighters at all times** supported by a complement of part-time firefighters.

This results in an improvement to 52% of initial response coverage within the expanded defined urban area and 84% of the historical calls. The inclusion of four full-time firefighters at all four urban stations will also provide the department with sufficient on duty staff to deploy sixteen firefighters to 10% of the defined urban area and 31% of the historical call locations in the urban area. This is a significant improvement over the existing emergency response capabilities for Single-Family Dwelling – Initial Full Alarm Assignment (Moderate Risk Occupancy).

The complement of part-time firefighters is proposed to be, at a minimum, 20 firefighters assigned to existing Stations 1, 2, 3, and 4. While the analysis of the future response capabilities for neither the defined urban area nor the defined rural area includes any potential improvement of the response capabilities of the part-time firefighters, increasing the complement of part-time firefighters and improving turnout time could result in an improvement of performance as compared to the rural demand zone performance benchmark. It could also contribute to the staffing required for structure fires in the event of a High Rise – High Risk Occupancy, for example, in the defined urban area and provide some depth of resources in the event of simultaneous calls or a structure fire requiring extensive resources over a long period of time. See **Section 7.10.1** for further discussion.

Table 39: Summary of Proposed Defined Urban and Rural Area Fire Suppression Deployment Benchmarks

Scenario	EMERGENCY RESPONSE DEPLOYMENT MODEL	DEFINED URBAN AREA Initial Arriving Company (Min. 4 Firefighters Arriving On-scene in 4 min. or less 90% of the time)	DEFINED URBAN AREA Initial Full Alarm Assignment (min. 16 Firefighters Arriving On-scene in 8 min. or less 90% of the time)	DEFINED URBAN AREA Initial Full Alarm Assignment (min. 26 Firefighters Arriving On-Scene in 8 min. or less 90% of the time)	DEFINED RURAL AREA Rural Demand Zone Emergency Response (min. 6 Firefighters Arriving On-scene in 14 min. or less 80% of the time)
Scenario #1	**Existing Capabilities**	39% Of Area 50% Of Calls	0% Of Area 0% Of Calls	0% Of Area 0% Of Calls	19% Of Area 36% Of Calls
Scenario 2	**Future Capability - Full Complement at Station 4***	43% Of Area 73% Of Calls	Not Calculated	Not Calculated	Not Calculated
Scenario 2	**Future Capability - Full Complement at Station 4 and Station 3**	52% Of Area 84% Of Calls	10% Of Area 31% Of Calls	0% Of Area 0% Of Calls	21% Of Area 42% Of Calls

* This sub-scenario provides results for Initial Arriving Company only, as the purpose of this scenario was to assess an incremental approach to increasing staffing to the current stations with full-time firefighters (being 1, 4, and 5) with the sole purpose of demonstrating improvement in initial response as compared to existing conditions.

| 7.9.3 | **Scenario #3 - Proposed Future Fire Station 6** |

The need for additional fire stations will continue to be driven by the speed of community growth including expansion of the defined urban boundary area and further increases in population. As indicated in the previous section, continued expansion of residential and employment lands is projected to occur in phases. This review has identified that as of 2021 the estimated population ratio to fire stations will be approximately 35,000 people per station, based on four urban stations and forecast 2021 population from the March 3, 2021 D.C. Study (being 137,600 people).

In order to sustain the current fire suppression service levels within the expanded urban area additional fire stations and staffing will be required. In our view this should include sustaining the current composite model of utilizing both full-time and part-time firefighters. Our analysis indicates that by 2025/2026 with an average annual population growth of approximately 8,230 people, and completion of the projected development phasing, a sixth fire station will be required. The approximate total population that will trigger the need for a sixth station is approximately 175,000 people. Our analysis indicates that a sixth fire station should be planned for the area of the 5th Line and Britannia Road.

This scenario assumes that the staffing of the proposed Station 6 will include a total complement of 20 additional full-time firefighters staffing an additional pumper/rescue by 2026. It also includes a complement of a minimum of 20 additional part-time firefighters staffing an additional pumper.

| 7.9.3.1 | **Future Initial Arriving Company Capabilities - Defined Urban Area (NFPA 1710) – Proposed Station 6** |

This analysis assessed the proposed initial response performance benchmark of **"Four firefighters arriving on scene within a four minute travel time to 90% of fire suppression incidents"**. This deployment model assumes that the four existing fire stations within the defined urban area including Stations 1, 3, 4 and 5 and proposed Station 6 are operational with a minimum on duty staffing of four full-time firefighters at all times supported by a complement of part-time firefighters.

Figure 17 indicates that with the implementation of a sixth fire station **including a minimum on duty staffing of four full-time firefighters at all time**s supported by a complement of part-time firefighters the M.F.D. is predicted to be able to assemble a

minimum of four full-time firefighters on scene within a four minute travel time to 64% of the expanded defined urban area, and 85% of the historical (2015-2019) calls.

Figure 17: Future Initial Arriving Company Capabilities – Defined Urban Area – Proposed Station 6

Travel Time (Minutes)	% Area covered by 4 Staff	% Calls covered by 4 Staff	Staffing	
			Station 1	4 Full Time
			Station 3	4 Full Time
<= 4 minutes	64%	85%	Station 4	4 Full Time
<= 5 minutes	76%	97%	Station 5	4 Full Time
> 5 minutes	24%	3%	Station 6	4 Full Time
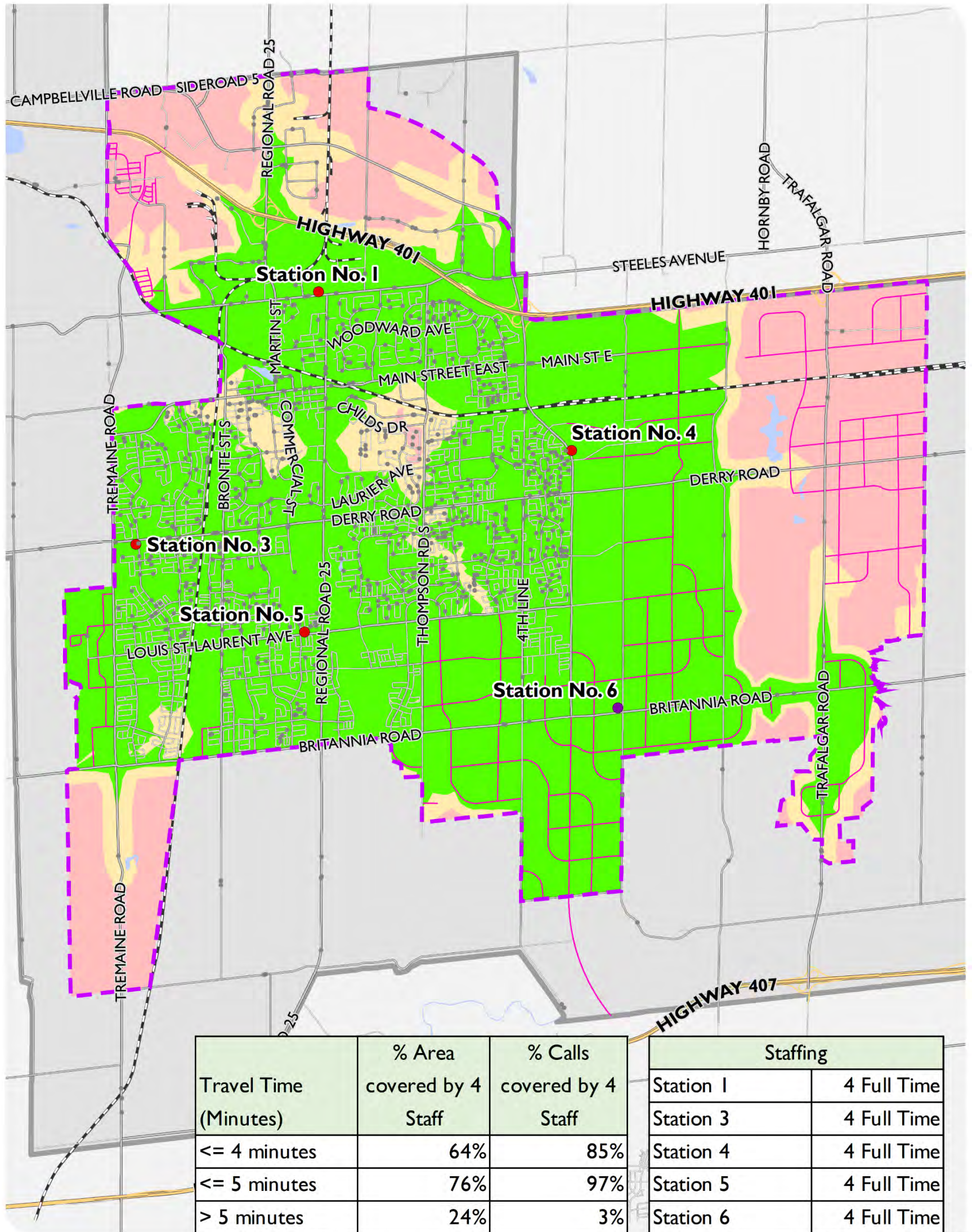
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FIGURE 18
FUTURE INITIAL ARRIVING COMPANY CAPABILITIES – DEFINED URBAN AREA – PROPOSED STATION 6

FILE LOCATION: I:\GIS\188072 - Milton FMP\mxd\2021\Accessible_Figures\Fig18_Future Scenario 3 Initial.mxd

• Historical Call (2015 - 2019)
🔴 Existing Fire Station
🟣 Proposed Fire Station
━━ Future Road
-·- Railway

▦ Urban Boundary (Future)
Travel Time
🟩 ≤ 4 Minutes at Network Speed
🟨 ≤ 5 Minutes at Network Speed
🟥 > 4 Minutes at Network Speed

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MAP DRAWING INFORMATION: DATA PROVIDED BY MNRF, TOWN OF MILTON
MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION: NAD 1983 UTM Zone 17N

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7.9.3.2   **Future Initial Full Alarm Assignment Capabilities – Defined Urban Area – Proposed Station 6**

This analysis assessed the proposed initial full alarm assignment performance benchmark for single-family dwellings of **"16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents. Figure 18** indicates that with this deployment model the M.F.D. would have sufficient firefighters to respond to a fire in a Single-Family Dwelling – Initial Full Alarm Assignment (Moderate Risk Occupancy) including the initial full alarm assignment performance benchmark of **"16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents"** to 18% of the defined future urban area, and 45% of the historical (2015-2019) calls.

This analysis highlights that the M.F.D. would continue to be unable to assemble the total number of firefighters identified within the proposed emergency response performance benchmarks for an Apartment – Initial Full Alarm Assignment (High Risk Occupancy) and a High-Rise – Initial Full Alarm Assignment (High Rise – High Risk Occupancy). As discussed in **Scenario 2**, there is the potential for the proposed increase in the complement of part-time firefighters and scheduled on-call program to contribute to the ability to add a depth of resources in the event of a structure fire in a High Rise – High Risk Occupancy, for example. See **Section 7.10** for further discussion.

Figure 18: Future Initial Full Alarm Assignment Capabilities – Defined Urban Area (NFPA 1710) – Proposed Station 6

Staffing		# of Firefighters On Scene within 8 minutes of Travel Time	% Area Covered	% Calls Covered
Station 1	4 Full Time	< 4	3%	0%
Station 3	4 Full Time	4	10%	1%
Station 4	4 Full Time	8	39%	20%
Station 5	4 Full Time	12	30%	34%
Station 6	4 Full Time	≥ 16	18%	45%
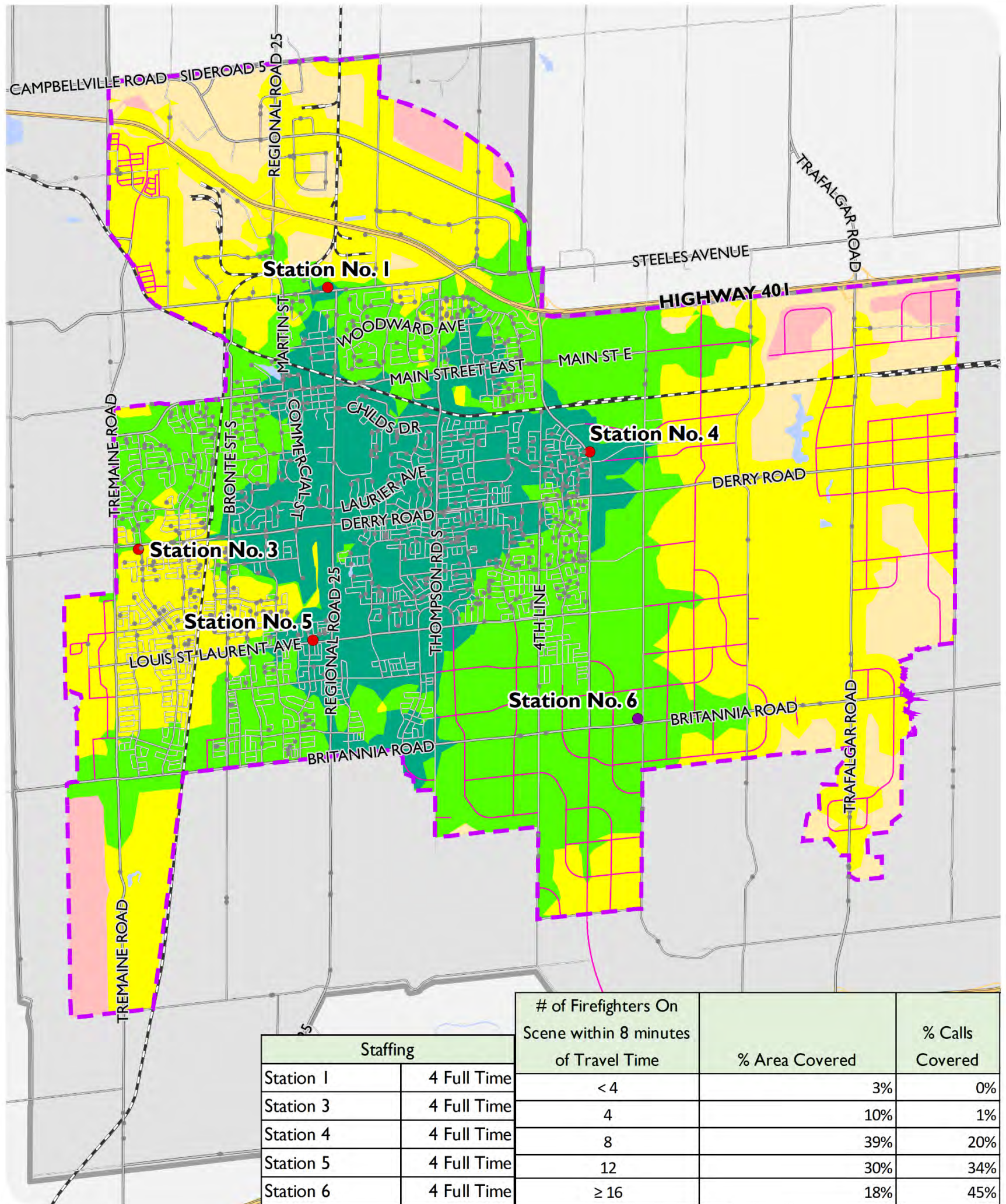
TOWN OF MILTON
FIRE MASTER PLAN UPDATE

FIGURE 19

FUTURE FULL ALARM ASSIGNMENT CAPABILITIES – DEFINED URBAN AREA – PROPOSED STATION 6

- Historical Call (2015 - 2019)
- Existing Fire Station
- Proposed Fire Station
- Future Road
- Railway
- Urban Boundary (Future)

Number of Staff on Scene within 8 Minutes of Travel Time

- ≥ 16
- ≥ 11
- ≥ 7
- ≥ 4
- < 4

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, TOWN OF MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:50,000

0   0.5   1   2 km

PROJECT: 187286   STATUS: DRAFT   DATE: 2021-06-03

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FILE LOCATION: I:\GIS\188072 – Milton FMP\mxd\2021\Accessible_Figures\Fig19_Future Scenario 3 Full Alarm.mxd

7.9.3.3   **Future Response Capabilities – Defined Rural Area – Proposed Station 6**

The future response capabilities is based on a deployment model of apparatus staffed with full-time firefighters responding from stations within the defined future urban area including the proposed complements at Stations 1, 3, 4, and 5 and proposed Station 6.

Where applicable, it also includes those apparatus with part-time firefighters responding from Station 1 and Station 3 which have historically been able to turnout in less than 14 minutes 80 percent of the time (consistent with existing conditions). The analysis of the future response capabilities within the defined rural area does not include any potential improvement of the response capabilities of the part-time firefighters, including those assigned to Station 2 (Campbellville), which may occur as a result of the recommendations of this F.M.P.

Based on these assumptions, **Figure 19** indicates that indicates the M.F.D. would be able to assemble a response of **"6 firefighters arriving on scene within a 14 minute turnout time + travel time to 80% of fire suppression incidents"** to 25% of the defined rural area and 42% of the historical (2015-2019) calls that occurred in this area. As discussed in **Scenario 2**, there is the potential for the proposed increase in the complement of part-time firefighters and scheduled on-call program to contribute to an increased ability to meet this performance benchmark. See **Section 7.10** for further discussion.

Figure 19: Future Response Capability – Defined Rural Area – Proposed Station 6
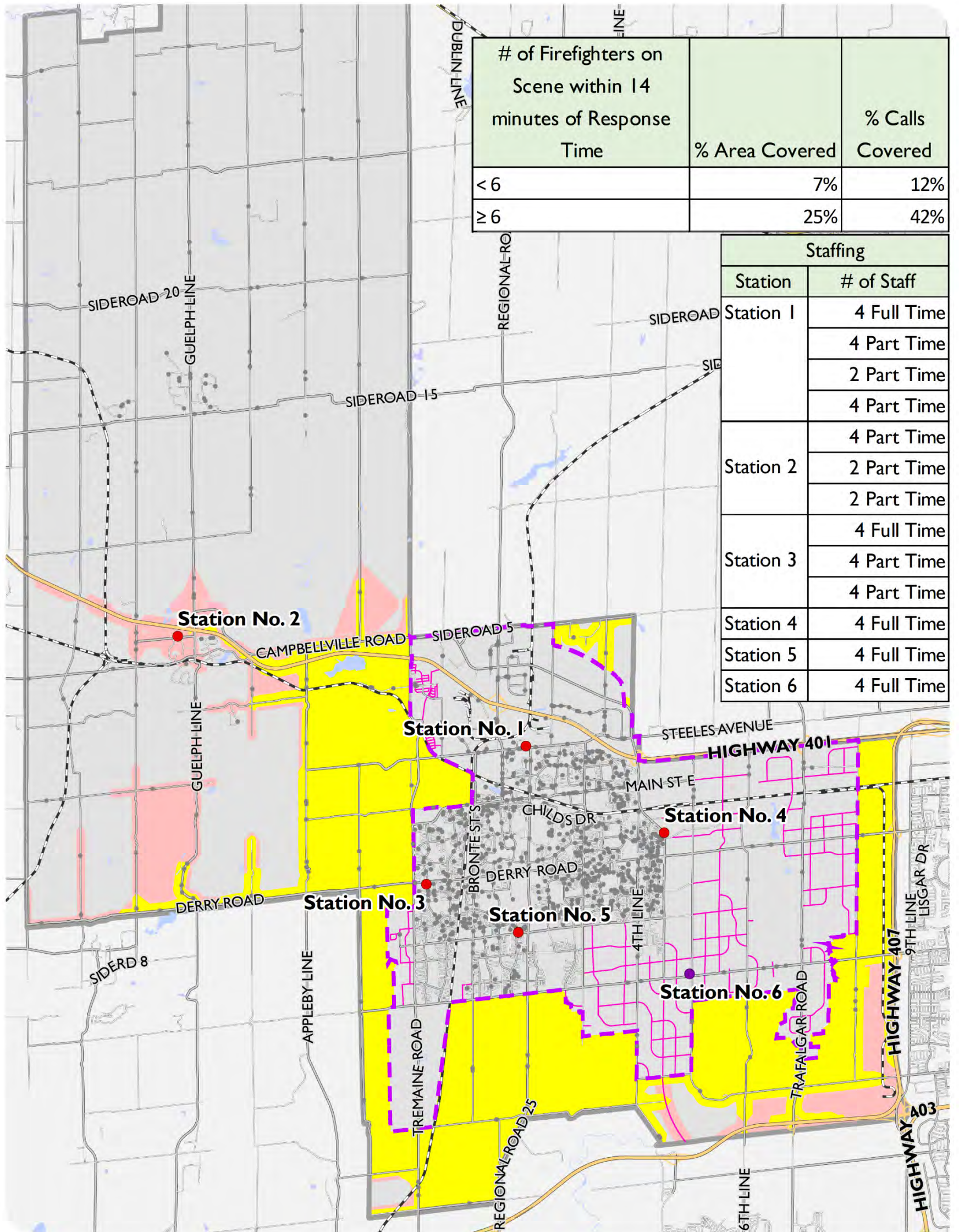
# of Firefighters on Scene within 14 minutes of Response Time	% Area Covered	% Calls Covered
< 6	7%	12%
≥ 6	25%	42%

Staffing		
Station	# of Staff	
Station 1	4 Full Time	
	4 Part Time	
	2 Part Time	
	4 Part Time	
Station 2	4 Part Time	
	2 Part Time	
	2 Part Time	
Station 3	4 Full Time	
	4 Part Time	
	4 Part Time	
Station 4	4 Full Time	
Station 5	4 Full Time	
Station 6	4 Full Time	

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FIGURE 20

FUTURE RESPONSE CAPABILITY – DEFINED RURAL AREA – PROPOSED STATION 6

- • Historical Call (2015 - 2019)
- ● Existing Fire Station
- ● Proposed Fire Station
- —— Future Road
- - - - Railway
- Urban Boundary (Future)

Total Staffing for Station Coverage
- < 6
- ≥ 6

MAP DRAWING INFORMATION:
DATA PROVIDED BY MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:90,000

0 1 2 4 km

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FILE LOCATION: I:\GIS\188072 - Milton FMP\mxd\2021\Accessible_Figures\Fig20_Future Scenario 3 Rural.mxd

7.9.3.4 **Summary of Scenario #3 – Future Emergency Response Deployment Capability + Proposed Station 6**

Table 40 illustrates a summary of the predicted future emergency response deployment capabilities of the M.F.D. assuming that the five recommended fire stations within the defined urban area including Stations 1, 3, 4, 5 and proposed Station 6 are **operational including a minimum on duty staffing of four full-time firefighters at all times** supported by a complement of part-time firefighters.

This includes an improvement to 64% of initial response coverage within the expanded defined urban area and 85% of the historical calls. The additional four full-time firefighters at Station No. 6 will also provide the department with sufficient on duty staff to deploy sixteen firefighters to 18% of the defined urban area and 45% of the historical call locations. This is a significant improvement over the existing emergency response capabilities for Single-Family Dwelling – Initial Full Alarm Assignment (Moderate Risk Occupancy).

The complement of part-time firefighters is proposed to be, at a minimum, 20 firefighters assigned to existing Stations 1, 2, 3, 4, and proposed Station 6. The same advantages of this approach to part-time firefighter staffing would apply to this scenario as discussed in **Scenario 2.** See **Section 8.10** for further discussion.

Table 40: Summary of Proposed Defined Urban and Rural Area Fire Suppression Deployment Benchmarks

Scenario	EMERGENCY RESPONSE DEPLOYMENT MODEL	DEFINED URBAN AREA Initial Arriving Company (Min. 4 Firefighters Arriving On-scene in 4 min. or less 90% of the time)	DEFINED URBAN AREA Initial Full Alarm Assignment (min. 16 Firefighters Arriving On-scene in 8 min. or less 90% of the time)	DEFINED URBAN AREA Initial Full Alarm Assignment (min. 26 Firefighters Arriving On-Scene in 8 min. or less 90% of the time)	DEFINED RURAL AREA Rural Demand Zone Emergency Response (min. 6 Firefighters Arriving On-scene in 14 min. or less 80% of the time)
Scenario 1	Existing Capabilities	39% of Area 50% of Calls	0% of Area 0% of Calls	0% of Area 0% of Calls	19% of Area 36% of Calls
Scenario 2	Full Complement at Station 4*	43% of Area 73% of Calls	Not Calculated	Not Calculated	Not Calculated
Scenario 2	Full Complement at Station 4 and Station 3	52% of Area 84% of Calls	10% of Area 31% of Calls	0% of Area 0% of Calls	21% of Area 42% of Calls
Scenario 3	Proposed Station 6	64% of Area 85% of Calls	18% of Area 45% of Calls	0% of Area 0% of Calls	25% of Area 42% of Calls

* This sub-scenario provides results for Initial Arriving Company only as the purpose of this scenario was to assess an incremental approach to increasing staffing to the current stations with full-time firefighters (being 1, 4, and 5) with the sole purpose of demonstrating improvement in initial response as compared to existing conditions.

| 7.9.4 | **Scenario #4 - Proposed Future Fire Station 6 and Station 7** |

Our analysis indicates that by approximately 2029 with an average annual population growth of approximately 8,230 people from 2021, and with completion of the projected development phasing, a seventh fire station will be required. The approximate total population that will trigger the need for a seventh station is 210,000 people. Our analysis indicates that this seventh fire station should be planned for the area of Trafalgar Road and Derry Road.

This scenario assumes that the staffing of the proposed Station 7 will include a total complement of 20 additional full-time firefighters staffing a new 75' Quint (aerial device).

| 7.9.4.1 | **Future Initial Arriving Company Capabilities - Defined Urban Area (NFPA 1710) – Proposed Station 7** |

This analysis assessed the proposed initial response performance benchmark of **"Four firefighters arriving on scene within a four minute travel time to 90% of fire suppression incidents"**. This deployment model assumes that the existing fire stations within the defined urban area including Stations 1, 3, 4, 5, and proposed Stations 6 and 7 are operational with a minimum on duty staffing of four full-time firefighters at all times supported by a complement of part-time firefighters.

Figure 20 indicates that with the implementation of Stations 6 and 7 including a minimum on duty staffing of four full-time firefighters at all times supported by a complement of part-time firefighters the M.F.D. is predicted to be able to assemble a minimum of four full-time firefighters on scene within a four minute travel time to 79% of the expanded defined urban area, and 86% of the historical (2015-2019) calls.

Figure 20: Future Initial Arriving Company Capabilities – Defined Urban Area (NFPA 1710) – Proposed Stations 6 and 7

Travel Time (Minutes)	% Area covered by 4 Staff	% Calls covered by 4 Staff
<= 4 minutes	79%	86%
<= 5 minutes	89%	97%
> 5 minutes	11%	3%

Staffing	
Station 1	4 Full Time
Station 3	4 Full Time
Station 4	4 Full Time
Station 5	4 Full Time
Station 6	4 Full Time
Station 7	4 Full Time
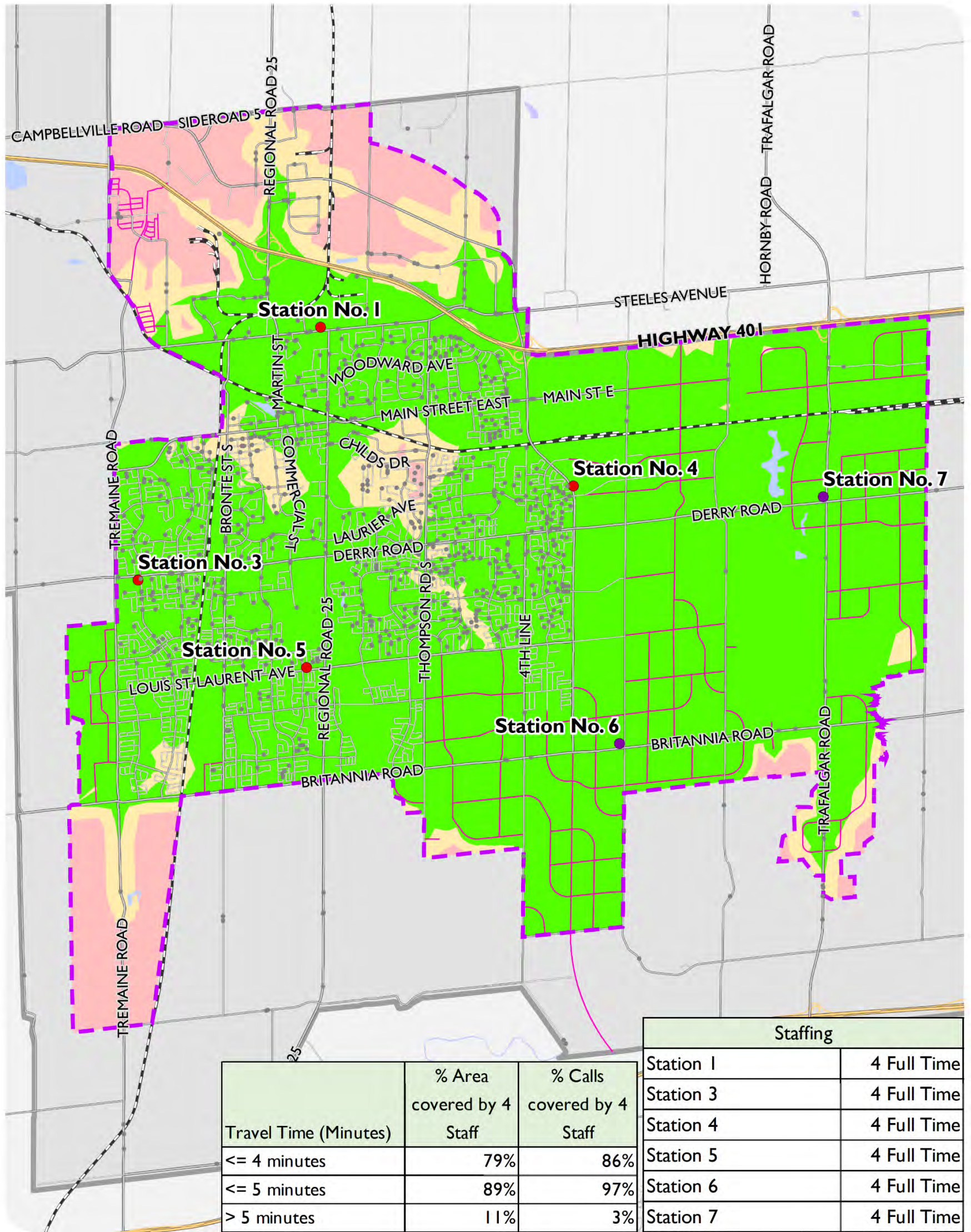
TOWN OF MILTON
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FIGURE 21

FUTURE INITIAL ARRIVING COMPANY CAPABILITIES – DEFINED URBAN AREA – PROPOSED STATIONS 6 AND 7

· Historical Call (2015 - 2019)
● Existing Fire Station
● Proposed Fire Station
— Future Road
--- Railway

Urban Boundary (Future)
Travel Time
≤ 4 Minutes at Network Speed
≤ 5 Minutes at Network Speed
> 5 Minutes at Network Speed

MAP DRAWING INFORMATION:
DATA PROVIDED BY MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:50,000
0   0.5   1   2 km

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7.9.4.2 **Future Initial Full Alarm Assignment Capabilities – Defined Urban Area – Proposed Stations 6 and 7**

This analysis assessed the proposed initial full alarm assignment performance benchmark for single-family dwellings of **"16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents". Figure 21** indicates that with this deployment model the M.F.D. would have sufficient firefighters to respond to a fire in a Single-Family Dwelling – Initial Full Alarm Assignment (Moderate Risk Occupancy) including the initial full alarm assignment performance benchmark of **"16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents"** to 30% of the defined future urban area, and 46% of the historical (2015-2019) calls.

This analysis highlights that the M.F.D. would continue to be unable to assemble the total number of firefighters identified within the proposed emergency response performance benchmarks for an Apartment – Initial Full Alarm Assignment (High Risk Occupancy) and a High-Rise – Initial Full Alarm Assignment (High Rise – High Risk Occupancy). As previously discussed, there is the potential for the proposed complement of part-time firefighters and scheduled on-call program to contribute to the ability to add a depth of resources in the event of a structure fire in a High Rise – High Risk Occupancy, for example. See **Section 8.10** for further discussion.

Figure 21: Future Initial Full Alarm Assignment Capabilities – Defined Urban Area (NFPA 1710) – Proposed Stations 6 and 7

# of Firefighters On Scene within 8 minutes of Travel Time	% Area Covered	% Calls Covered
< 4	2%	0%
4	5%	1%
8	27%	16%
12	36%	22%
≥ 16	30%	46%

Staffing	
Station 1	4 Full Time
Station 3	4 Full Time
Station 4	4 Full Time
Station 5	4 Full Time
Station 6	4 Full Time
Station 7	4 Full Time

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FIGURE 22

FUTURE FULL ALARM ASSIGNMENT CAPABILITIES – DEFINED URBAN AREA – PROPOSED STATIONS 6 AND 7

- Historical Call (2015 - 2019)
- Existing Fire Station
- Proposed Fire Station
- Future Road
- Railway
- Urban Boundary (Future)

Number of Staff on Scene within 8 Minutes of Travel Time
- ≥ 16
- ≥ 11
- ≥ 7
- ≥ 4
- < 4

MAP DRAWING INFORMATION:
DATA PROVIDED BY MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:50,000

0   0.5   1   2 km

PROJECT: 187286   STATUS: DRAFT   DATE: 2021-06-03

FILE LOCATION: I:\GIS\188072 – Milton FMP\mxd\2021\Accessible_Figures\Fig22_Future Scenario 5 Full Alarm.mxd

7.9.4.3 **Future Response Capability – Defined Rural Area – Proposed Stations 6 and 7**

The future response capabilities for the defined rural area is based on a deployment model of apparatus staffed with full-time firefighters responding from stations within the defined future urban area including the proposed complements at Stations 1, 3, 4, and 5 and proposed Stations 6 and 7.

Where applicable, it also includes those apparatus with part-time firefighters responding from Station 1 and Station 3 which have historically been able to turnout in less than 14 minutes 80 percent of the time (consistent with existing conditions). The analysis of the future response capabilities within the defined rural area does not include any potential improvement of the response capabilities of the part-time firefighters, including those assigned to Station 2 (Campbellville), which may occur as a result of the recommendations of this F.M.P.

Based on these assumptions, **Figure 22** indicates that the M.F.D. would be able to assemble a response of **"6 firefighters arriving on scene within a 14 minute turnout time + travel time to 80% of fire suppression incidents"** to 27% of the defined rural area and 42% of the historical (2015-2019) calls that occurred in this area. As previously discussed, there is the potential for the proposed complement of part-time firefighters and scheduled on-call program to contribute to an increased ability to meet this performance benchmark. See **Section 7.10** for further discussion.

Figure 22: **Future Response Capability – Defined Rural Area – Proposed Stations 6 and 7**
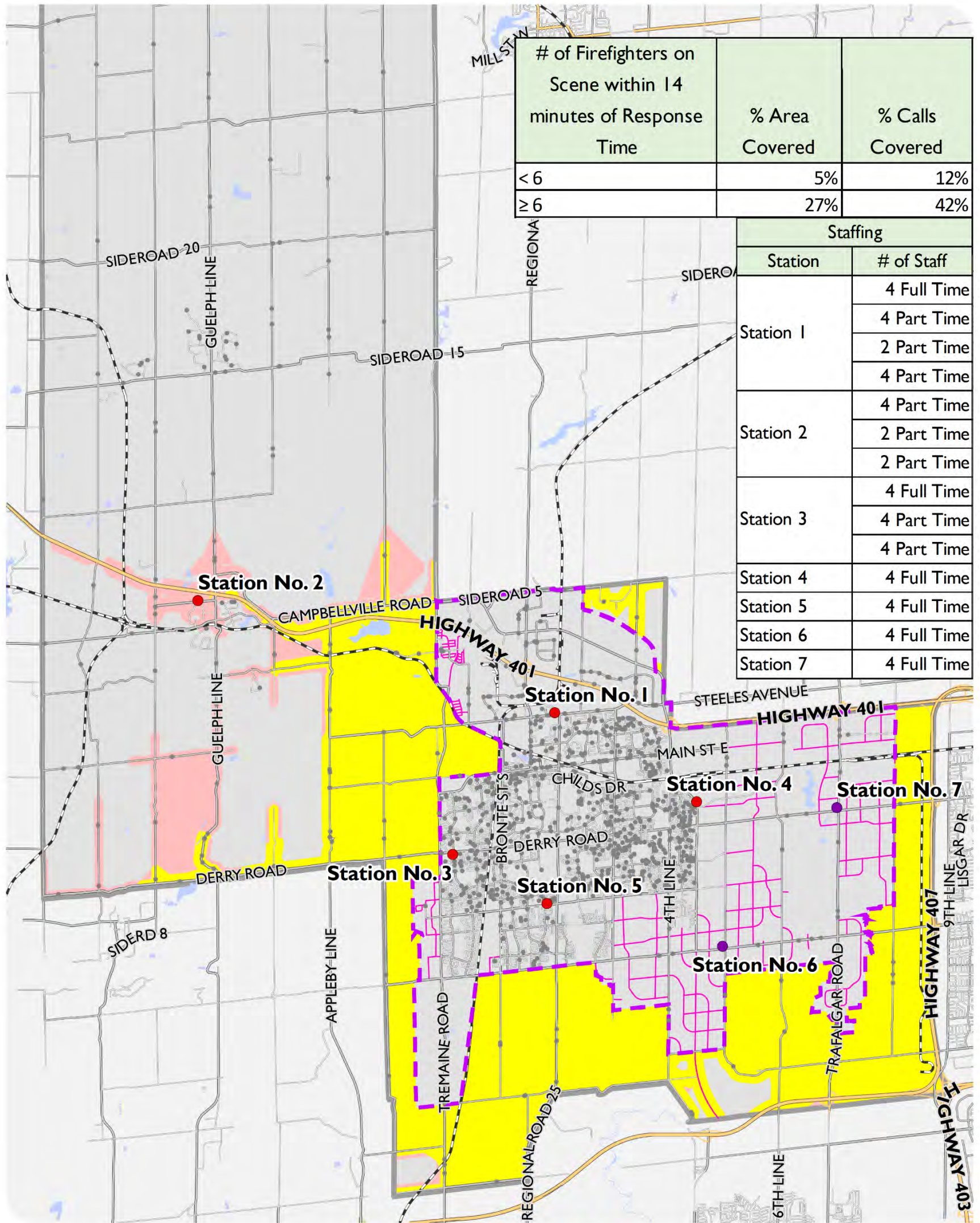
# of Firefighters on Scene within 14 minutes of Response Time	% Area Covered	% Calls Covered
< 6	5%	12%
≥ 6	27%	42%

Staffing	
Station	# of Staff
Station 1	4 Full Time
	4 Part Time
	2 Part Time
	4 Part Time
Station 2	4 Part Time
	2 Part Time
	2 Part Time
Station 3	4 Full Time
	4 Part Time
	4 Part Time
Station 4	4 Full Time
Station 5	4 Full Time
Station 6	4 Full Time
Station 7	4 Full Time

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FIGURE 23
FUTURE RESPONSE CAPABILITY – DEFINED RURAL AREA – PROPOSED STATIONS 6 AND 7

· Historical Call (2015 - 2019)
● Existing Fire Station
● Proposed Fire Station
— Future Road
--- Railway

┌┈┐ Urban Boundary (Future)

Total Staffing for Station Coverage
▮ < 6
▮ ≥ 6

MAP DRAWING INFORMATION:
DATA PROVIDED BY MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:90,000
0   1   2   4 km
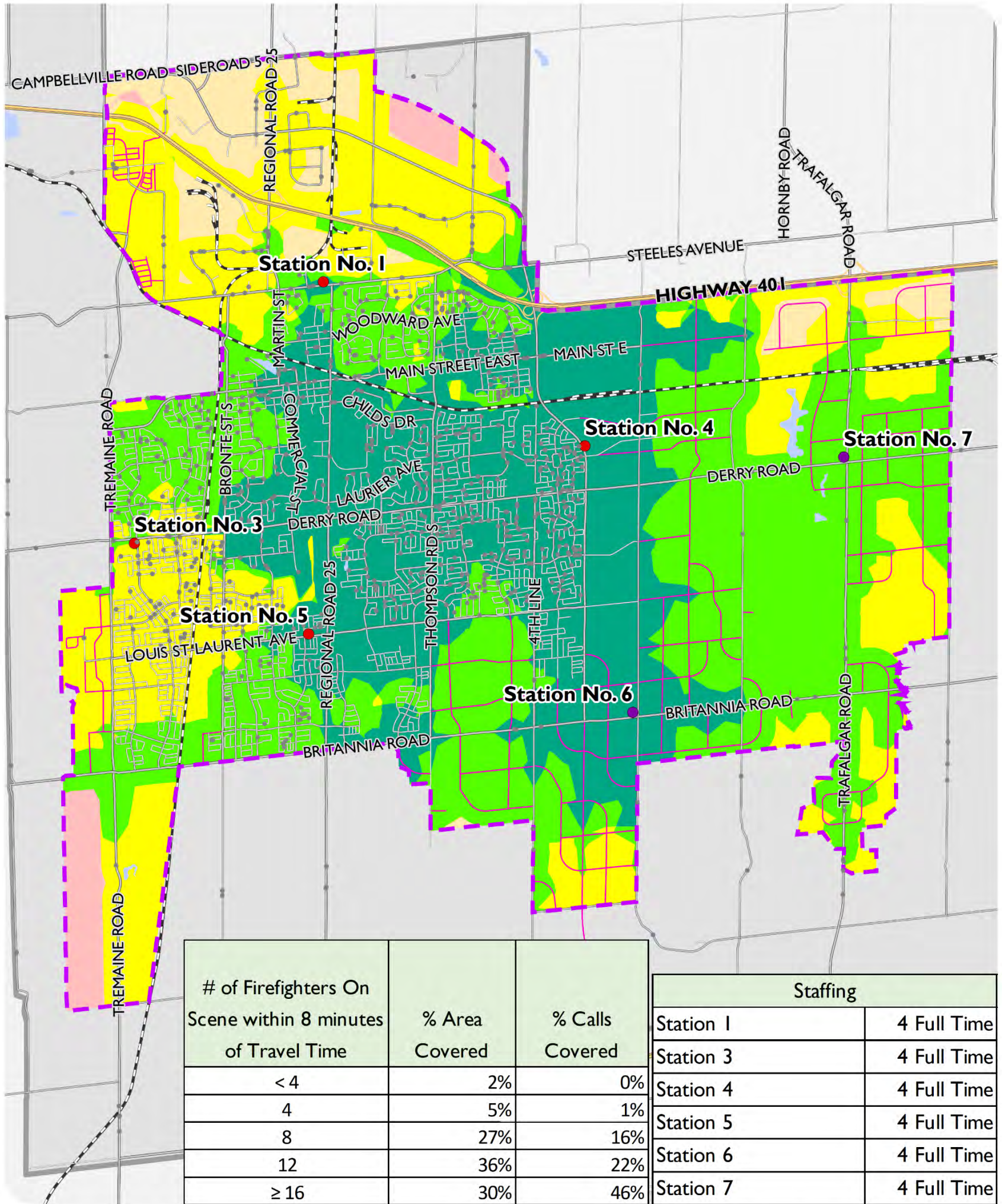
PROJECT: 187286   STATUS: DRAFT   DATE: 2021-06-03

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FILE LOCATION: I:\GIS\188072 - Milton FMP\mxd\2021\Accessible_Figures\Fig23_Future Scenario 5 Rural.mxd

7.9.4.4   **Sensitivity Test – Proposed Station 7 (No Station 6)**

With consideration to the importance of growth and the timing of growth, a sensitivity test was conducted to assess the coverage of the proposed Station 7 in a scenario where it would be added as the sixth station (i.e., prior to the addition of Station 6).

Initial Arriving Company

This analysis assessed the proposed initial response performance benchmark of **"Four firefighters arriving on scene within a four minute travel time to 90% of fire suppression incidents"**. This deployment model assumes that the existing fire stations within the defined urban area including Stations 1, 3, 4, 5, and proposed Station 7 are operational with a minimum on duty staffing of four full-time firefighters at all times supported by a complement of part-time firefighters.

Figure 23 indicates that with the implementation of Station 7 the M.F.D. is predicted to be able to assemble a minimum of four full-time firefighters on scene within a four minute travel time to 64% of the expanded defined urban area, and 85% of the historical (2015-2019) calls.

Quantitatively, this is similar to the coverage of Scenario #3; however, the geographic area covered is different. With Scenario #3, there is coverage of the Boyne Secondary Plan Area, the Britannia Secondary Plan Area, and the southern portion of the Trafalgar Secondary Plan Area. In this sensitivity test, there is some coverage of the Agerton Secondary Plan Area and in the northern portion of the Trafalgar Secondary Plan area.

Initial Full Alarm Assignment

This analysis assessed the proposed initial full alarm assignment performance benchmark for single-family dwellings of **"16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents".** This deployment model assumes that the four existing fire stations within the defined urban area including Stations 1, 3, 4 and 5 and proposed Station 7 are operational with a minimum on duty staffing of four full-time firefighters at all times supported by a complement of part-time firefighters.

Figure 24 indicates that with this deployment model the M.F.D. would have sufficient firefighters to respond to a fire in a Single-Family Dwelling – Initial Full Alarm Assignment (Moderate Risk Occupancy) including the initial full alarm assignment

performance benchmark of **"16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents"** to 13% of the defined future urban area, and 38% of the historical (2015-2019) calls.

As compared to Scenario #3 there is a lower geographic area covered (-5%) and fewer historic calls covered (-7%). This suggests that Station 6 as the sixth station provides a greater improvement in Initial Full Alarm Assignment as compared to the performance benchmark.

We therefore propose the scenario where Station 6 is added first followed by the proposed Station 7. **Ultimately, within the horizon of this plan, assuming the current pace of growth, two additional stations will be required. However, it will be important for the Town to monitor the location, type and pace of growth over the horizon of this plan and consider any changes in needs and circumstances that may result in a case where it may be prudent to add Station 7 before Station 6.**

Figure 23: Future Initial Arriving Company Capabilities – Defined Urban Area (NFPA 1710) – Proposed Station 7

Travel Time (Minutes)	% Area covered by 4 Staff	% Calls covered by 4 Staff	Staffing	
			Station 1	4 Full Time
			Station 3	4 Full Time
<= 4 minutes	64%	85%	Station 4	4 Full Time
<= 5 minutes	80%	97%	Station 5	4 Full Time
> 5 minutes	20%	3%	Station 7	4 Full Time
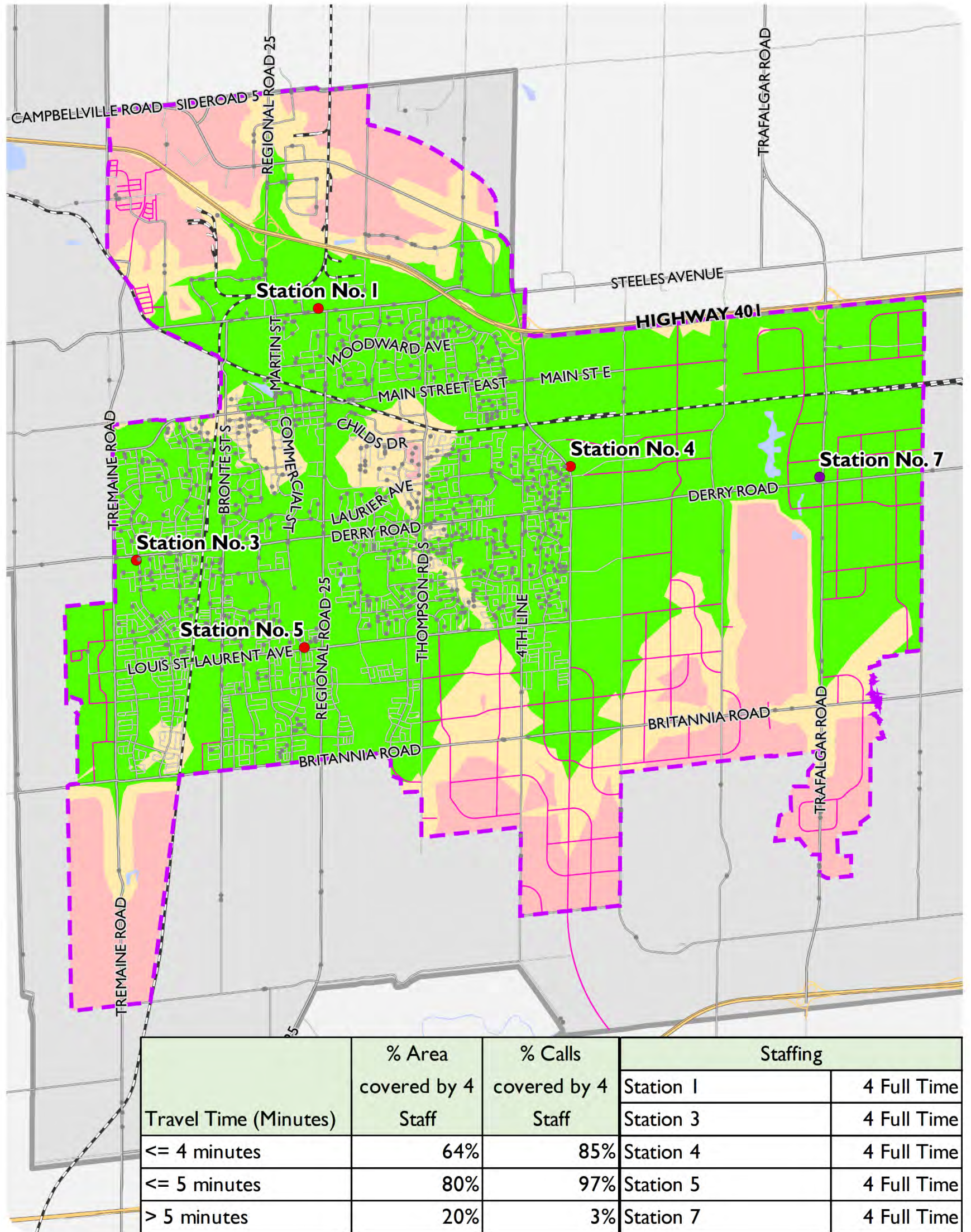
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FIGURE 24
FUTURE ARRIVING COMPANY CAPABILITIES – DEFINED URBAN AREA – PROPOSED STATION 7

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- Historical Call (2015 - 2019)
- ● Existing Fire Station
- ● Proposed Fire Station
- — Future Road
- -- Railway

Urban Boundary (Future)

Travel Time
- ≤ 4 Minutes at Network Speed
- ≤ 5 Minutes at Network Speed
- > 5 Minutes at Network Speed

MAP DRAWING INFORMATION:
DATA PROVIDED BY MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:50,000
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PROJECT: 187286   STATUS: DRAFT   DATE: 2021-06-03

FILE LOCATION: I:\GIS\188072 - Milton FMP\mxd\2021\Accessible_Figures\Fig24_Future Scenario 4 Initial.mxd

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Figure 24: Future Initial Full Alarm Assignment Capabilities – Defined Urban Area (NFPA 1710) – Proposed Station 7

Staffing		# of Firefighters On Scene within 8 minutes of Travel Time	% Area Covered	% Calls Covered
Station 1	4 Full Time	< 4	2%	0%
Station 3	4 Full Time	4	9%	1%
Station 4	4 Full Time	8	51%	26%
Station 5	4 Full Time	12	25%	35%
Station 7	4 Full Time	≥ 16	13%	38%
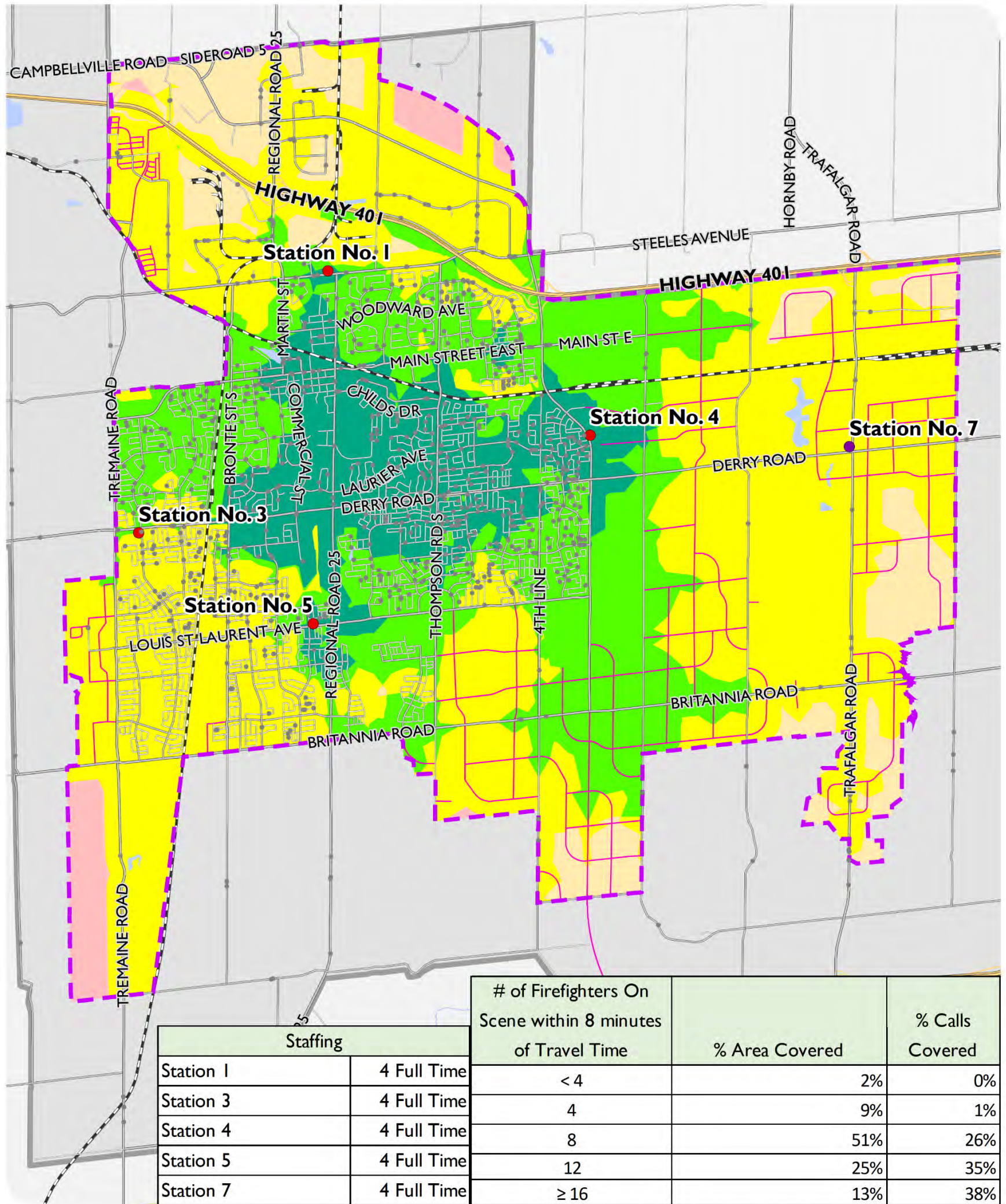
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FIGURE 25
FUTURE FULL ALARM ASSIGNMENT CAPABILITIES – DEFINED URBAN AREA – PROPOSED STATION 7

- Historical Call (2015 - 2019)
- ● Existing Fire Station
- ● Proposed Fire Station
- — Future Road
- ‑‑ Railway
- ▢ Urban Boundary (Future)

Number of Staff on Scene within 8 Minutes of Travel Time
- ≥ 16
- ≥ 11
- ≥ 7
- ≥ 4
- < 4

MAP DRAWING INFORMATION:
DATA PROVIDED BY MILTON

MAP CREATED BY: LK
MAP CHECKED BY: AN
MAP PROJECTION:
NAD 1983 UTM Zone 17N

1:50,000
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PROJECT: 187286   STATUS: DRAFT   DATE: 2021-06-03

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7.9.4.5   Summary of Scenario #4 – Future Emergency Response Deployment Capability + Proposed Station 6 and 7

Table 41 illustrates a summary of the predicted future emergency response deployment capabilities of the M.F.D. assuming that the fire stations within the defined urban area including Stations 1, 3, 4, 5 and proposed Stations 6 and 7 are **operational including a minimum on duty staffing of four full-time firefighters at all times** supported by a complement of part-time firefighters.

Compared to Scenario 1 (existing conditions), this includes an improvement to 79% of initial response coverage within the expanded defined urban area and 86% of the historical calls. The additional four full-time firefighters at Stations 6 and 7 will also provide the department with sufficient on duty staff to deploy sixteen firefighters to 30% of the defined urban area and 46% of the historical call locations. This is a significant improvement over the existing emergency response capabilities for Single-Family Dwelling – Initial Full Alarm Assignment (Moderate Risk Occupancy).

The complement of part-time firefighters is proposed to be, at a minimum, 20 firefighters assigned to existing Stations 1, 2, 3, 4, and 6. The same advantages of this approach to part-time firefighter staffing would apply to this scenario as discussed in **Scenario 2.** See **Section 7.10** for further discussion.

Table 41: Summary of Proposed Defined Urban and Rural Area Fire Suppression Deployment Benchmarks

Scenario	EMERGENCY RESPONSE DEPLOYMENT MODEL	DEFINED URBAN AREA Initial Arriving Company (Min. 4 Firefighters Arriving On-scene in 4 min. or less 90% of the time)	DEFINED URBAN AREA Initial Full Alarm Assignment (min. 16 Firefighters Arriving On-scene in 8 min. or less 90% of the time)	DEFINED URBAN AREA Initial Full Alarm Assignment (min. 26 Firefighters Arriving On-Scene in 8 min. or less 90% of the time)	DEFINED RURAL AREA Rural Demand Zone Emergency Response (min. 6 Firefighters Arriving On-scene in 14 min. or less 80% of the time)
Scenario #1	Existing Capabilities	39% of Area 50% of Calls	0% of Area 0% of Calls	0% of Area 0% of Calls	19% of Area 36%
Scenario 2	Full Complement at Station 4*	43% of Area 73% of Calls	Not Calculated	Not Calculated	Not Calculated
Scenario 2	Full Complement at Station 4 and Station 3	52% of Area 84% of Calls	10% of Area 31% of Calls	0% of Area 0% of Calls	21% of Area 42% of Calls
Scenario 3	Proposed Station 6	64% of Area 85% of Calls	18% of Area 45% of Calls	0% of Area 0% of Calls	25% of Area 42% of Calls
Scenario 4	Proposed Stations 6 and 7	79% of Area 86% of Calls	30% of Area 46% of Calls	0% of Area 0% of Calls	27% of Area 42% of Calls

* This sub-scenario provides results for Initial Arriving Company only as the purpose of this scenario was to assess an incremental approach to increasing staffing to the current

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stations with full-time firefighters (being 1, 4, and 5) with the sole purpose of demonstrating improvement in initial response as compared to existing conditions.

7.10   Proposed Fire Suppression Resource Strategy

The Town of Milton has been the beneficiary of a highly effective and efficient fire department that has utilized part-time (volunteer) firefighters for decades which has been very cost-effective for the Town. However, as the Town has grown the operational effectiveness of this model has continued to decrease. The increasing annual emergency call volume, additional training requirements and the impacts of work/life balance on the part-time firefighters are making it challenging for this group to be effective in providing the initial response fire suppression capabilities of a growing community, specifically within the defined urban area.

Due to their historical turnout times to respond to the fire station they are assigned, it is impossible for the current part-time firefighters to be an effective component of the department's initial response deployment model. **However**, **in our view the part-time firefighters remain an effective and efficient component of the department's current initial full alarm assignment (depth of response) deployment model and in support of the Town's fiscal responsibilities.** To ensure the sustainability of this model this F.M.P. has identified the fire suppression resource strategies related to the part-time firefighters for consideration.

7.10.1   Proposed Part-time Firefighter Organizational Model

Historically the M.F.D. has operated a part-time firefighter organizational model that has included one part-time District Chief, two part-time Captains, two part-time Lieutenants and twelve to fifteen part-time firefighters at each of the fire stations. This model is consistent with the historical operation of the department that recognised the Town was divided into three distinct response districts with each having a dedicated fire station and complement of part-time firefighters.

Community growth and expansion of the fire department has required the transition to the use of full-time firefighters to support the part-time firefighters. This transition has increased the number of current fire stations and eliminated the need for sustaining the historical part-time distinct response districts. However, the part-time District Chief role is important to the sustainability of the composite fire department model and the

overall continuity of leadership for the part-time firefighters. There is an opportunity to leverage the existing positions of three District Chiefs as the part-time firefighter complement grows whereby one District Chief oversees the part-time firefighters out of two stations.

Based on current industry best practices consideration should also be given to increasing the total complement of part-time firefighters at the respective stations. Historically part-time (volunteer) firefighters had broader freedom to leave work, or respond to emergency calls than today's part-time firefighters. In our view consideration should be given to increasing the total complement of part-time firefighters to a model that includes two part-time Captains, four part-time Lieutenants and at a minimum twenty part-time firefighters at each respective station. The M.F.D. should continue to monitor part-time turn-out times and numbers, with a view to increasing the base complement to 25 if performance metrics do not improve.

This proposed organizational model would ensure a complement of at least twenty part-time firefighters at Stations 1, 2, 3, and 4 whereby the historic complement has ranged from 16 to 20. In Station 2 where a full-time firefighter complement will **not** be added, and given they predominately respond to a large rural area, it is proposed that the department strive for a complement of 26 to 30 firefighters. To staff the existing Station 1, 2, 3, and 4, this would result in a total approved complement of 90 part-time firefighter. In our view the implementation of this strategy is required to support the effectiveness of the part-time firefighters in supporting the identified depth of response needs of the M.F.D.

This Fire Master Plan proposes the introduction of a complement of a minimum of 20 part-time firefighters at proposed Station 6. This would increase the total approved complement of part-time firefighters to 110. Based on the proposed staffing strategy for full-time firefighters, by the time a seventh station is added, there would be nearly enough full-time firefighters to meet the Apartment (High Risk Occupancy) performance benchmark which requires a minimum of 25 firefighters, thereby reducing the need for part-time firefighters to contribute to initial full alarm assignment (defined urban area) deployment capabilities over the longer term. The M.F.D. should monitor the pace of development, risk as defined through a C.R.A., and the evolution of suppression resources within the department in order to inform implementation over the horizon of this plan.

7.10.2   Proposed Part-time Firefighter Scheduled On-Call Program

The analysis within this F.M.P. recommends the need for the Town of Milton to increase the total number of full-time firefighters. Subjects to Council's consideration of the recommendations contained within this F.M.P. there will be a need to develop a comprehensive financial strategy to address the potential short-term and long-term operating and capital budget impacts of each recommendation, and specifically the costs associated with the proposed additional full-time firefighters.

The financial impacts of hiring additional full-time firefighters although warranted are significant to a community's overall financial capabilities. In the past the Town has effectively utilized a strategy of phasing in additional full-time firefighters. As such we recognize that based on the findings of this fire master planning process there is a need to consider short-term alternatives to supplement the process of hiring additional full-time firefighters. In addition, the scheduled on-call program may also support the ability of the part-time firefighters to contribute to the short- and long-term need regarding Initial Full Alarm Assignment performance benchmarks, particularly for the high risk occupancies.

In our experience the development of a part-time firefighter scheduled on-call process has proven to be an effective strategy towards enhancing the response and utilization of part-time firefighters. This strategy **is not** intended to replace the need for additional full-time firefighters or to staff fire stations with part-time firefighters. This strategy is intended to provide the Fire Chief with knowledge that a specific number of part-time firefighters assigned to a specific fire station have agreed in advance to be available to respond within a specific turnout time. In comparison to the current part-time firefighters operating model where there is no assurance of a response by any part-time firefighters this model is intended to provide that assurance.

This strategy should be developed through consultation with the part-time firefighters with recognition it may not be applicable to all of the fire stations or to all of the part-time firefighters. It may also require some form of compensation depending on the goals and objectives developed. The concept of this strategy is presented within this F.M.P. as a short-term alternative to enhancing the fire suppression deployment capabilities of the M.F.D. by reducing the turnout times of the part-time firefighters and providing the Fire Chief with assurances on the number of part-time firefighters that

would be responding at all times. Over the long-term, it will continue to provide assurance as to staff availability.

7.10.3	**Proposed Full-time Firefighter Hiring Strategy**

The analysis within this F.M.P. presents the proposed fire suppression deployment benchmarks based upon a comprehensive review of current industry guidelines, standards and best practices in response to the fire risks present within the Town of Milton. The analysis within this F.M.P. also indicates the existing fire suppression capabilities of the M.F.D. in comparison to the proposed fire suppression deployment benchmarks.

The recommendations of the 2008 F.M.P. targeted an objective of staffing the four fire stations within the defined urban area including Stations 1, 3, 4 and proposed Station No. 5 with a minimum on duty staffing of four full-time firefighters at all times to staff the initial responding apparatus. This minimum staffing of four full-time firefighters is a recognised industry best practice and supported by research for staffing an initial responding apparatus.

Sustaining this minimum staffing level at all times (24/7 and 365 days a year) requires a minimum complement of twenty full-time firefighters for each apparatus. This reflects a ratio of 1.25 firefighters to sustain the minimum of four at all times and accounts for vacation and regular absences such as illness. Fire Stations 1 and 5 are currently staffed with a complement of twenty full-time firefighters per station whereas Fire Station 4 is staffed with only 16 full-time firefighters.

The analysis within this F.M.P. continues to support the objective of staffing Stations 1, 3, 4 and Station 5 within the defined urban boundary with a minimum of four full-time firefighters at all times, and Station No. 2 located in the rural area with part-time firefighters. Based on the 1.25 ratio this will require a total complement of 80 full-time firefighters representing a gap of 24 full-time firefighters from the current total complement of 56. The current estimate for salary and benefits for a full-time firefighter are $125,000 per year representing a potential annual financial gap of $3.0 million dollars to achieve the proposed complement of 80 full-time firefighters. This is the highest priority for increases in career staffing.

This fire master planning process has identified the existing gaps in achieving the proposed fire suppression deployment benchmarks. These gaps are directly related to

the number of full-time firefighters that are currently available. This process also recognises that the potential annual financial gap of $3.00 million dollars would be significant to any municipality. However, the analysis of future community growth indicates that there will be a need to consider a sixth fire station by the years 2025/2026 (or when the population is approximately 175,000 people) and a seventh fire station by 2029 (or when the population is approximately 210,000). Each of these fire stations will require a complement of twenty full-time firefighters representing a further annual financial impact of $2.5 million dollars per station.

This fire master planning process has recognised that the realities of the community's fiscal responsibilities have not allowed the department to maintain the same speed of growth (2008 F.M.P.) as that of the community. However, in our view priority should be given to developing a comprehensive hiring strategy for the additional 24 full-time firefighters to fully staff Stations 3 and 4 prior to 2025/2026 and the need to consider construction and staffing of the proposed sixth station. For example, this strategy may include the Town's historical phasing of hiring of full-time firefighters that would result in the need to hire six additional full-time firefighters in each of the next four years (2022 to 2025). This addition of 24 full-time firefighters would allow the Town to fully staff the existing urban stations prior to the need to staff a sixth station.

In addition to developing a strategy to transition to 80 full-time firefighters, the Town has a pressing need to plan for growth. Ideally, when a new station is added a full complement of full-time firefighters would be added in order to have a minimum staffing of four firefighters 24/7. The Town should develop a hiring strategy to plan for the staffing of the proposed Stations 6 and 7 (20 full-time firefighters for each station). If growth materializes as projected, a sixth station will be required by 2025/2026. The Town should begin hiring proactively to be able to fully operationalize the station once it is open. In order to achieve this goal, the Town may need to consider hiring more than six firefighters a year. A similar strategy may need to be taken to staff Station 7 with 20 full-time firefighters by 2029.

As the Town grows, the demand for medical calls will increase and there is the potential for the department to assist in the response to this need. Any call volume increase should be matched with increases in the proposed complement of full-time firefighters. With an increase of full-time firefighter resources, the Town of Milton may want to monitor this and potentially review tiered-response whereby the fire department

responds to an increasing type and number of medical calls. In considering a change in service levels related to medical calls, it will be important to consider workload impacts since a change in tiered-response typically has a large impact on workload and call volume. It should also be done in consultation with Halton Region Paramedic Services. This approach is supported by the findings of the C.R.A. whereby the total M.F.D. call volume from 2012 to 2016 was 4% medical/resuscitator calls. Whereas the proportion of medical/resuscitator calls in the Province as a whole over the same period accounted for 42% of the total call volume. A change in service levels of this nature may be appropriate considering the continued evolution of the fire department and the Town of Milton.

It is important to acknowledge that the implementation of a hiring strategy will need to be directly informed by the actual pace of growth and the risk as defined through Community Risk Assessment updates. Should the population of the Town not approach 175,000 by 2026 then there would be greater flexibility in the implementation, and the hiring strategy for an additional 20 full-time firefighters could be revised accordingly to staff a sixth station. An objective of the M.F.D. and the Town should be to monitor to growth and revise plans based on resulting needs, circumstances and risks.

7.10.4 | Proposed Platoon Chiefs

Today M.F.D. operates and manages its span of control of the full-time firefighters without the use of full-time Platoon Chiefs. The 2008 Fire Master Plan recommended the introduction of the position of Platoon Chief as the department increased to 80 full-time firefighters. A Platoon Chief would report directly to a Deputy Fire Chief and function as a supervisor who can coordinate, supervise and participate in firefighting related activities, public education/prevention activities, and training activities. As a designated officer the Platoon Chief would provide incident command, handling the span of control across multiple crews. By also having a role in carrying out routine administrative tasks, Platoon Chiefs would offset some of the workload on the fire department senior management team by managing some of the day-to-day needs of the department. As the municipality and the fire department grows this will become critical.

It is proposed that the M.F.D. transition to the Platoon Chief model, with the addition of four Platoon Chiefs. This is in addition to the suppression staff identified to staff each station. An operational and hiring strategy should be developed to implement the

Platoon Chief model with consideration to growth and the addition of a sixth and seventh station.

7.11 | 2020 Historic Call Data Analysis

COVID-19 has affected so many facets of everyday life, including more people working from home and going out less. M.F.D. requested that a separate analysis on 2020 historic emergency call data be conducted to begin to understand some of the quantitative impacts of the COVID-19 pandemic on the fire department.

An analysis on call volume, call type, and turnout time was conducted based on historic call data from 2015 to 2019 and compared to that of 2020 to identify any significant changes or trends. The M.F.D. provided the data used in this analysis for all historical calls for the six-year period from January 1, 2015 to December 31, 2020.

7.11.1 | Annual Emergency Call Volume – All Incident Types

The analysis of annual emergency call volume can be beneficial in garnering an understanding of where trends may be evolving, or where changes in community emergency response demand may be occurring. A summary of the total number of emergency calls for the period from January 1, 2015 to December 31, 2020 is shown in **Figure 25**. This analysis indicates a 28.3% increase in the total emergency call volume within the Town over this period (from 1,576 calls in 2015 to 1,951 calls in 2019). This reflects a consistent overall trend of an increase in call volume over the five year period, whereas the call volume for 2020 reflects a slight decrease of 5.13% from 2019 to 2020.

Figure 25: Annual Call Volume – All Incidents January 1, 2015 to December 31, 2020

Source: Milton Fire Department Emergency Response Call Data

7.11.2 | **Total Emergency Call Volume – By O.F.M.E.M. Response Type**

This section illustrates the analysis of all emergency calls for the period from January 1, 2015 to December 31, 2020 by O.F.M.E.M. emergency response type. **Table 42** illustrates the proportion of calls by response type for 2015 to 2019 compared to 2020. For the 2015 to 2019 period, False Fire Calls was the highest percentage of total emergency calls (26%), followed by Other Response (22%), and Rescue calls (21%).

Table 42: Percentage of M.F.D. Calls by O.F.M.E.M. Response Type 2015 to 2019 Compared to 2020

O.F.M.E.M. Response Type	2015 to 2019	2020	% Change
Burning (Controlled)	3%	5%	2%

O.F.M.E.M. Response Type	2015 to 2019	2020	% Change
CO False Calls	7%	6%	-1%
False Fire Calls	27%	31%	5%
Medical/Resuscitator	4%	4%	0%
Other Response	22%	19%	-3%
Overpressure Rupture/Explosion (no fire)	0%	0%	0%
Pre Fire Conditions/No Fire	4%	5%	1%
Property Fires/Explosions	7%	6%	-1%
Public Hazard	6%	7%	1%
Rescue	21%	17%	-4%
Total:	8,746	1,851	Not Applicable

Table 42 shows that the areas of change in terms of proportion of call includes:

- False Fire Calls which increased by 5% of total calls, making up 31% of all calls in 2020.
- Burning (Controlled) calls also increased in 2020, by 2% of total calls.
- Rescue calls decreased by 4%, reflecting 17% of total calls in 2020. This is likely attributable to a smaller number of vehicles travelling on Milton roads.
- Pre-Fire Conditions/No Fire and Public Hazards calls as a proportion of calls was 1% higher with a decrease of 1% for Property Fire/Explosions.

7.11.3   **Part-Time Firefighter Turnout Time**

Table 42 highlights staffing and 80th percentile staffing and turnout time of part-time firefighters by apparatus for 2015 to 2019 as compared to 2020. The staffing did not change in 2020 as compared to past years. However, as the table illustrates, there is

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overall lower turnout times in 2020 for part-time firefighters in Milton in comparison to turnout times from 2015-2019. There was a decrease in 2020 turnout times for every part-time apparatus compared to 2015-2019 as a whole. This ranged from a 2% decrease between 2015-2019 and 2020 for Pumper 2, to a 53% decrease between 2015-2019 and 2020 for Pumper 31.

There may be several factors contributing to the shorter 2020 turnout times for part-time firefighters including increased firefighter availability during business hours due to an increase in those working from home and not commuting outside of Milton. It may also be attributed to a decrease in travel times due to a reduction in traffic during the pandemic and subsequent stay-at-home orders.

Table 43: Apparatus Staffing and Turnout Time Comparison Chart, 2015-2019 and 2020

Station	Apparatus	2015 to 2019 and 2020 Part-time Staff Deployment (80% of the Time)	2015 to 2019 Part-time Staff 80th Percentile Turnout Time (Seconds) (mm:ss)	2020 Part-time Staff 80th Percentile Turnout Time (Seconds) (mm:ss)	Percent Change between 2015-2019 and 2020
1	Pump 11	4	575 (9:35)	561 (9:21)	-2%
1	Aerial 16	4	669 (11:09)	616 (10:16)	-8%
1	Tanker 15	2	662 (11:02)	579 (9:39)	-12%
1	Rescue 14	5	850 (14:10)	788 (13:08)	-7%
2	Pump 21	4	902 (15:02)	703 (11:43)	-22%
2	Pump/Tanker 22	2	957 (15:57)	835 13:55	-13%

Station	Apparatus	2015 to 2019 and 2020 Part-time Staff Deployment (80% of the Time)	2015 to 2019 Part-time Staff 80th Percentile Turnout Time (Seconds) (mm:ss)	2020 Part-time Staff 80th Percentile Turnout Time (Seconds) (mm:ss)	Percent Change between 2015-2019 and 2020
2	Tanker 25	2	964 (16:04)	785 (13:05)	-19%
3	Pump 32	4	818 (13:38)	382 (6:22)	-53%
3	Aerial 36	4	744 (12:24)	669 (11:09)	-10%
3	Tanker 35	2	889 (14:49)	647 (10:47)	-27%

7.11.4   **Summary 2020 Historic Call Data Analysis**

It is not known how long COVID-19 will continue to have an impact on everyday life and the operations of a fire department or what, if any, legacy impacts there will be. This analysis demonstrates that the pandemic appears to have had an impact on call volume (slight decrease), call type (increase in false fire calls, decrease in rescue calls), and part-time firefighter turnout times (decrease). The department should continue to monitor these trends as the pandemic continues and consider updating the Community Risk Assessment accordingly.

7.12   Technical Rescue Service Level Review

Technical Rescue functions over time have become the primary responsibility of fire services. Health and safety measures are ever increasing around techniques, training and equipment required. A number of recent inquests including the Brunt and Kendall inquests have put a greater focus on the training and equipment utilized by fire services. Further, fire services are generally dispatched to these types of incidents with a public expectation that they will be able to perform the necessary actions to mitigate the situation. **N.F.P.A. 1670 – Standard on Operations and Training for Technical Search**

and Rescue Incidents and **N.F.P.A. 1006 – Standard for Technical Rescue Personnel Professional Qualifications** are the two documents utilized by the industry to guide fire departments in technical rescue operations and associated training.

There are a number of factors to consider when entering into technical rescue disciplines. These include: the risk identified in the community for a situation to occur; the training time and costs to perform the initial training, maintenance training, and any recertification testing, if required; and the cost of purchasing, maintaining and replacing equipment required. These costs will require life cycle replacement and financial planning to ensure equipment does not expire without replacements in place.

Further, the timing and commitment to training all fire suppression staff in all technical rescue disciplines is nearly impossible to achieve and arguably an inefficient use of resources. M.F.D. will need to consider looking to maintain designated crews responsible for designated disciplines to ensure an appropriate balance. All staff should be trained in any discipline M.F.D. responds to at an awareness level as a minimum.

M.F.D. should collect training records to demonstrate current levels of training completed by staff. This training can be matched to the appropriate Job Performance Requirements (J.P.R.) in the N.F.P.A. 1006 standard to identify equivalency in the appropriate level of the various disciplines.

M.F.D. will also need to determine an appropriate longer-term schedule for implementation of the various disciplines, as a phased approach in order to plan appropriately for training needs. A prioritization based on current levels of training, equipment and risk should be considered, as well as an alternative delivery through fire services agreements with other fire departments needs to be considered.

7.12.1 Hazardous Materials Mitigation

The C.R.A. did not identify any existing specific risks within the community related to the presence of hazardous materials. The C.R.A. identifies the presence of major provincial transportation routes such as the Highway 401 and 403 corridors, and the rail lines that bisect the community. There is also the proposal to construct a CN Milton Hub/railyard in the South West district of the town. Hazardous materials are commonly transported along theses corridors and as a result of an accident require the response of the M.F.D. However, in these instances the transportation of dangerous goods are regulated by the **Transportation of Dangerous Goods Act, 1992.** This includes regulations that require

the carrier to provide emergency response capabilities. It is common for fire services to be the first emergency response to rail and auto incidents involving hazardous material substances. The role of fire is to secure the scene, size up the incident and take appropriate actions to mitigate, whether it is conducting the tasks internally or requesting the response of more qualified agencies.

N.F.P.A.472 "Standard for Competence of Responders to Hazardous Materials/ Weapons of Mass Destruction Incidents" – 2018 Edition identifies the various levels and the responsibilities that an organization should be able to perform under each level.

At a minimum, a fire department should be trained to an awareness level response capability for hazardous materials mitigation. This allows for identifying a hazard, isolating the area and initiating other necessary resources to assist in mitigation. The Establishing and Regulating Bylaw identifies that M.F.D. will provide hazardous material mitigation to anoperations level in accordance with N.F.P.A. 472. Sustaining an **"operations level"** of emergency response capability requires a significant amount of financial investment in equipment and training on behalf of the M.F.D.

For example, each firefighter is currently required to complete a minimum of five full days of training to complete the awareness and operations level training as well as further time to complete the required skills and testing process. This level will also require M.F.D. to maintain the appropriate level of response equipment. Our research of other G.T.A. municipalities, and specifically municipalities bordering the Town of Milton indicates that there are several larger neighbouring fire departments that also provide this level of hazardous materials mitigation.

Industry best practices support the importance of all firefighters having an awareness level of training for all types of specialized emergency responses, including hazardous materials mitigation. This is required to ensure all firefighters are trained to identify the hazards associated with these types of materials and the need for specialized training and equipment. Further to the awareness level and M.F.D. potential response to road, rail and fixed sites (such as cold storage plants), hazardous material situations as well as the potential for the construction of a CN Rail hub located in the community, M.F.D. should maintain an operations level response. This level will allow for increased control of the incident, the ability to perform emergency rescues of life and the capability to perform emergency decontamination procedures on victims, rescuers or those exposed.

The use of technical response teams from other fire departments or private industry would be required to further mitigate complex incidents.

7.12.2	**Surface Water/Ice Search and Rescue**

The M.F.D. currently provides both surface water rescue and ice search and rescue to the technician level. These types of services have been the subject of much discussion within the fire service as a result of a May 2017 Coroner's inquest into the death of a firefighter during a training exercise. This inquest recommended that all "ice/cold swift water rescue services" training be put in abeyance until such time as the recommendations of the jury were addressed. There is a difference between swift water qualifications and surface water qualifications identified in N.F.P.A. 1670. Currently M.F.D. does not provide swift water rescue.

Information provided to fire departments across the Province by the Office of the Fire Marshal and Emergency Management contained in Communique 2017-06 dated October 10, 2017 encouraged municipalities to assess their delivery of these types of specialized rescue services and specifically their respective Establishing and Regulating By-law. Currently M.F.D. has identified Surface Water Rescue and Ice Rescue at a technician level under the Establishing and Regulating By-law. As noted earlier, M.F.D. does not perform swift water rescue services.

The findings of the May 2017 Coroner's Inquest highlight the need for stringent training requirements for firefighters to facilitate any type of rescue where water or ice is present. The presence of these elements identifies conditions that warrant very careful consideration of the services the M.F.D. should be providing. Additionally, through the internal stakeholder engagement process of preparing this F.M.P. we were advised of concerns related to the current level of training of internal instructors for these services.

Through consultation with senior department staff in regards to the department's current Surface Water/Ice Search and Rescue service level training and operations, emphasis was placed on the importance of ensuring the current training and qualifications of all firefighters participating in this type of specialized rescue were consistent with the applicable N.F.P.A. standards such as N.F.P.A 1006 and 1670 and other applicable training requirements. To further complement the applicable training standards, it was agreed that the department's current practice is to ensure that any firefighter participating in this type of rescue would be tethered to the shore at all

times. In this instance the term "tethered" is defined as a firefighter while conducting a training, or rescue operation on ice, or in the water shall be attached to the shore (shore-based) by a rope that is designed for the purpose of rescuing the firefighter.

M.F.D. as part of their review of their SOP/SOG should ensure that provisions are made to ensure staff are always tethered to shore when conducting in water or on-ice rescues.

As referenced by the O.F.M.E.M. it is recommended that the current Establishing and Regulating By-law be revised to clearly define the M.F.D. Surface Water/Ice Search and Rescue services as being "shore-based" (tethered) at all times.

7.12.3 | **High/Low Angle Rope Rescue**

The M.F.D. currently provides high/low angle rope rescue to the technician level of training and competency. **Table 44** identifies the **"key findings"** included within the C.R.A. related to the geographic profile of the community.

Table 44: Identified Key Findings – Related to High/Low Angle Rope Rescue

C.R.A. Key Findings Analysis Outcomes	Third Line of Defence (For consideration within the proposed Emergency Response Program)
There are several conservation areas located within the Town that present varying types and levels of risk associated with residents and visitors participating in activities such as rock climbing, hiking and swimming/boating.	Yes

The M.F.D. utilizes the O.F.M.E.M. reporting process for the reporting of and tracking of all emergency responses. The O.F.M.E.M. emergency response codes do not specifically identify the nature or type of rescue response such as a high/low angle rope rescue. However, analysis of the O.F.M.E.M. data did identify rescue as the third most common type of response call with a total of 278 calls over the five year period (2012-2016). Based on our discussions with senior department staff it is our understanding that a large percentage of these responses were related to a high/low angle rope rescue on the Niagara Escarpment. It is recommended that the M.F.D. continue to provide high/low angle rope rescue to the technician level as defined in N.F.P.A. 1670 – Chapter

5 – Rope Rescue, and that each staff responsible for the delivery of this service is trained and tested in the skills and competences outlined in the N.F.P.A. 1006 Chapter 5 – Rope Rescue.

7.12.4   Confined Space/Trench Rescue Response

Ontario Regulation 632/05 – Confined Spaces defines a confined space "means a fully or partially enclosed space"[34]. This regulation also sets forth employers responsibilities including the provision of on-site rescue procedures. There is currently no legislative requirement for the Town to provide either confined space or trench rescue services. In many instances a trench rescue can also be defined as a confined space. M.F.D. is most likely to be the first emergency responders to attend incidents involving confined space situations. They will be required to secure the area, size up the incident and put into action any mitigation measures required.

As referenced within the hazardous materials mitigation section it is important for firefighters to be able to identify a confined space. As such awareness level training should be considered the minimum level of training for all firefighters. There are also many areas within the Town that would be defined as a confined space, and the high degree of construction within the community could result in trench rescue.

Trench rescue qualifications are closely linked to confined space rescue qualifications. To maintain a N.F.P.A. 1006 Chapter 11 - trench rescue qualification, an individual must also hold a N.F.P.A. 1006 Chapter 7, confined space qualification at an equal level of qualification.

With the increase growth to the community, resulting in increased building and construction, the opportunity to respond to either a trench rescue or a confined space rescue grows. At a minimum all fire department staff should be trained to the awareness level in both disciplines. So as M.F.D. can conduct control rescues, with defined restrictions in the N.F.P.A. standards, it is recommended that M.F.D. deliver Confined Space Rescue to an operations level defined in N.F.P.A. Chapter 7 and Trench Rescue to an operations level defined in N.F.P.A. 1670 Chapter 11. In both cases all personnel should be trained to an awareness level and those conducting the services in

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[34] Ontario Regulation 632/05 – Definitions Section 1. Confined Space

both disciplines be trained and tested as per N.F.P.A. 1006 Chapter 7 and 11 respectfully (operations level).

Further, should the incident warrant a greater response than that M.F.D. is able to provide, fire service agreements should be made with other emergency response agencies to provide the higher level required.

7.12.5 **Machinery Rescue Operations**

In our experience the additional training and qualifications required to conduct machinery rescue operations are more limited than those for the other specialized emergency responses identified within By-law No. 026-2018. The skills and experience required to conduct this type of rescue are also very applicable to a wide range of other rescues the department may be required to provide such as vehicle collision patient extrication. Sustaining the current technician level is recommended.

7.12.6 **Vehicle Rescue Response**

With Highway 401 traversing east to west across Milton, the Town of Milton has experienced large volumes of traffic on this thoroughfare. Recent widening of the highway has increased the number of lanes. Increased large truck traffic and larger number of personal vehicles have resulted in an increase in motor vehicle collisions, motor vehicle collisions involving large vehicles and more complex incidents. The larger and more complex vehicles are, the greater need for additional skills and procedures to mitigate.

Under the Establishing and Regulating By-law core services has identified responses to vehicle accidents, vehicle extrication and transportation incidents involving vehicles, buses, trucks and trains. It is recommended that M.F.D formalize their response capabilities, given the increase in complex situations, to those outlined in N.F.P.A. 1670 – Chapter 8 Vehicle Rescue technician level. All personal required to conduct these services should be trained and tested as identified in N.F.P.A. 1006– Chapter 8 Vehicle Rescues technician level.

This should be reflect accordingly in the Establishing and Regulating By-law.

7.12.7 **Structural Collapse Response**

In the event of a structural collapse in the Town of Milton, M.F.D. will likely be the first emergency responder to attend and will be required to mitigate the situation presented.

Although not a routine type of response, across Ontario over the past 5 to 10 years, structural explosion resulting in building collapse and building failure resulting in collapse have become more prevalent. Mississauga, London, Caledon and Hamilton are examples of recent events that have resulted in complex operations requiring additional resources through provincial Heavy Urban Search and Rescue (H.U.S.A.R.) program.

Since there is not a high probability of this occurring, but still a chance and that M.F.D. will be one of the first responding organizations, M.F.D. should identify that it will provide awareness level response as identified in N.F.P.A. 1670 Chapter 6 – Structural Collapse Rescue and all personal required to respond to these incidents be trained and tested as identified in N.F.P.A. 1006 – Chapter 6 Structural Collapse Rescue awareness level.

Further, M.F.D. should investigate fire service response agreements with another fire department providing this service. The O.F.M.E.M. also operates a provincial H.U.S.A.R. program and as identified in Fire Marshal's Communique 2016-05. M.F.D. can access these resources for H.U.S.A.R. through the mutual aid-fire co-ordinator to the Provincial Emergency Operations Centre (P.E.O.C.).

7.12.8	**Summary Specialized Emergency Responses**

Recent changes to the Establishing and Regulating By-law No. 026-2018 provide clear and specific definition of the level of specialized emergency response services to be provided by the M.F.D. The findings of the C.R.A. and this fire master planning process have identified options for Council's consideration to revise the existing service levels provided by the M.F.D. in several areas and to develop fire service agreements to support the M.F.D. in areas required.

This strategy is intended to focus the training and capabilities of the M.F.D. in those areas of higher probability of occurrence. It is also recognized that M.F.D. will likely be the first emergency responder to attend the incident with a clear expectation for mitigation. The proposed level of response will allow for life safety and rescue to be taken into consideration, but more complex situations may require additional resources from higher qualified agencies. The implementation of this strategy will need to ensure there is a balance with the current training resource capacity, and the need to also focus on the core training needs of the M.F.D. related to the delivery of fire suppression

services. This strategy recognises that there is a need to further expand the number of fire suppression resources (firefighters) to address community growth.

The analyses of these specialized emergency responses have considered the findings of the C.R.A., training requirements to support these services and options that may be available for alternative delivery of these services. **Table 45** presents a summary of the proposed Specialized Emergency Response service levels and in the order for consideration of training and implementation. In the interim, fire service agreements may be warranted until the training, qualifications and equipment is available and completed.

Table 45: Proposed Specialized Emergency Response Service Levels

Program	Existing Service Level	Proposed Service Level	Proposed Fire Service Agreement
Hazardous Materials Response	Operations Level	Operations Level	Yes
Vehicle Rescue	Not currently identified	Technician Level	No
High/low Angle Rope Rescue	Technician Level	Technician Level	No
Surface Water Rescue	Technician Level	Technician Shore-Based	No
Ice Search and Rescue	Technician Level	Technician Shore-Based	No
Machinery Rescue	Technician Level	Technician Level	No
Confined Space Response	Operations Level	Operations Level	Yes
Trench Rescue Response	Awareness Level	Operations Level	Yes
Structural Collapse	**Not Currently identified**	**Awareness Level**	**Yes**

M.F.D. will need to develop a phased strategy to implement the proposed service levels and consider operational needs regarding specific stations (crews) trained to the proposed service levels.

| 7.13 | **Operations Division Summary and Recommendations** |

The Operations Division is primarily responsible for the delivery of fire suppression and emergency response services. The existing organizational structure of this division has evolved from its historical roots of operating as a solely volunteer fire department to its current composite organizational model that utilizes both full-time and part-time firefighters. This composite organizational model is recognised within the fire services as a cost effective and efficient organizational structure for delivering these types of services.

Rapid community growth is challenging the ability of the M.F.D. to sustain and extend its delivery of emergency response services with the expanding urban core. Increasing emergency call volume and an expanding building stock that includes vulnerable occupancies such as seniors care facilities and high rise high-risk taller buildings are further challenging the ability of this division. The fire risks associated with these types of building stock and the increasing volume of residential building stock have exceeded the capabilities of the part-time firefighters to provide an effective response time as a result of their extended turnout time to the fire station. The result has been a higher demand to increase the number of full-time firefighters to provide an effective and efficient response based on the fire risks present.

This fire master planning process recognises the importance of sustaining the use of part-time firefighters as the initial responders in the rural area of the community and in support of the full-time firefighters within the defined urban area. This sustainability strategy includes revising the organizational structure of the part-time firefighters and increasing the total number of part-time firefighters. This F.M.P. supports the utilization of the composite organizational model for the foreseeable future of the M.F.D. including with the proposed commissioning of Fire Stations No. 6.

This fire master planning process has identified the need for the M.F.D. to update its fire suppression deployment benchmarks based on a comprehensive analysis of current industry guidelines, standards and best practices. This is required to recognise the continuing community growth and evolution of fire risk within the community. As referenced within the C.R.A., 94.72% of the Town's existing building stock is comprised of Group C- Residential Occupancies. Current industry guidelines, standards and best practices support an initial response of **"16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression**

incidents" to this type of fire risk. This is a level of service that the M.F.D. is unable to achieve with its current resources. This F.M.P. recommends the hiring of additional full-time firefighters and increasing the total complement of part-time firefighters to enhance to existing fire suppression capabilities of the M.F.D. in responding to the identified fire risk within the community.

Based on the projected community growth this F.M.P. also identifies the need to consider two additional fire stations and associated staffing to be located within the expanding defined urban area. This includes a proposed Station No. 6 to be constructed in the area of the 5th Line and Britannia Road by 2025/26 (based on a population of approximately 175,000) and a proposed Station No. 7 to be constructed in the area of Trafalgar Road and Derry Road by 2029 (based on a population of approximately 210,000).

As a result of the review of the Operations Division, the following goal, objectives, and recommended actions are provided for Council's consideration:

7.13.1 | **Goals, Objectives, and Recommendations**

Goal #3: Milton Fire Department will provide emergency response services in alignment with its local needs and circumstances as confirmed though a Community Risk Assessment and with consideration to health and safety, industry best practices, future growth, and the services that provide the most effective and efficient level of services resulting in the best value for the community.

Objective #3A: Strive for continuous improvement through monitoring emergency response performance as compared to applicable industry best practices.

Recommended Action: Establish Council-approved performance benchmarks for emergency response and annually monitor and report to Council and the community including:

a. The proposed fire suppression performance objectives for the defined urban area being:

i. Initial Arriving Company - Four firefighters arriving on scene within a four minute travel time to 90% of fire suppression incidents.

ii. Single-Family Dwelling – Initial Full Alarm Assignment - 16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type

iii. Apartment – Initial Full Alarm Assignment - 25 firefighters (26 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type

iv. High-Rise – Initial Full Alarm Assignment - 38 firefighters (39 if building is equipped with a fire pump) arriving on scene within a ten minute and ten second travel time to 90% of fire suppression incidents in this occupancy type

b. The proposed fire suppression performance objective for the defined rural being:

i. Rural Demand Zone – 6 firefighters arriving on scene within a 14 minutes turnout time + travel time to 80% of fire suppression incidents in the defined rural area.

Objective #3B: Move towards the fire suppression staff resources that reflect the needs and circumstances of the community.

Recommended Action: In consultation with the Human Resources Division, develop a hiring strategy to fully staff the existing fire stations in alignment with industry best practices and proposed performance benchmarks for the existing fire stations including:

c. Phasing in an increase to 80 full-time suppression firefighters (from the existing 56 firefighters) to staff all four existing urban fire stations with a full complement of full-time firefighters (20 each). This requires the addition of 24 firefighters over the next four years.

d. Hiring four Platoon Chiefs to cover the four shifts required to provide 24/7 response coverage. This is in response to recent and forecast municipal and department growth.

e. Increasing the total approved complement of part-time firefighters from 65 to 90 including a minimum of 20 part-time firefighters for each of Station 1, 3, and 4, and 30 part-time firefighters for Station 2. This is in support of the initial full alarm assignment needs of the M.F.D., and to help respond to the staffing needs for high risk occupancy incidents (e.g. high rise building, long-term care facilities). This will also enhance the ability of the department to respond in the event of simultaneous calls, and is part of the strategy to support the departments staffing needs as the Town incrementally hires full-time firefighters over the coming years.

Objective #3C: Prepare for growth by planning for the need for increased fire suppression resources while balancing taxpayer affordability.

Recommended Action: Based on monitoring the actual timing of growth and with consideration to updated Community Risk Assessment, develop and implement a hiring strategy to prepare to respond to forecast growth so that the proposed new Station 6 and Station 7 can be fully staffed once they are built, including:

f. Planning for the addition of 20 full-time firefighters to staff each of the proposed Station 6 and 7 (40 additional full-time firefighters total) including any associated apparatus and equipment.

g. Increase total part-time firefighter complement from 90 to 110 by planning for the addition of a minimum of 20 part-time firefighters to staff proposed Station 6 including any associated apparatus and equipment.

h. Planning for the construction of a sixth station (by 2026 or approximately 175,000 people) and a seventh station (by 2029 or approximately 210,000 people).

Objective #3D: Prioritize the sustainability of the composite model for the Town of Milton.

Recommended Action: Maintain the part-time District Chief model with consideration to transition to a span of control of two stations per part-time District Chief.

Recommended Action: Develop and implement a part-time firefighter scheduled on call program in consultation with the part-time firefighters to enhance the number and time it takes them to turn-out for an incident.

Recommended Action: Increase the overall approved complement of part-time firefighters as described in the above objectives.

Objective #3E: Move towards technical rescue service levels that reflects the needs and circumstances of the community as identified in the Community Risk Assessment.

Recommended Action: Develop a plan to operationalize proposed changes to technical rescue service levels including associated training, maintenance, and equipment costs.

Recommended Action: Transition towards establishing the proposed technical rescue service levels, to be approved by Council through an Establishing and Regulating by-law, being:

    i.   Hazardous Materials Response – Operations Level

    ii.   Vehicle Rescue – Technicial Level

    iii.   High/low Angle Rope Rescue – Technician Level

    iv.   Surface Water Rescue - Technician Shore-Based

    v.   Ice Search and Rescue - Technician Shore-Based

    vi.   Machinery Rescue - Technician Level

    vii.   Confined Space Response - Operations Level

    viii.   Trench Rescue Response - Operations Level

    ix.   Structural Collapse - Operations Level

Recommended Action: Develop fire service agreements with neighbouring departments or other service providers for hazardous materials response, confined space rescue, trench rescue, and structural collapse.

8.0 | Municipal Emergency Planning

The role and responsibilities of the fire department in the Town's emergency management program were assessed as part of this fire master plan. The legal framework for managing emergencies in Ontario is established in the **Emergency Management and Civil Protection Act (E.M.C.P.A.)**. It is complemented by **Ontario Regulation 380/04** (Standards), which lays out the minimum standards required by municipalities and provincial ministries for emergency management programs. This section of the F.M.P. is guided by the appropriate legislation and industry standards and provides an overview of the emergency preparedness, planning and management activities taking place within the Town of Milton.

8.1 | Emergency Management Legislation and Regulation in Ontario

Under the E.M.C.P.A., the Solicitor General has the authority to make regulations setting standards for the development, implementation and maintenance of emergency management programs required by every municipality. It further requires that every municipality, minister of the Crown and designated agency, board, commission and other branch of government ensure their emergency management programs and emergency plans conform to the standards set within the Act. To verify compliance with the E.M.C.P.A., municipalities are required to annually review and submit supporting documentation which may include:

- Emergency Response Plan (E.R.P.);
- Proof of training;
- Proof of exercises;
- Evidence of public education program;
- Municipal Hazard Identification Risk Assessment (H.I.R.A.);
- Critical Infrastructure (C.I.) List; and
- Emergency Management Program By-law.

Internal consultation with M.F.D. has confirmed that the Town was compliant with the E.M.C.P.A. requirements for 2020 and has completed, or reviewed the items as per the list above which are discussed in greater detail throughout the sections that follow.

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8.2	**Town of Milton Emergency Management Program**
8.2.1	**Emergency Response Plan and Emergency Management Program By-law No. 136-2006 (as amended)**

The Town of Milton's emergency management program and Emergency Response Plan was developed under the authority of **By-law No. 136-2006 as amended**. The Emergency Response Plan serves as a tool to assist emergency personal and users of the plan in their collective emergency response efforts. It also serves as a guideline that outlines the roles and responsibilities or each team member when preparing for, mitigating, responding to and recovering from emergencies and disasters. Complementary to the primary document, there are a number of confidential appendices solely accessible to internal agencies and may be disseminated to external agencies at the Town's discretion.

Should an emergency situation exhaust the existing capabilities of the E.R.P., the C.A.O. may draw upon the following resources for assistance:

- Milton Department mutual aid plans;
- Halton's contingency plan for spills;
- Halton's Emergency Evacuation Centre Plan;
- Halton's Allendale Emergency Plan;
- Conservation Halton's Flood Contingency Plan;
- Grand River Conservation Authority Flood Contingency Plan; and
- Maplehurst/Province of Ontario Evacuation Plan.

The Town's Emergency Response Plan was established in 2006 and the M.F.D. has recognized that there would be value in updating and enhancing the E.R.P. As such, the Town's E.R.P. is currently under review and the Town has retained the services of an external consulting agency to update its E.R.P.

Although the M.F.D. has continued to maintain compliance with the basic requirements outlined in the E.M.C.P.A., current practices within the industry have evolved since the development of provincial legislation. At the time this divisional analysis took place, the Ministry of the Solicitor General issued Incident Management System (I.M.S.) Guidance Version 2.0 in 2021. I.M.S. 2.0 builds on the strong foundation of the previous I.M.S. 1.0. (2008). Its development has been guided by best practices and lessons learned from

responders from all areas of incident management. I.M.S. Ontario's Incident Management System is designed to be a response system, but it can be used to manage all stages of an incident. It is created to give communities and organizations a common framework to communicate, coordinate and collaborate during an incident response. I.M.S. is an important element in building a comprehensive and effective emergency management program. The Town's current E.R.P. has not fully adopted the I.M.S. model.

The Regional Emergency Response Plan as well as some of the Town's neighbouring municipalities (i.e. City of Burlington) have incorporated I.M.S. into their E.R.P. frameworks. Modernization of the Town's E.R.P. with I.M.S. will contribute to aligning its processes with neighbouring plans and will promote a more cohesive and complimentary approach in responding to emergencies, especially when coordination with neighbouring municipalities and the Region is required. This alignment is supported by the E.M.C.P.A. which states that "The emergency plan of a lower-tier municipality in an upper-tier municipality, excluding a county, shall conform to the emergency plan of the upper-tier municipality and has no effect to the extent of any inconsistency and, for the purposes of this section."[35]

For these reasons, we recommend that in additional to reviewing the Emergency Response Plan, the M.F.D. consider modernizing it to be in alignment with the current best practices outlined in Ontario's Incident Management System Guidance document (Version 2.0). Also, the Town may wish to consider incorporating its emergency management program into the future Council-Staff Work Plan with the goal of enhancing the program overall through strategic action.

8.2.2   Training and Exercise

The Emergency Management and Civil Protection Act requires municipalities in Ontario to train staff involved in the jurisdiction's emergency management program. Courses are available through Emergency Management Ontario (E.M.O.) based on best practices and principles across Ontario. E.M.O. administers courses in the areas of Incident Management Systems, Exercise Program Management, Note Taking, Basic Emergency Management (B.E.M.) and Community Emergency Management Coordinator training.

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[35] Emergency Management and Civil Protection Act, R.S.O. 1990, Chapter E.9, Section 5.

The most current guidance provided to municipalities with respect to emergency management training is dated February 6, 2018 which specifies the following four courses as mandatory for C.E.M.C.s:

- Basic Emergency Management (E.M. 200)
- Community Emergency Management Coordinator (E.M. 300)
- Introduction to Incident Management System (I.M.S. 100) available on-line
- Basic Incident Management System (I.M.S. 200)

Under O. Reg. 380/04, Community Emergency Management Coordinators are required to complete the required training within one year of being appointed a C.E.M.C.

Municipal Emergency Control Group members are required on an annual basis to demonstrate:

- Knowledge of all components of the Emergency Management program, including the H.I.R.A. and Critical Infrastructure list;
- Knowledge of the Municipal Emergency Plan, including their respective roles and responsibilities as well as the roles and responsibilities for local agencies and organizations included in the Plan;
- Knowledge relating to the procedures required to activate and operate under the Municipal Emergency Plan;
- Knowledge of notification procedures for the M.E.C.G. when the Plan is activated; and
- Knowledge of the location, and equipment utilized in the E.O.C.

The 2018 guidance also suggests those with responsibilities during a municipal emergency to maintain records complete E.M. 240- Note Taking to ensure proper documentation is prepared in the event of an emergency which requires the activation of the E.O.C. While this training is not mandatory, in our experience, municipal staff have found value in participating in this course offering.

In 2020, emergency management training was provided for Town of Milton staff assigned to a role in the Emergency Operations Centre. This included a senior and elected official workshop, EM200 – Basic Emergency Management and IMS 100 – Introduction to Incident Management Systems. All primary members of the Municipal Emergency Control Group were trained in Incident Management Systems, Level 100 and

reviewed a presentation for the Senior and Elected Officials workshop. Training records also indicate that many of the alternates to key emergency operation centre positions have not completed either training requirements. Ensuring that all personnel responsible for operating in an E.O.C. are properly trained is paramount to the effective and efficient collective response to a municipal emergency.

8.2.3 Public Education Program

The E.M.C.P.A. requires municipalities to provide emergency preparedness education to the community. The 2020 Municipal Compliance report indicates that in 2020 the emergency management program consisted of the following public education activities:

- Educational messaging on the Town's Facebook and Twitter accounts during Emergency Preparedness Week in May; and
- Posting of Emergency Preparedness information on the Town's website with links to Halton Region and other Emergency Preparedness agencies.

These activities meet the minimum requirements as set out in the E.M.C.P.A. and its standards. However, during the interview process conducted for this F.M.P. it was identified that additional public education activities that go beyond the minimum standards, specifically community engagement, have been difficult to deliver due to the operational demands of the C.E.M.C.

8.2.4 Emergency Operations Centre

According to the Incident Management Systems for Ontario Resource Manual, "the ability to coordinate incident support is dependent on having a facility with the capabilities to monitor the incident responses, and to communicate with Incident Command." This support is typically coordinated through an Emergency Operations Centre. The Town of Milton has both a primary and alternate E.O.C. The facilities have appropriate computer and communications technology, alternative power sources, as well as resources and redundancies to operate effectively during extended emergency operations. The Town also has the capacity to conduct emergency control group meetings virtually and access to web-based emergency management tools such as DisasterLAN.

8.2.5   **Town of Milton Hazard Identification and Risk Assessment (H.I.R.A.) 2020**

As required by the E.M.C.P.A., Milton has reviewed its Hazard Identification and Risk Assessment for 2020. In 2019, the O.F.M.E.M. released the "Hazed Identification Report" and "Methodology Guidelines" outlining a process for the development of a Hazard Identification and Risk Assessment Program to assist municipalities in assessing their local hazards and potential risks. This methodology includes consideration of the following steps:

1. Plan;
2. Identify Hazards;
3. Build Community Knowledge;
4. Assess Risk; and
5. Report and Follow-up.

Municipalities are required to review the H.I.R.A. on an annual basis and update as needed. The Town can update its H.I.R.A. utilizing the O.F.M.E.M. H.I.R.A. methodology guideline.

8.3   Emergency Management Staffing

In addition to his roles and responsibilities under the F.P.P.A., the Fire Chief is also the Town's designated Community Emergency Management Coordinator (C.E.M.C.). The C.E.M.C. is responsible for ensuring sustained compliance with the E.M.C.P.A. and Ontario Regulation 380/04, which sets out the minimum standards for emergency management programs.

Currently the Deputy Fire Chief of Support Services has been appointed as the alternate C.E.M.C. In our experience, in the event of an emergency requiring the activation of the E.O.C. a Fire Chief who is also the C.E.M.C. is overtaxed. It is incredibly challenging for one person to act in both an operational role as Fire Chief while also acting in an operational role in the E.O.C. This arrangement requires one person to split his or her focus, attending meetings of the M.E.C.G. while also making complex decisions about operational deployments as the Fire Chief. Consideration should be given to transferring the C.E.M.C. role to one of the Deputy Fire Chiefs or another appropriate municipal employee in the short term.

As the community continues to grow, support functions will need to keep pace with that growth. There would be value in tracking the workload and demands of the C.E.M.C. position and related desired emergency planning initiatives with a view to evolving the position to a full time emergency management specialist. Tracking workload and desired emergency planning initiatives will provide the basis to support the development of a business case to transition this function to a full-time emergency management specialist.

8.4 Municipal Emergency Planning Summary and Recommendations

Each municipality is responsible for demonstrating their compliance with the annual requirements set out in the E.M.C.P.A. Upon review of the Town's Municipal Compliance Report, the Town is compliant with the Emergency Management and Civil Protection Act.

8.4.1 Goals, Objectives, and Recommendations

Goal #4: Milton Fire Department will provide municipal emergency planning services with consideration to its legislative requirements, industry best practices, and future growth.

Objective #4A: Maintain legislative compliance while preparing for future growth.

Recommended Action: Conduct a review of the Emergency Response Plan (E.R.P.) annually and when necessary, to sustain compliance with the Emergency Management and Civil Protection Act's legislative requirements. The annual review should include updating the E.R.P. in line with the most recent best practices as set out in Ontario's Incident Management System Guidance document (Version 2.0).

Recommended Action: Consider enhancing the emphasis on emergency preparedness and planning as a strategic priority of the Town and as part of its strategic planning process to prepare the future Council-Staff Work Plan.

Recommended Action: Consider transferring the C.E.M.C. position to a Deputy Fire Chief or another appropriate municipal employee in the short term, and tracking work load and desired emergency planning initiatives

with a view to developing a business case for a full-time or part-time emergency management specialist that would include the role of C.E.M.C.

9.0 # Communications (Fire Dispatch)

The Communications Centre is located at Headquarters/Fire Station 3 at 610 Savoline Boulevard, Milton. The department's Communications Centre is overseen by the Division Chief of Support Services, who reports to the Deputy Fire Chief, Staff. This includes responsibilities for the department communications including the fire dispatch and radio systems pagers and other related equipment.

The Establishing and Regulating By-law includes provision for the M.F.D. to provide emergency call taking and fire dispatching as well as Town of Milton "after-hours" call taking and dispatching of staff from other Town departments. These after-hours calls range from general inquiries to specific complaints or inquiries.

As part of this F.M.P. review, it is recommended that M.F.D. undertake a more detailed investigation of the options for the delivery of Fire Dispatching services, as discussed in **Section 9.7**. There are at least three unique options, each with their own advantages and limitation. This review and the related decision resulting from the review must take place in a timely manner as any decision will have an impact on other aspects of the F.M.P. and subsequent recommendations. As an example, upgrades to NG-911 (Next Generation 911) must be completed and operational by March 2024; however if an option to outsource is selected this may not be required to be completed. If status quo is selected as the preferred option, then all recommendations will need to be implemented to maintain a comprehensive emergency communications centre to meet the growing demands of the municipality.

9.1 Communications Centre Staffing

The M.F.D. Communications Centre is overseen by the Division Chief of Support Services, and is staffed by four full-time Communication Technicians, and four part-time (contract) Communication Technicians. In addition to providing after-hours call taking for other Town departments, the Communication Technicians provide emergency call taking and fire dispatching services for the M.F.D. at all times. The department maintains a minimum of one Communication Technician on duty at all times. A Support Services Technician is also a non-dedicated resource for this division.

9.1.1	**Division Chief of Support Services**

Supervision of the Communications Centre during the normal business week daytime hours is provided by the Division Chief of Support Services. In the absence of the Division Chief, and specifically after that position's normal hours of work, there is no identified or assigned supervisor for the Communications Centre. It is estimated by the department that the commitment to Communication Division by the Division Chief of Support Services represents approximately 25-30% of their overall work and is not considered full-time supervision identified under **N.F.P.A. 1221**[36] **– Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems**.

In the event of a major equipment failure, or a major incident there is no defined procedure for the on-duty Communications Technician to seek assistance by contacting a designated supervisor. A Standard Operating Policy should be developed to provide clear direction to the on-duty Communications Technician as to who to contact in the event assistance or direction is required. This policy should also consider the Occupational Health and Safety requirements for a supervisor for the on-duty Communications Technicians in the absence of the Division Chief of Support Services. It is noted that the Town's Information Technology department provides support to the systems in communications; however, there is no formal 24/7 service outlined to ensure that the reliability of the critical infrastructure is maintained.

9.1.2	**Communications Technician**

There are four full-time Communication Technicians, and four part-time (contract) Communication Technicians that staff the centre 24 hours a day, seven days a week. They are responsible for calmly and effectively performing emergency communications, operating the two-way radio system, computer aided dispatching system and are required to receive, transmit, and record information in accordance with department policies and procedures. It is routine practice for the M.F.D. to regularly staff with one Communications Technician. Based on **N.F.P.A. 1221– Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems**, it is identified that an emergency communications centre should be staffed with a minimum of two communicators at all times. This has potential to create concerns with concurrent call

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[36] N.F.P.A. 1221 2019 Edition was referenced within this report.

volume, need for restroom break and meal breaks and the ability to manage call taking and dispatching duties at the same time. As identified within the Community Risk Assessment, call volumes are steadily higher between 0800 and 2000 hrs. This is consistent seven days a week, with no or limited differential between weekdays and weekends. In order to staff the centre with two commutators during these times, it is proposed that M.F.D. hire two additional full-time Communication Technicians.

As the municipality continues to grow and call volume increases, there will be a need to evolve to staffing communications with two communicators on a 24/7 basis. It is anticipated that this would require the hiring of two additional full-time Communication Technicians.

9.1.3 | Support Services Technician

The operation of the Communications Centre is supported by the full-time Support Services Technician, a non-dedicated resource which provides support to other divisions. The primary roles and responsibilities of the Support Services Technician are to assist the Division Chief of Support Services with research and policy development, conduct and facilitate communications training, perform and facilitate station and equipment maintenance and support the M.F.D.'s pre-planning program. If the Support Services Technician is available in Station #3/ Fire HQ they may be able to assist the on-duty Communication Technician with emergency call taking and fire dispatching, or during a temporary absence.

9.2 | Communications Centre Performance Benchmarks

The applicable performance benchmarks for emergency alarm processing are contained within the **N.F.P.A. 1221 – Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems (2019 Edition)** with reference to emergency alarm processing performance benchmarks in **N.F.P.A. 1710 (2020)**. For the purposes of this fire master plan, we have applied a performance benchmark for the processing of emergency alarm processing within 64 seconds, 90% of the time.

Based on an analysis of the 2015 to 2019 historic call data, it was identified that the 90th percentile emergency alarm processing over this period is 149 seconds, 85 seconds higher than the performance benchmark. When looking at the years individually, there has been an overall decreasing trend from 181 seconds in 2015 to 60 seconds in 2019;

however, there was an increase in 2020 to 87 seconds. Dispatch is one component of total response time and improving dispatch times will reduce the total response time to an incident.

At this time the department does not have an operating guideline that directs staff to monitor, and report on the performance benchmarks included within the N.F.P.A. 1221 Standard. In our view, this should be a priority of the department.

9.3 | Training and Qualifications

The applicable requirements for a communications centre operator (Communications Technician) are contained within **the N.F.P.A. 1061 - Standard for Professional Qualifications for Public Safety Telecommunications Personnel**. Current industry best practices reflect that at a minimum a communications centre operator (Communications Technician) should be trained and qualified to "Level I and Level II" of this standard. The current Communication Technician conducts both call-taking functions (Level I) and Dispatching functions (Level II).

The current Communication Technician training program consists of a two-month training period provided by the Support Services Technician, followed by a one month on duty training period when support is provided by the Support Services Technician. The M.F.D. does not currently require that the Communications Technician be certified to the **N.F.P.A. 1061 - Standard for Professional Qualifications for Public Safety Telecommunications Personnel** requirements. The Training Division can work with the O.F.M.E.M and the Ontario Fire Communicators Association to map out the available qualifications training through the Association of Public Safety Communications Officials (APCO) and Certification evaluation that is conducted by the O.F.M.E.M. The APCO Public Safety Telecommunicator program will allow a trainee to learn the information required to write a NFPA 1061 Level I and II examination and complete the practical evaluation conducted through the O.F.M.E.M. Having staff complete the Instructor course will allow for the training to be conducted in house.

As referenced within this F.M.P. the training, qualifications, and certification of fire department personnel and specifically Communications Technicians (Fire Dispatchers) has been the topic of numerous Corners Inquests and fire-related investigations across the province. In our opinion the qualification and certification of fire dispatchers is a warranted industry best practice to enhance the efficiency and effectiveness of

delivering emergency call taking and fire dispatching. In our view it is also a warranted industry best practice to minimize any potential liability on behalf of the Town for providing these services both internally and externally to other municipalities.

9.4 Department Policies, Standard Operating Guidelines & Routine Operations

Our research into the operations of the Communications Centre indicates an absence of clearly identified policies and procedures to direct the Communications Technicians. Much of the training and practices appears to be handed down from the senior Communications Technicians and is not contained in or supported by approved department policies or procedures.

Priority should be given to developing a comprehensive set of Standard Operating Guidelines and Policies for the Communications Division. These SOGs/ SOPs should be integrated into the training program that should be developed for the position of Communications Technician. These guidelines and policies, through a training program, should clarify and implement the expected level of performance and operation of the Communication Centre.

9.5 Communications Systems

Radio communication is essential to firefighter safety and for information dissemination. The ability to communicate across the organization and within departments are both important considerations. The Halton Region Police Service and the Regional Municipality of Halton commissioned a study in 2007 to review two-way voice and data radio communications within the Region. This study led to the construction of upgraded radio infrastructure, which is compliant with the Association of Public-Safety Communications Officials (A.P.C.O.) Project 25 standard. The upgraded system was funded by Halton Regional Police Services Board and the Region of Halton, with municipal and regional stakeholders including emergency services, public works and transit services. The M.F.D. pays annual operational costs to use this system.

New radio equipment was purchased by the M.F.D. to ensure operability with the new system through a Request for Proposal process undertaken by the Halton Cooperative Purchasing Group. The M.F.D.'s radio equipment includes two base radios (located at each station being one V.H.F. paging base and one 800MHz), mobile radios in every fire

department apparatus, and 40 portable radios, used by firefighters and officers during emergency response operations. The radio equipment was purchased in 2011, funded in part with a provincial grant money allocated to municipalities to support infrastructure investments. Within the communications centre the Motorola P25 radio system includes an MCC7500 Console with VHF paging and 800 MHz radio. For redundancy, the M.F.D. utilizes a Zetron 284 Paging Encoder.

Through the consultation process it was identified that during times of high call volume there can be a high volume of simultaneous communications required through the various communication systems within the Centre including the telephones and radio system. This is not uncommon within fire/emergency services communication facilities. One of the most effective solutions to this challenge is the provision of individual headsets for the Communications Technicians. Through the interfacing of all communications systems the use of headsets can provide a more user-friendly environment and allow for hands free applications.

The M.F.D. utilizes NICE recording software, which records and allows for playback of all phone and radio transmissions. This unit is current and is meeting the needs of the organization.

In addition, the Computer Aided Dispatch (C.A.D.) system is fully integrated with F.D.M. Software for records management. The C.A.D. system is within its current version provided by the supplier; however, it should be noted that the current C.A.D. provider has been acquired by another organization and there is concern as to how long the current application/version will be supported. There is indication that the current version will be supported but there will be no further enhancements to the current system. The system will need to be upgraded or replaced in the near future as increased enhancements are required. Further, the current C.A.D system does not have automated station notification software. This requires the communicator to put a caller on hold to dispatch out a station or delay the dispatching until they are finished collecting the information required.

The department currently utilizes Sentinel FM Fleet Management Automatic Vehicle Locator (A.V.L.) and apparatus are equipped with ACURA-GETAC mobile data tablets (which are not C.A.D. linked). The department's telephone system has Bell A.Q.S. Plus P-Enhanced 9-11 (ANI-ALI) capability, with Bell BCM50 Enhanced 9-11 voice.

The M.F.D. should complete a review and analysis of the current C.A.D. and R.M.S. system to determine any upgrades required and to confirm what supports are to be provided moving forward on the current system. The M.F.D., following industry best practices and system compatibility, should consider optimizing the ability to communicate with responding fire suppression personnel through mobile computer terminals in front-line fire apparatus. This strategy could provide fire suppression staff with access to the department's records management system, computer aided dispatch system and an alternative to communicating with the Communications Centre and other agencies. Halton Regional Police are exploring the utilization of an internally managed Public Safety Broadband on the 700 mhz platform. This system would allow greater flexibility by M.F.D. to access, share and utilize mobile technology in the field.

All part-time firefighters are issued with Motorola Minitor V and VI pagers to notify them of emergency calls. The M.F.D. also uses the "I Am Responding" emergency responder reply app, which enables part-time firefighters to notify the department of their ability to respond to an emergency.

In summary, the M.F.D. through its partnership with the Region of Halton and other municipalities within the region have updated the radio system communications equipment with current radio technology. Other communication technology such as C.A.D. and R.M.S. systems need to be analyzed and plans developed for upgrade or replacement.

9.6   Next Generation-911 (NG-911)

The Canadian Radio-television and Telecommunications Commission (C.R.T.C.) has announced its determinants on the implementation and provision of NG-911 networks across Canada. Telecom Regulatory Policy CRTC 2017-182 released on June 1st, 2017 indicates the following:

"Canadians depend on the provision of reliable and effective 9-1-1 services to seek help in an emergency. As technology and consumers' needs evolve, so do consumers' expectations related to 9-1-1 services. In the coming years, telecommunications networks across Canada, including the networks used to make 9-1-1 calls, will continue to transition to Internet Protocol (IP) technology. This will enable Canadians to access new, enhanced, and innovative 9-1-1 services with IP-based capabilities, referred to as next-generation 9-1-1 (NG9-1-1) services. For example, Canadians could stream video

from an emergency incident, send photos of accident damage or a fleeing suspect, or send personal medical information, including accessibility needs, which could greatly aid emergency responders.

In this decision, the Commission is setting out its determinations on the implementation and provision of NG9-1-1 networks and services in Canada. This will require coordination and collaboration between numerous stakeholders, including the Commission; telecommunications service providers that provide 9-1-1 services (TSPs); 9-1-1 network providers; the CRTC Interconnection Steering Committee (CISC); federal, provincial, territorial, and municipal governments; emergency responders; and public safety answering points (PSAPs). As such, in this decision, the Commission is making a number of recommendations in which all stakeholders will have a role to play, including the establishment of a national PSAP and emergency responder coordinating body.[37]

In June 2020, the CRTC has adjusted NG-911 Milestones and provided updated dates and timelines for the implementation and transition to the new system. There are different starting points for the various phases and all Public Safety Answering Points (P.S.A.P.) which Milton is considered a secondary P.S.A.P. must be migrated to the new NG-911 before March 30, 2024, at which time the existing legacy systems will be decommissioned. It is important for M.F.D. to work closely with the Halton Police Service, who operates the Primary P.S.A.P., and their current C.A.D. provider to ensure alignment and to assist in determining timing, budgeting requirements and operational processes. Once the requirements have been determined, additional capital costs are going to be required through the various stakeholders and suppliers.

9.7 | Communications Centre Operational Structure Review

The delivery of dispatching services is currently outlined within By-law No. 026-2018 known as the Establishing and Regulating By-law. It identifies that "The communications Division will provide emergency call taking (as well as Town of Milton "after hour" call taking) and dispatching of emergency vehicles as appropriate. This service may be provided to other municipalities in the event of mutual aid assistance." Within the fire service industry there are a number of models that could be utilized by a municipality for this service delivery. The following provides a high-level review of three of the most

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[37] Telecom Regulatory Policy CRTC 2017-182

common models and identifies the advantages and limitations of each as it relates to the delivery of services provided by M.F.D. These models include:

1. Delivery of service in house (status quo),
2. Services through a centre with shared infrastructure (as a partner in the centre), and
3. Fees for service contract.

9.7.1   Service Delivery In-House (Status Quo)

In this model, M.F.D. would continue to provide call-taking and dispatching services through a Communications Centre owned and operated by M.F.D.

Advantages of the status quo model include:

- Allows M.F.D. to maintain oversight and control of all functions of fire communications. The agency would establish its performance benchmarks and conduct regular quality assurance reviews to ensure objectives are maintained or improved.

- During critical incidents, it is important to maintain situational awareness of all facets of the incident. Maintaining an internal fire communications centre allows senior management to maintain oversight of the internal communications during an incident. Senior officers would be able to attend the centre to assist in managing a large incident or multiple incidents from the centre.

- As an organization adjusts their operations, the policies, procedures and response rules may need to be adjusted, either permanently or temporarily. Maintaining an internal centre would allow for greater flexibility in managing this type of change.

- Maintaining the internal communications centre continues to align with the current collective bargaining agreement.

Limitations of the status quo model include:

- As identified earlier in the FMP review, additional staffing of the Communications Division will be required to meet industry best practices and the growing demands on the service. The current centre is staffed with a minimum of one communicator at any one time. The current emergency incident volume is over 2,000 calls annually and anticipated to grow year over year. To meet the intent of NFPA 1221, a minimum of two communicators should be staffing the centre at all times.

- With the implementation of NG-911 scheduled for March 2024, the M.F.D. will be required to ensure that their system is compatible with the local P.S.A.P. (Halton Regional Police) and the C.R.T.C. standards for the new national system.

- The current C.A.D. and R.M.S. system is reaching its life expectancy and will be required to be upgraded or replaced in the next three to five years at a potential cost of over $2 million. There are concerns over how much longer this critical component in its current version will be supported by the vender. There is a current identified need to upgrade the system to allow for call-taking software which will assist in automating and improving call processing times. The current process is manual and very time dependent to complete and adds time to the overall response time for M.F.D.

- As part of establishing key performance standards or benchmarks for a communications centre to meet, agencies must adopt a quality assurance (Q.A.) program that identifies areas of concern and develop improvement plans to correct areas of identified deficiencies. M.F.D. will need to invest in a Q.A. program to improve the call processing times.

9.7.2 Shared Infrastructure

This model would see M.F.D. joining an existing provider, or partner with another provider to develop a shared infrastructure centre. A shared infrastructure model would see each participating organization operating from a joint centre, providing their own staff, supervision, and response protocols. The agencies would share space, dispatching infrastructure and maintain a joint operating board to oversee high level operations and capital infrastructure. Infrastructure and operating (except labour) funding models could be determined by size, use, call volumes, tax base or a combination of any or all. Labour costs would be covered by each agency for their staff. An example of this model in currently utilized in Peel by the three Fire Services.

Advantages of a centre with shared infrastructure model include:

- Maintaining oversight of dispatching services, including response protocols, performance benchmarks and quality assurance programs, subject to the systems being utilized through the shared services.

- Maintaining, upgrading and the replacing critical infrastructure can be very expensive and costly to an organization. Under this model the costs of

infrastructure and operating costs, including C.A.D., R.M.S., radio and other technology infrastructure and furniture would be shared by all partners within the shared centre program.

- Maintaining oversight of dispatching services under a shared model allows an organization greater flexibility in managing adjustments of their operations, policies, procedure, and response rules that may need to be adjusted, either permanently or temporarily.

- When the demand for services, increased incidents or a significant event occurs that requires additional resources, through an organized structure, there are opportunities that can be realized in a shared centre for shared staffing during these busier times or complex situations.

- As demands on services grow and the size of the communications centre grows, so does the need for greater and more direct supervision of operations. A shared service model allows for shared supervision over staff and centre.

Limitations of a centre with shared infrastructure model include:

- Potential labour issues. Must consider harmonization in wages and benefits between the partners.

- Within every Fire Communications Centre there will be critical infrastructure. In a shared model, the M.F.D. would be responsible for its share of required updates. This cost will be reduced as compared to the status quo; however, given the significance of this infrastructure and the needed NG-911 requirements, it could still be a large capital investment for Town of Milton.

- As there is more than one employer sharing the centre, there is the possibility of variations within employment contracts, corporate policies, procedures and working conditions. This may require all partners to harmonize each one of these to ensure consistency.

- During critical incidents, it is important to maintain situational awareness of all facets of the incident. Participating in a shared fire communications centre may limit senior management ability to maintain oversight of the communications during an incident. Depending on location and accessibility, senior officers may not be able to attend the centre to assist in managing a large incident or multiple incidents from the centre.

- In a shared infrastructure model, M.F.D. would need to partner with an existing centre that would allow additional partners, or M.F.D. would be required to find other willing partners looking to participate in a shared infrastructure model and willing to join with M.F.D. on such venture.

9.7.3   **Fee for Service Contract**

In this model M.F.D. would purchase emergency fire communication services from an existing fire dispatch centre, other emergency service provider (e.g. police) or a private service. A set fee would be established and M.F.D. would pay an annual fee for service as defined in an agreed contract.

Advantages of a fee for service contract:

- M.F.D. would negotiate a service contract with the supplier and would pay a fee for service which is a fixed annual operating cost. There would be no or limited requirement to establish capital costs for communication centre infrastructure. There still would be a requirement to budget capital dollars for M.F.D. staff equipment costs such as mobile and portable radios, and station alerting systems.
- As noted earlier, there are major upgrades or replacements that will be required to the C.A.D./NG-911 and other centre technologies. This cost would be avoided, and a portion of the costs may be included in the fee for service operating cost.
- With a fee for service structure, the overall costs compared to the operation of an internal centre will be much lower.
- With other staffing pressures identified in other areas of M.F.D., there is an opportunity to explore transferring the F.T.E. counts assigned to communications to other areas in the organization.

Limitations of a fee for service contract:

- Under a fee for service model, an agency will negotiate dispatching services, including response protocols, performance benchmarks and quality assurance programs, but will be subject to the operations of the agency providing the service. The flexibility to quickly adjust protocols or dispatching rules may not be easily implemented and may be subject to established change process protocols within the service provider.
- The Collective Bargaining Agreement has prescriptive contracting out language and will require negotiations with the Association to move to a fee for service model.

- Once you remove dispatching service internally, there will be substantial capital costs to re-establish this service. It would include up-date systems such as Computer Aided Dispatching, Station alerting systems, NG-911 phone and communications systems, and base radio consoles as examples. These are high priced capital items and related annual operating expenses.

- The use of Records Management Systems is important for data capture, data analysis and records management. These R.M.S .systems need to be compatible with the C.A.D .system to ensure easy of data transfer. This will require M.F.D. to ensure the existing R.M.S. is compatible or replace an R.M.S. system to ensure it aligns with the service providers system.

- Through negotiations the agencies would negotiate the level of service to be provided. There is a risk that any additions or changes after the contract is finalized will need to be re-negotiated and/or additional costs to M.F.D. should any changes require unique costs associated directly to a request.

- M.F.D. currently acts as the after-hours answering point for the Town of Milton. This will likely be lost in a transition to a fee for service model (unless negotiated with the new provider). If it is not included in the new contract, then alternative measures will need to be identified by the Town for this answering service.

9.7.4 Summary

Each of the models presented above have their own unique challenges. Keeping a dispatch centre internally allows for more control and flexibility of services, but comes with a much higher capital and operating costs. In a shared model an agency can share the associated costs with other organizations, and still maintain a level of control and flexibility. The contracted service model will be the least expensive of the three models, however you have limited control over your dispatching services, making it more difficult to make quick change and requires situational awareness for command staff. Either of the latter two models will also require discussions with the Fire Fighters Association.

9.8 Communications Centre Summary and Recommendations

The delivery of fire dispatching systems is important to the overall approach to delivering fire services to the community. Incidents start with the call being received by the dispatch centre, information gathered, processed and fire resources are dispatched

to the incident. Time is critical to mitigating emergencies and fire communication is an integral part to reducing these times.

The call processing times have been identified as higher than the prescribed standard. This has an impact on the department's overall response time to incidents. Looking at all the factors in the call taking process, such as training, defined SOG, staffing workloads, and improved technology can assist in improving this call processing time and the overall department's response times.

The M.F.D .should ensure that its mission critical infrastructure is in working condition, reliable, maintained and serviced in working condition 24/7. A. priority should be to review of all systems and the development of a detailed lifecycle upgrade or replacement plan. This plan would assist in informing annual budgets and the Development Charge program. The plan will also assist in the review of the potential dispatch operating models and potential timing for decision making processes.

The delivery of fire dispatching services and specifically the qualifications of all staff assigned to the delivering of emergency call taking and fire dispatching services has come under significant scrutiny across the province as a result of Corners Inquests and fire investigations. In our view there is sufficient evidence for municipalities to recognize the need to minimize any potential liability in this area by prioritizing the training of all staff responsible for the delivering of emergency call taking and fire dispatching services to the industry best practices standards.

The M.F.D. has benefitted from partnering with the Region of Halton and the other municipalities within the Region to upgrade the department radio communication infrastructure. In our view this is a very good example of the benefits of municipal partnerships.

As a result of the review of the Communications Centre (Fire Dispatch), the following goals, objectives, and recommendations are presented for Council's consideration and approval:

9.8.1 Goals, Objectives, and Recommendations

Goal #5: Milton Fire Department will provide a technically enhanced core communications system that continues to meet the need of a growing municipality and to provide support for the requirements in the fire department.

Objective #5A: Improve M.F.D. call answering and call processing times to meet the guidelines of NFPA 1221 and established performance benchmarks, with the ultimate objective of reducing overall total response time.

> **Recommended Action:** Establish Council-approved performance benchmarks for call answering and call processing times and report to Council annually.

> **Recommended Action:** Adopt NPFA 1061 – Standard for Professional Qualifications for Public Safety Telecommunications Personnel, and training, and qualify all staff involved in the call-taking and dispatching of services to Level I and II of the standards.

> **Recommended Action:** Link the C.A.D. system with an automated Fire Station notification system.

> **Recommended Action:** Staff the communications center with two Communications Technicians between the hours of 0800-2000 seven days a week by hiring two additional full-time Communication Technicians.

> **Recommended Action:** As the municipality grows and the increase in demand occurs, M.F.D. should establish a staffing plan to ensure two people are on on-duty 24 hours a day, 7 days a week by hiring two additional full-time Communication Technicians.

> **Recommended Action:** Explore the use of mobile data terminals on front-line apparatus to improve communications and information sharing.

Objective #5B: Review all mission critical infrastructure systems for reliability and currency and develop a 10-year capital replacement program for annual budgeting and for input to the development charge program.

> **Recommended Action:** Complete a detailed analyses on the current C.A.D. and record management system (R.M.S.) to determine the need for upgrade/replacement and to determine the current and future support to be provided by the vendor.

> **Recommended Action:** Develop a 10-year capital replacement plan for current and future mission critical infrastructure systems in

communications including the potential need to upgrade or replace systems to conform to the new NG-911 requirements.

> **Recommended Action:** Work with Halton Regional Police and current C.A.D. supplier to determine NG-911 compatibility requirements for the communications centre and develop the funding strategy to finance the mandatory updates.

Objective #5C: Conduct a detailed review of options to further explore the feasibility and opportunities for delivery of emergency fire dispatching and communications, exploring level of service, costing, infrastructure requirements and labour implications.

> **Recommended Action:** Establish a working group of key stakeholders to investigate options for the current communications centre including status quo, shared infrastructure and fee for service contract.

Objective #5D: Develop and implement a quality assurance (Q.A.) and quality improvement program.

> **Recommended Action:** Develop required Standard Operating Policies and Guidelines for the communication centre.

> **Recommended Action:** Develop a supervision reporting structure for the Communications Centre to ensure appropriate direction or supervision 24/7.

> **Recommended Action:** Establish 24/7 service and maintenance plans with the systems suppliers and the Infrastructure Technology department to ensure reliability of the systems.

> **Recommended Action:** Adopt a quality assurance program that will be managed by the Division Chief of Support Services and report monthly to the Deputy Chief of Staff.

10.0	# Training Division

The M.F.D. is responsible for ensuring that all personnel, including full-time and part-time firefighters, receive the training necessary to meet the legislative requirements of the F.P.P.A. and the Occupational Health and Safety Act. The analysis within this section focusses on the delivery of training to the Operations Division staff with reference to training needs discussed throughout this plan (specifically Fire Prevention and Communications).

Dillon's experience and knowledge of the Ontario fire service indicates that fire service training is an area that has come under a high level of scrutiny over the past decades. The results of numerous inquests and investigations have concluded that firefighter training must be considered a priority for municipalities in their role as employer, as fire service leaders, and as supervisors. The analysis within this section first presents a discussion around training standards and the options fire departments have in providing training. It then presents a discussion of training standards specifically within the context of M.F.D. This is followed by an examination of the processes, programs, and resources currently in place in regard to training. This includes division organization and staffing, training standards, annual training program, specialized training, live fire training, online training, company officer training and records management.

This fire master planning process has presented the importance of assessing community fire risk as a component of determining the appropriate level of fire protection services to be provided. The information and analysis within this section will present the importance of linking the applicable training requirements of the fire department staff with the level of service to be provided by the M.F.D.

10.1	## Training Standards and Qualifications

In April 2013, the O.F.M.E.M. announced that the Ontario fire service would be adopting the N.F.P.A. Pro-Qual Standards to replace the previous Ontario Fire Services Standards (O.F.S.S.). The previous O.F.S.S. had been developed by the Ontario Fire Chiefs Association (O.A.F.C.) in partnership with the O.F.M.E.M. to provide guidance to the training and qualifications of fire department staff. Together these competency-based standards were applied in developing a comprehensive provincial fire service training

program that included a firefighter curriculum, Fire Prevention Officer Diploma program, Company Officer Diploma program, and a Training Officer Diploma program.

In January of 2014, the O.F.M.E.M. distributed Communique 2014 – 04 to the Ontario fire service reflecting the grandfathering and transition process to the use of the newly adopted N.F.P.A. Pro-Qual Standards. A "Grandfathering Policy" was integrated into the transition to the N.F.P.A. Pro-Qual Standards process "in order to exempt anyone from having to start over in any program and in order to give recognition for training and education already completed and for experience already gained."[38] Although the "Grandfather Policy" is expired, there are provisions within the standards to obtain equivalency, with detailed records of training already completed and matching the training with the defined learning outcomes of the standards.

Ontario Regulation 379/18 – Firefighter Certification (since rescinded) reflected the recommendations of an inquest into two fatal fires in Whitby and East Gwillimbury. On April 29th, 2016 the verdict of that inquest recommended to the Ministry of Community Safety and Correctional Services "To make a Regulation, pursuant to clause 78(1)9k) of the F.P.P.A., requiring mandatory certification and training, to recognized industry standards, for all personnel (as defined in the F.P.P.A.) whose primary job function is to perform: 1) fire inspections, 2) public education, and/or 3) communications (call-taking/dispatch)"[39].

The required training and qualifications identified within Ontario Regulation 379/18 – Firefighter Certification are consistent with those included within the N.F.P.A. Pro-Qual Standards. As such, fire services across the Province are continuing to transition to the use of the N.F.P.A. Pro-Qual Standards recognising that this is not mandatory and does not require certification. Use of the N.F.P.A. Pro-Qual Standards referenced in **Table 46** remain the current industry best practices in Ontario.

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[38] O.F.M.E.M. 2013 Grandfathering Policy
http://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/Communiques/OFM_Com_2014-04at.html

[39] Verdict of Coroner's Jury, Office of the Chief Coroner, last modified March 13, 2017: https://www.mcscs.jus.gov.on.ca/english/Deathinvestigations/Inquests/Verdictsandrecommendations/OCCInquestHarrisonTowieTwiddyandDunsmuir.html

Table 46: N.F.P.A. Standards for Firefighters and Department Staff

Role	N.F.P.A. Pro-Qual Standards
Firefighter	N.F.P.A. 1001 Standard – Level I and Level II
Officer (Captain, Deputies, Chief)	N.F.P.A. 1021 Standard – Level I, Level II and Level III
Training Instructor	N.F.P.A. 1041 Standard – Fire Instructor Level I and Level II
Fire Communicator	N.F.P.A. 1061 Standard – Communicator Level I and II
Public Fire Educator	N.F.P.A. 1035 Standard – Level I and II
Fire Inspector	N.F.P.A. 1031 Standard – Level I and II
Fire Investigator	N.F.P.A. 1033 Standard – Level
Technical Rescue Personnel	N.F.P.A. 1006 Standard – Awareness, Operations or Technician Levels depending on discipline
Emergency Vehicle Technician	N.F.P.A. 1071 Standard – Level I and Level II

The N.F.P.A. standards are intended to identify the required training for an individual to attain a recognised qualification related to a specific position's roles and responsibilities within the fire service. The N.F.P.A. training standards and related qualification do not consider or require certification. Certification is completed by third party organizations such as the International Fire Service Accreditation Congress (I.F.S.A.C.) or the Fire Service Professional Qualifications System (ProBoard) which provide independent evaluation to measure individual performance as set by the standards. In Ontario, the legislation that requires an employer to train its staff is the Occupational Health and Safety Act. The O.F.M.E.M. is the Authority Having Jurisdiction for Ontario in relation to certification through I.F.S.A.C. and ProBoard.

To provide the training to attain the qualifications identified within these standards, there are several options available to departments including: Ontario Fire Marshal

Regional Training Centres (R.T.C.), outside or third-party training, in-house training and out of province training opportunities.

10.1.1 Ontario Fire Marshal Regional Training Centres

One option is to enroll staff in training courses through the Ontario Fire College programs. The O.F.C is operated by the Office of the Fire Marshal and Emergency Management, under the authority of the Ministry of the Solicitor General. Previously the O.F.M. operated an onsite campus in Gravenhurst that was designated as the Ontario Fire College. The physical location has recently closed and the O.F.M. has transitioned to Regional Training Centers (R.T.C.) and exploring the expansion of virtual/on-line training programs. Courses are scheduled and offered at various R.T.C. or designated certification agencies (designated Fire Services) across the province. Courses typically run Monday to Friday, making overtime, potential travel costs and backfilling position requirements a notable budgetary consideration. As the Regional Training Centre model continues to be built out, there may be more flexibility in the scheduling and delivery of courses to meet the needs of the volunteer and part-time fire services.

10.1.2 External or Third-Party Training Organizations

Another option for training is to hire an external organization or individual qualified to teach a particular N.F.P.A. standard to deliver this training to department personnel. Because this training can be offered locally, there is greater scheduling flexibility, reducing overtime and eliminating travel costs.

Research indicates that municipalities should consider their due diligence in utilizing external organizations or individuals to provide training. There have been several inquests within the province over the past decade involving external or third-party training providers. Recommendations from these inquests have identified the need for provincially regulated training qualifications and certification of external and third-party organizations.

Some fire services, through the Ontario Association of Fire Chief's Large Urban Fire Chiefs committee, has embarked on a program to allow fire services to conduct N.F.P.A. training and conduct evaluation and certification as identified in N.F.PA. 1000 "Fire Service Professional Qualifications Accreditation and Certification Systems". This model allows for other fire services to participate in the delegated training and be evaluated

and certified by the delegated fire service. These fire service will charge outside participants a fee to cover costs.

| 10.1.3 | **In-House Training** |

A third option is for the department to train and qualify its own instructing staff to an N.F.P.A. standard and then have this staff resource deliver the training in-house. Curriculum development and the work associated with staying current with the standards is time consuming and staff intensive, requiring a level of expertise that may not be available within a fire department. However, the in-house option does provide opportunity for training to incorporate department specific considerations (e.g. Operational Guidelines, community risks, etc.) as well as greater flexibility with respect to scheduling, reducing the need for overtime, backfilling and eliminating travel time.

As identified earlier, the O.F.M. has delegated their authority for training, evaluation, and certification to designated fire departments. This option allows trainers to become experienced and certified and then bring the program back to their home community to deliver. Evaluation and certification would need to be conducted by the Authority Having Jurisdiction (A.H.J.) or a designated fire department.

| 10.1.4 | **Out of Province Training** |

Out of province learning opportunities provide an additional training option. While travel costs may make this option cost prohibitive, there are some courses that are not yet offered in Ontario (e.g., N.F.P.A. 1031 Level III, Plans Examiner I and II, and N.F.P.A. 1041 Level III) that may be beneficial for staff.

| 10.1.5 | **Certification** |

Once qualification is obtained using one of the options outlined above, a fire department may want to consider certification of their training curriculum. In circumstances where certification is desired, the fire department's curriculum must be approved by the O.F.M.'s Academic Standards and Evaluation (A.S. &.E.) section or the department must utilize approved third-party curriculum. The department can then use the approved curriculum repeatedly to train firefighters in the same or other jurisdictions within the province. In Ontario, a fire department can contact the O.F.M.E.M. or a designated fire department to schedule a certification evaluation to a

particular N.F.P.A. standard. The certification process is then governed by I.F.S.A.C. and ProBoard with the O.F.M.E.M. as the certifying organization in Ontario.

In summary, fire services in Ontario have multiple ways to train and qualify staff, with certification regulated by the Province. It is important to note that while at this point in time neither qualification nor certification are required by legislation, recent inquests involving issues with fire prevention and firefighter training have highlighted the importance of qualification and certification as industry best practices. **Ontario Regulation 379/18 – Firefighter Certification** required training and certification for certain positions within a fire department. Although this regulation was recently passed then repealed, there is still an Occupational Health and Safety requirement[40] to ensure that fire department staff are trained to a level of competency for the tasks they perform.

10.2   Existing Training Division Staff Resources

Reporting to the Fire Chief, the Division Chief of Training is responsible for the supervision of the Training Division, which includes one Training Captain and one Training Officer. The department also utilizes on-duty full-time firefighters assigned in the role of on-shift training instructors (S.T.I.).

10.2.1   Division Chief of Training

The Division Chief of Training reports directly to the Fire Chief. The job description (J.D.-4.01) for Division Chief was recently updated and indicates that this position is responsible for the supervision of the Training Division and the establishment and administration of all training programs for the M.F.D. The Division Chief of Training is also responsible for conducting research, developing training plans and ensuring the provision of a comprehensive training program for the department staff.

The following illustrates examples of the current roles and responsibilities of the Division Chief of Training:

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[40] Occupational Health and Safety Act R.S.O. 1990, Part III, 25 (2) (a) …employer shall provide information, instruction and supervision to a worker to protect the health or safety of the worker.

- Supervise the overall activities and programs of the division;
- Conduct community needs analyses, review the existing training program, and submit training goals and objectives to the Deputy Chief of Operations for approval;
- Develop training schedules for all suppression staff;
- Oversee support functions including emergency and non-emergency;
- Coordination and promotion of health and safety within the department;
- Research and develop training and response related policies and guidelines;

10.2.2	**Training Captain**

The Training Captain reports directly to the Division Chief of Training or in his/her absence the Fire Chief. The current job description (J.D.-4.03) for the Training Captain was recently updated and indicates that this position is responsible to assist in the supervision of the Training Division and to assist with the research development, planning and coordination of the departments training program.

The following illustrates examples of the current roles and responsibilities of the Training Captain:

- Assist with the supervise of all activities and programs of the division;
- Provide assistance to the Coordinator of Training with development of capital and operating budgets by identifying and recommending priorities for operating requirements;
- Develops training schedule for all suppression staff;
- Train personnel in the techniques of instruction.
- Assist instructors in the delivery of training, management of training facilities and resources;
- Using learning checks and feedback, evaluate the training program and recommend necessary changes;
- Conduct research and development, prepare teaching plans, maintain training records, evaluations and correspondence;
- Document all training as per the fire department management system to maintain records of all personnel; and

- Assist in the development, coordination, delivery, conduct and assist in the evaluation of all specialized training programs (i.e. rope rescue, hazmat etc.).

10.2.3   Training Officer

The Training Officer reports directly to the Training Captain or in his/her absence the Division Chief of Training. The current job description (J.D.-4.02) for the Training Officer was recently updated and indicates that this position is generally responsible for researching, developing, conducting and evaluating in-service training and response related programs and policies/guidelines.

The following illustrates examples of the current roles and responsibilities of the Training Officer:

- Development and conduct training including programs that meet legislative and industry standards; for licensing, certifications and upgrading or renewal; delivery of OFC approved courses.
- Assist in the developing of training schedules, coordinating appropriate disciplines, developing of SOG; and developing and building training aids.
- Stay informed of new applications in the field of firefighting operations, training educations, technology improvements and monitoring policies, procedures and techniques against best practices.
- Assess staff performance, conducting theoretical and practical assessments; participate in assessment and improvement of fire ground operations.
- Record and maintain current, accurate and complete records of training conducted; analyze and gather training data for Division Chief.
- Review existing programs and provide recommendations for improvement, prepare annual reports, goals and objectives and assist in budget recommendations.
- Maintain firefighting knowledge and skills and able to respond to fire and emergency related incidents on front line apparatus.

There is currently one training officer to provide delivery of training.

10.2.4   Shift Training Instructors

The current structure of utilizing Shift Training Instructors (S.T.I.) is not formalized. There are advantages to utilizing additional staff to assist in training. In order to ensure success in the S.T.I. program, a more formal structure needs to be developed and

implemented across the department. This takes advantage of staff in areas outside of suppression and the workload is shared.

10.2.5   **Training Standards and Qualifications – Training Division Staff**

Industry best practice indicates that an instructor would have successfully completed the N.F.P.A. training and level for a given standard they will be responsible for, in addition to the equivalent instructor qualification. For example, for a trainer to be qualified to deliver N.F.P.A. 1001 Level I training, he/she will have successfully completed N.F.P.A. 1001 Level I and N.F.P.A. 1041 Level I training. For a trainer to be qualified to deliver N.F.P.A. 1001 Level II training, he/she will have successfully completed N.F.P.A. 1001 Level II and N.F.P.A. 1041 Level I training.

Currently, training staff have been trained to N.F.P.A 1041 Level II and Captains in operations to N.F.P.A. 1041 Level I, except for a few that are still awaiting to obtain entry into the program. M.F.D. should ensure that any staff that has responsibility for training meets at minimum N.F.P.A. 1041 Level I and those whose primary role is training to meet Level II.

Table 47 is the recommended levels of training and qualifications that each position responsible for the delivery of training should obtain.

Table 47: Recommended Training Levels

Position	N.F.P.A. 1041 Level
Division Chief of Training	II
Training Captain	II
Training Officer	II
Shift Training Instructor	II
FT Captain	I
PT Captain	I
PT District Chief	I

The M.F.D. trains all firefighters, whether full-time or part-time to the same standard using a train the trainer approach. Training is conducted by both internal and external resources. In addition to driver training, internal staff provides training for high-angle rope rescue, water rescue, ice rescue, hazardous materials response and confined space rescue. The Town contracts Advanced Rescue to certify training division staff as rope, confined space and ice and water rescue instructors. In our view, additional qualifications are necessary for current M.F.D. Training Division staff to deliver technical rescue training as discussed in this Fire Master Plan **(Section 7.12)**.

10.2.6   Existing Training Division Staff Resource Summary

As referenced within this F.M.P. the fire service is undergoing a significant change through the transition to the N.F.P.A. Pro-Qual Standards. This change is impacting historical training programs including additional training requirements for all department staff, and specifically those staff resources involved in firefighting including both full-time and part-time. Other factors such as ongoing discussions regarding mandatory certification within the fire service, and inquest recommendations have heightened the awareness of due diligence in this area on behalf of fire department and municipalities.

10.3   Annual Training Program

Developing and delivering an annual training program for the Operations Division is a legislated requirement of the Town. The annual training program must provide the required training to achieve and sustain the required skills and competencies to provide the Council approved service levels and address an employer's responsibilities as defined by the Occupational Health and Safety Act, specifically the Section 21 Guidance Notes for Firefighters.

As referenced throughout this F.M.P., all levels of service provided by the M.F.D. should be clearly defined by Council through an Establishing & Regulating By-law. In addition to the basic firefighting requirements the By-law should clearly establish service levels for specialized technical rescues which directly influences specialized training programs and related division staff resource needs.

In addition to responding to relevant standards, curriculum and health and safety requirements, a comprehensive annual training program should include the following core functions:

- Identification of training needs in relation to services provided;
- Coordination/scheduling of theoretical and practical training;
- Monitoring and evaluation in relation to outcomes achieved;
- Ongoing evaluation in relation to industry best practices and legislative requirements;
- Oversight of program objectives and records management; and
- Ongoing assessment of program delivery for efficiency and effectiveness.

Current industry best practices to ensure a department is achieving these requirements are through the formulation and monitoring of an annual training plan. The M.F.D. currently utilizes an annual training plan to outline the scheduling of the various training programs and activities planned for the year with further detail included in T.R.-001 – .S.O.P. Full-Time Training and T.R.-002 S.O.P. Part-Time Training on training delivery and schedules. This information is regularly communicated by the Division Chief of Training. The M.F.D. must continue to evaluate the level of training required and clearly map out a long-term training plan to assist in identifying qualification requirements over a five year term. An annual training plan needs to be established and circulated to the organization to highlight the year's training required. At present, T.R.-002 S.O.P. Part-Time Training requires a 70% of the total annual scheduled station training sessions be attended (excluding specialized training). To ensure quality assurance and manage expectation, a quarterly training requirement should be considered and provided to all staff.

10.4 | Specialized Emergency Responses

The current Establishing and Regulating By-law No. 026-2018 – Appendix "B'" Core Services fire suppression and emergency response identifies a number of **"specialized emergency responses"** that the M.F.D. are authorized by Council to provide. These services are more commonly referred to within the fire service as **"technical rescues"** as they require a much higher level of training and qualification for firefighters. The nature and risk associated with completing these types of responses also requires more due

diligence in regard to the health and safety of all responding personnel. By-law No. 026-2018 references the level of services to be provided by the M.F.D. that are defined within the applicable **N.F.P.A. 1006 Standard for Technical Rescue Personnel Professional Qualifications, 2021**. These include the following levels of service as referenced in By-law No. 026-2018:

1. **Awareness Level** – reflecting the minimum capability of organizations;
2. **Operations Level** – reflecting the capability of organizations to respond, use equipment, and apply techniques to support and perform a technical rescue; and,
3. **Technician Level** – reflecting the capability of organizations to not only provide the Operational Level services but also to coordinate, perform, and supervise a technical rescue.

The various technical rescues or special operations requirements identified within the Establishing and Regulating By-law and outlined in the **Section 7.12** of the F.M.P. must adhere to the appropriate corresponding level and training to the applicable section under the N.F.P.A. 1006 standard. The Training Division will need to align all training plans with the introduction of new technical rescue programming and ensure that any maintenance training is planned so not to overload the organization.

10.5 | Live Fire Training

The purpose of live fire training is to provide realistic fire training simulations under safe and controlled conditions. Live fire training exercises are intended to simulate the actual fire conditions that a firefighter may encounter and simulate heat, humidity, restricted vision and smoke conditions. This training must comply with N.F.P.A 1403 "Standard on Live Fire Training Evolutions" This type of training is also very beneficial for firefighters, and particularly officers such as Captains to better understand fire behaviour including identifying evolving smoke conditions as they may relate to the potential for fire extension or conditions such as a "flashover".

To obtain live fire training, personnel attend the Oakville Training Campus for Emergency Excellence or one of the Regional Training Centres with a live fire training capability. The O.F.M.E.M. also supports the Ontario fire service by providing training on a regional basis. Industry best practices indicates that firefighters should be participating in live fire training exercises at a minimum on an annual basis, and where available as often as possible. This type of hands-on training and exposure to heat and smoke

conditions should be considered as a mandatory element of a comprehensive training program.

In addition to a live burn tower, the Oakville Training Campus for Emergency Excellence is equipped with a driver training area, water rescue pond, working traffic lights, hydro poles, manholes and level railway. Since the Oakville facility is located approximately 25 kilometers from the Town of Milton, the distance does result in M.F.D. staff, and the apparatus transporting them, to be unavailable to respond to emergencies while participating in training sessions. It is recommended that all recruit firefighters receive live firefighter training as a component of their initial recruit training program, and that all firefighters receive live fire training at a minimum annually and more often if possible.

The use of external agencies is subject to rental fees and require staff to travel outside the Town to conduct this required training. M.F.D. does have an area that is utilized as a training grounds at Fire Station #1. There is an ability to expand operations in the future to include additional training resources but there may be concerns with establishing a live fire building at this location due to the proximity of built-up developments in the area.

To expand operations in the future, M.F.D. should investigate larger land space away from developed areas that would allow for a larger facility that could include technical rescue props, driver training track and a live burn building. This approach could include partnerships with other area fire services, other regional emergency services, other town departments such as transit and public works, and local utility companies such as Milton Hydro. Other initiatives in the province have seen these types of facilities on 25–40-acre parcels of land.

As the department continues to grow in size and the requirement and expectations on training demands increase, the M.F.D. will need to explore a more committed plan to providing these resources and conduct a detailed feasibility study to providing in-house training and the associated costs.

10.5.1 Online Training

Access to online training programs can provide greater flexibility in delivering content within a comprehensive training program. Currently the department utilizes online training as part of the Blue card system. In our view, there is value to incorporating e-

learning into a fire department's training division, whether it be to provide standard materials such Workplace Hazardous Materials Information System (W.H.M.I.S.) and Health and Safety Training for new recruits, instructional videos demonstrating proper use of a new piece of equipment, a way in which to share a lecture or lesson that has been previously recorded or using an on-line forum to encourage personnel to engage on a particular topic.

Many on-line learning platforms are combined with a records management system which will track all the courses completed by staff. These courses can be self-delivered or supervised and delivered by qualified instructors. On-line learning options provide the opportunity for both full time and part-time personnel with flexible access, whether on shift or at home. Courses contain learning activities and materials presented in a logical, familiar fashion. Use of technology such as this would allow the M.F.D. to build and customize its own training course content, utilize existing third party programs, with some systems allowing courses to be shared with other fire departments. The department has had some success in using online training as part of the recruit firefighter training program as well as incorporating online training in response to the pandemic.

10.6 Company Officer Training

The fire service is a paramilitary organization that relies on a rank structure to manage the roles and responsibilities of the organization and the operational services it delivers. This structure needs to include an appropriate span of control in order to be efficient and effective. Within the existing M.F.D. fire suppression organizational structure Company Officers include District Chiefs, Captains, Acting Captains and Lieutenants.

A sufficient number of Company Officers are also required to ensure the function of incident command can be implemented at all emergency scenes, and depending on the incident action plan, have sufficient additional officers to facilitate other roles such as sectoring of the scene, and Safety Officer.

Municipalities are required to ensure a sufficient number of supervisors (officers) are trained to oversee the workforce. Within the Occupational Health and Safety Act, Part III, Duties of Employers and Other persons, Section 12, subsection (2) states that: "Without limiting the strict duty imposed by subsection (1), an employer shall,"(c) when appointing a supervisor, appoint a competent person;"

As an employer, the Town of Milton is legislated by this section of the O.H.S.A. to ensure that all supervisors, which includes the role of incident commander, be competent.

The O.H.S.A. defines a "competent person" to mean a person who:

(a) "is qualified because of knowledge, training and experience to organize the work and its performance,

(b) is familiar with this Act and the regulations that apply to the work, and

(c) has knowledge of any potential or actual danger to health or safety in the workplace."

While the M.F.D. recognizes the importance of a sufficient number of company officers, the consultation process in developing this F.M.P. identified a need to enhance the existing Company Officer training program. Company Officer training is currently focused on the promotional process for new Company Officers and Officers advancing through the rank system. Company Officer training does not occur on a regular basis to ensure skills and competencies are retained, and new or advanced training is provided.

Industry best practices reflect that a Company Officer training program should be ongoing as an element of a broader Officer Development Program. This strategy further supports succession planning and career development for future senior officers. The **N.F.P.A. 1021 - Standard for Fire Officer Professional Qualifications** is a recognized best practice for this type of training.

10.6.1 Succession Planning

The current M.F.D. approach to succession planning in essentially aligned with the promotional policies outlined in the Collective Agreement to occur annually. Departments across the province are finding that they benefit from a more proactive approach to succession planning as a component of officer development. Such an approach could include developing a clear framework of skills, competencies and experience required for advancement within the department. To expose staff to these opportunities, formal mentoring programs, job shadowing, cross training, or secondments are all options. In addition, a proactive succession plan helps assure senior Town staff and elected officials that there are trained and skilled candidates available in the event vacancies occur within the department. The M.F.D. will need to establish a more formal secondment program to allow personnel to gain experience and develop

skills in advancing levels of responsibilities. This may include the option to allow staff take on secondment roles in other divisions to better round out knowledge and skills.

10.7 | Incident Command Training

Incident command training is considered a core element of Company Officer Training. Guidance Notes to protect the health and safety of firefighters are developed by the Ontario Fire Service Section 21 Advisory Committee and distributed by the Ministry of Labour. **Firefighters Guidance Note #2-1 – Incident Command** reflects the importance of having an Incident Command System. This guidance note references a number of recognized systems including the **"Phoenix Fireground Command System"** which was developed by Alan V. Brunacini, the former Fire Chief of the Phoenix Fire Department.

An Incident Command System (I.C.S.) is designed to positively affect the outcome of an emergency scene operation and the health and safety of firefighters. These systems can have a dramatic effect on the efficiency and effectiveness of the emergency response and safety on the emergency scene. This includes all incidents that the fire department may respond to including the fireground, hazardous materials incidents, automobile extrications, water/ice rescues and any other incident the fire department responds to where emergency responders and apparatus must be coordinated.

Incident command should be established by the first arriving officer and be sustained until the emergency is mitigated. The Incident Commander (officer) is responsible for all aspects of managing the emergency incident including developing an **"Incident Action Plan"** and managing all operations on scene. This includes:

- ✓ Establish immediate priorities, especially the safety of responders, other emergency workers, bystanders, and people involved in the incident;
- ✓ Stabilize the incident by ensuring life safety and managing resources efficiently and cost effectively;
- ✓ Determine incident objectives and strategies to achieve the objectives;
- ✓ Establish and monitor incident organization;
- ✓ Approve the implementation of the written or oral Incident Action Plan; and
- ✓ Ensure adequate health and safety measures are in place.

| 10.7.1 | **Blue Card Incident Command Training** |

M.F.D. personnel are enrolled in the Blue Card Fire Incident Command training program once they are promoted to the rank of officer. Most M.F.D. officers have successfully completed the program. The Blue Card program is based on the work of Fire Chief Brunacini and is of one of the most widely utilized programs in the fire service. The program utilizes both on-line and in-class simulation training which focuses primarily on Incident Command training for structural fire responses but is applicable to all emergency incident responses. This review identified that the department's current approach to the provision of incident command training has described in Standard Operating Procedure E.O.-007 – Incident Management System and E.O. – 015 – Tactical Worksheet is serving the department well for single-family residential incidents.

Community growth is expected to result in an increasing number of high-rise buildings and industrial and commercial occupancies with larger building footprints. The department should evolve its incident command training program, skills and capabilities to align with the incident command needs at these occupancies reflecting a continued prioritization of health and safety of responding personnel.

10.8 Wellness and Fitness Programming

The cases of emergency worker mental health concerns are increasing. Presumptive legislation under the Workplace Safety and Insurance Board (W.S.I.B.) now includes post-traumatic stress disorder (P.T.S.D.) for Firefighters. There is a requirement through the Ministry of Labour to ensure all fire services have a P.T.S.D. Prevention Plan. M.F.D. has a detailed P.T.S.D. Prevention Plan.

Fire departments are expected to take proactive approaches to P.T.S.D. and injury prevention and to build resiliency in staff mental health. The best approach is total wellness approach that includes physical, medical, behavioral and mental health pillars and provides for a whole approach to wellness. M.F.D. has physical fitness equipment at stations and is looking to organize a steering committee to expand existing programming to a broader total wellness approach.

10.9 Training Division Staff Resource Strategy

The M.F.D. training program needs to align with established service levels and the applicable N.P.F.A. training standards. This is applicable for all areas of the department

including fire prevention division staff, training division staff, communications division staff, and the part-time and full-time firefighters. Throughout this Fire Master Plan, discussion and recommendations are presented in regards to the specific training qualifications recommended for each division. Today there exists an increased demands in training needs across both the full-time and part-time staff.

This Fire Master Plan also presents a number of strategies to grow the size of the department to meet the needs of the community. This F.M.P. identifies the need for significant growth in the number of firefighters as well as discussion regarding the importance of training to applicable standards, and service levels regarding technical rescues. This will place increasing demands on the current staff resources within this Division due to the need to conduct regular recruit classes, and develop, implement regular training programs.

As referenced within the Fire Prevention Division, at the current time the department does not track or collect the data required to fully assess the workload capacity of staff within this division as well. The implementation of this type of a workload management process would also be beneficial to assessing the staff resources required and implementation time frame to achieve the proposed training requirements to meet the Town's legislative and operational requirements.

There will be a requirement as the municipality and the fire department grows to add additional resources. There will need to be appropriate resources, qualifications, and experience to deliver the identified and required programs. The use of Shift Training Instructors should continue and M.F.D. will need to formalize these roles and responsibilities, reporting structure, qualification needs, and the quantity required for the delivery of training to both full-time and part-time staff. There will be additional dedicated staff needed to provide oversight and development for expanding programming. Further analysis on workload management, workload process and workload alignment must be evaluated to determine when addition resources are required.

There is no identified industry standard for the number of training staff required. In our view, the department would benefit from addition of one additional Training officer resource in the short term. The delivery of training and related accountability would be supplemented by a formalized Shift Training Instructor program and the proposed Platoon Chief model. Workload reporting and analysis should still be implemented in

order to monitor the potential need for additional resources over the horizon of this
F.M.P. and into the future.

10.10 Training Division Summary and Recommendations

The analysis presented within this F.M.P. confirms that the Town of Milton is currently
achieving its legislative requirements for the delivery of firefighter training programs.
The department benefited from participating in the O.F.M.E.M. **"Grandfathering Policy"**
in recognising the skills and competencies that the existing staff had garnered through
many years of training and experience.

Transition to the utilization of the N.F.P.A. Pro-Qual training standards will continue to
place a high demand on the existing level of staff resources within the Training Division.
As referenced in other areas of this F.M.P. the department has been unable to achieve
the fire suppression staffing levels recommended by the 2008 F.M.P. The result will be
further emphasis within this F.M.P. to expedite increasing the number of full-time and
part-time fire suppression staff to meet the demands of a rapidly growing community.
This F.M.P. also discusses proposed technical rescue service levels which also have
resulting training requirements. Subject to consideration and approval, this will result in
further demands on the Training Division to support the recruitment of additional full-
time and part-time firefighters as well as the provision of ongoing training to a larger
total complement of firefighters and to meet the service levels and qualifications for all
divisions of the department as discussed throughout this F.M.P.

As a result of the review of the Training Division, the following goals, objectives, and
recommended actions are presented for Council's consideration and approval:

10.10.1 Goals, Objectives, and Recommendations

Goal #6: M.F.D. will maintain a training program that supports all functions of the
organization and at the appropriate levels defined in the services provided in the
Establishing and Regulating by-law.

> **Objective #6A:** Follow industry best practices regarding training qualifications for
> all department staff.

>> **Recommended Action**: Council adopt the appropriate professional
>> standards, as applicable, to qualify staff in alignment with service levels as
>> defined through an Establishing and Regulating By-law.

Recommended Action: Adopt the appropriate professional standards in alignment with applicable roles and responsibilities, including:

a. NFPA 1035 – Level II - Public Educators/ Fire Prevention Inspectors
b. NFPA 1035 – Level I - Firefighters
c. NFPA 1031 – Level II – Fire Prevention Inspectors
d. NFPA 1031 – Level I – Firefighters
e. NFPA 1001 – Level II – Fire Fighters
f. NFPA 1041 – Level II – Training Division Staff/ Shift Training Instructors
g. NFPA 1041 – Level I – Company Officers
h. NFPA 1061 – Level I & II – Communication Technicians (Full-time and Part-time)
i. NFPA 1021 – Level I & II All Company Officers (Full-time, Part-time, Acting)
j. NFPA 1006 – As prescribed based on service delivery – Minimum Level I for all fire suppression staff

Objective #6B: In consultation with Human Resources Division, investigate and implement a Learning Management System, to allow for greater records management and remote/alternative training opportunities.

Recommended Action: Ensure that a records management system is in place to record and file all training and qualifications received by all staff members

Recommended Action: Provide alternative/remote training opportunities as applicable to all staff to ensure that all staff have the ability to train within their capabilities

Recommended Action: Develop a comprehensive training program that identifies a five year plan for qualifications and maintenance training, yearly plans and monthly requirements.

Objective #6C: Ensure that there are appropriate facilities and apparatus available to support the defined training needs.

Recommended Action: Investigate the feasibility of an in-house facility to accomplish all the training and qualification needs prescribed by health and safety and within the scope of the services provided under the Establishing and Regulating By-law. As part of the feasibility study,

examine facility rental opportunities and shared training centre with other partners in Halton Region, including other fire services, police and paramedic services.

Recommended Action: Conduct annual live fire training for all fire suppression and command staff through a facility rental from a neighboring municipal fire service following NFPA 1403 – "Standard on Live Five Fire Training Evolutions."

Objective #6D: Staff the training division with a sufficient quantity, relevancy and diversity required to meet the training and development of all fire department staff today and in the future.

Recommended Action: Utilize a mix of full time Training Officers and qualified Shift Training Instructors to deliver the variety of training and development required.

Recommended Action: Hire one additional Training Officer to support the existing needs, planned initiatives and near term growth in suppression staff and applicable changes in service levels.

Recommended Action: Implement a process to monitor the workload and capacity of staff in the Training Division in support of maintaining appropriate levels of resources required to deliver the training program effectively.

11.0	# Facilities, Apparatus and Equipment

11.1	## Existing and Proposed Fire Stations

Since adoption of the 2008 F.M.P., the Town of Milton has initiated a comprehensive strategy for the relocation, renewal and construction of fire stations. With the support of Council and senior corporate staff this significant capital investment has included the following:

- 2003 - Relocation and construction of a new Fire Station No. 2 in Campbellville in partnership with the Region of Halton to also provide space for the Halton Regional Emergency Medical Services and Halton Regional Police;

- 2011 – Construction of the new Fire Station No. 4 in the Bristol Survey including hiring additional full-time firefighters to provide 24/7 initial emergency response services;

- 2012 – Relocation and construction of the new Fire Station No. 3 as the new Fire Department Headquarters including space for the Administration Division and other divisions of the department including fire suppression, fire prevention, public education, training and communications;

- 2018 – Initiated the renewal of Fire Station No. 1 including a complete rehabilitation (completed in 2019) of the former station that will provide space for both full-time and part-time fire suppression staff and act as the departments Training Centre;

- 2020 – Construction of new Fire Station No. 5 located on Louis St. Laurent Avenue in partnership with the Region of Halton.

As part of preparing this F.M.P. tours of each of the existing fire stations and proposed fire station sites were completed when the project was originally initiated. Our findings indicate that the fire stations are being designed and constructed in compliance with all current legislative requirements and represent current industry best practices for the design and operation of a fire station. Each of the exterior designs has been created to complement the surrounding neighbourhood without negatively impacting the overall efficiency and effectiveness of the department.

In summary, the current inventory of fire stations operated by the M.F.D. all represent well designed and functional facilities that support the effective and efficient delivery of

fire protection services. In our view the core design elements listed above should serve as the foundation for the planning of future fire stations.

| 11.2 | **Emergency Response Apparatus & Equipment** |

P.F.S.G. 04-07-12 Types of Apparatus and Equipment was developed to provide communities, such as the Town of Milton, with options to follow in determining the level of fire suppression and types of fire apparatus and equipment that should be available within the community. P.F.S.G. 04-07-12 provides the following information for consideration:

- Demands on municipal resources force all communities to re-evaluate the level and nature of services they provide;

- Traditional approaches to the delivery of fire suppression with full-size triple combination pumpers may not necessarily be the most appropriate way to deliver this component of community fire safety, particularly in small communities with limited availability of firefighting personnel;

- The primary mission of all fire departments should be to ensure that the community is provided with an optimal level of fire protection in a cost effective and efficient manner. This optimal level may require a much greater emphasis on fire prevention and public education activities - with residents being responsible for protection within their own residences;

- New technology provide options;

- Must be appropriate to the fire suppression needs of the community;

- Dependent upon availability of human resources needs to work closely with neighbouring communities; and,

- Focus must still be on community fire safety initiatives.

P.F.S.G. 04-07-12 refers to the **N.F.P.A. 1901 Standard for Automotive Fire Apparatus (2009 Edition)** as a reference for the standards that should be considered in determining the appropriate apparatus for a community. N.F.P.A. has released a new edition in 2016. N.F.P.A 1901 (2016 Edition) provides definitions of major fire apparatus:

- **Pumper:** Fire apparatus with a permanently mounted fire pump of at least 750 gpm (3000L/min) capacity, water tank and hose body whose primary purpose is to combat structural and associated fires.

- **Initial Attack Apparatus:** Fire apparatus with a fire pump of at least 250 gpm (1000L/min) capacity, water tank, and hose body whose primary purpose is to initiate a fire suppression attack on structural, vehicular, or vegetation fires and to support associated fire department operations.

- **Mobile Water Supply Apparatus (Tanker**): A vehicle designed primarily for transporting (pick-up, transporting, and delivering) water to fire emergency scenes to be applied by other vehicles or pumping equipment.

- **Quint:** Fire apparatus with a permanently mounted fire pump, a water tank, a hose storage area, an aerial ladder or elevating platform with a permanently mounted waterway, and a complement of ground ladders.

- **Aerial Device:** A vehicle equipped with an aerial device, elevating platform, or water tower that is designed and equipped to support firefighting and rescue operations by positioning personnel, handling materials, providing continuous egress, or discharging water at positions elevated from the ground.

- **Special Services Fire Apparatus:** A multipurpose vehicle that primarily provides support services at emergency scenes.

In addition to N.F.P.A. 1901 the industry commonly refers to the following types of major fire apparatus:

- **Rescue:** A vehicle specifically designed for the purposes of transporting specialized rescue equipment such as vehicle extrication equipment, water/ice rescue equipment, hazardous materials equipment, and additional fire suppression support equipment such as additional self-contained breathing apparatus.

- **Pump/Rescue:** A vehicle that combines the traditional functions of a pumper and a rescue apparatus into one multi-functional apparatus.

As part of the review completed for this F.M.P., the M.F.D. equipment was visually assessed at the original initiation of this project in relation to the current level of services provided by the M.F.D. of and our experience regarding firefighting equipment best practices. All the assessed equipment appeared in good condition, reflecting good care and maintenance.

The following presents existing fleet for the M.F.D.

11.2.1 | **Existing Major Fire Apparatus**

Table 48 presents the current major fire apparatus for the department and the forecasted replacement date.

Table 48: Major Fire Apparatus

Unit Number	Station	Vehicle Description	Year Purchased	Forecasted Replacement Date
11	Station 1	KME Pumper	2016	2031
12	Station 1	KME Pumper	2021	2036
14	Station 1	American LaFrance Rescue	2003	2021
15	Station 1	Freightliner KME Tanker	2020	2036
16	Station 1	American Lafrance Aerial	2006	2026
21	Station 2	Pierce Contender Pumper	2010	2025
22	Station 2	Pierce Contender Pumper/ Tanker	2015	2025
25	Station 2	Freightliner KME Tanker	2020	2036
31	Station 3	Pierce Contender Pumper	2010	2025
35	Station 3	Freightliner KME Tanker	2020	2036
36	Station 3	KME Aerial	2013	2033
41	Station 4	KME Pumper	2015	2025
54	Station 5	Ford 550 DRW Rescue	2007	2025
56	Station 5	Pierce Aerial	2020	2040

11.2.2 | **Existing Service-Ready Fleet**

Maintaining a reserve fleet of major fire apparatus reflects current industry best practices and is supported by the Fire Insurance Underwriters as due diligence on behalf of the municipality. The term "reserve" can be interpreted to mean this apparatus may not necessarily be required. In our experience the term "service ready" is more

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applicable to this category of major fire apparatus. It should be recognized that this apparatus may be needed under emergency conditions to sustain the level of Council approved fire suppression services in the event of an apparatus breakdown. This apparatus also provides greater flexibility in the event of a major incident.

Table 49 presents the service-ready major fire apparatus. (Note that the addition of Unit Number 39 is not in effect at the time of writing but is imminent so is included in this F.M.P.).

Table 49: Service Ready Major Fire Apparatus

Unit Number	Station	Vehicle Description	Year Purchased
39	Station 3	Spartan Pumper	2013
162	Station 4	Freightliner Pumper	2000

11.2.3 | **Small and Specialized Vehicles**

In addition to the major fire apparatus the M.F.D. operates a number of small and specialized vehicles. This includes vehicles for administration staff (Fire Chief and Deputy Fire Chiefs), training staff, operations, mechanical staff, and fire prevention staff. A list of the small and specialized vehicles found within the M.F.D. are listed in **Table 50**. This table also provides the forecast replacement dates based on the current M.F.D. fleet replacement plan and capital budget forecasts. Further discussion on the fleet replacement plans and service-ready fleet considerations are presented in the following section.

Table 50: Current Small and Specialized Apparatus

Fleet Number	Station	Vehicle Description	Division Assigned To	Year Purchased	Forecasted Replacement Date
1	Station 3	Ford Expedition SUV	Administration	2019	2027
2	Station 1	Ford Expedition SUV	Administration	2019	2027

Fleet Number	Station	Vehicle Description	Division Assigned To	Year Purchased	Forecasted Replacement Date
3	Station 3	Dodge Durango SUV	Administration	2014	2022
7	Station 1	Ford F250 Pick up	Operations	2011	2019
8	Station 1	Ford F350 Pick up	Operations Grass Fire Unit	2019	2027
10	Station 2	Ford 550 DRW	Operations	2012	2022
20	Station 2	Ford F350 Pickup	Operations Grass Fire Unit	2012	2020
24	Station 2	Freightliner Rescue	Operations	2005	2023
30	Station 3	Ford F350 Pick up	Operations Grass Fire Unit	2017	2025
33	Station 1	Honda Pioneer 1000 ATV	Operations	2019	2029
40	Station 4	Ford F250 Pick up	Utility	2011	2019
100	Station 1	Stealth Trailer	Training/ Utility	2015	2033
200	Station 1	Atlas Trailer	Operations (Hazmat)	2009	2027
300	Station 1	Canadian Trailer Co.	Operations (ATV)	2019	2037
400	Station 1	Ashgrove Welding Trailer	Training (Flatbed)	2006	2024

Fleet Number	Station	Vehicle Description	Division Assigned To	Year Purchased	Forecasted Replacement Date
161	Station 1	Ford Explorer	Training	2016	2024
163	Station 3	Ford Cube Van	Operations Rehab	1990	2005
164	Station 1	Ford F250 Pickup	Training	2012	2020
181	Station 3	Dodge Durango	Prevention/ Support Services	2013	2021
182	Station 3	Ford F250 Pick up	Prevention/ Support Services Investigations	2015	2025
183	Station 3	Ford F150 Pick up	Prevention/ Support Services	2019	2027
184	Station 3	Ford F150 Pick up	Prevention/ Support Services	2019	2027
191	Station 1	Ford F250 Pick up	Mechanical	2015	2023

11.3 | Fleet Replacement Plan

Our review indicates that the M.F.D. operates an emergency response apparatus fleet that reflects the needs of a modern fire and rescue service. The current fleet operated by the M.F.D. represents what would be expected based on the fire risks present within the community. Overall, the emergency response apparatus fleet operated by the M.F.D. are reasonably well maintained and in good condition.

The M.F.D. currently has a fleet replacement plan on a ten-year capital budget with a replacement schedule varying by the type of apparatus (e.g., full-time pumper replaced on 10 year cycle, part-time pumper replaced on 15 year cycle). Our review of the Town of Milton 2021 Approved Capital and Operating Budget and 10-year Capital Forecast indicates the commitment of Council to capital project financing including the

purchasing and replacement of emergency response apparatus and associated equipment. The 2021 capital budget forecast identifies the planned replacement schedule for all apparatus and equipment based on the next 10-year replacement schedule. Smaller vehicles and equipment are planned for replacement based on criteria included use and manufacturers life cycle replacement planning.

It was identified as part of this review that there may be an opportunity to extend the lifecycle of apparatus by improving regular maintenance practices. A fire apparatus is an emergency vehicle that must be relied on to transport firefighters safely to and from an incident and to operate reliably and properly to support the mission of the fire department. A piece of fire apparatus that breaks down at any time during an emergency operation not only compromises the success of the operation but might jeopardize the safety of the firefighters relying on that apparatus to support their role in the operation.

There are opportunities to maximize the use of a vehicle through a replacement schedule that considers the need for service-ready apparatus. Currently there are only two service-ready apparatus available and they are both pumpers. A desirable replacement schedule can be informed by some industry best practices. This includes **N.F.P.A. 1911 Standard for the Inspection, Maintenance, Testing and Retirement of in-service Emergency Vehicles (2017 Edition)** is very general in its approach to vehicle age related to retirement or replacement of said vehicle. Appendix D states:

> "It is recommended that apparatus more than 15 years old that have been properly maintained and that are still in service - able condition be placed in reserve status; be upgraded in accordance with N.F.P.A. 1912; and incorporate as many features as possible of the current fire apparatus standard (see Section D.3). 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. Apparatus that were not

manufactured to the applicable NFPA fire apparatus standards or that are over 25 years old should be replaced" [41]

Fire Underwriters Survey uses the following criterion to review apparatus as part of their credit scoring. It is ULC listed[42] and is of appropriate age. Another aspect is to ensure that the apparatus design meets the requirements of **N.F.P.A. 1901 Standard for Automotive Fire Apparatus** and it is tested and in compliance with N.F.P.A. 1901. Since there are no formal defined age limits on a vehicle the organization should examine its costs associated to operating the vehicle, related to repair and maintenance vs the replacement cost of the vehicle. [43]

Based on the above, local Milton conditions and our industry knowledge, typically a replacement schedule would see well maintained apparatus in service as front line apparatus for 10 to 12 years, with an additional five years in reserve. The department would ideally maintain a minimum of one each of a pumper, tanker, and aerial with consideration to growing the service-ready fleet as the overall fleet grows. Other considerations are also important, such as the age of the frontline fleet and the ability to house the apparatus indoors.

Due to the lack of an electronic fleet management program M.F.D. is unable to analyze the optimal lifecycle that should be calculated based on a depreciated value of the replacement cost as compared to repair/ maintenance work order costs over the life of the vehicle. Through an analysis it can be determine the optimal time for replacement. The utilization rate of vehicles will vary depending on location and workload of the assigned station. A vehicle at a busier station will see greater wear and tear and may require increased levels of repair and maintenance. As part of the analysis, M.F.D. should consider rotation of busier

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[41] NFPA 1911-17 Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Emergency Vehicles, Appendix D.1 General

[42] Listed by ULC means that the apparatus has been tested and certified through "listing" and a ULC plate (indicating listing number) has been applied to the apparatus. The testing and certifying organization must be a Standards Council of Canada accredited agency (ULC is an accredited agency). Listing of the apparatus implies the apparatus meets all of the requirements of the standard ULC S-515.

[43] Fire Underwriters Survey Technical Bulletin – Apparatus Acceptance terms of reference for fire insurance grading and public fire protection classification.

units to stations that are less busy and to even out the workload and wear on front-line apparatus.

After a review of both the analysis and industry benchmarking the M.F.D. can determine if the current lifecycle replacement model is effective and economically reasonable and allow for reliability of frontline and reserve apparatus. Further, M.F.D. should ensure an aggressive preventative maintenance program that will allow a more frequent thorough inspection on each apparatus and will implement improved corrosion prevention treatments.

The M.F.D. should develop a longer-term plan to maintain adequate service ready apparatus to ensure that response capabilities are not impacted when an in-service vehicle is taken out of service for any reason. In our view, incorporating a reserve program into a capital budget replacement plan would provide greater flexibility in the event of an emergency or when a vehicle is temporarily out of service for repairs or maintenance.

11.4 | Fleet Maintenance Review

M.F.D. recently implemented new changes to their Firefighter/Fleet Emergency Vehicle Technician (E.V.T.) position. In May of 2021 this position was modified to a Fleet Mechanic/ EVT. Reporting to the Division Chief of Support Services, the Fleet Mechanic/E.V.T. is responsible for the maintenance, inspection, diagnosis and repair of emergency vehicles and equipment in compliance with legislatively mandated guidelines to maintain the required level of emergency vehicles and equipment for operations. The Fleet Mechanic/ EVT acts as the point of contact for maintenance and repairs of apparatus and mechanical equipment. The Support Service Technician has responsibility for the maintenance and repairs for the breathing apparatus and personal protective equipment.

At the time of this report the Fleet Mechanic was not hired however the Job Posting lists the following as required or desired qualification.

Required:

- Minimum of five (5) years' experience on heavy, medium, and light duty vehicles
- 310T certification Truck and Coach Technician
- DZ driver's license

Preferred:

- Minimum three (3) years' experience with emergency vehicles and equipment
- 310 S Certification – Automotive Service Technician
- 421A Certification – Heavy Duty Equipment Technician
- 435A Certification – Small Engine Technician
- Emergency Vehicle Technician Level I, II, III, F-5, GL Certifications
- ODP Certification – Ozone Depletion Potential

Maintenance and repairs to the M.F.D. fleet that require a mechanic's licence or specialized equipment is outsourced as is pump and ladder certification. There is a concern to the reliability and availability of front-line apparatus utilizing the current outsourcing method. There are no contracts or agreements that prioritizes emergency vehicles for repair. Once a vehicle is outsourced it is generally put into the queue of work that is being conducted by the outsourced company. This could have the vehicle out of service for many days before it is even looked at. If multiple vehicles are in need of repair, it could result in a lack of available vehicles for emergency response.

Warranty for some equipment and electronics requires the manufacturer to perform maintenance and repairs and this at times is limited to the availability of the manufacturer or supplier.

11.4.1   Records Management System

All Emergency response apparatus are inspected by crews at the beginning of each shift, in keeping with industry best practices and Ministry of Transportation requirements. The recording of maintenance and repairs on fleet, equipment, and facilities, as well as the recording of inventory is tracked manually and is utilizing an informal paper system. The implementation of an electronic records management system that links work orders, with required maintenance/ repair and capturing the inventory of supplies, costs and time allotted will benefit M.F.D. These records will help manage the current status of a vehicle, ensure it is in working condition, control inventory of parts and supplies and allow for data analysis on costs and repairs of each vehicle. There may be opportunities to partner with other municipal departments that are already utilizing a fleet management system or M.F.D. will need to research, purchase and implement its own system.

11.5 | Fleet Maintenance Options

In order to meet the requirements to provide fire suppression operations, M.F.D. must ensure that they maintain a response ready fleet. This includes repairs on demand as required on an apparatus and includes conducting preventative maintenance to ensure that the apparatus remains ready to respond.

Within the fire service industry there are a number of models that could be explored by a municipality to maintain fire apparatus. The following is a high-level review of three most common models and identifies the advantages and limitations of each as it relates to M.F.D. These models include:

1. Outsourcing repairs/ maintenance (Status Quo)
2. Shared infrastructure with another internal maintenance/ repair centre
3. Fire Department operated maintenance centre

11.5.1 | Outsourcing Repairs/ Maintenance (Enhanced Status Quo)

Under the current system M.F.D. would continue to utilize a dedicated Fleet Mechanic/E.V.T. to coordinate the required repair and maintenance of the fleet. The coordination would prioritize the needs of repair and maintenance to maintain the fleet in operational readiness. The actual repairs and maintenance would be outsourced to established contracts. Some minor repairs and maintenance would be complete by the Mechanic/ E.V.T. in-house.

Advantages of the enhanced status quo model include:

- Utilizing the current model to outsource service and repair allows M.F.D. to avoid capital equipment costs and facility requirements for operating a maintenance and repair centre. However, there may be a need to enhance some sections of existing buildings to provide dedicated workspace for minor repairs.
- Utilizing a Fleet Mechanic/E.V.T. with a Licensed Coach and Truck Technician certification allows M.F.D. to conduct limited, minor repairs and diagnosis on deficiencies encountered.

Limitations of the enhanced status quo model include:

- Under this system, M.F.D. would have limited control over the timing of the repairs. Vehicles will continue to sit in the suppliers work queue with all other customers.

The reliability and availability of front-line vehicles is a concern to operations of the suppression division.

- With the specialty of the emergency vehicle systems, not all work can be supported through one specific vendor. This requires multiple vendors to be considered and some specialty work will be required to be out of town increasing the time and resources to repair.
- Establishing the right partner(s) that are sensitive to the priority needs may mitigate this to some extent.

11.5.2 | **Shared Infrastructure with another Internal Maintenance/Repair Centre – (Works/ Transit)**

The Town already operates maintenance facilities and operations in both Works Department and Transit Operations. Utilizing established maintenance centres, there is an opportunity to explore sharing these existing facilities, including equipment, space and human resources. The Fleet Mechanic/ E.V.T. would continue to coordinate the repairs and allow for larger repairs and maintenance work to be performed in-house. If additional resources are needed, the staff from other internal departments could be utilized.

The advantages of a shared infrastructure model include:

- M.F.D. would participate in an established centre that may require some initial capital costs for specialized needs and then on-going sharing of operating and capital costs with the other partners.
- There could be opportunities to utilize shared labour to assist on specifically identified tasks or in the event of emergency repair and the need to fix in a timely manner.
- M.F.D. would maintain control of their vehicles and have the ability to prioritize the repairs or maintenance of vehicle and manage the time that the apparatus is out of service.
- It was identified that on-boarding of new apparatus and preparing them for in-service status is time consuming and labour intensive. This would allow for shared resources and a location for this work to be done.

The limitations to a shared infrastructure model include:

- A workload analysis is required to be conducted to determine the required skills and amount of human resources that will be required to operate in a shared centre. This model may indicate a need for additional resources to manage the physical repairs on vehicle and equipment.

- Although many repairs and maintenance will be able to be completed in this centre, some aspects or specialized work may still be required to be outsourced.

- M.F.D. will need to indicate the work that is to be performed in house and what is outsourced beforehand with the Fire Fighters Association to avoid any contracting out issues.

11.5.3   Fire Department Operated Maintenance Facility

The operation of a M.F.D. maintenance facility would allow for the department to manage and control the majority of repairs and maintenance for the fire department fleet. This model would include staff to both coordinate the apparatus requirements and to conduct the actual repair and maintenance work. A further review of the costs to acquiring the necessary equipment, training and licencing would be required. Dedicated space required to perform maintenance and repairs within existing facilities, such as retrofitting Station 1 and future fire department facilities, needs to be considered.

The advantages of the fire department operated maintenance facility are:

- M.F.D. would maintain independent control over the centre which allows for in house prioritizing on the use of the shop.

- With new fire stations being considered, the design and new build could occur to the scope, requirement and specifications required by the fire services.

- The mechanics get to know the equipment and are better able to manage quality control.

The limitations to the fire department operated maintenance facility are:

- M.F.D. would be responsible for all the operating and capital costs to start up a new centre and maintain it on an annual basis, including parts and equipment.

- M.F.D. would require additional staff as determined through a workload study. The use of other staff in a shared system would not be available.

- Most work could be completed in house; however, some specialty repairs or maintenance would be required to be outsourced. Agreements would need to be

in place ahead of times with the Fire Fighters Association to determine what is in scope and what is able to be outsourced.

11.6 | Equipment

The M.F.D. requires an extensive inventory of equipment such as firefighter protective clothing (bunker gear), self-contained breathing apparatus (S.C.B.A.) firefighting hose and nozzles, ladders, automobile extrication tools and many specialized pieces of equipment required for the specialized rescue services provided. Regular maintenance and repair to this equipment is typically completed by the on-duty firefighters at the fire station. Our review indicates that the policies and procedures that exist with relation to equipment require a review and update. This should be included within the proposed clarification of all Department Policies, Standard Operating Guidelines and Routine Operations recommend within this F.M.P.

Under the current structure the Division Chief of Support Services has oversight for the repair, maintenance and replacement of firefighting equipment including S.C.B.A. and Personal Protective Equipment (P.P.E.). There are also pieces of equipment that require external resources to conduct regular inspection, cleaning and repairs, including firefighter bunker gear that is sent to an external supplier. Each firefighter has two sets of bunker gear in order to facilitate this regular inspection process required by manufacturers as recognized by the O.H.S.A.

11.7 | Respiratory Protection Program

All Fire Services require comprehensive Respiratory Protection Program that includes reference to the applicable O.H.S.A. Section 21 Guidance Note #4-9 Respiratory Protection Program. The Respiratory Protection Program is described in R.O. - 009: Respiratory Protection Program.

The M.F.D. has many Routine Orders relating to the care, maintenance, and inspection of S.C.B.A. The department has developed a draft respiratory protection program consolidating all department policies, procedures and routine orders referring to the respiratory protection. It is recommended that this program be formalized and implemented. This includes the fire fighters regular checks of their S.C.B.A.'s, as defined in the program, to ensure they are functioning properly and under the O.H.S.A. 28 (1)(c) report any functional concerns or repair needs with the S.C.B.A. unit.

11.8 | Asset Management/Inventory

The 2008 F.M.P. recommended a comprehensive review of all department apparatus and equipment maintenance issues to establish inspection, preventative maintenance, and routine/emergency repair options. That plan suggested the need for a dedicated fleet and equipment asset protection program. Our research indicates that an asset management program is not in place yet and that there is currently no system in place to manage and assign parts or stock supplies required for maintenance or repair, or the need for reordering to keep stock available. M.F.D. will need to establish an Asset Management program utilizing industry best models that are easily integrated into a Corporate Asset Management program. This will allow M.F.D. to properly track inventory and to manage the replacement of their capital assets.

11.9 | Facilities, Apparatus and Equipment Summary

Our review of the facilities, apparatus and equipment utilized by the M.F.D. indicates that many aspects of its operations, and specifically its fire stations reflect current best practices within the fire service in Ontario. The M.F.D. maintains a fleet and equipment maintenance and repair program that has historically met the needs of the department with an opportunity to more closely align replacement programs with industry guidelines and best practices and an evolving fire department. This F.M.P. recommends the continued growth of the M.F.D. to support the growth in the municipality that subject to Council's consideration and approval, will result in additional fire stations, fire apparatus and equipment. As the department continues to grow there will be a need to enhance the M.F.D.s operations including as it relates to fleet maintenance and repairs and revising its approach to records management including work orders, maintenance requests, inspections, and inventory.

11.9.1 | Goals, Objectives, and Recommendations

Goal #7: Milton Fire Department will maintain stations, apparatus, and equipment in the appropriate quantity, in a ready state and reliable condition to meet the needs of the community and the operations of the fire department.

> **Objective #7A:** Maintain Emergency Service fleet and equipment to ensure operational readiness and reliability.

Recommended Action: Implement a fleet management system to track work orders, status of vehicle condition, and keep accurate and consistent records.

Recommended Action: Conduct a fleet analysis to determine the optimal fleet lifecycle based on costs to maintain an apparatus versus depreciation value of vehicle and industry best practices.

Recommended Action: Invest in/adopt an Asset Management Program that will align with the corporate Asset Management Program.

Recommended Action: Formalize and implement a Respiratory Protection Program to address the care, use and maintenance of respiratory equipment.

Recommended Action: Ensure that there are "service ready" vehicles to limit the impacts to incident responses when front line apparatus are taken out of service for training, maintenance or repair.

Objective #7B: Investigate the options to provide maintenance and repair services by enhancing the current process, including expanding the role of the current Fleet Mechanic/E.V.T.

Recommended Action: Obtain priority contracts with various repair vendors to ensure appropriate terms and conditions are outlined, which may include priority status.

Recommended Action: Establish a preventative maintenance program for all fleet and equipment.

Objective #7C: Investigate the opportunities of optimizing the fleet and equipment management program; exploring out-sourcing, shared services, and in-house models.

Recommended Action: Conduct a feasibility study investigating options for the delivery of maintenance and repair to fleet and equipment.

Recommended Action: Conduct workload review in the current system and in any proposed systems to determine the human resources required for maintenance as the fleet grows.

12.0 | Implementation Plan

The goals, objectives, and recommended actions of this F.M.P. have been developed in consideration of the strategic priorities identified within this plan. This F.M.P. includes an implementation plan that features proposed schedule and estimated operating and capital costs. There are a lot of priorities identified in the short term (2021 – 2023). It may not be practical to achieve all of the recommended timelines from a resourcing perspective. The fire chief and senior fire department management will have to assess their annual work plan to phase in and achieve these priorities. It may require that some of these recommended action take longer to implement from a practical perspective. It should also be noted that some of the recommended actions will incur operating costs, most of which can be covered by existing resources. Should the department wish to engage external third-parties to conduct any of the reviews or investigations, this could result in additional capital costs that have not been included.

Those recommended actions that require direct Council approval related to policy decisions, financial commitments, or due diligence are highlighted in green in the table.

As part of the implementation of this plan, it is recommended that Council approve the strategic priorities of this plan. The following strategic priorities are recommended as the strategic framework for the delivery of fire protection services within the Town of Milton:

I. **The sustained use of a C.R.A. to determine the fire safety risks within the Town of Milton as the basis for developing clear goals and objectives for all fire protection and emergency services provided by M.F.D.;**

II. **Where applicable, the optimization of the first two lines of defence including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Town; and**

III. **Emphasis on strategies that support the sustainability of fire protection and emergency services that provide the most effective and efficient level of services resulting in the best value for the community.**

Administration Division

GOAL #1: Milton Fire Department will provide the appropriate level of resources, leadership capabilities, policies and systems to continue to meet the needs of a rapidly growing community based on the findings of a Community Risk Assessment.

Objective #1A: Use a Community Risk Assessment to help identify the needs and circumstances of Milton and inform decision-making with respect to community fire protection services to sustain compliance with O. Reg. 378/18 Community Risk Assessments.

Recommended Action: Conduct a review of the C.R.A. annually and when necessary, and revise the C.R.A. in line with the guidelines set out in O.F.M Technical Guideline-02-2019 and consider potential impacts on existing fire protection services.

Proposed Scheduled: Annually beginning in 2022

Objective #1B: Maintain up-to-date documentation and procedures for all by-laws, agreements, Standard Operating Guidelines (SOG), Standard Operating Policies (SOP), records management systems, and job descriptions.

Recommended Action: Update and implement a regular review process of all applicable fire protection services by-laws including:

    a. The Establishing and Regulating By-law No. 026-2018;
    b. The current Rates and Fees By-law No. 072-2020 including:
        v. revisions to include cost recovery of additional specialized services such as Fire Safety Plans and providing Fire Extinguisher Training;
        vi. a review of the fees charged for fire inspections services and consider modifying or clarifying the fee charged;
    c. Fireworks By-law No. 037-2009, and
    d. Current fire protection agreements by-laws.

Proposed Scheduled: 2021/2022

Recommended Action: Bring forward any revised by-laws for Council consideration and approval.

Proposed Scheduled: Ongoing

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Recommended Action: Conduct a review of current agreements (fire protection services, mutual aid, automatic aid) with the intent to confirm the need and revise agreements to clearly define the scope of existing and planned services provided/received, to formalize in writing any informal agreements, and ensure applicable by-laws are in place.

Proposed Scheduled: 2021/2022

Recommended Action: Establish a process for the regular review of existing Standard Operating Policies and Standard Operating Guidelines in order to develop new ones, where required, and clarify the application and definition of all Department Policies, Standard Operating Guidelines and Routine Operations.

Proposed Scheduled: 2021 and ongoing

Recommended Action: Develop records management protocols and systems for all records management practices within the department with consideration to the corporate requirements and training for all staff responsible for administrative support.

Proposed Scheduled: 2021

Recommended Action: Update department job descriptions, and include required N.F.P.A. Pro-Qual Standards where applicable, and implement a regular review cycle.

Proposed Scheduled: 2021 and ongoing

Objective #1C: Sustain the regular reporting of the services provided by the M.F.D. both internally and externally.

Recommended Action: Report to Council annually on the performance of the department, any applicable updates, and on the annual review of the Comprehensive Risk Assessment.

Proposed Scheduled: Annually

Recommended Action: Implement a dedicated Analyst resource in support of reporting, strategic initiatives, and data-driven decision making.

Proposed Scheduled: 2022

Estimated Operating Budget Impact: $125,000

Objective #1D: Have appropriate administrative capacity as the department grows.

Recommended Action: Implement a process to monitor the administrative workload in support of maintaining appropriate levels of administrative capacity as the department grows.

    Proposed Scheduled: Ongoing

Objective #1E: Have a fire department that is inclusive and reflects the diversity of the community.

Recommended Action: In conjunction with the Town's Diversity and Inclusivity Strategy, develop an internal fire department diversity and inclusion policy and committee that includes M.F.D. senior staff and review existing M.F.D. policies of procedures through the lens of inclusion.

    Proposed Scheduled: 2021/2022

Recommended Action: In consultation with the Human Resources Division, provide diversity, equity, and inclusion training to all staff.

    Proposed Scheduled: 2022

FIRE PREVENTION DIVISION

Goal #2: The Milton Fire Department will enhance its fire prevention and public education programs based on the outcomes of a C.R.A in support of optimizing the first two lines of defence.

Objective #2A: Implement proactive fire prevention and public education programs and policies in alignment with the community risks.

Recommended Action: Develop and implement a Council-approved proactive inspection cycle and proactive public education cycle.

    Proposed Scheduled: 2021/2022
    This is a Council Recommendation

Recommended Action: Enhance the utilization of trained and qualified on-duty full-time firefighters for inspections and delivery of education programs.

    Proposed Scheduled: 2022

Recommended Action: Develop a Fire Department Public Communication Policy in consultation with Strategic Communications.

    Proposed Scheduled: 2022

Recommended Action: Develop a comprehensive strategy for managing false alarm calls that includes enhanced and targeted public education strategies, increased fire inspections and enforcement options.

> **Proposed Scheduled:** 2021/2022

Recommended Action: Develop a child/youth fire safety education program targeting grade 7/8 to increase the depth of the current public education program;

> **Proposed Scheduled:** 2021/2022

Recommended Action: Develop a Fire Prevention Policy that defines the purpose and objectives of each of the fire prevention related policies/guidelines including the proactive inspection cycle and proactive public education cycle. Present the policy to Council for approval and inclusion within the Establishing and Regulating By-law as an appendix.

> **Proposed Scheduled:** 2021/2022

> **This is a Council Recommendation**

Recommended Action: Increase the capacity of the Fire Prevention Division by adding one full-time Public Education Officer.

> **Proposed Scheduled:** 2021/2022
> **Estimated Capital Budget Impact:** $80,700 (Vehicle and Equipment)
> **Estimated Operating Budget Impact:** $138,008
> **This is a Council Recommendation**

Recommended Action: Implement a process to monitor the workload and capacity of staff in the Fire Prevention Division in support of maintaining appropriate levels full-time personnel required to deliver fire prevention programs effectively.

> **Proposed Scheduled:** Ongoing

Objective #2B: Prioritize the training of all fire prevention and public education staff.

Recommended Action: All staff designated as Chief Fire Officials should be trained through the Public Services Health & Safety Association related to the Chief Fire Official roles and responsibilities.

> **Proposed Scheduled:** 2021/2022

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Recommended Action: Fire prevention staff be trained and qualified to the appropriate N.F.P.A. Pro-Qual standards suitable to their role.

> **Proposed Scheduled:** 2021/2022

Recommended Action: Train all full-time firefighters to the qualification of N.F.P.A. 1031 – Fire Inspector - Level I and NFPA 1035 – Fire and Life Safety Educator - Level I.

> **Proposed Scheduled:** 2022/2023 and ongoing

OPERATIONS DIVISION

Goal #3: Milton Fire Department will provide emergency response services in alignment with its local needs and circumstances as confirmed though a Community Risk Assessment and with consideration to health and safety, industry best practices, future growth, and the services that provide the most effective and efficient level of services resulting in the best value for the community.

> **Objective #3A:** Strive for continuous improvement through monitoring emergency response performance as compared to applicable industry best practices.

> **Recommended Action:** Establish Council-approved performance benchmarks for emergency response and annually monitor and report to Council and the community including:

> > a. The proposed fire suppression performance objectives for the defined urban area being:

> > > i. Initial Arriving Company - Four firefighters arriving on scene within a four minute travel time to 90% of fire suppression incidents.

> > > ii. Single-Family Dwelling – Initial Full Alarm Assignment - 16 firefighters (17 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type

> > > iii. Apartment – Initial Full Alarm Assignment - 25 firefighters (26 if an aerial is deployed) arriving on scene within an eight minute travel time to 90% of fire suppression incidents in this occupancy type

> > > iv. High-Rise – Initial Full Alarm Assignment - 38 firefighters (39 if building is equipped with a fire pump) arriving on scene within a ten minute

and ten second travel time to 90% of fire suppression incidents in this occupancy type

b. The proposed fire suppression performance objective for the defined rural being:

v. Rural Demand Zone – 6 firefighters arriving on scene within a 14 minutes turnout time + travel time to 80% of fire suppression incidents in the defined rural area.

Proposed Scheduled: Annually beginning in 2021
This is a Council Recommendation

Objective #3B: Move towards the fire suppression staff resources that reflect the needs and circumstances of the community.

Recommended Action: In consultation with the Human Resources Division, develop a hiring strategy to fully staff the existing fire stations in alignment with industry best practices and proposed performance benchmarks for the existing fire stations including:

a. Phasing in an increase to 80 full-time suppression firefighters (from the existing 56 firefighters) to staff all four existing urban fire stations with a full complement of full-time firefighters (20 each). This requires the addition of 24 firefighters over the next four years.

Proposed Scheduled: 2022 to 2025
Estimated Capital Budget Impact: Protective Clothing $52,200 annually for four years, ($208,800 total)
Estimated Operating Budget Impact: $3,372,880 (compensation and protective clothing lifecycle)
This is a Council Recommendation

b. Hiring four Platoon Chiefs to cover the four shifts required to provide 24/7 response coverage. This is in response to recent and forecast municipal and department growth.

Proposed Scheduled: 2025
Estimated Capital Budget Impact: $115,500 (Vehicle & Protective Clothing)

Estimated Operating Budget Impact: $692,568 (Compensation Plus Vehicle and Protective Clothing Costs)
This is a Council Recommendation

c. Increasing the total approved complement of part-time firefighters from 65 to 90 including a minimum of 20 part-time firefighters for each of Station 1, 3, and 4, and 30 part-time firefighters for Station 2. This is in support of the initial full alarm assignment needs of the M.F.D., and to help respond to the staffing needs for high risk occupancy incidents (e.g. high rise building, long-term care facilities). This will also enhance the ability of the department to respond in the event of simultaneous calls, and is part of the strategy to support the departments staffing needs as the Town incrementally hires full-time firefighters over the coming years.

Proposed Scheduled: 2022/2023
Estimated Capital Budget Impact: Protective Clothing - $217,500
Estimated Operating Budget Impact: $296,750 (Compensation and Protective Clothing Lifecycle Cost)
This is a Council Recommendation

Objective #3C: Prepare for growth by planning for the need for increased fire suppression resources while balancing taxpayer affordability.

Recommended Action: Based on monitoring the actual timing of growth and with consideration to updated Community Risk Assessment, develop and implement a hiring strategy to prepare to respond to forecast growth so that the proposed new Station 6 and Station 7 can be fully staffed once they are built, including:

a. Planning for the addition of 20 full-time firefighters to staff each of the proposed Station 6 and 7 (40 additional full-time firefighters total) including any associated apparatus and equipment.

Proposed Scheduled: Station 6 – 2026 and Station 7 - 2029
Estimated Capital Budget Impact:
Proposed Station #6 -New Class "A" Pump/Rescue and Equipment $950,000, Protective Clothing - $174,000
Proposed Station #7: New Class "A" 75 FT Quint and Equipment - $1,400,000, Protective Clothing $174,000

Estimated Operating Budget Impact:
Proposed Station #6 -$2,923,567(Compensation, Pump/Rescue Costs and Protective Clothing Lifecycle)
Proposed Station #7: $2,923,567(Compensation, Pump/Rescue Costs and Protective Clothing Lifecycle)
This is a Council Recommendation

b. Increase total part-time firefighter complement from 90 to 110 by planning for the addition of a minimum of 20 part-time firefighters to staff proposed Station 6 including any associated apparatus and equipment

Proposed Scheduled: 2025/2026
Estimated Capital Budget Impact: Proposed Station #6 - New Class "A" Pump/Rescue -- $950,000, Protective Clothing - $174,000
Estimated Operating Budget Impact: Proposed Station #6 - $331,567 (Compensation and Vehicle/Protective Clothing Lifecycle)
This is a Council Recommendation

c. Planning for the construction of a sixth station (by 2026 or approximately 175,000 people) and a seventh station (by 2029 or approximately 210,000 people).

Proposed Scheduled: Station 6 – 2026 and Station 7 - 2029
Estimated Capital Budget Impact:
Proposed Station #6 - Land purchase & design/construction $6,815,000, Equipment $270,000
Proposed Station #7 - Land purchase & design/construction $6,815,000, Equipment $270,000
Estimated Operating Budget Impact:
Proposed Station #6 - $267,216 (Operating, Maintenance and lifecycle Costs)
Proposed Station #7 - $267,216 (Operating, Maintenance and lifecycle Costs)
This is a Council Recommendation

Objective #3D: Prioritize the sustainability of the composite model for the Town of Milton.

Recommended Action: Maintain the part-time District Chief model with consideration to transition to a span of control of two stations per part-time District Chief.

> **Proposed Scheduled:** Ongoing

Recommended Action: Develop and implement a part-time firefighter scheduled on call program in consultation with the part-time firefighters to enhance the number and time it takes them to turn-out for an incident.

> **Proposed Scheduled:** 2022 to 2025
>> **Estimated Operating Budget Impact:** Subject to program design and consultation with the part-time firefighters.

Recommended Action: Increase the overall approved complement of part-time firefighters as described in the above objectives.

Objective #3E: Move towards technical rescue service levels that reflects the needs and circumstances of the community as identified in the Community Risk Assessment.

> **Recommended Action:** Develop a plan to operationalize proposed changes to technical rescue service levels including associated training, maintenance, and equipment costs.

> **Proposed Scheduled:** 2021/2022

Recommended Action: Transition towards establishing the proposed technical rescue service levels, to be approved by Council through an Establishing and Regulating by-law, being:

   x.   Hazardous Materials Response – Operations Level

   xi.   Vehicle Rescue – Technician Level

   xii.   High/low Angle Rope Rescue – Technician Level

  xiii.   Surface Water Rescue - Technician Shore-Based

  xiv.   Ice Search and Rescue - Technician Shore-Based

   xv.   Machinery Rescue - Technician Level

  xvi.   Confined Space Response - Operations Level

xvii.   Trench Rescue Response - Operations Level

xviii.   Structural Collapse - Operations Level

Proposed Scheduled: 2022 to 2024

Recommended Action: Develop fire service agreements with neighbouring departments or other service providers for hazardous materials response, confined space rescue, trench rescue, and structural collapse.

Proposed Scheduled: 2022

EMERGENCY MANAGEMENT

Goal #4: Milton Fire Department will provide municipal emergency planning services with consideration to its legislative requirements, industry best practices, and future growth.

Objective #4A: Maintain legislative compliance while preparing for future growth.

Recommended Action: Conduct a review of the Emergency Response Plan (E.R.P.) annually and when necessary, to sustain compliance with the Emergency Management and Civil Protection Act's legislative requirements. The annual review should include updating the E.R.P. in line with the most recent best practices as set out in Ontario's Incident Management System Guidance document (Version 2.0).

Proposed Scheduled: 2022 and Annually

Recommended Action: Consider enhancing the emphasis on emergency preparedness and planning as a strategic priority of the Town and as part of its strategic planning process to prepare the future Council-Staff Work Plan.

Proposed Scheduled: 2024
This is a Council Recommendation

Recommended Action: Consider transferring the C.E.M.C. position to a Deputy Fire Chief or another appropriate municipal employee in the short term, and tracking work load and desired emergency planning initiatives with a view to developing a business case for a full-time or part-time emergency management specialist that would include the role of C.E.M.C.

Proposed Scheduled: 2022

COMMUNICATIONS DIVISION

Goal #5: Milton Fire Department will provide a technically enhanced core communications system that continues to meet the need of a growing municipality and to provide support for the requirements in the fire department.

Objective #5A: Improve M.F.D. call answering and call processing times to meet the guidelines of NFPA 1221 and established performance benchmarks, with the ultimate objective of reducing overall total response time.

Recommended Action: Establish Council-approved performance benchmarks for call answering and call processing times and report to Council annually.

Proposed Scheduled: 2021/2022

Recommended Action: Adopt NPFA 1061 – Standard for Professional Qualifications for Public Safety Telecommunications Personnel, and training, and qualify all staff involved in the call-taking and dispatching of services to Level I and II of the standards.

Proposed Scheduled: 2021/2022

Recommended Action: Link the C.A.D. system with an automated Fire Station notification system.

Proposed Scheduled: 2022/2023

Recommended Action: Staff the communications center with two Communications Technicians between the hours of 0800-2000 seven days a week by hiring two additional full-time Communication Technicians.

Proposed Scheduled: 2022
Estimated Operating Budget Impact: $250,000
This is a Council Recommendation

Recommended Action: As the municipality grows and the increase in demand occurs, M.F.D. should establish a staffing plan to ensure two people are on on-duty 24 hours a day, 7 days a week by hiring two additional full-time Communication Technicians.

Proposed Scheduled: 2025
Estimated Operating Budget Impact: $250,000
This is a Council Recommendation

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Recommended Action: Explore the use of mobile data terminals on front-line apparatus to improve communications and information sharing.

Proposed Scheduled: 2021**/**2022

Objective #5B: Review all mission critical infrastructure systems for reliability and currency and develop a 10-year capital replacement program for annual budgeting and for input to the development charge program.

Recommended Action: Complete a detailed analyses on the current C.A.D. and record management system (R.M.S.) to determine the need for upgrade/replacement and to determine the current and future support to be provided by the vendor.

Proposed Scheduled: 2021/2022

Recommended Action: Develop a 10-year capital replacement plan for current and future mission critical infrastructure systems in communications including the potential need to upgrade or replace systems to conform to the new NG-911 requirements.

Proposed Scheduled: 2022
This is a Council Recommendation

Recommended Action: Work with Halton Regional Police and current C.A.D. supplier to determine NG-911 compatibility requirements for the communications centre and develop the funding strategy to finance the mandatory updates.

Proposed Scheduled: 2021 to 2023

Objective #5C: Conduct a detailed review of options to further explore the feasibility and opportunities for delivery of emergency fire dispatching and communications, exploring level of service, costing, infrastructure requirements and labour implications.

Recommended Action: Establish a working group of key stakeholders to investigate options for the current communications centre including status quo, shared infrastructure and fee for service contract.

Proposed Scheduled: 2022

Objective #5D: Develop and implement a quality assurance (Q.A.) and quality improvement program.

Recommended Action: Develop required Standard Operating Policies and Guidelines for the communication centre.

Proposed Scheduled: 2021/2022

Recommended Action: Develop a supervision reporting structure for the Communications Centre to ensure appropriate direction or supervision 24/7.

Proposed Scheduled: 2021/2022

Recommended Action: Establish 24/7 service and maintenance plans with the systems suppliers and the Infrastructure Technology department to ensure reliability of the systems.

Proposed Scheduled: 2012/2022

Recommended Action: Adopt a quality assurance program that will be managed by the Division Chief of Support Services and report monthly to the Deputy Chief of Staff.

Proposed Scheduled: 2022

TRAINING DIVISION

Goal #6: M.F.D. will maintain a training program that supports all functions of the organization and at the appropriate levels defined in the services provided in the Establishing and Regulating by-law.

Objective #6A: Follow industry best practices regarding training qualifications for all department staff.

Recommended Action: Council adopt the appropriate professional standards, as applicable, to qualify staff in alignment with service levels as defined through an Establishing and Regulating By-law.

Proposed Scheduled: 2022/2023
This is a Council Recommendation

Recommended Action: Adopt the appropriate professional standards in alignment with applicable roles and responsibilities, including:

k. NFPA 1035 – Level II - Public Educators/ Fire Prevention Inspectors

l. NFPA 1035 – Level I - Firefighters

m. NFPA 1031 – Level II – Fire Prevention Inspectors.

n. NFPA 1031 – Level I – Firefighters

o. NFPA 1001 – Level II – Firefighters

p. NFPA 1041 – Level II – Training Division Staff/ Shift Training Instructors

q. NFPA 1041 – Level I – Company Officers

r. NFPA 1061 – Level I & II – Communication Technicians (Full-time and Part-time)

s. NFPA 1021 – Level I & II All Company Officers (Full-time, Part-time, Acting)

t. NFPA 1006 – As prescribed based on service delivery – Minimum Level I for all fire suppression staff

Proposed Scheduled: 2021/2022

Objective #6B: In consultation with Human Resources Division, investigate and implement a Learning Management System, to allow for greater records management and remote/alternative training opportunities.

Recommended Action: Ensure that a records management system is in place to record and file all training and qualifications received by all staff members.

Proposed Scheduled: 2022

Recommended Action: Provide alternative/remote training opportunities as applicable to all staff to ensure that all staff have the ability to train within their capabilities.

Proposed Scheduled: 2022

Recommended Action: Develop a comprehensive training program that identifies a five year plan for qualifications and maintenance training, yearly plans and monthly requirements.

Proposed Scheduled: 2023

Objective #6C: Ensure that there are appropriate facilities and apparatus available to support the defined training needs.

Recommended Action: Investigate the feasibility of an in-house facility to accomplish all the training and qualification needs prescribed by health and

safety and within the scope of the services provided under the Establishing and Regulating By-law. As part of the feasibility study, examine facility rental opportunities and shared training centre with other partners in Halton Region, including other fire services, police and paramedic services.

Proposed Scheduled: 2022/2023

Recommended Action: Conduct annual live fire training for all fire suppression and command staff through a facility rental from a neighboring municipal fire service following NFPA 1403 – "Standard on Live Five Fire Training Evolutions."

Proposed Scheduled: Annually

Objective #6D: Staff the training division with a sufficient quantity, relevancy and diversity required to meet the training and development of all fire department staff today and in the future.

Recommended Action: Utilize a mix of full time Training Officers and qualified Shift Training Instructors to deliver the variety of training and development required.

Proposed Scheduled: 2022

Recommended Action: Hire one additional Training Officer to support the existing needs, planned initiatives and near term growth in suppression staff and applicable changes in service levels.

Proposed Scheduled: 2022
Estimated Operating Budget Impact: $125,000
This is a Council Recommendation

Recommended Action: Implement a process to monitor the workload and capacity of staff in the Training Division in support of maintaining appropriate levels of resources required to deliver the training program effectively.

Proposed Scheduled: 2022/2023

FACILITIES, APPARATUS, AND EQUIPMENT

Goal #7: Milton Fire Department will maintain stations, apparatus, and equipment in the appropriate quantity, in a ready state and reliable condition to meet the needs of the community and the operations of the fire department.

Objective #7A: Maintain Emergency Service fleet and equipment to ensure operational readiness and reliability.

> **Recommended Action:** Implement a fleet management system to track work orders, status of vehicle condition, and keep accurate and consistent records.
>
> > **Proposed Scheduled:** 2022
>
> **Recommended Action:** Conduct a fleet analysis to determine the optimal fleet lifecycle based on costs to maintain an apparatus versus depreciation value of vehicle and industry best practices.
>
> > **Proposed Scheduled:** 2022 and ongoing
>
> **Recommended Action:** Invest in/adopt an Asset Management Program that will align with the corporate Asset Management Program.
>
> > **Proposed Scheduled:** 2022
>
> **Recommended Action:** Formalize and implement a Respiratory Protection Program to address the care, use and maintenance of respiratory equipment.
>
> > **Proposed Scheduled:** 2021
>
> **Recommended Action:** Ensure that there are "service ready" vehicles to limit the impacts to incident responses when front line apparatus are taken out of service for training, maintenance or repair.
>
> > **Proposed Scheduled:** 2022 to 2031

Objective #7B: Investigate the options to provide maintenance and repair services by enhancing the current process, including expanding the role of the current Fleet Mechanic/E.V.T.

> **Recommended Action:** Obtain priority contracts with various repair vendors to ensure appropriate terms and conditions are outlined, which may include priority status.
>
> > **Proposed Scheduled:** 2022
>
> **Recommended Action:** Establish a preventative maintenance program for all fleet and equipment.
>
> > **Proposed Scheduled:** 2022

Objective #7C: Investigate the opportunities of optimizing the fleet and equipment management program; exploring out-sourcing, shared services, and in-house models.

Recommended Action: Conduct a feasibility study investigating options for the delivery of maintenance and repair to fleet and equipment.

Proposed Scheduled: 2022/2023

Recommended Action: Conduct workload review in the current system and in any proposed systems to determine the human resources required for maintenance as the fleet grows.

Proposed Scheduled: Ongoing

Appendix A

Town of Milton Community Risk Assessment

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Tables

1.0 | Introduction

The process of assessing community risk is receiving increased attention within the fire protection industry in North America. A Community Risk Assessment (C.R.A.) is fundamental to the development of a strategic Fire Master Plan (F.M.P.). Assessing community risk informs the understanding of local needs and circumstances, which can then be aligned to the service levels established by the municipality. The results of a C.R.A. directly inform the recommendations within the F.M.P. and are used to identify existing service gaps across divisions, with particular connections to fire prevention, training and emergency response (e.g. suppression).

In May 2018, the Ministry of the Solicitor General (previously the Ministry of Community Safety and Correctional Services) adopted O. Reg. 378/18 under the F.P.P.A. O. Reg. 378/18 came into effect on July 1st 2019 and requires all municipalities in Ontario to develop a C.R.A. 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*"[1]. The new regulation has expanded and enhanced the depth at which risk is considered by jurisdictions, providing a more thorough analysis of the risks within a community. As required by O. Reg. 378/18, a C.R.A. must include a comprehensive analysis of nine mandatory profiles including:

- Geographic Profile;
- Building Stock Profile;
- Critical Infrastructure Profile;
- Demographic Profile;
- Public Safety and Response Profile;
- Community Services Profile;
- Hazard Profile;
- Economic Profile; and
- Past Loss and Event History Profile.

Within each of the nine profiles, there are a number of sub-topics examined. These sub-topics are illustrated in **Figure 1** below.

---

[1] Ontario Regulation 378/18: Community Risk Assessments, Mandatory Use, Section 1 (b).

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
• Road network • Bridges • Railways • Airport • Natural features and landforms • Willand-urban interface	• Property stock by occupancy type • Building age, construction • Building density and exposure • Building height and area • Potential high fire risk occupancies • Historically or culturally important features	• Food and water • Oil and natural gas • Electricity • Telecommunications • Public safety and security • Continuity of government • Transportation • Health • Financial institutions	• Population and dispersion • Age • Gender • Socioeconomic circumstances • Ethnic and cultural considerations • Transient populations	• Hazard identification and risk assessment	• Public safety response agencies within the community	• Community service agencies, organizations, and associations	• Major employers and economic sectors	• Overall fire loss • Fire loss by occupancy type • Civilian fire deaths and injuries • Fire cause and ignition • Smoke alarm status • Call volume • Call types

The Community Risk Assessment developed for the Town of Milton as part of the fire master planning process includes all nine profiles outlined in O. Reg. 378/18; however, the final draft was completed prior to the availability of Provincial guidance on the development process of a C.R.A. The F.P.P.A. assigns duties to the Office of the Fire Marshal and Emergency Management (O.F.M.E.M.) to "advise municipalities in the interpretation and enforcement of this Act and the regulations". The O.F.M.E.M. has developed Technical Guideline-02-2019 (T.G.-02-2019) to assist municipalities and fire departments in the process to develop a C.R.A. and to utilize the completed C.R.A. to inform the municipality's decisions with regard to complying with the F.P.P.A.

O. Reg. 378/18 requires municipalities to complete a C.R.A. least every five years, with annual reviews. Upon the next review of this CRA, the M.F.D. can include updating the C.R.A. in line with the guidelines set out in T.G.-02-2019.

In order to complete this C.R.A., data was collected and analyzed to identify risks from the perspective of each of the nine profiles. Key data sources included: Statistics Canada, Municipal Property Assessment Corporation (M.P.A.C.) data, O.F.M.E.M. Standard Incident Reporting (S.I.R.) data provided by the Milton Fire Department and desktop research. The lens for this risk assessment is focused on fire risk or how a risk outcome relates to a fire department.

Risk Assessment Methodology

A C.R.A. paints a picture about local needs and circumstances which can be used to inform decision-making including establishing service levels for a fire department. This C.R.A. is structured to directly inform the Fire Master Plan for the Town.

As outlined in **Figure 2,** the C.R.A. can be broken down into three broad stages and begins with data collection (Stage 1). This is followed by stage 2 which includes analyses within the context of the nine profiles and related sub-topics (Stage 2a). The analyses results and conclusions are identified as either a Key Risk or a Key Finding (Stage 2b). Within the context of this C.R.A., a **Key Risk** is an analysis outcome for which there is sufficient and appropriate information to inform an assessment of risk based on probability and consequence. The analyses and information available provides the opportunity to quantify the risk through a risk assignment process that concludes there is an existing fire related risk to the community. This is referred to as a risk assignment process where a risk level of high, moderate, or low is assigned. In simple terms, risk is defined as:

$$Risk = Probability \times Consequence$$

Similar to a key risk, a **Key Finding** is a risk related conclusion of the analysis that will inform service levels and other strategies. However, it is not put through the risk assignment process, in part because there is not sufficient quantitative data to do so.

The third and final stage of the C.R.A. takes the risk analysis outcomes and sets them up so that they can be directly applied within the F.M.P. This includes three steps:

1. Key Risk prioritization through the assignment of risk level (low, moderate, high) based on probability and consequence; and
2. Categorization of Key Risks and Key Findings, based on the three lines of defence.
3. Development of a Risk Map.

Further information on the three lines of defence is presented in the following section.

2.1   Three Lines of Defence

The O.F.M.E.M. Comprehensive Fire Safety Effectiveness Model identifies a fire protection planning strategy known as the *"Three Lines of Defence".* The application of this strategy highlights the importance of recognizing that there are options to developing an effective community fire safety plan. Although emergency response (fire suppression) may be needed, there are other strategies that can be applied as elements of a broader community risk reduction strategy that can have a positive impact on

reducing the reliance on emergency response and optimizing public safety within the community. The *"Three Lines of Defence"* model is summarized in **Table 1**.

Table 1: Overview of O.F.M.E.M. Three Lines of Defence Model

Line	Description
I. Public Education and Prevention	*Educating residents of the community on means for them to fulfill their responsibilities for their own fire safety is a proven method of reducing the incidence of fire. Only by educating residents can fires be prevented and can those affected by fires respond properly to save lives, reduce injury and reduce the impact of fires.*
II. Fire Safety Standards and Enforcement	*Ensuring that buildings have the required fire protection systems, safety features, including fire safety plans, and that these systems are maintained, so that the severity of fires may be minimized;*
III. Emergency Response	*Providing well trained and equipped firefighters directed by capable officers to stop the spread of fires once they occur and to assist in protecting the lives and safety of residents. This is the failsafe for those times when fires occur despite prevention efforts.*

The model also recognizes that developing programs and providing resources to implement the first line of defence (a proactive public education and fire prevention program) can be the most effective strategy to reduce and potentially minimize the reliance on the other lines of defence. The F.M.P., which is informed by the C.R.A. process, is designed to incorporate the three lines of defence model.

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Figure 2: Community Risk Assessment Process

Community Risk Assessment Process

1 Data Collection

2a Profile Analysis

2b Risk Outcomes

3 Alignment of Outcomes with Avenues to Optimize the Three Lines of Defence

Fire Master Plan

Key Sources

Key **data sources** include:
- Milton Fire Department;
- Municipal Property Assessment Corporation parcel data;
- Statistics Canada;
- OFMEM Standard Incident Reporting; and
- Desktop research.

Profiles

The CRA outcomes are based on an analysis of **nine profiles** and related sub-topics:
- Geographic;
- Building Stock;
- Critical Infrastructure;
- Demographics;
- Hazards;
- Public Safety and Response;
- Community Services;
- Economic;
- Past Loss & Event History.

Key Risk

Key risks identified through the analysis will have a risk level assigned (low, moderate, high) to help inform opportunities to inform service levels by optimizing the first two lines of defence.

Key Finding

Key finding identified through the analysis that will inform service levels and other strategies but will not have a risk level assigned.

(This includes findings identified through mapping analysis which may illustrate a spatial priority area.)

Key Risk Prioritization

Key risk prioritization through the assignment of a risk level (low, moderate, high) based on probability and consequence. Prioritization can help inform the development of a community risk reduction plan and the development of a risk model.

Categorization

Key risks and key findings are **categorized** to establish avenues to **optimize the three lines of defence**:
1) Public fire safety education;
2) Fire safety standards and enforcement; and
3) Emergency response.

Risk Model

Consideration of key risks, categorization, and risk level assignment to develop a risk model to assess emergency response capabilities of the fire suppression division.

2.2   Risk Assignment Methodology

Once the risk outcomes have been identified, a risk assignment methodology is applied to inform the prioritization of risks for community risk reduction strategies as well as to develop a risk model to assess emergency response coverage. This section provides an overview of the risk assignment methodology.

The O.F.M.E.M. Fire Risk Sub-model defines risk "*as a measure of the probability and consequence of an adverse effect to health, property, organization, environment, or community as a result of an event, activity or operation. For the purposes of the Fire Risk Sub-model, such an event refers to a fire incident along with the effects of heat, smoke and toxicity threats generated from an incident*".[2]

The O.F.M.E.M. model develops an overall risk assessment by "*assigning probability and consequence levels to potential adverse events or scenarios due to fire and combining the two to arrive at an overall risk level.*" The Sub-model also provides a matrix as one option in arriving at the level of risk for a range of scenarios.

At a high level, there are four steps included in the risk assignment exercise used for this study:

1. Determine a probability level to assign to each event;
2. Determine a consequence level to assign to each event; and
3. Establish the risk level (e.g., numerical value / location on the matrix) and risk category (e.g., low, moderate or high) for each based on the identified probability and consequence for each event.
4. Develop a G.I.S. risk model based on the Risk Level/Category

Further detail is presented in the subsequent sections.

2.2.1   Probability Levels

The first step to identifying a risk level is to assign probability. The probability of a fire or emergency event occurring can be estimated in part based on historical experience of the community, similar communities, and that of the province as a whole. The application of broader risk management industry best practices is also a key element in assigning probability levels.

The O.F.M.E.M. Fire Risk Sub-model categorizes the probability of an event occurring into five levels of likelihood, and provides descriptions for each probability level. These are shown in **Table 2.** The numerical weighted value assigned to the probability level has been adjusted from the O.F.M.E.M. values to reflect broader risk management industry best practices. Similarly, the descriptions for each

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[2]Source: "Comprehensive Fire Safety Effectiveness Model." O.F.M.E.M., Last Modified: February 8, 2016: https://www.M.C.S.C.S..jus.gov.on.ca/english/FireMarshal/FireServiceResources/ComprehensiveFireSafetyEffectivenessModel/FireRiskSub-Model/Fire_risk_submodel.html

probability level reflect the basis of O.F.M.E.M. descriptions; however they have been adjusted based on risk management industry best practices and definition of the adjusted probability values presented.

Value Adjusted

In principle, the scoring system should have equal distribution of importance when evaluating risk, therefore the values chosen should reflect it. In this case, we use 10 as the measure of importance. Mathematically, Risk is typically calculated as (likelihood) x (consequence). Please refer to Note 4 under s.2.1 Terms and Definition of risk in CAN/CSA ISO31000 (2015) Risk Management – principles and guidelines. Using a five-step scale and defining it by 1,2,3,4,5 indicates there is an increasing level of importance between the categories of "rare" and "almost certain". For example, moving from "rare" and "unlikely" or "1" and "2" implies a 100% increase in the level of importance (2-1)/1 equals 1 (100%). However, going from "unlikely" to "possible" or (3-2)/2 equals 0.5 or a 50% increase in the level of importance. Moving from "likely" to "almost certain" or (5-4)/4 equals 0.25 (25%) increase in level of importance. This means that less frequent/lower consequence events are more important than more frequent/higher consequence events. Therefore, the value has been adjusted to communicate a more accurate depiction of the level of importance of an event. In principle, the scoring system should have equal distribution of importance when evaluating the risk, therefore, the values chosen should reflect it.

Table 2: Probability Levels

Likelihood Category	Value (O.F.M.E.M.)	Value (Adjusted)	Description (Adjusted from O.F.M.E.M.)
Rare	*1*	1	• May occur in exceptional circumstances • No incidents in past 25 years
Unlikely	*2*	10	• Could occur at some time, especially if circumstances change • At least one incident in past 10 years
Possible	*3*	100	• Might occur under current circumstances • Occurs annually on average (1 to 5 incidents in past year)
Likely	*4*	1,000	• Will probably occur at some time under current circumstances • Multiple or reoccurring incidents in the past year • May occur monthly (10 to 50 incidents per year)
Almost Certain	*5*	10,000	• Expected to occur in most circumstances unless circumstances change • Multiple or reoccurring incidents in the past year • May occur weekly or daily (more than 50 per year)[3]

[3] Source: "Comprehensive Fire Safety Effectiveness Model." O.F.M.E.M., last modified February 8, 2016: https://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/ComprehensiveFireSafetyEffectivenessModel/FireRiskSub-Model/Fire_risk_submodel.html

2.2.2 **Consequence Levels**

The second step to identifying risk levels is to assign a consequence level. The consequences as a result of an emergency event relates to the potential losses or negative outcomes associated with the incident. The Fire Risk Sub-model identifies four components that should be evaluated in terms of assessing consequence. These include:

1. *Life Safety:* Injuries or loss of life due to occupant and firefighter exposure to life threatening fire or other situations.
2. *Property Loss:* Monetary losses relating to private and public buildings, property content, irreplaceable assets, significant historic/symbolic landmarks and critical infrastructure due to fire.
3. *Economic Impact:* Monetary losses associated with property income, business closures, downturn in tourism, tax assessment value and employment layoffs due to fire.
4. *Environmental Impact:* Harm to human and non-human (i.e. wildlife, fish and vegetation) species of life and general decline in quality of life within the community due to air/water/soil contamination as a result of fire or fire suppression activities.

The O.F.M.E.M. Fire Risk Sub-model evaluates the consequences of an event based on five levels of severity. The description and definition of each consequence level from the Fire Risk Sub-model are shown in **Table 3**. Similar to the probability levels, the numerical weighted value assigned to the identified consequence levels have been revised from the O.F.M.E.M. values to reflect broader risk management industry practices for assigning risk levels. The O.F.M.E.M. definitions are used for each consequence level.

Table 3: Consequence Levels

Consequence Category	*Value (O.F.M.E.M.)*	Value (Adjusted)	Description (O.F.M.E.M.)
Insignificant	*1*	1	• No life safety issue • Limited valued or no property loss • No impact to local economy and/or • No effect on general living conditions
Minor	*2*	10	• Potential risk[4] to life safety of occupants • Minor property loss • Minimal disruption to business activity and/or

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[4] Source: "Comprehensive Fire Safety Effectiveness Model." O.F.M.E.M., last modified February 8, 2016: https://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/ComprehensiveFireSafetyEffectivenessModel/Fire RiskSub-Model/Fire_risk_submodel.html "*Risk is defined as a measure of the probability and consequence of an adverse effect to health, property, organization, environment, or community as a result of an event, activity or operation. For the purposes of the Fire Risk Sub-model, such an event refers to a fire incident along with the effects of heat, smoke and toxicity threats generated from the incident. Low Risk Priority Level 1 (L1)-manage by routine programs and procedures, maintain risk monitoring; Moderate Risk Priority Level 2 (L2)-requires specific allocation of management responsibility including monitoring and response procedures; High Risk Priority Level 3 (L3)-community threat, senior management attention needed; Extreme Risk Priority Level 4 (L4)-serious threat, detailed research and management planning required at senior levels*

Consequence Category	*Value (O.F.M.E.M.)*	**Value (Adjusted)**	Description (O.F.M.E.M.)
			• Minimal impact on general living conditions
Moderate	*3*	100	• Threat to life safety of occupants • Moderate property loss • Poses threat to small local businesses and/or • Could pose threat to quality of the environment
Major	*4*	1,000	• Potential for large loss of life • Would result in significant property damage • Significant threat to businesses, local economy, and tourism and/or • Impact to environment would result in a short term, partial evacuation of local residents and businesses
Catastrophic	*5*	10,000	• Significant loss of life • Multiple property damage to significant portion of the municipality • Long term disruption of businesses, local employment, and tourism and/or • Environmental damage that would result in long-term evacuation of local residents and businesses[5]

2.2.3 Risk Matrix and Risk Levels

Once probability and consequence are determined for each major occupancy classification the level of risk is calculated by multiplying the numerical values for probability and consequence. The risk level is then attributed to a risk category.

Figure 3: Generic Risk Matrix

The relationship between probability and consequence as it pertains to risk levels can be illustrated in a risk matrix. Risk matrices typically demarcate different levels of risk along a 45-degree angle, as **Figure 3** illustrates. Probability and consequence are each defined on separate scales with varying descriptors providing direction on how to assign the probability and consequence of an event. While these descriptors will vary, probability and consequence must use the same logarithmic numeric scale, to reflect the fact that they are equally important. It is human tendency to place a higher weight on consequence than on probability, but robust risk analysis methods value probability and consequence equally.

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[5] Source: "Comprehensive Fire Safety Effectiveness Model." O.F.M.E.M., last modified February 8, 2016: https://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/ComprehensiveFireSafetyEffectivenessModel/FireRiskSub-Model/Fire_risk_submodel.html

The 2019 edition of N.F.P.A. 1730: Standard on Organization of Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation and Public Education Operations identifies three risk categories, namely: low risk occupancies, moderate risk occupancies and high risk occupancies. The risk categories are defined as follows:

- **Low risk occupancy**: An occupancy that has a history of low frequency of fires and minimal potential for loss of life or economic loss.
- **Moderate risk occupancy**: An occupancy that has a history of moderate frequency of fires or a moderate potential for loss of life or economic loss.
- **High risk occupancy**: An occupancy that has a history of high frequency of fires, high potential for loss of life or economic loss, or that has a low or moderate history of fires or loss of life but the occupants have a high dependency on the built in fire protection features of staff to assist in evacuation during a fire of other emergency.[6]

Comparatively, the O.F.M.E.M. Fire Risk Sub-Model identifies four risk categories (low, moderate, high, and extreme). This study makes use of the risk categories identified in N.F.P.A. 1730 and the descriptions for each risk category provided in the O.F.M.E.M. Fire Risk Sub-Model. **Table 4** shows the risk matrix for this C.R.A. As mentioned, the numerical values have been adjusted from those proposed in the O.F.M.E.M. Fire Risk Sub-Model to reflect industry best practices.

[6] Source: N.F.P.A. 1730: Standard on Organization and Deployment of Fire Prevention inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations, Accessed November 27, 2018. https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1730

Table 4: Risk Matrix

Consequence		Insignificant	Minor	Moderate	Major	Catastrophic
Probability		*1*	*10*	*100*	*1,000*	*10,000*
Almost Certain	*10,000*	10,000	100,000	1,000,000	10,000,000	100,000,000
Likely	*1,000*	1,000	10,000	100,000	1,000,000	10,000,000
Possible	*100*	100	1,000	10,000	100,000	1,000,000
Unlikely	*10*	10	100	1,000	10,000	100,000
Rare	*1*	1	10	100	1,000	10,000

Risk Category	Definition (O.F.M.E.M.)
Low Risk	• Manage by routine programs and procedures • Maintain risk monitoring
Moderate Risk	• Requires specific allocation of management responsibility including monitoring and response procedures
High Risk*	• Community threat, senior management attention needed • Serious threat, detailed research and management planning required at senior levels

* Note: The O.F.M.E.M. descriptions for High Risk and Extreme Risk have been combined. NFPA 1730 does not use the Extreme Risk category.

3.0 | Geographic Profile

As referenced in O. Reg. 378/18 : Community Risk Assessments, the geographic profile assessment includes analysis of the physical features of the community, including the nature and placement of features such as highways, waterways, railways, canyons, bridges, landforms and wildland-urban interfaces. These physical features may present inherent risks or potentially have an impact on fire department access or response time. The following sections consider these geographic characteristics within the Town.

3.1 | Geographic Snapshot of Milton

The Town is one of four municipalities that make up the Regional Municipality of Halton. Milton is centrally located within the region, surrounded by the City of Burlington, the Town of Oakville, and the Town of Halton Hills as displayed in **Figure 4**.

CITY OF GUELPH

TOWNSHIP OF GUELPH/ERAMOSA

TOWN OF ERIN

SIDEROAD 32

TRAFALGAR ROAD

3RD LINE

4TH LINE

7

TOWN OF CALEDON

GUELPH LINE

TOWN OF HALTON HILLS

SIDEROAD 22

SIDEROAD 20

SIDEROAD 17

SIDEROAD 15

TRAFALGAR ROAD

9TH LINE

7

TOWNSHIP OF PUSLINCH

SIDEROAD 10

TOWN OF MILTON

REGIONAL ROAD 25

CITY OF BRAMPTON

401

CAMPBELLVILLE ROAD

TREMAINE ROAD

STEELES AVENUE

401

MAIN STREET

DERRY ROAD

407 ETR

DERRY ROAD

APPLEBY LINE

TREMAINE ROAD

BRITANNIA ROAD

CITY OF HAMILTON

CITY OF MISSISSAUGA

CITY OF BURLINGTON

407 ETR

CEDAR SPRINGS ROAD

DUNDAS STREET WEST

TOWN OF OAKVILLE

9TH LINE

BRANT STREET

407 ETR

BURLOAK DRIVE

BRONTE ROAD

3RD LINE

8TH LINE

QEW

WATERDOWN ROAD

UPPER MIDDLE ROAD

QEW

6TH LINE

CORNWALL ROAD

403

FAIRVIEW STREET

SPEERS ROAD

LAKESHORE ROAD EAST

QEW

NEW STREET

REBECCA STREET

LAKESHORE ROAD

Lake Ontario

TOWN OF MILTON

HALTON REGION
FIGURE 4

	Town of Milton		Local Roads
	Halton Region		Arterial Roads
	Waterbody		Highway

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF

MAP CREATED BY: SFG
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N

0 0.5 1   2 km

1:130,000

PROJECT: 188072   STATUS: DRAFT   DATE: 2018-10-03

File Location: G:\cad\GIS\188072\Mapping\Town of Milton.mxd

Milton is a mix of urban, rural and natural environment areas on the edge of the Greater Toronto Area (G.T.A.). The Town consists of a distinct urban area and rural areas, which are defined in the Official Plan. **Figure 5** shows the urban area of Milton. This area is characterized by single family residential development, commercial development along key corridors and the downtown core of Milton. As shown in **Figure 6**, the rural area encompasses all lands outside of the urban area which is "comprised of farms, natural areas, quarry operations, estate residential development and the hamlets of Campbellville, Brookville and Moffat".[7] In Campbellville, the Woodbine Mohawk Park is a large attraction for live horse racing.

A portion of the Niagara Escarpment, a U.N.E.S.C.O. World Biosphere region, bisects Milton on the west side of the urban area. This area is managed by the Niagara Area Escarpment Commission, which was established in 1973 under the Niagara Escarpment Planning and Development Act.[8] The Commission is made up of elected officials from member counties and regions, responsible for development permits and land use decisions in the Niagara Escarpment Plan Area. The Niagara Escarpment is a large tourism draw for the municipality.

The geographic area of the Town represents a fire suppression response area of over 363 km2. This geographic area includes unique elements such as the Niagara Escarpment and the Highway 401 corridor that can impact emergency response travel times. A large portion of the existing residential population is located in the central/southern urban area of the Town. The existing fire suppression services are provided to the southern urban geographic area and residential population from three fire stations located within the urban area. In areas of the municipality outside of the defined urban area the delivery of fire suppression services can be impacted by longer travel distances as a result of the size of the geographic area.

This can result in fire suppression resources having longer response times in rural areas. In summary, this analysis identifies a key finding that indicates that there can be longer emergency response times for fire suppression services as a result of the size of the geographical area and other geographical elements within the Town.

Estate residential developments in the hamlets of Campbellville, Brookville and Moffat, and other rural residences may experience extended emergency response times.

Key Finding: *There can be longer emergency response times for fire suppression services in rural areas as a result of the size of the geographical area and other geographical elements within the Town.*

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[7] Town of Milton Official Plan pg 8-9 https://www.milton.ca/en/build/resources/officialplan-text.pdf
[8] Niagara Escarpment Commission. About Us, https://www.escarpment.org/Commission/AboutUs retrieved September 12, 2018.

Figure 5: Town of Milton Urban Area
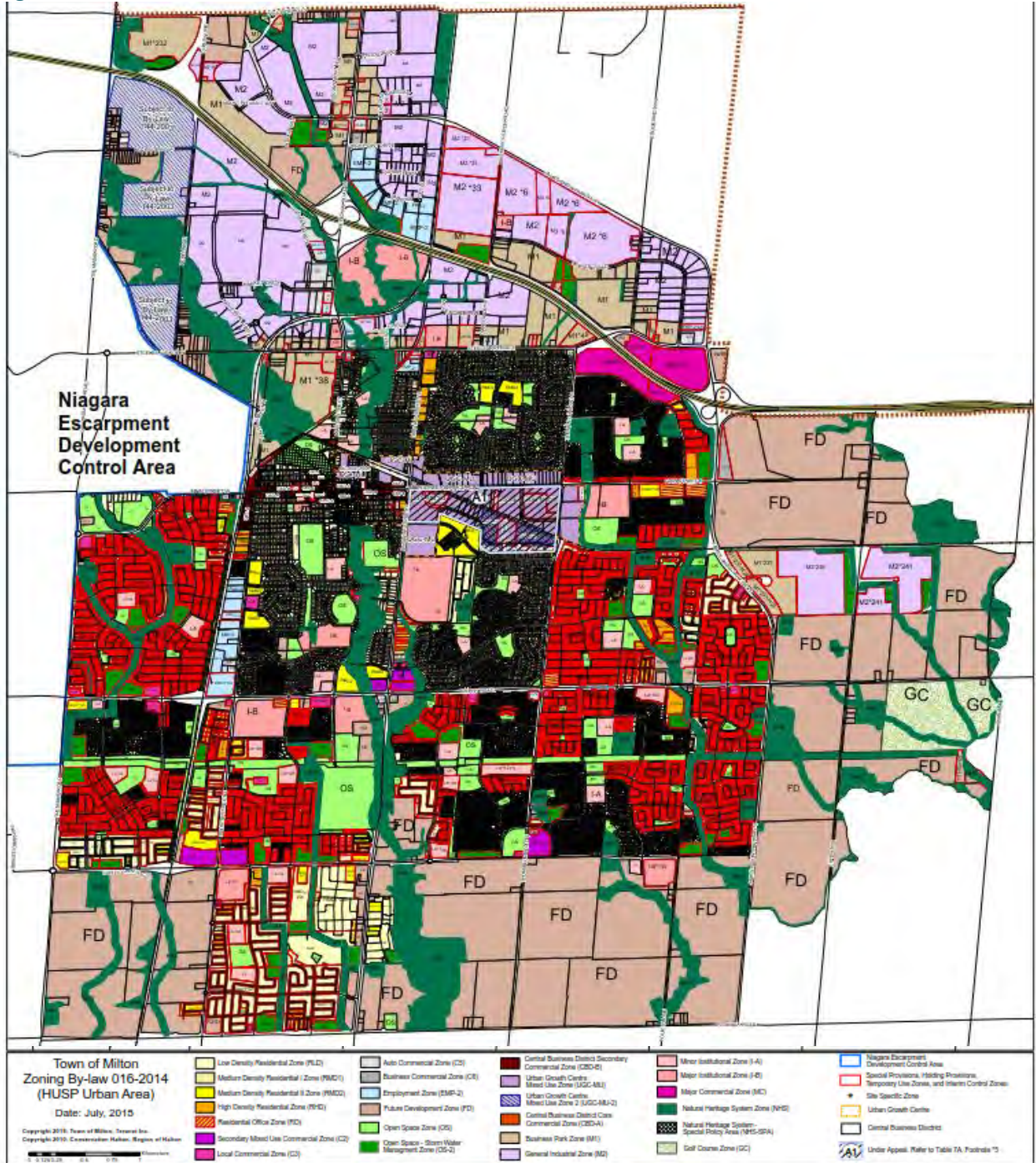
(*Source: Town of Milton – Zoning By-law*)

Figure 6: Town of Milton Rural Area
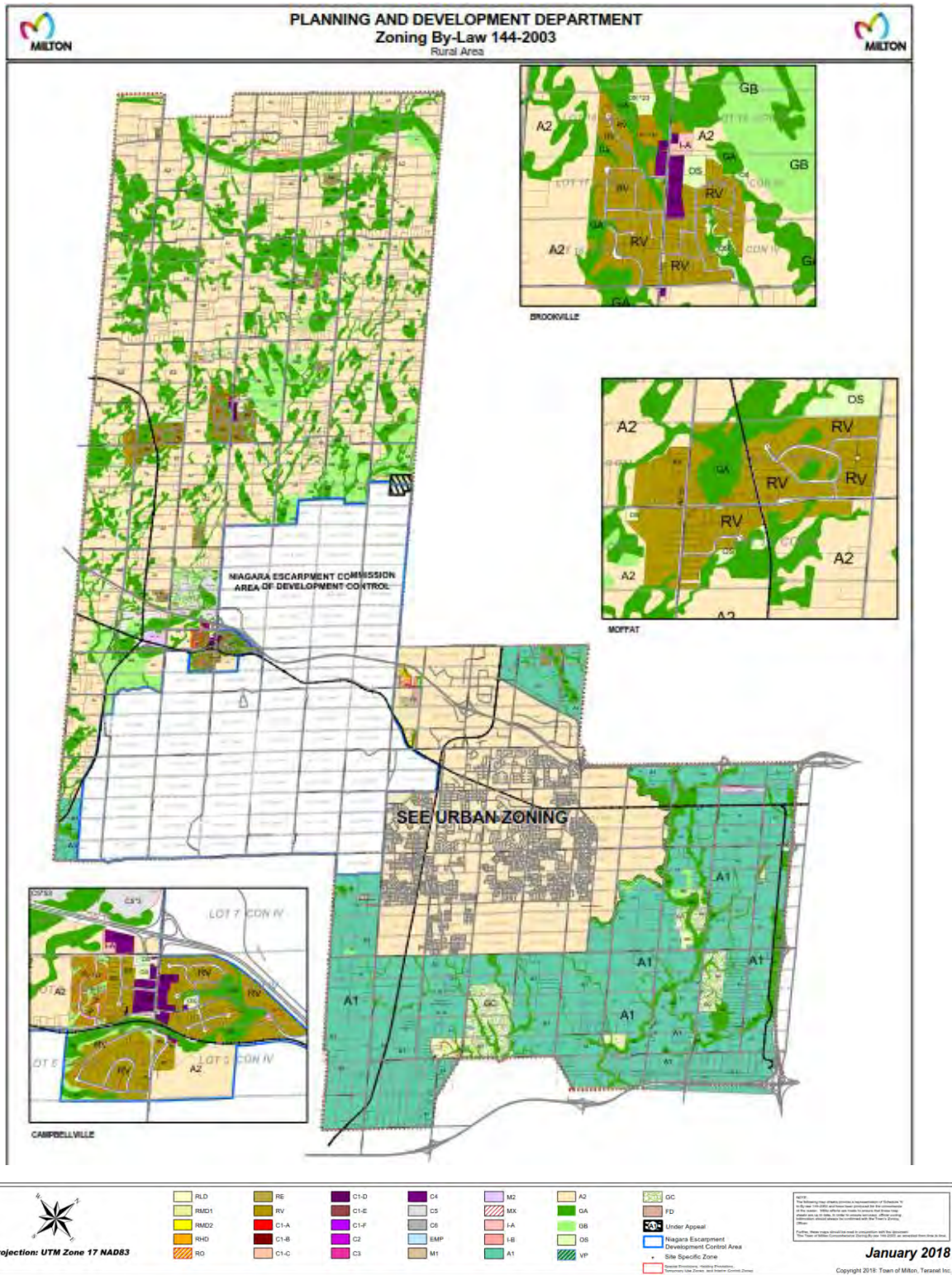
(Source: Town of Milton– Zoning By-law)

Road Network

The road network in a municipality is essential for fire service access during emergencies. Milton's road network is well-laid out in the urban area, with older neighbourhoods having a modified grid network and newer neighbourhoods having a curvilinear pattern. The rural road network is typical for concessions spaced out around agricultural activity and hamlets.

Milton has two major highways, namely the 401 and the 407 E.T.R. The 407 E.T.R. forms the eastern and a portion of the southern border of the municipality. Both highways have very high daily traffic volumes. These are vital commuter corridors as well as trade routes to move goods across the country to markets. The average daily traffic for Highway 401 in Halton Region is approximately 118,000 to 175,000 vehicles per day.[9] Heavy vehicle volume may increase the number of motor vehicle collisions which Milton Fire responds to. In addition, trucks carrying potentially hazardous materials which, if spilled or released, may impact public safety and affect emergency response.

Highway 401 bisects the municipality and limits access to the northern portion of the municipality. There are four interchanges for Highway 401 in Milton and three interchanges for the 407 E.T.R. in Milton. Highway 401 interchanges providing access to the northern portion of the municipality include Guelph Line, Martin Street, James Snow Parkway and Trafalgar Road. In addition to the interchanges, there are four overpasses and three underpasses, which connect Milton north of the 401:

- First Line Nassagaweya (Overpass);
- Campbell Avenue East (Underpass);
- Appleby Line (Underpass);
- Tremaine Road (Overpass);
- Steeles Avenue East (Overpass);
- Fifth line (Border - Underpass); and
- Sixth Line (Border – Overpass).

There are a number of key arterial roadways within the municipality that provide connections to the neighbouring municipalities. The existing road network of arterial, collector and local roads, including those located in the rural area of the community; reflect that of a typical Ontario community with a mix of urban and rural cross sections and a grid pattern. As development continues in and around the Town, traffic congestion will become an increasingly significant consideration from the perspective of providing emergency response.

Provincial Highway 401 bisects the Town from east to west providing the primary connection between Windsor and Toronto. Incidents occurring on Highway 401 can result in traffic being diverted onto the

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[9] Ontario. Ontario Widening Highway 401 in Mississauga and Milton. Province Creating Jobs and Keeping People and Goods Moving Through the GTA. https://news.ontario.ca/mto/en/2018/03/ontario-widening-highway-401-in-mississauga-and-milton.html date accessed September 13, 2018

regional and municipal road network causing further congestion within the Town. The result can be a delay in emergency response times both within the urban and rural areas as well as responses onto the highway.

Key Finding: As development continues in and around the Town, traffic congestion will become an increasingly significant consideration from the perspective of providing emergency response.

Key Finding: Incidents on Highway 401 can cause increased traffic congestion resulting in longer response times both on the highway and within the Town.

3.3 Railways

Railways are considered within a C.R.A. for two primary considerations: potential impact on emergency response times due to at-grade crossings; and potential risk of an emergency incident related to rail lines as a result of a derailment, which may include hazardous materials spill or release.

There are two mainline railway corridors that travel through the municipality. Canadian Pacific owns the east – west corridor, called the Galt Subdivision. Canadian National owns the north – south corridor called the Halton Subdivision. There are also a few rail spurs within Milton, north of the urban area, which service the logistics and commercial facilities adjacent to the 401.

On the western border of Milton the Hamilton Subdivision, owned by Canadian Pacific, turns into the Goderich Subdivision, owned by Guelph Junction Railway, north of Guelph Junction. A small portion of the Goderich Subdivision exists within in the Town of Milton.

In addition to freight rail service, G.O. Transit provides passenger service along the Galt Subdivision.

At-grade rail crossings (an intersection at which a road crosses a rail line at the same level) can create delays in emergency response by inhibiting emergency response vehicles and apparatus from accessing a road. Most of the rail-crossings within the urban area of Milton are grade separated, allowing traffic to flow regardless of train activity and therefore would not have an impact on fire department response times.

In rural areas, where traffic volumes are lower and roads are dispersed over larger areas, there is less need for grade separated infrastructure, requiring vehicles to wait for the train to pass or choosing an alternative route. This can impact response times negatively in stations staffed by part-time firefighters who travel to the station to board a fire apparatus prior to reporting to an emergency incident. Fire response vehicles may also be required to take alternative routes to an emergency incident extending the overall response time. Nineteen at-grade rail crossings have been identified throughout the Town. **Table 5** shows the crossings associated with each subdivision.

Table 5: At-Grade Rail Crossings Milton

Galt Subdivision	Halton Subdivision	Goderich Subdivision
Martin Street	Tremaine Road	Conservation Road
Bronte Street North	Lower Base Line	Side Road 3
Steeles Avenue West	Britannia Road	Campbellville Road
Appleby Line	5 Sideroad	Side Road 10
Canyon Road		15 Side Road
Main Street South		First Line Nassagaweya
Campellville Ave West		
Twiss Road		
First Line Nassagaweya		

Key Finding: *At-grade rail crossings can negatively impact part-time firefighters responding to the fire station as well as the response of apparatus particularly in the rural area.*

3.4   Bridges

Bridges are considered within a C.R.A. because of two main considerations: potential for crossing restrictions due to weight; and potential for impact on network connectivity if a bridge were to be out of service.

While the key interchanges, overpasses and underpasses were described under the road network section as well as the rail section, bridges also have to be evaluated for any potential weight restrictions. Based on desktop research, there does not appear to be any weight restrictions on bridges that would impact fire apparatus. In addition, there appear to be numerous access routes to the majority of the urban area therefore, an unforeseen bridge closure could be avoided with minimal impact to response.

3.5   Waterways and Conservation Areas

Waterways (creeks and lakes) and Conservation Areas are important from a community risk perspective as they may be popular destinations for recreational activities. There will also be natural hazards such as flooding associated with waterways. The Town of Milton completes Road and Bridge Needs Studies every two years as part of its overall roads and infrastructure management program, which considers all town owned infrastructure including roads and bridges.[10]

3.5.1   Waterways

Most of the urban area in Milton is located in the Sixteen Mile Creek Watershed. Sixteen Mile Creek runs north - south through Milton eventually draining into Lake Ontario. Bronte Creek (also known as Twelve Mile Creek), is just outside the south western boundary of the municipality; however, some

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[10] Town of Milton website. https://www.milton.ca/en/live/roads.asp?_mid_=5840 Accessed November 28, 2018.

small creeks act as tributaries in this watershed. The water in the Sixteen Mile Creek watershed is controlled by the Kelso Dam and Reservoir, which was completed in 1964 to control flooding, augment stream flows during times of low flow and to divert floodwater from flood prone areas within the Town.[11] North of the escarpment, there are a few small tributaries including Blue Springs Creek which drains into the Grand River system.

Repairs and infrastructure improvements to the Kelso Dam commenced in 2018. The first phase of the project, which included upgrades to the emergency spillway are now complete. The second phase of the project is expected to be complete by early 2019.[12]

There are some small lakes and waterbodies; however, most are captured within Conservation Areas and are discussed in the following section of this report. North of downtown Milton is Mill Pond, a popular fishing spot during the summer.

3.5.2   **Conservation Areas**

Milton has five designated Conservation Areas within its municipal boundaries, which are highlighted in **Table 6** below. In addition to the Conservation Areas, outdoor enthusiasts come through the area on the Bruce Trail, which is Canada's oldest and longest marked footpath.[13] The Conservation Areas each have access points near roadways; however, the trail networks can be diverse which could necessitate specialized rescue or medical response for injuries as the result of people on the trails.

Table 6: Conservation Areas in Milton

Conservation Area	Activities
Kelso Conservation Area	• Camping • Picnicking • Mountain biking • Downhill skilling • Swimming • Paddling
Rattlesnake Point Conservation Area	• Rock climbing • Camping • Hiking
Crawford Lake Conservation Area	• Hiking
Robert Edmondson Conservation Area	• Hiking • Picnicking • Fishing

[11] Conservation Halton. Our History. Historical Timeline. https://www.conservationhalton.ca/our-history date accessed September 13, 2018.
[12] Conversation Halton. Kelso Dam Construction. https://www.conservationhalton.ca/kelso-dam-construction. Accessed November 28, 2018.
[13] Bruce Trail Conservancy, About Us., https://brucetrail.org/pages/about-us

Conservation Area	Activities
Hilton Falls Conservation Area	- Waterfalls viewing - Fishing - Hiking

Key Finding: There are several conservation areas located within the Town that present varying types and levels of risk associated with residents and visitors participating in activities such as rock climbing, hiking and swimming/boating.

3.6   Topography

The topography of Milton is influenced dramatically by the Niagara Escarpment, which runs diagonally on a north-south axis through the Town. The escarpment results in a rise of elevation of approximately 107 metres from the south-east glacial plain.[14] The escarpment includes bluffs and streams which flow to Lake Ontario. On either side of the escarpment, the lands are relatively flat and marked by extensive agricultural activity.

3.7   Wildland-Urban Interface

N.F.P.A. 1730 identifies wildland-urban interface as geography-based risk for consideration. This interface refers to the area of transition between unoccupied land and human development. This transition area can be comprised of a mix of woodlots, bush or grass.

Milton has a mix of woodland areas as well as grasslands on the lower slopes of the escarpment. Emergency incidents could include forest fires or grass fires. The department should understand the risks associated with the wildland-urban interface in Milton. Based on this risk, M.F.D. should consider appropriate training of personnel and be aware of the potential challenges faced by emergency vehicles, equipment and personnel being able to access this type of fire.

Key Finding: Milton has a mix of woodland areas as well as grasslands on the lower slopes of the escarpment. Emergency incidents might include bush fires or grass fires.

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[14] Town of Milton Official Plan pg. 11 https://www.milton.ca/en/build/resources/officialplan-text.pdf

4.0 | Building Stock Profile

As referenced in O. Reg. 378/18: Community Risk Assessments, the building stock profile assessment includes analysis of the types and uses of the building stock of the 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 or uses of buildings given the presence or absence of fire safety systems and equipment at time of construction and maintenance thereafter. This section considers these building characteristics within the Town.

4.1 | Ontario Building Code (O.B.C.) Occupancy Classifications

The Ontario Building Code (O.B.C.) categorizes buildings by their major occupancy classifications. Each classification has definitions that distinguish it from other occupancy classifications. Utilizing the O.B.C. as the source for defining the occupancy classifications provides a recognized definition and baseline for developing the community risk profile.

The O.B.C. is divided into six major building occupancy classifications (groups). Within each group the occupancies are furthered defined by division. The O.B.C. major classification groups and divisions are presented in **Table 7.**

Table 7: O.B.C. Major Occupancy Classification

Group	Division	Description of Major Occupancies
Group A	1	*Assembly occupancies intended for the production and viewing of the performing arts*
	2	*Assembly occupancies not elsewhere classified in Group A*
	3	*Assembly occupancies of the arena type*
	4	*Assembly occupancies in which occupants are gathered in the open air*
Group B	1	*Detention occupancies*
	2	*Care and treatment occupancies*
	3	*Care occupancies*
Group C	---	*Residential occupancies*
Group D	---	*Business and personal services occupancies*
Group E	---	*Mercantile occupancies*

Group	Division	Description of Major Occupancies
Group F	1	*High-hazard industrial occupancies*
	2	*Medium-hazard industrial occupancies*
	3	*Low-hazard industrial occupancies*
Source: Ontario Building Code, 2012		

The Fire Risk Sub-model developed by the O.F.M.E.M. utilizes the major group classifications (i.e. Group A, B, C, D, E, F), but does not use the detailed division classifications provided for the respective occupancy groups. This strategy provides the ability to assess property stock within a community comparatively by major occupancy groups, thus providing a consistent and recognized definition for each major occupancy type. Where necessary, this strategy provides the opportunity for further analysis of a specific occupancy group. Subject to any site specific hazards or concerns, occupancies within this group can be assessed individually and then included where required within the scope of the broader C.R.A.

Table 8 and the discussion that follows describe the major occupancy groups used within these C.R.A. Definitions of the major occupancies from the O.B.C. are provided. The typical type of risk related to these occupancies and the potential proactive measures to reduce risk are also introduced.

All occupancies have unique risks based on their occupancy classification group. Within the groups, the buildings themselves can also be very different. For Group C - Residential occupancies, there are many types of buildings that can meet this description, each presenting its own unique risks - for example, mobile homes/travel trailers versus a single-detached dwelling. Consideration also needs to be given to high-rise residential occupancies which represent unique risk and operational challenges.

Group D – Business and Personal Services occupancies can also be located in different types of buildings, such as remodeled single-family dwellings, low-rise and high-rise buildings. Each of these building types can present different risks, including egress for firefighting operations and evacuation by occupants. Group E – Mercantile occupancies also present varied risks depending on the type of building which houses them. They range in size and potential risk from smaller neighbourhood corner stores to the large "big box" industrial style buildings. Large volumes of combustibles may be present in all forms of mercantile and business and personal services occupancies. Within the fire service, these two occupancy types are often considered together as "commercial uses."

While building variation applies within Group B – Care or Detention occupancies, the important consideration in this case is the nature of the occupancy. Such occupancies are for individuals that require special care or treatment due to cognitive or physical limitations. These occupancies could also be for individuals who are incapable of self-evacuation in the event of an emergency due to restraint. Regardless of the type of building Group B – Care or Detention occupancies inhabit, this critical aspect of risk remains the same.

Table 8: O.B.C. Major Occupancy Classification

O.B.C. Major Occupancy Classification	Division	Description of Major Occupancies	O.B.C. Definition	Occupancy Risks	Proactive Measures for Reducing Risk
Group A - Assembly	1	Assembly occupancies intended for the production and viewing of the performing arts	The occupancy or the use of a building or part of a building by a gathering of persons for civic, political, travel, religious, social, educational, recreational or similar purposes or for the consumption of food or drink.	• Overcrowding by patrons • Lack of patron familiarity with emergency exit locations and procedures • Insufficient staff training in emergency procedures • Large quantities of combustible furnishings and decorations • Where alcohol is served, possibility of impairment which could slow exit • Loud performances may lead to delayed notification in the event of fire alarm	• Regular fire prevention inspection cycles • Automatic fire detection and monitoring systems • Approved fire safety plan and staff training • Pre-planning by fire suppression staff
	2	Assembly occupancies not elsewhere classified in Group A			
	3	Assembly occupancies of the arena type			
	4	Assembly occupancies in which occupants are gathered in the open air			
Group B - Care or Detention	1	Detention occupancies	The occupancy or use of a building or part thereof by persons who; are dependent on others to release security devices to permit exit; receive special care and treatment; or receive supervisory care.	• Inability to evacuate or relocate patients • Presence of flammable/combustible gases (ie. Oxygen) • Insufficient staff • Insufficient staff training • Vulnerable occupants using overnight accommodations (sleeping) • Vulnerable occupants may be unable to evacuate without assistance • Evacuation may be delayed due to cognitive, physical limitations or the use of sleep aids • Combustible furnishings	• Regular fire prevention inspection cycles • Automatic fire detection and monitoring systems • Approved Fire Safety Plan and staff training • Pre-planning by fire suppression staff
	2	Care and treatment occupancies			
	3	Care occupancies			
Group C - Residential	-	Residential occupancies	An occupancy that is used by persons for whom sleeping accommodation is provided but who are not harboured or detained there to receive medical care or treatment or who are not involuntarily detained there.	• Overnight accommodation (sleeping) • Combustible furnishings • Secondary units (basement apartments) • High population density • Human behaviour (cooking, use of candles, smoking, alcohol, hoarding, etc.) • Delayed detection due to improper placement, lack of maintenance or missing smoke alarms	• Home smoke alarm programs • Public education programming including home escape planning • Retro-fit and compliance inspection cycles for OFC compliance • Pre-planning by fire suppression staff

O.B.C. Major Occupancy Classification	Division	Description of Major Occupancies	O.B.C. Definition	Occupancy Risks	Proactive Measures for Reducing Risk
Group D - Business and Personal Services	-	Business and personal services occupancies	An occupancy that is used for the transaction of business or the provision of professional or personal services.	• High volume of occupants • High combustible loading • Specialized equipment utilizing high risk substances such as radiation • Consumers unfamiliar with emergency exits and procedures	• Regular fire prevention inspection cycles to maintain OFC compliance • Targeted fire prevention inspections for OFC retro-fit compliance • Staff training in fire prevention and evacuation procedures • Public education programs • Pre-planning by fire suppression staff
Group E - Mercantile	-	Mercantile occupancies	An occupancy that is used for the displaying or selling of retail goods, wares, and merchandise.	• High volume of occupants/staff • High volume of combustible loading/high rack storage • Exit facilities blocked with merchandise • Lack of occupant familiarity with emergency exit locations and procedures • Size of building	• Regular fire prevention inspection cycles • Automatic fire detection and monitoring systems • Approved Fire Safety Plan and staff training • Pre-planning by fire suppression staff
Group F- Industrial	1	High-hazard industrial occupancies	An occupancy that is used for the assembly, fabrication, manufacturing, processing, repairing or storing of goods and materials	• Large dollar loss as a result of a major fire • Economic loss in the event of plant shut downs and job loss • Environmental impacts • Presence of ignition sources related to processing activities • Poor housekeeping and maintenance of equipment • Insufficient staff training • Improper use of equipment	Regular fire prevention inspection cycles Staff training in fire prevention and evacuation Public education Pre-planning by fire suppression staff Installation of early detection systems (smoke alarms, heat detectors) Installation of automatic sprinkler systems
	2	Medium-hazard industrial occupancies			
	3	Low-hazard industrial occupancies			

As shown in **Table 8,** the Group F – Industrial occupancy group is divided into low-hazard (Division 3), medium-hazard (Division 2) and high-hazard (Division 1) based on the combustible and/or flammable or explosive materials present and the potential for rapid fire growth. The potential for major fires within this occupancy type is related to the high levels of combustibles and/or flammable or explosive materials used in the manufacturing process and present in storage.

In addition to the six major occupancy classifications, there are other occupancies and features that should be considered as part of developing the C.R.A. These include occupancies that may not be regulated or classified under the O.B.C. and the O.F.C. or they may fall under federal jurisdiction. Farm buildings, for example are regulated by the National Farm Building Code of Canada (N.F.B.C.) 1995, in conjunction with the O.F.C.

There are a number of farm buildings identified within the Town's building stock, including a number of horse barns. Regardless of their building classification, these buildings present unique challenges, including the storage of hay and straw and other combustible fuel load, roof truss span and strength, building materials, large wall openings and floor spaces. Research indicates a number of highly publicized barn fires have occurred in and around the Town within the past few years. These fires have unfortunately resulted in the loss of animal lives. Although no human lives were lost in these fires, the impact has been reported as devastating within the community, including those involved with Woodbine Mohawk Park, located within the Town.

A further issue related to farm buildings is the renovation and use of barns as event venues to host large numbers of people for weddings and other celebrations. In cases where a Change of Use Permit is obtained, these renovations will include proper fire protection systems to accommodate the change in intended use from farm building to assembly occupancy, including upgrades to emergency and exit lighting, development of a fire safety plan, removal of unnecessary combustible materials, etc. in compliance with the O.B.C. and the O.F.C., addressing the increased level of hazard present due to the change in use. Without a Change of Use permit however, the building may place those attending the venue at increased risk as the building was designed to house animals and store farm commodities, not accommodate large numbers of people. Although issues associated with the use of farm buildings for assembly purposes have been highly publicized and challenging in other jurisdictions throughout the Province, to date the Milton Fire Department has not been made aware of an instances within the Town.

4.2 Town of Milton Property Stock by Major Occupancy Classification

A summary of the Town's property stock by major occupancy classification is provided in **Table 9**. The majority of Milton's property stock is comprised of Group C- Residential (94.72%) with 34,234 residential dwellings overall. The second largest major occupancy type (classified within the O.B.C.) is Group F - Industrial at 535 industrial occupancies. Group D – Business accounts for 0.32% of the Town's total

building stock and there are a small number of Group A – assembly (0.37%), Group B – Care or Detention (9 total) and Group E – Mercantile (0.23%) occupancies.

Table 9: Town of Milton Building Stock

Occupancy Classification (O.B.C.)	Occupancy Definition Fire Risk Sub-model (O.F.M.E.M.)	Number of Occupancies	Percentage of Occupancies
Group A – Assembly	Assembly occupancies	132	0.37%
Group B – Care or Detention	Care or Detention occupancies	9	0.02%
Group C – Residential	Single Family	34,234	94.72%
	Multi-unit residential		
	Hotel / Motel		
	Mobile Homes & Trailers		
	Other		
Group D – Business	Business and Personal Services	117	0.32%
Group E – Mercantile	Mercantile Occupancies	83	0.23%
Group F – Industrial	Industrial occupancies	535	1.48%
Other	Not classified within the O.B.C.	1,034	2.86%
	Total	**36,144**	100%

Source: M.P.A.C. Parcel data.

Group C – Residential occupancies represent the majority of building stock within most Canadian municipalities. Given the proportion of fire loss, fire related injuries and death rates within this occupancy classification, the prominence of Group C occupancies present a greater risk. The first two lines of defence – public education and prevention and fire safety standards and enforcement – are significant measures that can be taken to mitigate fire risk within residential occupancies. This entails implementing smoke alarm programs, home escape planning, the identification of vulnerable groups specific to each municipality, regular fire inspection cycles and programs specific to each occupancy type, as well as implementing stricter enforcement measures related to licencing and prosecutions for fire code violations. Fire loss trends for the Town are discussed in greater detail in **Section 11**.

Key Risk: 94.72% of the Town's existing building stock is comprised of Group C – Residential Occupancies.

Key Finding: Buildings not classified under the Ontario Building Code account for 2.86% of the Town's building stock.

Key Finding – Group F – Industrial occupancies represent 1.48% of the Town's total building stock.

4.3   ## Building Age and Construction

As a regulation under the *Building Code Act*, *1992* the O.B.C. details technical and administrative requirements as well as minimum standards for building construction in Ontario. Prior to the adoption of the O.B.C., municipalities had individually developed building codes which resulted in an inconsistent construction standards environment across the province. Complementary to the O.B.C., the O.F.C. under the *F.P.P.A.* sets forth the minimum requirements regarding fire safety for existing buildings and facilities. It states that the owner of a building is responsible for upholding the requirements within the Code and the Fire Department is responsible for enforcing it. Together, the O.B.C. and O.F.C. provide the foundation for eliminating many of the inconsistencies in building construction and maintenance that were present before their adoption.

Collectively these codes provide for specific fire safety measures that are designed to address the intended use of the building including requirements such as exits/means of egress including signs and lighting, fire alarm and detection equipment, fire department access and the inspection, testing, and maintenance of the building fire protection systems.

In many situations the age and construction of a building can be directly associated with whether the building was constructed prior to, or after the introduction of these codes. For example, during the late 19th century and early 20th century, balloon frame construction was a common wood framing technique that was used in both residential and small commercial construction. This technique allowed for exterior walls to be continuous from the main floor to the roof in some cases extending multiple stories through a building. The result was the potential for fire and smoke to spread unobstructed from the basement to the roof of a building. In many cases the result was a fire that started in the basement spreading to the roof very quickly and without the knowledge of building occupants or fire service personnel. The O.B.C. implemented requirements to change this construction method and introduce additional requirements to mitigate the potential of fire spread through wall cavities.

Similarly, the new codes have recognized new construction techniques such as light weight wood frame construction. This includes the use of wood trusses to replace conventional wood frame roofing techniques and new construction materials including Laminated Veneer Lumber (L.V.L.) that is a high-strength engineered wood product now used commonly in residential and commercial buildings. Although these techniques and materials have enhanced the efficiency and cost of construction, this construction presents very different challenges to firefighters from those of historical construction methods. For example, the light weight wood frame construction used in an engineered wood truss roof system relies on all of the structural components to work together. In the event one of the components fails due to exposure to high heat or fire, the result is the potential for the entire roof system to fail.

Understanding building construction and building materials is a critical component for firefighters in determining the appropriate type of fire attack and safety measures that need to be in place. As such, having knowledge of the age of a building that may be directly related to the type of construction

methods and materials is why building age and construction is a component of this Community Risk Assessment.

Table 10 illustrates the age of buildings (2016 Census Data) within the Town prior to the new codes, and in comparison to the Province of Ontario. This analysis indicates that 31% of the Town's residential building stock was built prior to new codes being introduced. This represents a key fire risk within the community. By comparison, 79% of the residential building stock in the Province was built prior to 2001. **Figure 7** further illustrates the 69% increase in residential building stock within the Town since 2001, in comparison to the 21% increase across the Province. This analysis illustrates the extensive growth in residential occupancies that has occurred in the Town since 2001, and a further key fire risk related to new light weight residential construction methods and materials.

Table 10: Age of Construction of Residential Dwellings (2016 Census)

Period of Construction	Town.	% of Units	Ontario	% of Units
Prior to 1960	2,130	6%	1,293,135	25%
1961 to 1980	5,490	16%	1,449,585	28%
1981 to 1990	1,885	6%	709,135	14%
1991 to 2000	970	3%	622,565	12%
2001 to 2005	6,810	**20%**	396,130	**8%**
2006 to 2010	9,400	**27%**	368,235	**7%**
2011 to 2016	7,570	**22%**	330,390	**6%**
Total	**34,260**	**100%**	5,169,175	**100%**

Source: Statistics Canada, 2016 Census

Figure 7: Period of Construction of Residential Dwellings – Town of Milton

Period of Construction of Residential Dwellings
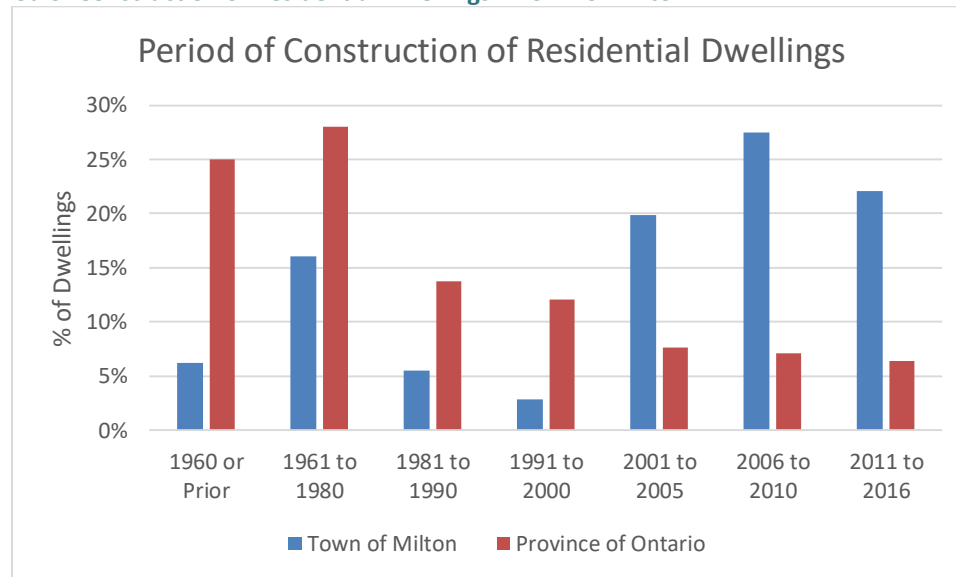
(Source: 2016 Census, Statistics Canada)

Table 11 illustrates the planned growth to 197,300 dwelling units currently underway in the Town. This analysis indicates the continued growth in residential occupancies, and of importance to this C.R.A. the knowledge that new light weight wood frame construction methods, and building materials are recognised within the fire service industry has having a high degree of vulnerability to fire during the construction process. The O.B.C. and O.F.C. recognize this potential vulnerability and provide guidance to municipalities in mitigating this key fire risk.

Table 11: Town of Milton – Urban Development Areas

Development	Number of Dwelling Units	
	Current	Planned Build Out
Sherwood Survey - Residential	9,216	39,000
Bristol Survey - Residential	14,740	18,000
Boyne Survey - Residential	1,021	54,000
Trafalgar Corridor Residential	54	31,100
Britannia Corridor Residential	69	49,200
Milton Educational Village	4	6,000
Total	**25,104**	**197,300**

Source: Milton Fire Department

Lightweight construction refers to the materials and techniques used to construct many of the buildings within the last thirty years, the timeframe when much of Milton's residential building stock was built. Buildings of this construction type burn faster and hotter than those built years ago. This is compounded by the amount of synthetic materials that are being used in today's furnishings. With fires growing faster and buildings failing sooner, occupants have less time to evacuate safely and there is increased risk for responding firefighters due to potential structural collapse. These risks may be mitigated through public education campaigns specific to home escape planning, smoke alarm initiatives and automatic fire sprinklers. Firefighter training should include material identification and risks of lightweight construction.

Key Risk: *31% of the Town's residential building stock was built prior to the introduction of the Ontario Building Code and Fire Code.*

Key Risk: *69% of the Town's residential construction has occurred since 2001 and includes new light weight wood construction methods and materials.*

Key Risk: *The Town is continuing to experience a high volume in growth of residential occupancies and development that can be vulnerable to fire while under the construction process.*

4.4   Building Density and Exposure

N.F.P.A. 1730 lists building density as a key factor for understanding potential fire risk with particular consideration given to core areas (downtowns). Additionally, the Places to Grow Act, 2005 and the Growth Plan for the Greater Golden Horseshoe, 2017, promote the development of more compact urban environments, including the prioritization of higher density land uses. Closely spaced buildings, typical of historic downtown core areas and newer infill construction, have a higher risk of a fire spreading to an adjacent exposed building. A fire originating in one building could easily be transferred to neighbouring structures due to the close proximity. The close proximity of buildings can also impede firefighting operations due to the limited access for firefighters and equipment.

Adoption of the O.B.C. and the O.F.C. has required spatial separations and the use of fire retardant materials and constructions methods to reduce the fire risks. In addition to the construction and planning requirements within the respective codes, basic firefighting practices consider the protection of exposures as a primary function and consideration in the event of a response by the fire and emergency services.

An understanding of the breakdown of residential dwelling type (presented in **Table 12**) can provide some indication of exposure risk for residential property stock within the Town. Residential structural dwelling type data from the 2016 Census reveals that Milton's structural dwellings consist mainly of single-detached houses (59%), higher than the provincial total number of single-detached dwellings (54%). The percentage of property stock that consists of buildings comprised of five or more storeys is

substantially higher for the Province than the Town (17% versus 5%) indicating that when compared to the Province, Milton has fewer apartment complexes. A significant portion (37%) of the Town's property stock includes other types of attached dwellings (semi-detached, row housing, apartments or flats in a duplex or apartment buildings with fewer than five storeys) reflecting a slightly higher total in comparison to the Province with a large portion of attached dwellings being row housing (22%). Attached dwellings have a higher risk of a fire spreading to an adjacent exposed dwelling.

Overall, the Town has a residential dwelling profile that represents a higher density of row housing when compared to the Province resulting in increased exposure risk for this dwelling type. **Figure 8** in **Section 4.7** of this report illustrates areas of the urban portion of the Town where townhouses and other apartments (low-rises that are five or less storeys) are located.

Table 12: Residential Structural Dwelling Types (2016 Census)

	Town.		Ontario	
Structural Dwelling Type	**Total Dwellings**	**Total % Dwellings**	**Total Dwellings**	**Total % Dwellings**
Single-detached house	20,090	58.7%	2,807,380	54%
Apartment in a building that has five or more storeys	1,550	4.5%	886,705	17%
Movable dwelling	10	0%	14,890	0%
Other attached dwellings	12,600	36.8%	1,460,200	28%
Semi-detached house	3,570	10.4%	289,975	6%
Row house	7,425	21.7%	460,425	9%
Apartment or flat in a duplex	260	0.8%	176,080	3%
Apartment in a building that has fewer than five storeys	1,335	3.9%	522,810	10%
Other single-attached house	15	0%	10,910	0%
Total	**34,250**	**100%**	**5,169,175**	**100%**

Source: Statistics Canada, 2016 Census

***Key Risk** – 22% of the Town's residential building stock is comprised of row housing, higher than the provincial total of 9%. Attached dwellings have a higher risk of a fire spreading to an adjacent exposed building.*

4.5   Building Height and Area

Buildings that are taller in height, or contain a large amount of square footage (footprint) can have a greater fire loss risk and life safety concern. One of the unique characteristics and risks of tall / multi-storey buildings is known as the "stack effect". This is characterized as vertical air movement occurring throughout the building, caused by air flowing into and out of the building, typically through open doors

and windows. The resulting buoyancy caused by the differences between the indoor/outdoor temperature and elevation differences causes smoke and heat to rise within the building. This can have a dramatic effect on smoke permeation throughout the common areas and individual units within the building. This can be directly related to the high percentage of deaths that occur in high-rise buildings as a result of smoke inhalation.

The nature of taller buildings also brings the presence of higher occupant loads and higher fuel loads due to the quantity of furnishings and building materials. Efficient evacuation can also be a challenging process due to a lack of direction, signage, knowledge, or familiarity of the occupants which may result in overcrowding of stairways and exit routes.

Ensuring all required life safety systems are in place and functioning is a priority for these occupancies. Taller buildings can experience extended rescue / fire suppression response times for firefighters to ascend to the upper levels. This is commonly referred to as "vertical response" representing the time it takes for firefighters to gain entry into the building and ascent to the upper floors by the stairwells. Options such as "shelter-in-place" whereby occupants are directed by the fire department to stay within their units can be an effective life safety strategy. However, ensuring internal building communications systems are in place and functioning is critical to the success of this strategy. Targeted campaigns addressing strategies like shelter in place are also critical to educating building occupants. Recommendations relating to risk mitigating strategies based on the three lines of defence are included in the F.M.P.

Building area can cause comparable challenges as those present in taller buildings. Horizontal travel distances rather than vertical can mean extended response times by firefighters attempting rescue or fire suppression activities.

It is important to note that there are a variety of metrics associated with the terms "high rise", "tall buildings" and "high buildings." For clarity, four differing, yet relevant metrics are outlined below:

Source/Standard/Legislation	Metric Used
N.F.P.A. 1710: Standard for the Organization and Deployment of Fire Suppression Operations	Building height greater than 75 feet (23 meters), or 7 storeys
Ontario Building Code/Ontario Fire Code	A building with its floor level 18 meters (59 feet) above grade, or 6 storeys
Statistics Canada/Census	Those buildings with 5 or more storeys
Town of Milton Report No P.D.-022-18 Mid-Rise and Tall Building Design Guidelines	Mid-rise buildings 4-8 storeys, high rise 8+ storeys

Each of the metrics described above have been developed from a different perspective. For example, N.F.P.A. 1710 considers building height from the perspective of operationally deploying a sufficient

number of firefighters for firefighting purposes as a result of the vertical response requirements. This is the metric that will be applied when modelling and analysing fire suppression emergency response capabilities in the F.M.P.

The Town recently developed Mid-Rise and Tall Building Guidelines to proactively address intensification concerns within the community. These guidelines are intended to provide guidance to both the development community and Town Planning and Development staff responsible for reviewing and evaluating development proposals.

The O.B.C. has detailed considerations to define a high-rise building based on the occupancy classification, floor area and occupant load. Within all occupancy classifications, additional O.B.C. requirements apply when a building is or exceeds 18 meters in height. The Milton Fire Department has identified 22 high-rise buildings which spatially represented in **Figure 8** in **Section 4.7** of this report. From a risk perspective, these locations contain a high number of occupants as well as higher fuel loads (i.e. more furnishings and building materials). A full list of buildings identified with a height at or in excess of 18 metres are highlighted in **Table 13**.

Table 13: Buildings in Milton at or Greater than 6 Storeys

Number of Storeys	Building Name	Building Address
11	Jasper Condominiums	Main Street East
12	Art on Main Condominiums	Main Street East
13	Milton Tower Condominiums	Millside Drive
16	Village Park on the Pond Condominiums	Millside Drive
6	6 Ten Condominiums	Farmstead Drive
6	Ambassador Condominiums	Costigan road
6	Ambassador Condominiums	Costigan road
6	Bronte West Condominiums	Transom Crescent
6	Greenlife Condominiums	Main Street East
6	Greenlife Condominiums	Whitmer Street
6	Hawthorne South Village Condominiums	Leger Way
6	Origin Condominiums	Suave Street
6	Origin Condominiums	Suave Street
6	Origin Condominiums	Suave Street
6	Origin Condominiums	Suave Street
6	Parkside Residences Condominiums	Costigan Road
10	Noble Towers Apartments	Millside Drive
11	Glen Eden Court Apartments – Building B	Bronte Street South
11	Millside Towers Apartments	Millside Drive
7	Mayfair Apartments	Ontario Street North

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CONSULTING

75
YEARS

Number of Storeys	Building Name	Building Address
9	Glen Eden Court Apartments – Building A	Bronte Street South
9	Milgate Place Apartments	Ontario Street North

Source: Milton Fire Department

Key Risk: *The M.F.D. has identified 22 occupancies with a height in excess of 18 metres, which have been defined as high-rise buildings.*

Large buildings, such as industrial plants and warehouses, department stores, and "big box" stores, can contain large volumes of combustible materials. In many of these occupancies, the use of high rack storage is also present. Fires within this type of storage system can be difficult to access and cause additional risk to firefighter safety, due to building collapse. The Milton Fire Department has identified a number of buildings that present an increase fire risk due to their large floor areas, some of which have the potential for fuel load concerns. Buildings that occupy large areas are included in **Table 14.**

Table 14: Buildings with Large Area Considerations

Building Name	Address	Area (in square meters)	Description of Facility
Eleven Points Logistics (Lowes)	8450 Boston Church Road	123,911	General storage of goods, including dangerous goods (aerosols, flammable & combustible liquids, compressed gas and pesticides)
Magna – Karmax Heavy Stamping	333 Market Drive	100,983	Automotive parts manufacturing, includes hazardous areas containing mineral spirits, sealants, paints, propane, diesel fuel and acetylene
Whirlpool Canada	8574 Boston Church Road	70,113	Regional distribution warehouse of major appliances
	2994 Peddie Road	61,798	Distribution warehouse
Rockwool	Steeles Avenue East	59,491	Manufacturer of stone wool insulation
U-Line	3333 James Snow Parkway N.	58,200	Distribution warehouse of shipping supplies
Schenker Canada	8690 Escarpment Way	54,002	Customs brokerage, contract logistics
Versa Cold	2701 High Point Drive	50,052	Temperature sensitive storage

Source: Milton Fire Department

Key Finding – *There a number of buildings that present an increased fire risk due to their large floor areas. Some of these facilities store dangerous goods.*

Potential High Fire Risk Occupancies

Potential high-fire risk occupancy consideration is another factor within building stock profile per N.F.P.A. 1730. High fire risk can be linked to a combination of factors such as building density (exposures). This section of the Community Risk Assessment will focus primarily on fuel load for industrial occupancies. 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. This can include industrial materials, commercial materials or typical office furnishings. Higher fuel loads results 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. As presented previously within this report, age and construction of a building can also have an impact on fuel load given that older buildings likely have a larger volume of combustible construction such as wood framing rather than newer construction utilizing concrete and steel products.

Occupancies with specific fuel load concerns within the Town as identified by the M.F.D. are included in **Table 15**. The properties include four that store building products, including significant amounts of wood products, which is of particular concern when considering fuel load. Aimco Solrex has been identified as a hazardous waste management site that specializes in solvent recycling and the chemical processing. The M.F.D. has also identified two sites that specialize in the refrigeration of food products. These units contain materials that could promote the rapid spread of smoke and fire within the building they are contained.

Table 15: Buildings with Site Specific Fuel Load Considerations

Facility	Address	Concerns
Goodfellow Incorporated	Twiss Road - 9184	Building Supplies - Wood Products
Taiga Building Products	Harrop Drive - 570	Building Supplies - Wood Products
Brampton Pallets Incorporated	Auburn Road - 7125	Building Supplies - Wood Products
Pallet Management Group	Twiss Road - 9148	Building Supplies - Wood Products
Gordon Food Services	James Snow Parkway N - 2999	Refrigeration - Food Products
Versa Cold Products	High Point Drive - 2701	Refrigeration - Food Products
Aimco Solrex	Morobel Drive - 425	Chemical - Solvent Processing

Source: Milton Fire Department

In addition to ensuring compliance to the requirements of the O.B.C. and the O.F.C., 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.

Key Finding – *There are a number of properties within the Town that have fuel load concerns, primarily linked to building supplies.*

4.7   Vulnerable Occupancies (Occupancies with Potential High Life-Safety Risk)

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. They can be someone with mobility limitations, cognitive limitations, persons with developmental disabilities or those who are unable to move on their own due to physical limitations or restraint. 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 particular demographic within a community.

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 O.F.M.E.M. 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 limitation can live on their own or in subsidized housing making them a key demographic to reach.

Ontario Regulation 150/13, 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 and seniors' residences and long term care facilities. The regulation requires fire departments to perform annual inspection, approve and witness fire drill scenarios and file certain information regarding the occupancy with the Fire Marshal's office, all of which are described in the F.M.P. In addition to those facilities that have been classified as vulnerable occupancies, there are other facilities which require special consideration, including schools, day cares and occupancies which may fall outside of O. Reg. 150/13, which amends Ontario 213/07: Fire Code but are occupied by vulnerable persons.

Table 16 includes registered vulnerable occupancies within Milton identified by the M.F.D. Currently the M.F.D. conducts annual inspections on these properties, working with each occupancy to maintain compliance. Additionally, although not required by legislation, it would beneficial for the M.F.D. to conduct pre-planning activities for all occupancies with vulnerable occupants, not just those listed in

Table 16. Pre-planning activities increase fire department personnel familiarity with buildings of special interest.

Table 16: Registered Vulnerable Occupancies – Town of Milton

Property Name	Occupancy Type	Address	Number of Beds
Allendale	Care and Treatment Occupancy – Long Term Care Home	185 Ontario Street South	200
Birkdale Place	Retirement Home (Licensed)	611 Farmstead Drive	104
Bob Rumball	Care Occupancy – Group home for adults	225 Commercial St.	7
		10 Laurier Ave	5
		931 Toletza Landing	6
		341 Ontario Street South Building E	3
		8830 Boston Church Road	7
Community Living North Halton	Care Occupancy	364 Meadowbrook Drive	6
		251 Pine Street	5
		512 Nelson Court	6
		500 Valleyview Drive	6
		340 Ontario Street	6
		348 Wilson Drive	6
		12444 6th Line Nassageweya	6
Darling Home For Kids	Care Occupancy	5657 15th Side Road	12
Deborah's House	Care Occupancy	296 Ontario St. N.	5
Martindale Gardens	Retirement Home (Licensed)	45 Martin Street	79
Milton District Hospital	Care and Treatment Occupancy - Hospital	7030 Derry Road	156
Seasons Milton Retirement Home	Retirement Home (Licensed)	760 Bronte Street South	180

Source: Milton Fire Department

In addition to vulnerable occupancies, the M.F.D. has identified 35 schools (both existing and currently under construction) within Milton, which are listed in **Table 17**.

Special fire safety consideration is warranted for the E.C. Drury School for the Deaf, which provides both residential and day programs for approximately 250 elementary and secondary school children who are either deaf or hard of hearing. Decreased hearing ability or hearing loss entirely may limit an individual's ability to hear the audible warnings of a smoke alarm or respond to a fire. Proper fire escape planning and education programming geared towards the hearing impaired is crucial to the delivery of fire safety education in this setting.

Table 17: Schools- Town of Milton

Facility	Address	# of Students
Guardian Angels School (Catholic)	650 Bennett Boulevard	960
Hawthorne Village School (Public)	850 Bennett Boulevard	1109
Our Lady Of Fatima School(Catholic)	709 Bolingbroke Drive	805
Jean Vanier Secondary School (Catholic)	1145 Bronte Street S.	1920
Our Lady Of Victory School (Catholic)	540 Commercial Street	278
Bruce Trail School (Public)	1199 Costigan Road	1211
E W Foster School (Public)	320 Coxe Boulevard	325
St. Peter School (Catholic)	137 Dixon Drive	716
Boyne School (Public)	1110 Farmstead Drive	830
Anne J Macarthur School (Public)	800 Farmstead Drive	925
C.R.A.ig Kielburger Secondary School (Public)	1151 Ferguson Drive	1500
Brookville School (Public)	11325 Guelph Line	370
W I Dick School (Public)	351 Highside Drive	409
Sam Sherratt School (Public)	649 Laurier Avenue	429
Elementary (Public)	1450 Leger Way	Under Construction
Bishop P F Reding Secondary School (Catholic)	1120 Main Street E.	1884
Holy Rosary School (Catholic)	141 Martin Street	483
Martin Street (Public)	184 Martin Street	592
St. Benedict School (Catholic)	80 Mclaughlin Avenue	1000
Gary Allen High School (Public)	215 Ontario Street S.	550
E C Drury School For The Deaf	255 Ontario Street S.	150
Irma Coulson School (Public)	625 Sauve Street	1037
Queen Of Heaven School (Catholic)	311 Savoline Boulevard	938
Lumen Christi School (Catholic)	841 Savoline Boulevard	671
Escarpment View School (Public)	351 Scott Boulevard	1100
P L Robertson School (Public)	840 Scott Boulevard	1047
J M Denyes School (Public)	215 Thomas Street	272
St. Anthony Of Padua School (Catholic)	1240 Tupper Drive	985
Elementary (Catholic)	170 Whitlock Avenue	Under Construction
Milton District High School (Public)	396 Williams Avenue	1300

Facility	Address	# of Students
Robert Baldwin School (Public)	180 Wilson Drive	380
Chris Hadfield School (Public)	1114 Woodward Avenue	890
Tiger Jeet Singh School (Public)	650 Yates Drive	1118
Saint Nicolas (Catholic - French)	720 Woodward Avenue	401
Elementary (Catholic - French)	1150 Ferguson Drive	Under Construction

Figure 8 provides a spatial representation of the locations of vulnerable occupancies, retirement occupancies and schools within the Town's urban area.

Figure 8: Occupancy Locations within the Town of Milton
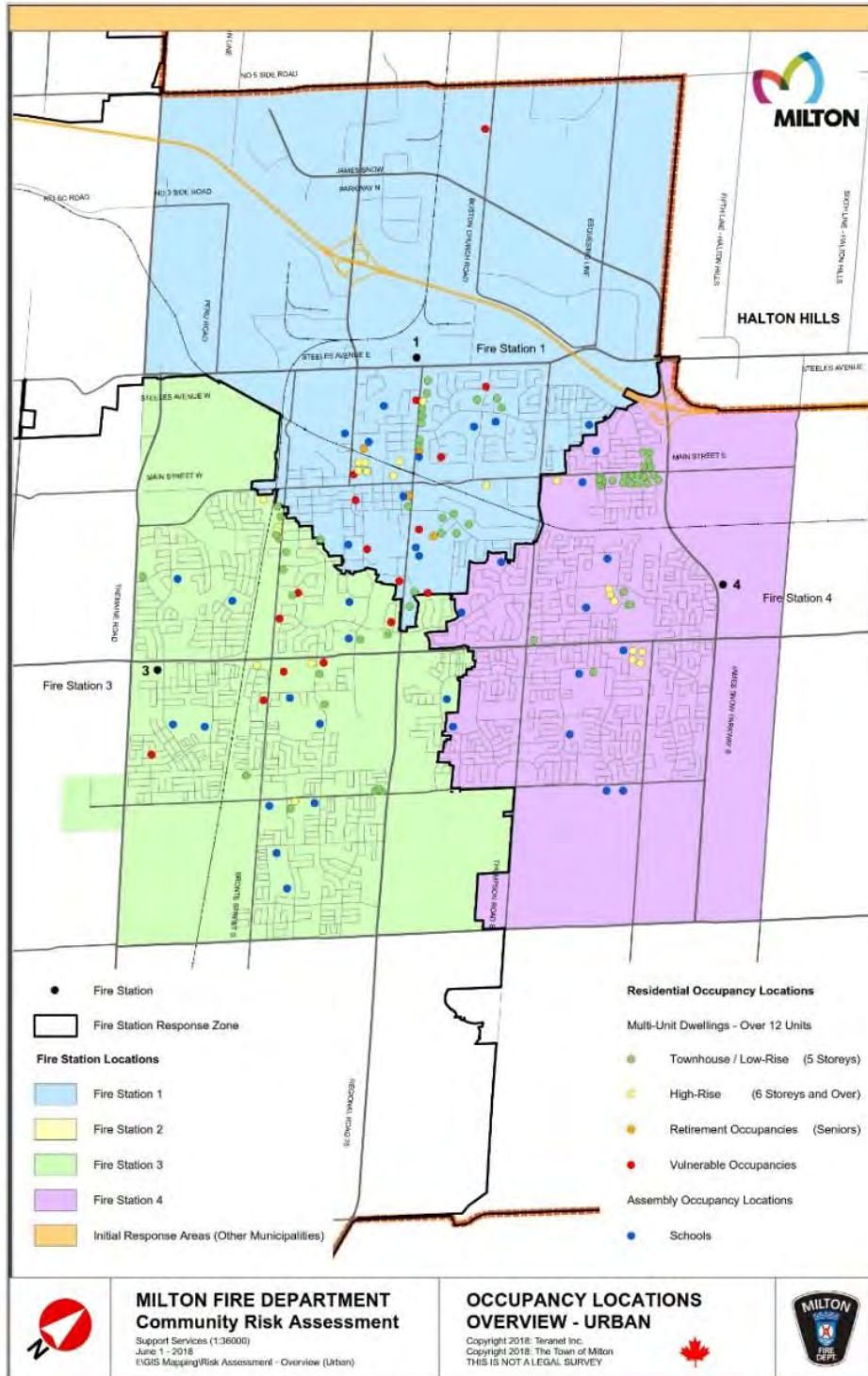
(Source: Town of Milton)

Further research indicates that there are two detention centres located within the Town; Vanier Centre for Women, with capacity for 333 inmates and Maplehurst Correctional Complex, which accommodates 1,500 inmates.[15]

A fire department can help reduce the risk faced by vulnerable individuals or vulnerable occupancies by performing regularly scheduled fire safety inspections; approving and witnessing fire drill scenarios; enforcing the O.F.C.; providing public education on fire safety issues; conducting pre-planning exercises to increase fire department personnel's familiarity with the facility; reviewing fire safety plans for accuracy and encouraging facility owners to update facilities as needed; providing staff training; and encouraging fire drills. Some of these activities are now legislated responsibilities under O. Reg. 150/13, which amends Ontario Regulation 213/07: Fire Code for those facilities classified as vulnerable occupancies.

Key Risk – *There are 19 registered vulnerable occupancies within the Town.*

Key Risk: *E.C. Drury School for the Deaf, Maplehurst Correctional Complex and the Vanier Centre for Women present unique life-fire safety risks.*

4.8   Historic or Culturally Significant Buildings

In addition to the consideration of building age and construction, understanding the location of historic or culturally important buildings or facilities is important. Such building or facilities may be keystone features to the community. They may provide a sense of heritage, place, and pride and act as tourism destinations which could result in an economic impact in the case of their loss.

Thirty-one (31) properties have been designated as buildings of historical and architectural value or interest under the *Ontario Heritage Act Register* some of which were constructed as early as 1840. These are included in **Table 18** below:

Table 18: Buildings of Historical Value in Milton

Property	Construction End Date
100 Victoria Street	1887
121 Mill Street	1879
151 Robert Street (formerly 167 Mary Street)	N/A
16 Hugh Street	1886
360 Pine Street	1855
58 Victoria Street	N/A
59 Mill Street	1856

[15] Source: Halton Community Services Database, http://search.hipinfo.info/record/OAK4138

Property	Construction End Date
66 Charles Street	N/A
66 Victoria Street	1886
99 Mill Street	N/A
Bronte Pioneer Cemetery	N/A
Brussell House	1865
Charles Hotel	N/A
Christie- Henderson Lime Kilns	1910
Ebenezer United Church	1915
Elliot House	1840
Ernest Jay Farmhouse	1913
Featherstone House	1860
Former Land Registry Office	1915
Grand Trunk Railway Station	1884
John Sproat House	1857
Levi Wilson House	N/A
Milton Town Hall	1865
Old Courthouse and Jail	1855
Schubert Residence	1890
Socrates Centre House	1870
St. David's Presbyterian Church	1891
Stone Barn	1875
Waldie's Blacksmith Shop	1865
William McFadden Farmhouse	1912
Willmot Farmstead	1840

Source: Ontario Heritage Act Register

Critical Infrastructure

5.0

As referenced in O. Reg. 378/18: Community Risk Assessments, the critical infrastructure profile assessment includes analysis of the capabilities and limitations of critical infrastructure, including electrical distribution, water distribution, telecommunications, hospitals and airports. The presence and/or availability and capacity of infrastructure elements that could have a significant impact on such things as dispatch, communications, suppression operations, overall health care or transportation or the community if compromised, or that may present unique fire risks by virtue of their size or design. The following sections consider these critical infrastructure characteristics within the Town.

The O.F.M.E.M. defines critical infrastructure 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 O.F.M.E.M. also sets out nine critical infrastructure sectors, namely: continuity of government, electricity, financial institutions, food and water, health, oil and natural gas, public safety and security, telecommunications and transportation networks. These nine sectors have further been recognized by the Ministry of Energy and Emergency Management Ontario, all of which are captured in **Table 19** below.

Table 19: Critical Infrastructure Sectors

Critical Infrastructure Sector	Sector components
Continuity of Government	municipal, provincial and federal governments
Electricity	nuclear, hydroelectric and fossil power generation; electricity transmission and distribution
Financial Institutions	Bank of Canada, banks and trust companies, credit unions, caisses populaires, Province of Ontario Savings Office, inter-institution computer systems, insurance companies, mutual fund companies, stock exchanges
Food and Water	water treatment, water storage, water monitoring, water distribution, waste water and sewage treatment, food production and harvesting, food processing and distribution, food inspection and monitoring
Health	hospitals, ambulance services, pharmaceuticals, blood services, and long-term care facilities
Oil and Natural Gas	oil refineries, distribution and retail operations; natural gas distribution
Public Safety and Security	firefighting, police and emergency medical services, emergency operations and evacuation centres, Centre of Forensic Sciences, Office of the Chief Coroner, military facilities, correctional facilities, search and rescue, flood and erosion control, pollution monitoring and public alerting, weather forecasting and public alerting
Telecommunications	9-1-1 communications, telephones, wireless telephones, pagers, television stations, radio stations, internet)

Critical Infrastructure Sector	Sector components
Transportation	highways and roads, snow removal services, rail-ways, public transit, airports, aviation communication and navigation, port facilities, canals and shipping locks, movable bridge systems, ferries, marine communication and navigation, border controls[16]

5.1   Telecommunication

Telecommunications are essential infrastructure which information is transmitted through a variety of mediums or channels including optical fibers, coaxial cables, and free space communications (e.g. radio waves). Telecommunication requires three basic elements to transmit information; these include the transmitter, a transmission medium and a receiver. In Milton, free space communication towers which deliver mobile service are evenly spread across the built environment, as shown in **Figure 9**. Providers include Bell, Fido, Wind, Rogers, Terago Networks, Explornet communications and Telus. A few towers which transmit television include C.B.C., C.T.V., and T.V. Cogeco. Switches, another important piece of infrastructure for cable internet and landline telephone is the interface which routes communications to and from transmitter to receiver and vice versa. These are shown in pink in **Figure 9** below.

Towers and switches are essential for residents, the Milton Fire Department and other emergency personnel for a number of reasons. If a tower, station or switch is compromised in the event of a fire, the ability to respond to emergency personnel could be obstructed or delayed. Similarly, the time of arrival on-scene may be compromised if emergency person received delayed or insufficient information. While incidents like this are rare, it is possible that mobile service in rural areas of Milton may be an issue as there are fewer towers.

[16] Source: "Ontario Government Emergency Fuel Distribution Protocol." Ontario Ministry of Community Safety and Correctional Services. Last modified 25 May 2016: https://www.emergencymanagementontario.ca/english/emcommunity/ProvincialPrograms/ci/emergency_fuel_distribution_protocol.html
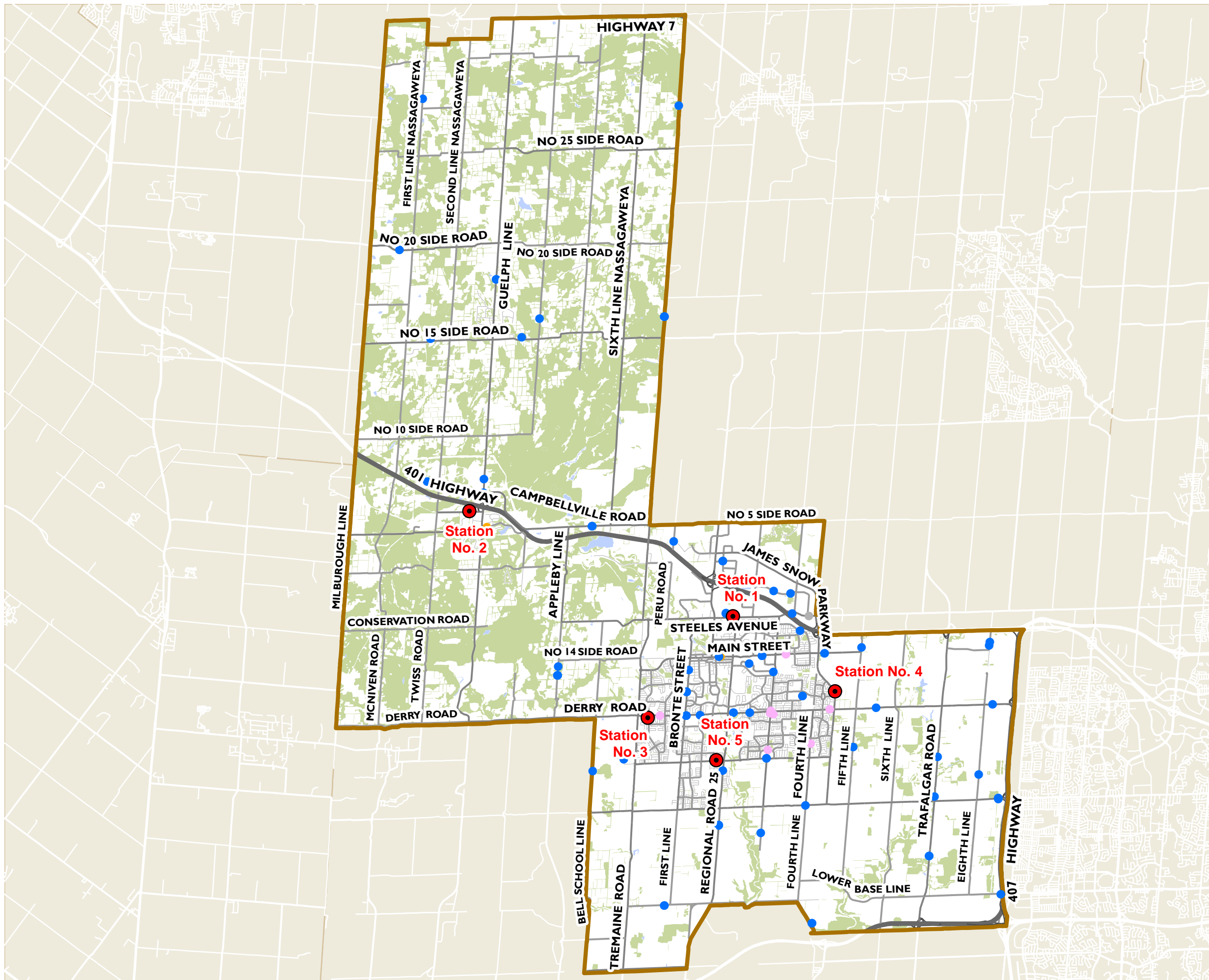
TOWN OF MILTON
Community Risk Assessment

Critical Infrastructure - Telecommunications
FIGURE 9

Legend

⦿ Fire Station

Telecommunications
● Office
● Station
● Switch
● Tower

Roads
— Highway
— Ramp
— Arterial
— Collector
— Local
Forested Area
Water Body
Town of Milton

1:120,000

0 0.5 1   2 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: SW
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON
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PROJECT: 18-8082

STATUS: DRAFT

DATE: 2018-09-13

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Health Care

Health care is also an essential service from the perspective of fire and other emergencies. There are a number of facilities in Milton which offer medical services and pharmaceuticals. These are shown in **Figure 10** below.

Halton Healthcare includes three hospitals namely Milton District Hospital, Georgetown Hospital and Oakville-Trafalgar Memorial Hospital. The Milton District Hospital offers a variety of conventional and specialized services including emergency medicine and intensive care. Due to a recent expansion, the Milton District Hospital recently added 66 new patient beds, doubling capacity to 129 inpatient beds.[17] The Milton District Hospital is equipped with a helipad and M.R.I. The hospital provides good coverage of the built-up area; however, the community in the north is closer to a major hospital in Guelph. There are also a number of nearby clinics and pharmacies shown in blue and pink in the same figure.

Key Finding: The only hospital in Milton is a significant distance from the Town's rural community to the north; however, the closest major hospitals to Milton's rural residents are St. Joseph's (Guelph) and Guelph General Hospital.

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[17] Source: Milton District Hospital: https://www.mdhf.ca/about-the-hospital/Accessed November 11, 2018.
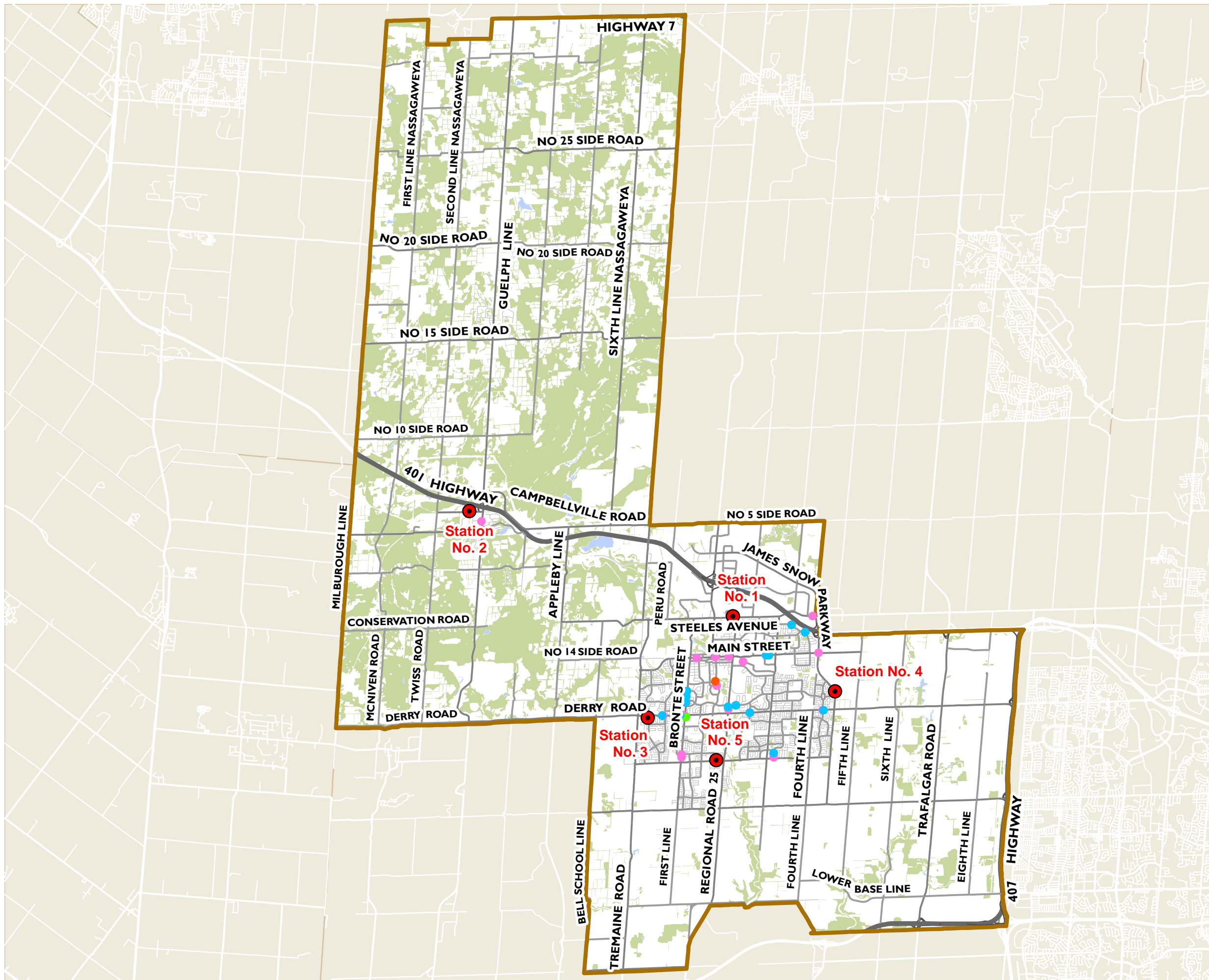
TOWN OF MILTON
Community Risk Assessment

Critical Infrastructure - Heath Care
FIGURE 10

Fire Station

Subtype
- Clinic
- Hospital
- Lab
- Pharmacy

Roads
— Highway
— Ramp
— Arterial
— Collector
— Local
Forested Area
Water Body
Town of Milton

1:120,000

0 0.5 1   2 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

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MAP CHECKED BY: JP
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5.3	**Utilities**

Utilities are critical infrastructure which transport, store or convert electricity, oil, gas and water in Milton.

5.3.1	**Electricity, Oil and Gas**

Electricity, oil and gas the key components to a municipality's power supply as well as severe fire risks and consequences if a network or piece of infrastructure malfunction. Key utilities in Milton are shown in **Figure 11**.

Milton Hydro Distribution Inc. provides electricity to more than 37,000 commercial and residential customers. Electricity is transmitted from a generating station (e.g. power plant, renewable sources etc.) and is conveyed through transmission lines to substations/transformers in Milton (shown in blue). All pieces of infrastructure are important in conveying electricity, from a local context; transformers are an essential piece of infrastructure which transfers electrical energy between two or more circuits through electromagnetic induction. If compromised, a large portion of businesses and residents would be without power. Electrical malfunctions sometimes include high-voltage electrical arcs, fires and even oil ignition and dispersion which pose a special risk to nearby buildings and residents.

Key Finding: Electrical malfunctions at substations/transformers would leave a large portion of the Town without power. Electrical malfunctions at transformers sometimes include electrical arcs, fires and oil ignition which pose as a special risk to residents, property and the environment.

Union Gas Limited distributes natural gas to commercial and residential customers within the Town. Incidents involving a natural gas leak or gasoline leak require specialized knowledge by first responders to mitigate the emergency. Training of fire department personnel should include response protocols as well as environmental mitigation strategies and decontamination procedures.

A natural gas transmission and compressor system known as the Union Gas Dawn Parkway System is located in Milton. The System moves natural gas across the province, connecting with other pipelines in the Greater Toronto area, eastern provinces and parts of the U.S. northeast. The System includes a gas compressor station and two natural gas compressors.[18]

---

[18] Source: Union Gas: https://www.uniongas.com/-/media/projects/bright/Dawn_Parkway_FAQ_Sheet-Final.pdf?la=en&hash=159C1189A4DFD68A9472A48CF39D14C4CFC81601. Accessed November 27, 2018.

FIRST LINE NASSAGAWEYA
SECOND LINE NASSAGAWEYA
NO 25 SIDE ROAD
SIXTH LINE NASSAGAWEYA
GUELPH LINE
NO 20 SIDE ROAD
NO 20 SIDE ROAD
NO 15 SIDE ROAD
NO 10 SIDE ROAD
401 HIGHWAY
CAMPBELLVILLE ROAD
MILBUROUGH LINE
APPLEBY LINE
PERU ROAD
CONSERVATION ROAD
MCNIVEN ROAD
TWISS ROAD
NO 14 SIDE ROAD
DERRY ROAD
DERRY ROAD
BRONTE STREET
MAIN STREET
STEELES AVENUE
JAMES SNOW PARKWAY
NO 5 SIDE ROAD
BELL SCHOOL LINE
TREMAINE ROAD
FIRST LINE
REGIONAL ROAD 25
FOURTH LINE
FOURTH LINE
FIFTH LINE
SIXTH LINE
TRAFALGAR ROAD
EIGHTH LINE
LOWER BASE LINE
407 HIGHWAY

Station No. 1
Station No. 2
Station No. 3
Station No. 4
Station No. 5

TOWN OF MILTON
Community Risk Assessment

Critical Infrastructure - Electricity, Oil & Gas
Figure 11

⊙ Fire Station
Subtype
● Town of Milton Operations Centre
● Union Gas Compression Station
● Propane Storage
● Petroleum Vendor
● Electrical Transformer
● Hydro One Yard
● Hydro One Office
▢ Town of Milton
Roads
━━ Highway
── Ramp
── Arterial
── Collector
── Local
▢ Forested Area
▢ Water Body

1:120,000
0 0.5 1   2 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: SW
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

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5.3.2 **Water**

Water infrastructure is an essential component to fire suppression and community well-being. In Milton there are a number of pieces of infrastructure for waste-water and drinking water. As shown in **Figure 12**, there are 3,147 fire hydrants in Milton according to the Town. As most fire departments responding to rural areas without hydrants, the Milton Fire Department uses tankers to haul water to the scene. The M.F.D. received the Fire Underwriters' Survey Rating for Superior Tanker Shuttle Accreditation in June of 2000 and maintains this status today. This accreditation represents the M.F.D.s capacity to:

- Pump a minimum of 900L/minute within five minutes of the first pumper arriving on scene; and
- Maintain that same water flow for two hours, uninterrupted.

HIGHWAY 7

FIRST LINE NASSAGAWEYA
SECOND LINE NASSAGAWEYA
NO 25 SIDE ROAD
NO 20 SIDE ROAD
GUELPH LINE
NO 20 SIDE ROAD
SIXTH LINE NASSAGAWEYA
NO 15 SIDE ROAD
NO 10 SIDE ROAD

401 HIGHWAY
CAMPBELLVILLE ROAD
NO 5 SIDE ROAD

MILBUROUGH LINE

Station No. 2

APPLEBY LINE
PERU ROAD
JAMES SNOW PARKWAY

Station No. 1

STEELES AVENUE

CONSERVATION ROAD

MCNIVEN ROAD
TWISS ROAD

NO 14 SIDE ROAD

MAIN STREET

Station No. 4

BRONTE STREET

DERRY ROAD

Station No. 3

DERRY ROAD

Station No. 5

FOURTH LINE
FIFTH LINE
SIXTH LINE
TRAFALGAR ROAD
EIGHTH LINE

REGIONAL ROAD 25

BELL SCHOOL LINE

TREMAINE ROAD
FIRST LINE
FOURTH LINE
LOWER BASE LINE

407 HIGHWAY

TOWN OF MILTON
Community Risk Assessment

Critical Infrastructure - Water
FIGURE 12

⊙ Fire Station
Name
● Pumping Station
● Treatment Plant
● Bulk Station
● Reservoir
● Surge Tank
● Well
▭ Town of Milton
Roads
— Highway
— Ramp
— Arterial
— Collector
— Local
▨ Forested Area
▨ Water Body

1:120,000

0 0.5 1   2 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

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MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

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5.4 | **Airport**

Airports can play a key role in a municipality in terms of the movement of goods and people. They also present unique hazards. 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.

5.5 | **Food Security**

Gordon Food Service, a foodservice distribution company, as well as a number of groceries stores within the Town are shown in **Figure 13**. Metro, Sobey's, A.J.'s Grocery Inc., No Frills, M&M Food Market, Longo's, and Walmart Supercentre provide grocery products to the residents of Milton.

There are no special risks related to grocery vendors or donation centre, however; they are an essential resource for residents. Food security is a greater concern in areas without access to public transportation and areas farther away from grocery stores (rural areas). The M.F.D. may choose to consider pre-planning efforts for these facilities as large amounts of ammonia are often present, used as a component of refrigeration systems. First responders should be aware of dangers of an ammonia release and response protocols.
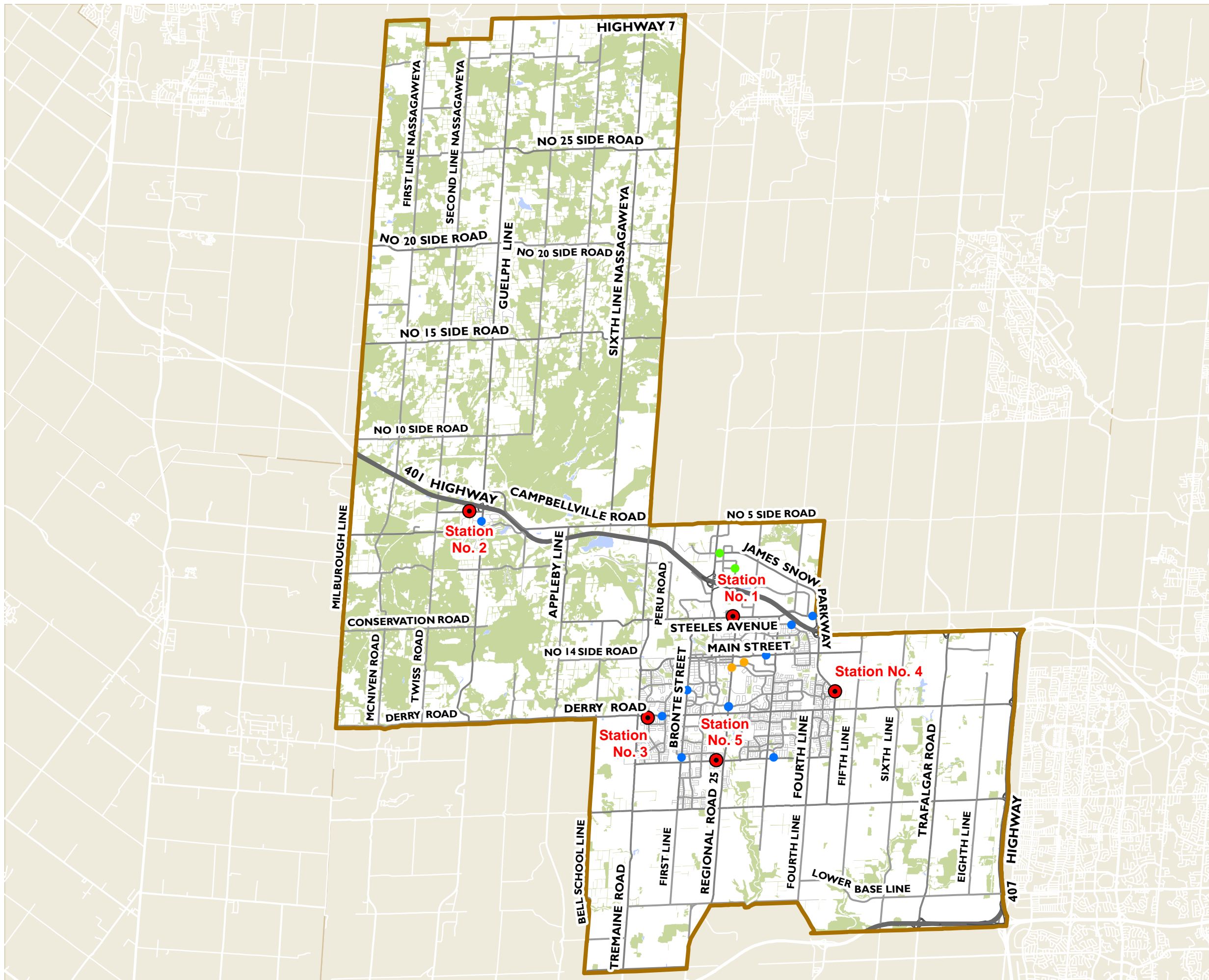
TOWN OF MILTON
Community Risk Assessment

Critical Infrastructure - Food Security
FIGURE 13

● Fire Station

Food Security Infrastructure
● Grocery Distribution Centre
● Grocery Donation Centre
● Grocery Store
▭ Town of Milton

Roads
— Highway
— Ramp
— Arterial
— Collector
— Local
▭ Forested Area
▭ Water Body

1:120,000

0 0.5 1   2 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: SW
MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON
CONSULTING

PROJECT: 18-8082
STATUS: DRAFT
DATE: 2018-09-13

FILE LOCATION: I:\GIS\188082-Milton_FMP_update\MXD\Infrastructure.mxd

5.6 **Financial Institutions**

Financial institutions provide access to money which thereby enables residents to purchase goods and services. Available banks are shown in **Figure 14**.

Each financial institution whether it is a global company base or individual community bank or credit union has their own set of security needs, business continuity plans and resources available to them in the event of a major disaster or emergency situation. Financial institutions provide access to credit, investment and insurance products and most importantly money, enabling residents to purchase goods and services. There are a number of banks within Milton at which these services may be provided. The banks listed below have multiple branches located within the Town of Milton, as shown in **Figure 14.**

- C.I.B.C.;
- B.M.O.;
- Scotia Bank;
- T.D. Canada Trust;
- R.B.C.; and
- Tandia.
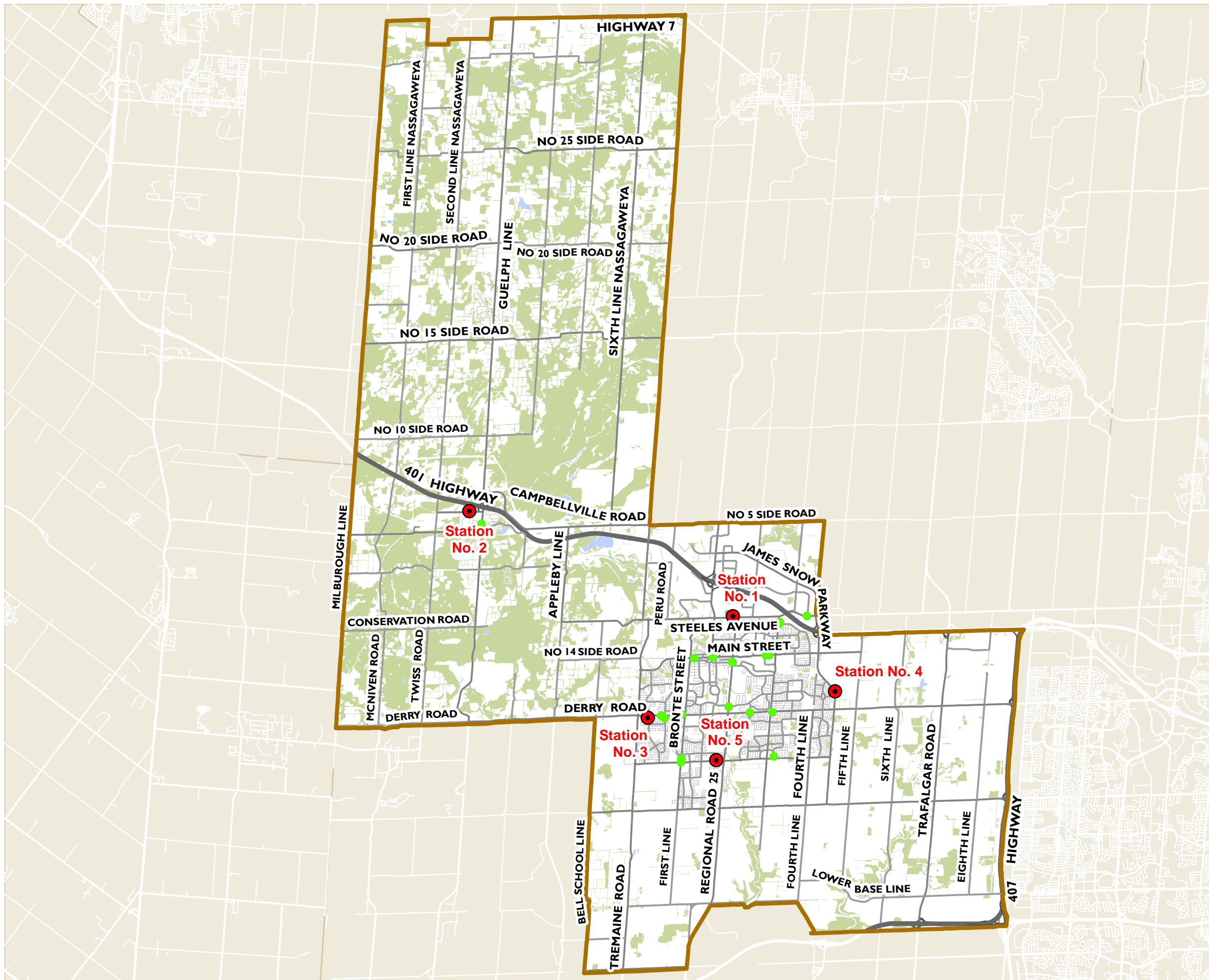
TOWN OF MILTON
Community Risk Assessment

Critical Infrastructure - Financial
FIGURE 14

Legend:
- Fire Station
- Subtype
  - Bank
- Roads
  - Highway
  - Ramp
  - Arterial
  - Collector
  - Local
  - Forested Area
  - Water Body
  - Town of Milton

1:120,000
0 0.5 1   2 km

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: SW
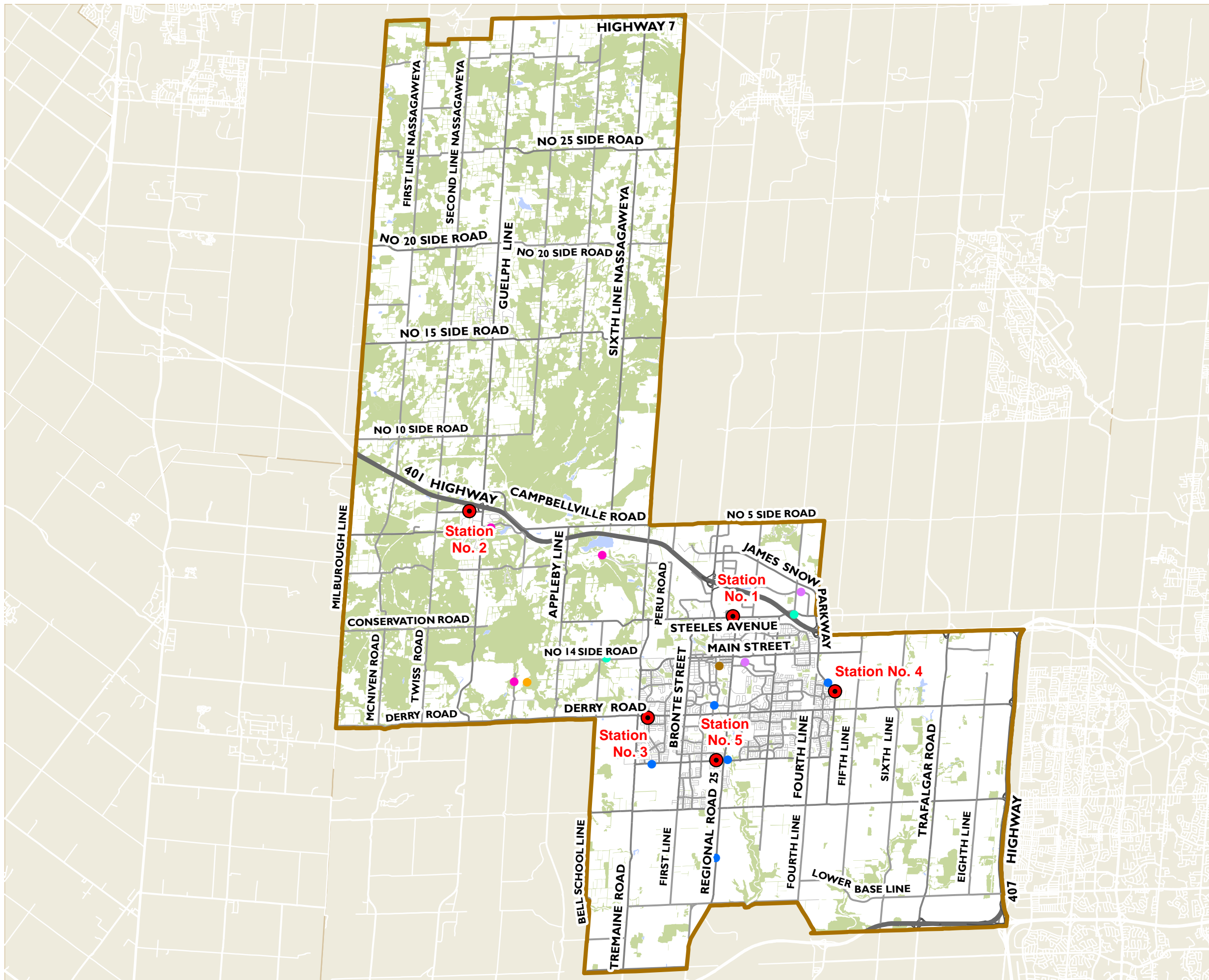MAP CHECKED BY: JP
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON
CONSULTING

PROJECT: 18-8082
STATUS: DRAFT
DATE: 2018-09-13

FILE LOCATION: I:\GIS\188082-Milton_FMP_update\MXD\Infrastructure.mxd

6.0	# Demographic Profile

As referenced in O. Reg. 378/18: Community Risk Assessments, 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.

6.1	## Population and Age

Milton's population has grown significantly over a 15 year timeframe (2001 – 2016). **Table 20** indicates that the Town experienced its highest growth between 2001 and 2006 with an increase in population of 71.39% and the total number of dwellings increased by 72.89%. The increase in population and total private dwellings has increased steadily since 2006. According to the Town's Economic Development Annual Report, 2017, Milton's population is estimated to grow to 235,000 by 2031.

Table 20: Historic Growth in Population and Households

Year	Population	% Change Since 2001	Total Private Dwellings	% Change Since 2001
2001	31,471	-	10,680	-
2006	53,939	71.39%	18,465	72.89%
2011	84,362	168.06%	28,049	162.63%
2016	110,128	249.93%	35,537	232.74%

Source: Statistics Canada, 2001, 2006, 2001, 2016 Census

Key Finding: Over 15 years (2001-2016) Milton's total population increased by 250% and the number of residential dwellings in the Town increased by 233%.

Canada's aging population has been recognized as one of the most significant demographic trends. Based on preliminary postcensal estimates from Statistics Canada, on July 1, 2015, for the first time ever, there were more Canadians over the age of 65 (16.1% of the population) than there were children aged 0 to 14 (16.0%). Seniors (those 65 years and over) are considered to represent one of the highest fire risk groups across the province based on proportion of fire fatalities experienced within this population age group. **Table 21** illustrates the results of an analysis completed by the O.F.M.E.M.[19]

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[19] "Ontario Residential Fatal Fires." M.C.S.C.S. website, last Modified: May 7, 2018: https://www.M.C.S.C.S..jus.gov.on.ca/english/FireMarshal/MediaRelationsandResources/FireStatistics/OntarioFatalities/Home FireFatalitiesChildrenAdultsSeniors/stats_fatal_res.html

Table 21: Fire Fatalities by Age Group in Ontario

Age	% of Province of Ontario Population	% of Fire Fatalities
0-14 years	16%	5%
15-64 years	67%	57%
65 years and over	17%	38%[20]

Source: O.F.M.E.M.

The information in this report captures residential fire fatalities in Ontario during a ten year period from 2007 to 2016. The table below was prepared using 2016 Census data from Statistics Canada in combination with the data presented in the O.F.M.E.M. report. Although seniors (those 65 years of age or older) account for 17% of Ontario's total population, they represent 38% of the total residential fire fatalities occurring in the Province over a ten year period. It is identified that seniors are at an increased risk of fatality in residential occupancies compared to other age groups.

Identifying a community's population by age category is a core component of developing the C.R.A. and identifying specific measures to mitigate risks associated with a specific age group, such as seniors. **Table 22** provides a comparison of the Town's population by age group based on the 2016 Census compared to that of the Province.

Table 22: Population by Age Group (2016 Census)

Age Group	Town of Milton		Province of Ontario	
	Population	%	Population	%
0 to 4 years	9,315	8%	697,360	5%
5 to 9 years	10,505	10%	756,085	6%
10 to 14 years	8,585	8%	754,530	6%
15 to 19 years	6,375	6%	811,670	6%
20 to 24 years	5,095	5%	894,390	7%
25 to 44 years	35,950	33%	3,453,475	26%
45 to 54 years	14,700	13%	1,993,730	15%
55 to 64 years	9,460	9%	1,835,605	14%
65 to 74 years	6,575	6%	1,266,390	9%
75 to 84 years	2,585	2%	684,195	5%

[20] Note: In the Ontario Residential Fatal Fires Report, age groups for children and youth, and adults are distributed slightly different from those used by Statistics Canada. The age group denoting children and youth is 0 to 15 years of age (whereas Stats Canada uses 0 to 14) and adults are categorized as 16 to 64 rather than 15 to 64. The age group for seniors is 65+ for both sources.

Age Group	Town of Milton		Province of Ontario	
85 + years	980	1%	301,075	2%
Total	110,128	**100%**	**13,448,495**	**100%**
Median Age of the Population	35	-	41.3	-
Population aged 14 and under	28,405	26%	2,207,975	17%
Population aged 65 and over	10,140	9%	2,251,660	16%

(Source: 2016 Census, Statistics Canada)

The 2016 census identified a total population of 110,128 for the Town. The age distribution of Milton and Ontario are further illustrated in **Figure 15**. The figure indicates that the age distribution between the Town and the Province are evenly spread for a large portion of the adult population between the ages of 24 and 45. However, there are two notable differences. There are a lower proportion of seniors in the Town than in the Province (9% vs. 16%). This is counter to the recorded demographic trend that Canada's senior population is increasing. Approximately 22% of the population are between the ages of 45 and 64 years of age, representing a portion of the population that is aging towards the seniors demographic of 65 and over.

Key Risk: People between the ages of 45 and 64 who are aging towards the seniors demographic of 65 or over make up 22% of Milton's population.

Another key observation is that the Town's youngest demographic surpasses the Provincial average (26% vs. 17%). This would indicate that Milton has a relatively high number of children and youth between the ages of 0 and 14 years of age. Due to their dependence on others and less physical or cognitive ability to make informed decisions about their well-being compared to an adult, children should be considered when developing targeted public fire safety education programs.

Key Risk: In comparison to the Province, Milton's total population contains a high proportion of persons aged 0 to 14 (26% versus 17%).

Figure 15: Population Distribution – Town and the Province of Ontario
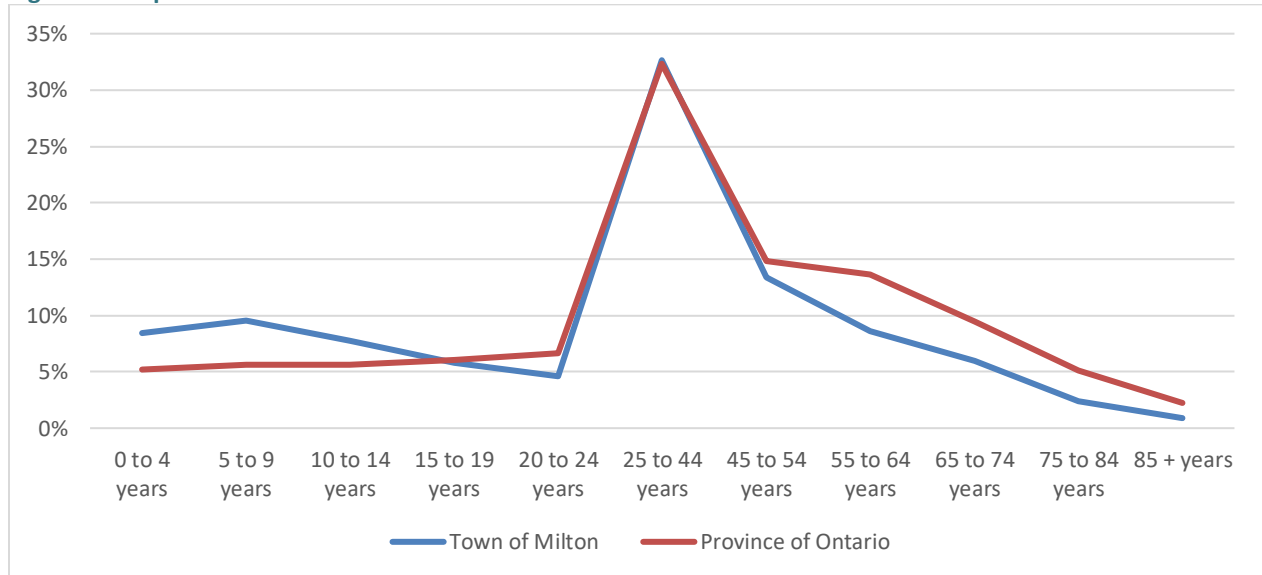
The M.F.D. is required to track the person associated with fire ignition by age as part of the O.F.M.E.M. Standard Incident Reporting. **Table 23** below presents the results of an analysis of fire loss data from 2012-2016 of applicable and determined instances. The highest proportion of persons associated with "ignition" fall into the 40 to 64 years of age category. Young adults from age 20-39 were the second highest proportion, accountable for 11% of fire ignitions. It should be noted that the M.F.D. data, as reported, includes 159 instances where the item was identified as "not applicable" and 107 instances where it was reported as "unknown".

Table 23: Person Associated with Ignition by Age 2012-2016

Age (years)	2012	2013	2014	2015	2016	Total	%
0-9	1	0	0	1	0	2	0%
10-19	3	1	1	3	3	11	3%
20-39	7	3	13	9	18	50	11%
40-64	6	25	17	24	16	88	20%
65-79	2	2	7	1	3	15	3%
80+	1	1	0	1	0	3	1%
Not Applicable	24	28	36	36	35	159	37%
Unknown	22	20	21	19	25	107	25%
					Grand Total	*435*	*100%*

Source: O.F.M.E.M. S.I.R.s

Key Finding: Individuals aged 40-64 were the highest proportion of individuals reported as persons associated with ignitions reported in the M.F.D. Fire Loss data from 2012-2016.

6.2   Gender

In examining the proportion of males versus females overall for the Town, they are approximately evenly split at 49% male and 51% female as reflected in **Table 24**. Due to the minor variations in the proportions, it may be challenging to target public education information without considering this information spatially. When specific age groups are reviewed, there is a more noticeable difference in the age group of 85 years and over where males account for 34% and females 66% of that population. However, based on these statistics, it is not anticipated that public education programming would be refined based on gender. The impact of gender distribution on public education programming would be more notable in a community with unique demographics such as those that have transient populations due to employment, for example.

Table 24: Gender Distribution by Age Group – Milton (2016 Census)

Age Group	Total Population	Male	%	Female	%
0 to 4 years	9,315	4,790	51%	4,525	49%
5 to 9 years	10,505	5,455	52%	5,050	48%
10 to 14 years	8,585	4,380	51%	4,205	49%
15 to 19 years	6,375	3,295	52%	3,080	48%
20 to 24 years	5,095	2,695	53%	2,400	47%
25 to 44 years	35,950	16,980	47%	18,975	53%
45 to 54 years	14,705	7,615	52%	7,090	48%
55 to 64 years	9,455	4,610	49%	4,845	51%
65 to 74 years	6,580	3,140	48%	3,440	52%
75 to 84 years	2,585	1,220	47%	1,365	53%
85 + years	980	330	34%	650	66%
Total	**110,125**	**54,510**	**49%**	**55,625**	**51%**

(Source: 2016 Census, Statistics Canada)

In addition to age, the M.F.D. tracks the persons associated with fire ignition by gender as part of the O.F.M.E.M. Standard Incident Reporting. **Table 25** presents the results of an analysis of the M.F.D. fire loss data from 2012-2016 of applicable and determined instances. The person associated with the ignition source was male in 32% of the instances compared to female in 9% of instances. It should be noted that in 158 instances (or 36% of total instances) the call was reported as not applicable and in 97 instances the call was reported as "unknown".

Table 25: Person Associated with Ignition by Gender (2012-2016)

Gender	2012	2013	2014	2015	2016	Total	%
Male	20	29	34	27	31	141	32%
Female	4	6	6	12	11	39	9%
Not Applicable	24	29	35	34	36	158	36%
Unknown	18	16	20	21	22	97	22%
					Grand Total	**435**	**100%**

Source: O.F.M.E.M. Standard Incident Reporting

Key Finding: *According to M.F.D. fire loss data for 2012-2016, the person associated with the ignition source was male for 32% of instances compared to females in 9% of instances.*

6.3 Socioeconomic Circumstances

A significant factor that can impact fire risk is the socioeconomic circumstances of a community. Socioeconomic status is reflected in an individual's economic and social standing and is measured in a variety of ways accounting for a person's status in the labour force, their income, level of education and occupation. These factors can be reflected in the analysis of socioeconomic indicators such as labour force status, family structure, educational attainment and income as well as household tenure, occupancy, suitability, and cost.

Socioeconomic factors intersect in a number of ways and have a direct and indirect impact on fire risk. One such example is outlined in the Office of the Fire Marshal and Emergency Management's Fire Risk Sub-Model. The Sub-Model makes reference 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 the complex relationships between socioeconomic circumstance and probability / consequence of a fire are not well understood within the fire service, this C.R.A. seeks to explore these factors at a high level for the Town in comparison to the Province of Ontario. It should be noted that, if viewed at a finer level of detail (e.g. census tract or neighbourhood level) consideration could be given to how these factors intersect and compound each other. For example, a neighbourhood that has a high proportion of seniors, immigrants, and unemployed residents may be at higher risk than a neighbourhood with just a high proportion of seniors.

The factors reviewed at a high level have been selected based on the data available from Statistics Canada (both the Census and the National Household Survey). Factors that are highlighted in this section include:

- Labour force status;
- Immigrant status;
- Family structure;
- Educational attainment;
- Household tenure;
- Household occupancy;
- Household suitability; and
- Household costs.

6.3.1 Labour Force Status

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 labour 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, high fire risk). In terms of labour force status, **Table 26** below shows the Town of Milton has significantly higher participation rate than the Province (74% versus 65%). The Town has an unemployment rate of 4%, which is lower than the Province's 5%, suggesting a slightly lower amount of fire risk in comparison to the Province from the perspective of labour force status.

In relation to fire risk, lower income levels could imply unsafe heating, lighting and cooking practices as well as less disposable income to purchase fire safety products. Studies have also shown a correlation between increased cigarette smoking among lower income groups which increases fire risk due to increased potential for fires due to cigarette ignition sources.[21]

Table 26: Labour Force Status – Town and Province of Ontario

	Town	%	Province of Ontario	%
In the labour force	59,815	74%	7,141,675	65%
Employed	56,485	70%	6,612,150	60%
Unemployed	3,330	4%	529,525	5%
Not in the labour force	20,740	26%	3,896,765	35%
Total	**80,560**	**100%**	**11,038,440**	**100%**

[21] Source: "Comprehensive Fire Safety Effectiveness Model." M.C.S.C.S., Last Modified: February 8, 2016: https://www.M.C.S.C.S..jus.gov.on.ca/english/FireMarshal/FireServiceResources/ComprehensiveFireSafetyEffectivenessModel/FireRiskSub-Model/Fire_risk_submodel.html#P190_7337

	Town	%	Province of Ontario	%
(Source: Statistics Canada, 2016)				

For the population aged 15 years and older in private households, 79% received employment income in 2015 whereas 71% received employment income for the Province (see **Table 27**). This suggests that the Town faces a lower fire risk in comparison to the Province from the perspective of employment income status.

Table 27: Employment Income Status in 2015 – Town and Province of Ontario (Census 2016)

	Town		Province of Ontario	
Without Employment Income (2015)	17155	21%	3,247,760	29%
With Employment Income (2015)	63405	79%	7,790,680	71%
Total	**80555**	**100%**	**11,038,440**	**100%**

Source: Statistics Canada, Census 2016

6.3.2 **Family Structure**

Family structure is another indicator of socioeconomic status and level of income. For example, single parent families are often more economically challenged due to the fact that there is only one income. These households also have fewer resources to arrange childcare, increasing the likelihood of fires caused by unsupervised children. For example, a higher proportion of lone-parent families could reflect lower household income and therefore a higher fire risk.

Table 28 indicates that of the families with children in Milton, 12% are lone-parent families, lower than the percentage of lone-parent families in Ontario at 17%. According to the Statistics Canada 2016 Census, 61% of couple census families in private households have children, 16% higher than the Province (45%). This suggests that the Town has a lower fire risk than the Province with respect to family structure and lone-parent families in particular.

Table 28: Family Structure – Town and Province of Ontario (Census 2016)

	Town	%	Ontario	%
Couple-Only	8505	27%	1,428,575	38%
Couple Families (with children)	18735	61%	1,708,995	45%
Lone-Parent Families	3600	12%	644,975	17%
Total	**30,840**	**100%**	**3,782,545**	**100%**

(Source: Statistics Canada, 2016 Census)

6.3.3   **Educational Attainment and Income**

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. Over two thirds (67.1%) of the top 1% had attained a university degree compared to 20.9% 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 a higher education is associated with more disposable income and lower fire risk. It is also assumed that these households are more likely to invest in the fire life safety products such as fire extinguishers and smoke alarms, reducing their fire risk.

Table 29 displays the educational attainment status for the portion of the population 15 years of age and older in private households.

Table 29: Educational Attainment – Town

Educational Attainment	Town	%	Province of Ontario	%
No Certificate; Diploma or Degree	9,640	12%	1,935,355	18%
High School Diploma or Equivalent	19,650	24%	3,026,100	27%
Postsecondary Certificate; Diploma Or Degree	51,270	64%	6,076,985	55%
Total	**80,560**	**100%**	**11,038,440**	**100%**

(Source: Statistics Canada, Census 2016

According to the 2016 Census, 64% of residents in Milton have a postsecondary Certificate, Diploma or Degree, which is 9% higher than the Province. Twelve percent (12%) of the Town's population has not attained a certificate, diploma or degree of any sort, which is lower than the Province's 18%. This level of educational attainment could be linked to higher median household income. The median total income of households in 2015 for the Town was $104,730, above the Provincial median total income per household of $74,287. This suggests that the Town as a whole has a lower fire risk from the perspective of income using educational attainment as an indicator.

Another way to analyze income is through income decile groups. As stated by Statistics Canada, a "decile group provides a rough ranking of the economic situation of a person based on his or her relative position in the Canadian distribution of the adjusted after-tax income of economic families". Economic family income decile group for the population in private households is presented in **Table 30** illustrating that a higher portion of the population (62%) in Milton falls within the top distribution of income decile groups, 10% higher than the Provincial total (52%). These statistics are suggestive of lower fire risk within the Town from the perspective of income.

Table 30: Economic Family Income Decile Group for the Population in Private Households (Town and Province of Ontario)

Income Decile Group	Town		Province of Ontario		Difference
	Population	%	Population	%	
In the bottom half of the distribution	41210	38%	6335170	48%	-10%
In the top half of the distribution	67725	62%	6906990	52%	10%
Total	**108935**	**100%**	**13242160**	**100%**	-

Source: 2016 Census Statistic Canada

6.3.4 Household Tenure, Occupancy, Suitability and Costs

Table 31 summarizes household statistics for the Town and the Province of Ontario including tenure, occupancy, suitability and costs.

Housing tenure reflects socioeconomic status whereby a low home ownership rate may reflect lower incomes in the community and a higher overall fire risk. The Town has a higher proportion of dwellings that are owned versus rented when compared to the Province (86% owned in Milton versus 70% in the Province). A higher proportion of multiple persons per household can result in increased fire loss (consequence) resulting in a higher risk. In the Town, 3% of the households have more than one person per room, a slightly higher percentage when compared to the Province which has 2% of households with more than one person per room.

Similarly, the National Household Survey reports on housing suitability which refers to whether a private household is living in suitable accommodations according to the National Occupancy Standard. Suitable accommodations are defined by whether the dwelling has enough bedrooms based on the age and relationships among household members. Based on this measure, the Town has 4% (or 1,530) of households that are not suitable compared to 6% for the Province as a whole (resulting in nearly 311,005 "not suitable" households across Ontario). From the perspective of housing suitability, the Town has a lower fire risk than the Province.

Shelter costs further provide some indication of the amount of disposable income within a household. Households with less disposable income have fewer funds to purchase household fire life safety items resulting in a higher risk. In Milton, 25% of households spend 30% or more of the household total income on shelter costs. This is 3% lower than the Province, where 28% of households spend 30% or more of income on shelter costs. Looking closer at shelter costs, the median value of dwellings in Milton is $598,650 ($198,154 more than the Province). The Town also has a higher median monthly shelter costs for owned and rented dwellings than the Province. This analysis suggests that from the perspective

of shelter suitability, cost and the impact on income, the Town has a lower fire risk than the Province as a whole.

Table 31: Household Tenure, Occupancy, Suitability and Costs – Town of Milton and Province of Ontario (2016 Census)

	Town of Milton	%	Province of Ontario	%
Household Tenure				
Owner	29,415	86%	3,601,825	70%
Renter	4,840	14%	1,559,720	30%
Total Households	**34,260**	**100%**	**5,169,175**	**100%**
Household Occupancy				
One person or fewer per room	33,385	97%	5,046,810	98%
More than one person per room	875	3%	122,360	2%
Total Households	**34,260**	**100%**	**5,169,175**	**100%**
Housing Suitability				
Suitable	32,725	96%	4,858,170	94%
Not suitable	1,530	4%	311,005	6%
Total Households	**34,260**	**100%**	**5,169,175**	**100%**
Shelter Costs				
Spending less than 30% of household total income on shelter costs	25,555	75%	3,694,385	72%
Spending 30% or more of household total income on shelter costs	8,505	25%	1,411,900	28%
Total Households	**34,060**	**100%**	**5,106,290**	**100%**
Median value of dwellings	$598,650		$400,496	
Median monthly shelter costs for owned dwellings	$1,917		$1,299	
Median monthly shelter costs for rented dwellings	$1,615		$1,045	

(Source: Statistics Canada, 2016 Census)

As previously noted, it is important to keep in mind that all these factors, can intersect with one another and have an impact on fire risk. For example, a community may have higher shelter costs, resulting in less disposable income, but also have a higher level of educational attainment.

6.4   **Ethnic and Cultural Considerations**

Cultural diversity and ethnic background can be factors for fire service providers to consider in developing and delivering programs related to fire prevention and public education. Communication barriers, in terms of language and the ability to read written material, can have an impact of the success of these programs. There may also be familiarity challenges related to fire safety standards within recent immigrant populations.

A high proportion of immigrants could demonstrate a higher fire risk due to a large population that has a potential for: lower income; lack of familiarity with local fire life safety practices; and/or may experience possible language barriers. **Table 32** presents the overall immigrant status of the population in Milton. The Town has a higher proportion of immigrants (36%) compared to Ontario as a whole (29%). This data shows that 18% of the total 36% of immigrant population immigrated between the years of 2001 to 2016. This portion of the population presents a higher fire risk due to the potential for language barriers when communicating in fire response situations. There may also be familiarity challenges related to fire prevention and home fire safety within recent immigrant populations. In addition, a high proportion of immigrants could demonstrate a higher fire risk due to a population that has a potential for lower incomes and lack of a strong social network.

Table 32: Immigration Status – Town and Province of Ontario (2016 Census)

	Town	*%*	**Province of Ontario**	*%*
Non-immigrants	**68,880**	**63%**	**9,188,815**	**69%**
Immigrants	**39,105**	**36%**	**3,852,145**	**29%**
Before 1981	6,545	6%	1,077,745	8%
1981 to 1990	4,320	4%	513,995	4%
1991 to 2000	8,740	8%	834,510	6%
2001 to 2010	13,870	13%	953,730	7%
2001 to 2005	7,675	7%	490,560	4%
2006 to 2010	6,200	6%	463,170	3%
2011 to 2016	5,635	5%	472,170	4%
Non-permanent residents	**950**	**1%**	**201,200**	**2%**
Total	**108,935**	**100%**	**13,242,160**	**100%**

(Source: Statistics Canada, 2016 Census)

The top five non-official languages spoken in Milton, according to the 2016 Census from Statistics Canada are included in **Table 33**. This population should be monitored as new Census data becomes available for consideration when planning public education programs and materials.

Table 33: Top Five Non-Official Languages Spoken in Milton

Language	# of People	% of Population*
Urdu	8,180	7.4%
Arabic	2,915	2.7%
Spanish	2,605	2.4%
Punjabi (Panjabi)	2,055	1.9%
Polish	2,055	1.9%

Source: 2016 Census, Statistics Canada
*Based on a total population of 110,128.

Table 34 provides a breakdown of the knowledge of official languages based on the 2016 Statistics Canada census information. As shown, 90% or 98,830 people in the Town speak English only. In addition, 8% of the population or 8,745 state that they know both English and French, 2% or 1,695 people have no knowledge of English or French, and 115 people speak French only. Communications staff at the M.F.D. have indicated anecdotally that they have experienced language challenges while receiving emergency calls where English as a second language is present. The potential for communication barriers should be considered and monitored, especially as the Town continues to grow in the future.

Table 34: Knowledge of Official Languages (2016 Census)

Language	Town		Province of Ontario	
	Total	% Total	Total	% Total
Total population (non-institutional)	**109,380**	-	**13,312,865**	-
English Only	98,830	90%	11,455,500	86%
French Only	115	0%	40,040	0%
English and French	8,745	8%	1,490,390	11%
Neither English nor French	1,695	2%	326,935	2%

6.5   Population Shift

The population within a community can shift at various times during the day or week and throughout the year. Population shift can be a result of a number of factors including employment, tourism, and education. In some municipalities, residents occasionally leave the community for employment. Other communities may be major tourist and vacation destinations resulting in large population shifts related to seasonal availability of tourism activities. This can present a number of unique risks and associative challenges for response efforts. As such, it is important to consider population shifts from a fire protection, education and prevention standpoint. Specific fire protection strategies to address population shifts should be accommodated as part of broader services, such as pro-active fire inspections of the facilities occupied by these demographics.

Commuting patterns for Milton residents are an important factor to consider. While the number of commuters adds to traffic and transit volumes, the level of community engagement amongst commuters can be impacted due to the amount of time the resident spends outside of Milton. This may have an impact on the number of people interested and available for volunteer roles within the community, including part time firefighting positions.

6.5.1   Tourism

There are a variety of geographical features and events that would draw tourists and a recreational population to the Town and the surrounding Halton Region on a seasonal basis. Its location at the base of the Niagara Escarpment and natural tourism venues including the Bruce Trail, Kelso Lake, Mountsberg Conservation Area, Glen Eden Ski and Snowboard Centre and Rattlesnake Point attract visitors seeking scenic day trips and weekend excursions year round. Seasonal outdoor recreation activities such as hiking, snowboarding, skiing and kayaking bring more than 1.5 million visitors to the area each year.[22] As a result, the Town experiences some population shift due to the tourism draw for recreational opportunities. This trend is expected to be maintained as the Town recognizes in its Official Plan that its natural features and the Niagara Escarpment in particular play a significant role in the structure of the community and local economy.[23] Please see **Section 3.1** for further details regarding the Town's geographical features that may attract transient tourist populations throughout the year.

Typically an influx of tourism can result in an increased risk due to overnight tourism accommodation (sleeping) which can impact the demand for fire protection services. However, due to Milton's geographic positioning in line with Highway 401 many of these sites are accessible for day trips. While these features and seasonal properties may contribute to some population shift that is seasonal, overall, they do not contribute to a significant shift in population in terms of tourism accommodation.

6.5.2   Education and Employment

A key source for population shift in some communities is educational institutions as they attract people from outside a typical community. In an effort to expand access to post-secondary education in Milton is working with a number of partners to establish an innovative academic centre of excellence in the Milton Education Village in partnership with Wilfred Laurier University and Conestoga College.[24] As one of the Province's fastest growing municipalities, this development will likely draw a new student demographic to the Town. One impact associated with this type of population shift could be an increase in vehicular traffic which could impact the number of motor vehicle calls and emergency response times within the Town.

[22] Source, Town of Milton website: https://www.milton.ca/en/play/visitorslinks.asp
[23] Source: Town of Milton website: https://www.milton.ca/en/build/officialplan.asp
[24] Source: Town of Milton website: https://www.milton.ca/en/townhall/miltoneducationvillage.asp

The Milton Education Village has the potential to increase the number of students looking for shelter within the Town. In our experience, student accommodations and short term rental units present unique fire safety issues that may be attributed to the conversion of houses into boarding houses or rooming house type accommodations that do not conform to the Ontario Fire Code or Ontario Building Code. These properties are not always known to the fire department, posing a challenge for Fire Prevention division staff responsible for Fire Code enforcement.

Commuter populations represent a large portion of Milton's labour force. The Town is centrally located within a transportation corridor linking residents to employment opportunities throughout the Greater Toronto Area and southern Ontario. One way to measure this population shift is based on traffic counts. Within the G.T.A. and Hamilton Area, there is a transportation census held that provides insight into the travel habits of residents in the region called the Transportation Tomorrow Survey (T.T.S.). The T.T.S. reports on such topics as how many trips are made to and from the Town. The most recent T.T.S. reporting year (2016) indicates that, in a 24 hour period, 206,200 trips were made by the residents of Milton, 74% of which traveled by driving a vehicle.[25] Similarly, 178,500 trips were made to Milton by residents of the Transportation Tomorrow Survey Area in a 24 hour period.

In consideration of Milton's growth as a Town and with its many economic initiatives attracting new businesses, industries and students to its boundaries, it is likely that the amount of commuters to and from the Town will increase. Recently, for example, Amazon has announced that it will be expanding its business into Caledon, a nearby Town close to Milton, creating many employment opportunities for its residents and for residents in neighbouring communities; a development that may lead to more commuters in the area. Higher counts of transient populations can have a significant impact on transit and traffic, increasing the likelihood of vehicle collisions and major collisions and a higher risk may be presented during peak commuting times in the morning and late afternoon. An increase in vehicle collisions is sure to increase emergency calls, potentially impacting emergency response times within the Town.

Key Risk: *There are substantial shifting commuting populations throughout the year. This population shift may impact collision calls and the demand for fire protection services.*

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[25] Source: Transportation Tomorrow Survey, 2018:
http://dmg.utoronto.ca/pdf/tts/2016/2016TTS_Summaries_Halton_Wards.pdf

7.0   Hazard

As referenced in the O. Reg. 378/18: Community Risk Assessments, the hazard profile assessment includes analysis of the hazards within the community, including natural hazards, hazards caused by humans, and technological hazards to which fire departments may be expected to respond, that may have a significant impact on the community. Section 7 considers these hazards within the Town.

7.1   Hazard Identification and Risk Assessment (H.I.R.A.) in Ontario

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. It is important to identify and consider these hazards from a fire risk, emergency response and public safety perspective in order to assist local emergency response personnel prepare for and mitigate the risks within their communities, allowing for the creation of exercise, training programs and plans based on hazardous scenarios.

Under the Emergency Management and Civil Protection Act (E.M.C.P.A.), municipalities are required to 'identify and assess the various hazards and risks to public safety that could give rise to emergencies and identify the facilities and other elements of the infrastructure that are at risk of being affected by emergencies' 2002, c. 14, s. 4. To assist municipalities in identifying their own risks and hazards that have occurred and therefore have the potential to impact the community, the Province of Ontario has provided guidance through the Ontario Provincial H.I.R.A. to assist municipalities in preparing for, mitigating, responding to and recovering from emergency incidents.

The first step of a municipal H.I.R.A. process is to identify which events could occur in the local municipality, based on historical review of the municipality's hazards or in using the provincial list of natural, human-caused and technological hazards as a guide. Afterwards a risk assessment is undertaken, with consideration to the frequency of those identified hazards occurring within certain timeframes and the overall consequence level of an event occurring. The hazard identification and risk assessment results are used to categorize the hazards into risk levels with the ultimate goal of aiding the municipality in its emergency management efforts and programming. The H.I.R.A. is to be reviewed annually based on current legislative requirements.

7.2   Town of Milton Hazard Identification and Risk Assessment (H.I.R.A.) 2017

As required by the E.M.C.P.A., Milton reviewed its Hazard Identification and Risk Assessment in 2017. The Town's 2017 Municipal Compliance Report submitted to the O.F.M.E.M. confirms the Town successfully submitted its H.I.R.A., fulfilling its legislative requirements. The top ten hazards identified in the Town's H.I.R.A. include:

1. Freezing rain/ice storm
2. Energy emergency (supply)
3. Explosion/fire
4. Snowstorm/blizzard
5. Flood – urban flood
6. Windstorm
7. Critical infrastructure failure – sewer/sanitary
8. Critical Infrastructure failure – telecommunications
9. Transportation emergency – road emergency
10. Hazardous materials incident/spills – transportation incident

In reviewing Milton's 2017 H.I.R.A., it appears that the methodology used in generating the risk levels is not consistent with the risk analysis outlined in the Emergency Management Ontario H.I.R.A. Workbook[26]. We have been made aware that the O.F.M.E.M. is in the process of revising the H.I.R.A. process. The updated guidance document is expected to be available for municipalities in the first quarter of 2019.

Key Finding: The top five identified hazards within the Town include freezing rain/ice storms, energy emergency (supply), explosion/fire, snowstorm/blizzard and flood-urban flood.

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[26] Please see the following link for the Hazard Identification and Risk Assessment Workbook:
https://www.emergencymanagementontario.ca/english/emcommunity/ProvincialPrograms/hira/hira_workbook/hira_workbook.html

8.0 | Public Safety Response

As required by O. Reg. 378/18: Community Risk Assessments, the Public Safety Response Profile includes analysis of 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 situation. The following sections consider these public safety response characteristics within the Town.

8.1 | Public Safety Response Agencies in Milton

8.1.1 | Joint Emergency Services Operational Advisory Group

The Joint Emergency Services Operational Advisory Group (J.E.S.O.A.G.) is the collaborative initiative of the Milton, Oakville, Burlington and Halton Hills Fire Departments, Halton Region Emergency Medical Services, the Ontario Provincial Police and the Halton Regional Police Services. The J.E.S.O.A.G., comprised of senior fire, police and emergency medical personnel, meets on a quarterly basis to discuss and address trends from a unified incident management structure perspective. When appropriate, Inter Agency Protocols are implemented. J.E.S.O.A.G. plans and initiates multi agency field exercises on a routine basis.

8.1.2 | Halton Region Paramedic Services

The Halton Region Paramedic Services (H.R.P.S.) provides emergency medical services to the residents of Burlington, Halton Hills, Milton and Oakville. According to the service's website, H.R.P.S. employs 184 paramedics (this includes both primary care and advanced care paramedics) and maintains a fleet of 34 emergency response vehicles. Over 50,000 calls are responded to each year servicing over 450,000 Halton residents. There is a co-located facility at Milton Fire Department's Station #2, staffed by a paramedic supervisor. Our research indicates M.F.D. Station #5 will also provide co-location for H.R.P.S.

According to the Paramedic Services Division Annual Update, over a ten year period (2007-2016), call volume increased by 55% for both emergency and non-emergency calls combined, higher than the call volume anticipated in the Paramedic Services 10-year plan. This trend is captured in **Table 35**, which has been adapted from the Update.

Table 35: Annual Call Volume for the Halton Region Paramedic Service 2007-2016

Year	Call Volume Dispatch Priority 1-4	Number of Patient Transports
2007	30,023	19,976
2008	29,270	19,580
2009	30,809	20,913
2010	31,213	21,503

Year	Call Volume Dispatch Priority 1-4	Number of Patient Transports
2011	33,774	22,975
2012	36,142	24,206
2013	38,400	25,575
2014	40,664	26,784
2015	42,881	27,959
2016	46,374	29,806

Source: Paramedic Services Division Annual Update, 2017

The Town is a participant in the Halton Region Tiered Response Agreement along with Halton Region Paramedic Services (H.R.P.S.), the Halton Regional Police Services and three other municipal fire services namely Oakville, Burlington and Halton Hills. This agreement outlines the specific conditions that call for a multi-agency response as well as the notification criteria required of each participant.

Within the agreement, the H.R.P.S. is to notify the M.F.D. in the case of:

- Obvious immediate threat of respiratory arrest or cardiac arrest (occurring within Town boundaries); and
- Motor vehicle collisions involving personal injury or entrapment.

The Halton Regional Police Service is to notify the M.F.D. in the case of:

- Chemical, Biological, Radiological, Nuclear and Explosives (C.B.R.N.E.) resulting from criminal intent/action; and
- Motor vehicle collisions involving entrapment.

The H.R.P.S. offers a bike medic program, which enables paramedics to respond to emergencies in locations ambulances may have difficulty accessing. The program has become very popular at community events, as the medics are able to provide the same services as those typically provided by medics in an ambulance. The bike medic program also promotes bike safety.

Additionally, the H.R.P.S. provides first aid and C.P.R. training to community groups.

As mentioned **in Section 10.0 – Economic Profile**, Milton is one of the fastest growing communities in Ontario. As urban Town borders and population expands, the provision of paramedic services will need to accommodate for growth through planning strategies that consider and address the needs and circumstances of a growing community.

8.1.3   **Halton Police Services**

The Halton Regional Police Service 1 District Operations is responsible for providing policing services to the Town (in addition to the Georgetown and Acton communities). The primary facility for 1 District Operations is located in Milton next to the Halton Region Paramedic Services station. There is an operational station in Georgetown and a substation in Acton.

According to the Halton Regional Police Service website, 1 District's command structure consists of one Superintendent and one Inspector who oversee four platoons each led by a Staff Sergeant. These platoons are comprised of uniformed officers and are backed by civilian staff. Additional support is provided by a Resource Officer at the Milton location and an Administrative Sergeant at the Georgetown station. As of October 2014, the H.R.P.S. has 667 uniformed and 290.5 civilian personnel, for a ratio of 1 police personnel for every 796 persons within the Region. The website also suggests that the Halton Region "is the safest regional municipality of its size, according to Statistics Canada's Crime Severity Index."[27]

The Halton Regional Police Service annual Report for 2017 provides a number of statistical highlights for the Region. For the purposes of this report a number of these highlights are reviewed below:

- Total requests for service increased by 5,552 or 3.6% in 2017.
- Analysis indicates that 1,435 more criminal offences were reported in 2017 than those recorded in 2016, representing an increase in the crime rate of 10.8% when regional population growth is taken into account.
- Reportable motor vehicle collision totals were 5.0% higher during 2017 when compared to 2016.[28]

The statistics reported are those collected by Halton Regional Police Services and excludes collisions and requests for service that take place on Highways 401 and 407. Those incidents are reported to the Ontario Provincial Police, through the collision reporting centre located within the Town.

The Halton Region Police Service operates a number of specialized units. These units include:

- Criminal Intelligence and Drugs - which includes analytics, drug and morality, firearms, intelligence, offender management;

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[27] Halton Regional Police Service: https//:haltonpolice.ca: Accessed September 18, 2018.
[25] Halton Regional Police Service: https://www.haltonpolice.ca/services/publications/documents/Annual_Report_2017.pdf : Accessed September 18, 2018

- Investigative Services - which includes cyber-crime, child abuse, forensic services, fraud, internet child exploitation, homicide, human trafficking and vice, polygraph, technological crime and domestic violence;
- Emergency Services- which includes canine, crisis negotiations, explosives disposal, search incident response, marine and tactical rescue unit;
- Traffic Services, including commercial motor vehicle enforcement;

The Region's growth may be a driver for the above increases and figures. As the Region overall (including Milton) continues to grow at a significant rate, so too will the challenge to acquire resources accordingly. The Halton Regional Police Service Corporate Business Plan 2017-2019 has recognized these trends and has implemented the use of new resource analysis tools to ensure personnel deployment is optimized to minimize response times and maximize the efficiency of staffing.[29]

It appears that statistical trends throughout the above departments are reflective of a growing region that will require ongoing assessment of the community's needs well into the future.

Key Finding: *Public safety response agency statistics are reflective of an increased demand for service in a growing community.*

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[29] Source: "Corporate Business Plan 2017-2019." Halton Regional Police Service, https://www.haltonpolice.ca/services/publications/businessplan.php

9.0 Community Services

As referenced in O. Reg. 378/18: Community Risk Assessments, 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.

9.1 Community Services within the Town

In keeping with the regulation, the Community Services Profile discusses "the types of services provided by other entities in the community and those entities' service capabilities."[30] The Halton Region Emergency Program and Plan (H.R.E.P.P.) and its related appendices will be referenced throughout this profile as it provides significant information relevant to the community services provided within the Town and the Region.

The H.R.E.P.P. identifies First Response Protocol Partners. They are:

- Fire, police and paramedics (first responders);
- Access Halton (311);
- Social and Community Services; and
- Canadian Red Cross.

Details relating to the response capabilities of the Milton Fire Department, Halton Regional Police and Halton Region Paramedic Services are discussed in the Public Safety Response Profile in this Community Risk Assessment, while the services provided by Social & Community Services and the Canadian Red Cross, along with other agencies will be discussed in the following pages of this profile.

In addition to the First Response Protocol Partners, the H.R.E.P.P. also identifies the following external partners:

- The Salvation Army;
- St. John Ambulance;
- Canadian Mental Health Association;
- H.M.C. Connections;
- Ontario Society for Prevention of Cruelty to Animals; and
- Halton Region Emergency Communications Team.

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[30] https://www.ontario.ca/laws/regulation/180378, Accessed September 13, 2018.

A variety of community services are available within the Town through the First Response Protocol Partners and external stakeholders. These services are described below.

9.1.1 Access Halton (311)

Halton Region has implemented a 311 system, providing residents with a non-emergency telephone number by which to access government services within the Region. Multi-lingual assistance is available. The partner organizations within the 311 system include:

- The Regional and local municipal governments, including the Town;
- Halton Regional Police Service;
- Halton District School Board; and
- Halton Catholic District School Board.

In the event of an emergency, the Incident Commander may use 311 to communicate incident information and advise the hub of the number of people impacted by the emergency. In turn, Social & Community Services staff coordinates support for those persons impacted by the emergency.

9.1.2 Social & Community Services and Canadian Red Cross

Social Services are provided to Milton residents through the Halton Region Social & Community Services Department along with both internal and external stakeholders, including the Canadian Red Cross. A variety of Emergency Social Services (E.S.S.) are available to people within the Region and the Town. In the event of an emergency, and if plan is activated Canadian Red Cross volunteers are responsible for assessing the needs of displaced persons, notifying Social & Community Services if further assistance is needed, delivering Emergency Social Services and updating the S.C.S. when delivery of E.S.S. is complete. According the H.R.E.P.P., the services offered include:

Registration and Information – record demographic information, assess E.S.S. needs, and provide information regarding community agencies.

Family Reunification – respond to inquiries regarding the location of other impacted people through registration information and Canadian Red Cross telephone hot lines to help find loved ones and reunite families.

Emergency food – food/grocery vouchers or pre-paid gift or debit cards.

Emergency clothing – one set of new clothing and footwear, and sleepwear, including laundry vouchers, as required.

Emergency lodging – safe, temporary lodging such as hotels, motels that are pet friendly where possible or within evacuation centres where a large scale incident impacts many people.

Personal services may include:

- Providing hygiene kits (toothpaste, toothbrush, deodorant, shampoo, razors, etc.), baby products and adult incontinence products as needed;
- Providing access to psychosocial support;
- Facilitating access to medical care and may include paying for one refill of essential medication, replacements or repair of eyeglasses, dentures, prosthetics and hearing aids when no other financial supports are available;
- Assisting people in securing or arranging transportation (public transit or taxis); and
- Arranging for animal / pet care;

Specialized Services may include:

- First aid treatment;
- Access to psychosocial/mental health support/referrals to counselling services;
- Support and placement of vulnerable people and unattended children in more appropriate facilities with help from external agencies;
- Access to culturally specific and language services;
- Arranging for animal care including service animals, and/or arranging pet care outside of an evacuation centre;
- Recreation activities for children and adults during daytime or early evening hours; and
- Screening for communicable disease, recommend infection prevention and control measures.

Wellness Checks

Should an incident within the Town require residents to shelter in place, Town and Regional staff identified under the H.R.E.P.P. as well as Canadian Red Cross may perform wellness checks on those who remain in their residence during the emergency. The assistance of Halton Regional Police Service, Halton Region Public Works Department, Halton Region Health Department and the Town's Community Emergency Management Coordinator (C.E.M.C.) may be utilized to perform wellness checks depending on the circumstances of the incident. Additionally, Regional Social & Community Services personnel are responsible for assessing and distributing food vouchers, income assistance and other support during an emergency that requires individuals and families to stay in their homes during an incident.

Emergency Evacuation Centre, Reception, Warming and Cooling Centres

In the event that the Town experiences an emergency that would displace more than 25 persons, the H.R.E.P.P. outlines the procedure to activate emergency evacuation centres, reception, warming and cooling centres.

9.1.3 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.

9.1.4   St. John's Ambulance

The St. John's Ambulance offers first aid and C.P.R. services at public recreational events within the Town, as well as a base of volunteers capable of providing first aid, C.P.R. and health care services in the event of a disaster within the community.

9.1.5   Halton Region Emergency Communications Team

The Halton Region Emergency Communications Team includes both amateur and non-amateur radio operators and groups within the Region. South Halton Amateur Radio and Emergency Services (S.H.A.R.E.S.) and Halton Amateur Radio Club Inc. are affiliated with Radio Amateurs of Canada. Both groups include licensed radio amateurs and individuals with an interest in radio communications. Its members provide rapid response to communications emergencies as well as communication services during community events.

9.1.6   Canadian Mental Health Association- Halton Region Branch

The Halton Region Branch of the Canadian Mental Health Association offers services and supports to people experiencing mental illness. Free walk in counselling services are offered in Milton on Mondays at the John Howard Society located at Main Street East between the hours of 1pm and 7pm. The services provided by the C.M.H.A. may be accessed by those impacted by an emergency incident.

9.1.7   Halton Multi-cultural Council (H.M.C.) Connections

HMC Connections is a government funded, full service settlement agency. It provides the following services to immigrants and refugees living in Halton Region:

- Counselling and settlement services;
- Assistance with basic needs;
- Access to information relating to affordable housing and financial budgeting rights, entitlements, responsibilities, education, health care coverage and transportation;
- Advocacy on behalf of the client with professionals (service provider, doctor, court, lawyer, etc.);
- Assessing eligibility for social services and financial assistance;
- Interpretation and Translation;
- Community Connections Mentorship Program;
- Computer classes; and
- English Conversation Circles, generally as well as specific programs for seniors.

Translation and interpretation services may be needed in the event an emergency impacts individuals who are unable to communicate in English.

9.1.8   Oakville and Milton Humane Society

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. The O.M.H.S. provides emergency shelter and investigative services 24 hours a day, 7 days per week.

These service may be required should an emergency incident displace a family or families with pets or make a situation unsafe for animals.

| *9.1.9* | **Conservation Halton** |

Under the H.R.E.P.P., 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. Conservation areas within the Town are discussed in greater detail within the Geographic Profile of this C.R.A.

| *9.1.10* | **Halton District School Board & Halton Catholic District School Board** |

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 C.R.A. includes a discussion of school aged children.

| *9.1.11* | **Milton Hydro Distribution Inc.** |

Milton Hydro Distribution Inc. distributes electricity to more than 37,000 business and residential customers and is owned by the Town. During an electrical emergency, the utility liaises with the Town through the C.E.M.C., providing information regarding any outages including the area affected, number of customers impacted, estimated time of restoration as well as any priority restoration areas. Further details regarding electrical distribution within the Town are discussed in the Critical Infrastructure Profile of this Community Risk Assessment.

| *9.1.12* | **Milton District Hospital** |

The Milton District Hospital is one of three hospitals that form Halton Health Care within the Region. Halton Healthcare has attained Accreditation with Exemplary Standing, the highest award possible, from Accreditation Canada. A 330,000 square foot expansion to the MDH was opened in 2017 and includes an MRI, Geriatric Clinic, Mental Health Crisis Nurse, Mental Health Urgent Care Clinic, a Pediatric Observation Short Stay area within the Emergency Department, the introduction of Ear, Nose and Throat (E.N.T.) surgery and a Special Care Nursery in the Maternal Newborn Department to the community.[31] The Milton District Hospital will also be discussed in the Critical Infrastructure Profile of this Community Risk Assessment.

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[31] Source: https://www.haltonhealthcare.on.ca/site_Files/Content/2017-18_annual_report.pdf Accessed September 13, 2018.

9.1.13   Annexes to the Halton Region Emergency Program and Plan

The H.R.E.P.P. includes a number of annexes that provide valuable guidance and procedural information relating to specific Regional departments providing community services in the event of an emergency. A summary of the relevant annexes follows, however because these annexes are not publically available, the details of the plans will not be discussed in this profile.

9.1.14   Human Resources Emergency Plan

The Halton Region Human Resources Emergency Plan provides guidance to support staff and volunteers in the event of an emergency. This is significant for the Town as it serves as a crucial resource for supporting and engaging volunteers who may make themselves available to assist during an emergency.

9.1.15   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.

9.1.16   Public Works

The Public Works Emergency Plan outlines a framework to restore critical infrastructure and public works services such as water, waste water, and waste management and to support a provincial, regional or municipal disruption of services.

The community services described in this profile are not intended to provide an exhaustive listing of the agencies and organizations offering services within the Town. Rather, those identified are those that have relevance to the provision of fire protection services as defined under the Fire Protection and Prevention Act. Those identified that are not directly related to the provision of fire protection services have been included due to the potential opportunities that may exist within the community to mitigate the impact of an emergency within the Town, including addressing issues that may affect or impact response due to barriers related to language, culture, mental health and socio-economic status. The community services available within the Town and Halton Region offer significant support and services to those living, working and visiting the community.

10.0 | # Economic

As referenced in O. Reg. 378/18: Community Risk Assessments, 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 significant influence on the ability of the community to provide or maintain service levels. The following sections consider these economic characteristics within the Town.

10.1 | ## Top Employers in Milton

Certain industries, employers and events contribute to the economic vitality and well-being of a community. If these facilities, employers or events are impacted through a fire or other emergency, it could have a negative effect on the overall financial stability and/or vitality of a municipality. The Town is a young, vibrant and fast-growing community with a robust labour force (see **Section 6.3.1)**. Situated in close proximity and accessibility to major transportation highways, Milton's businesses and residents are connected to major economic markets within the Greater Toronto Area.

Milton's 2016 Economic Development Annual Report has identified three main industries within the community:

- Advanced manufacturing;
- Logistics and distribution; and
- Food production and distribution

Within these industries, the Town's top employers surpassing 900 employees include Gordon Food Service and Karmax Heavy Stamping. All top employers by number of employees for the Town highlighted in the 2017 Economic Development Annual Report are included in **Table 36** below.

Table 36: Milton's Top Employers

Employer	Number of Employees
Gordon Food Service	906
Karmax Heavy Stamping	905
Monaghan Mushrooms Ltd.	398
Manheim Auto Auctions Company	350
Chudleigh's Ltd.	291
Adient (former Johson Control)	222
A.F.I.M.A.C. Global	194
Eaton Industries (Canada) Ltd.	181

Employer	Number of Employees
RockTenn	170

Source: 2017 Economic Development Annual Report

Key Finding: *The Town has key employers that contribute to the economic vitality and well-being of the community. If a fire were to occur at one of these facilities it could have a negative impact on the financial vitality of the Town.*

Milton is recognized as one of the fastest growing communities in Ontario. To accommodate its anticipated growth and promote employment within its business, commercial and industrial sectors, the Town has planned to develop three areas; Derry Green Business Park, Trafalgar Corridor and the Milton Downtown core.

The Milton Education Village (M.E.V.) is another future development prospect that will be integrated into the Town's urban structure and will likely contribute to its economy. The M.E.V. is a complete urban neighbourhood that integrates post-secondary education, residential commercial and recreational land use into one neighbourhood. This site is planned to be built south of Derry Road and north of Britannia.[32]

Key Finding: *There are a number of significant developments planned for Milton's future that are likely to play an integral role in the Town's economy. If a fire were to occur at one of these facilities it could have a negative impact on the financial vitality of the Town.*

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[32] Economic Development Annual Report, 2017:
http://www.miltoneconomicdevelopment.ca/Public/Page/Files/1_MiltonEconomicDevelopment_AnnualReport.pdf

11.0   Past Loss and Event History

As referenced in O. Reg. 378/18:Community Risk Assessments, 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

11.1   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.

11.1.1   Overall Fire Loss

The overall property loss as a result of fires is displayed in **Table 37** for the period of 2012-2016 during which Milton experienced a total of 571 fires (involving structures, outdoor fires and vehicles) leading to $20,814,115 in property loss. Over this five year period, there were 333 structure fires, 61 outdoor fires and 177 vehicle fires.

Table 37: Town of Milton Total Fire Loss (2012-2016)

Year	Structures		Outdoor		Vehicle		TOTAL	
	# of Fires	Loss ($)	# of Fires	Loss ($)	# of Fires	Loss ($)	# of Fires	Loss ($)
2012	51	$2,056,174	14	$301	26	$741,200	91	$2,797,675
2013	69	$4,037,700	7	$5,000	41	$626,399	117	$4,669,099
2014	71	$4,842,892	10	$600	37	$635,500	118	$5,478,992
2015	73	$2,488,708	14	$56,002	29	$508,000	116	$3,052,710
2016	69	$3,732,502	16	$30,337	44	$1,052,800	129	$4,815,639
Total	**333**	**$17,157,976**	**61**	**$92,240**	**177**	**$3,563,899**	**571**	**$20,814,115**

(Source: O.F.M.E.M. Standard Incident Reporting)

When looking at structure fires specifically **Table 38** shows the proportion of structure fires and property loss for the period of 2012-2016 based on total number of fires and total property loss for all fires (structures, outdoor and vehicle). Structure fires accounted for 58% of all fires and 82% of total dollar ($)

loss. For the period of 2012-2016 there were 36,159 structure fires in Ontario representing 66% of all fires. Structure fires accounted for 90% of total property loss or total dollar ($) loss in the Province. The proportion of structure fires in the province is higher when compared to the Town (58% versus 66%). This table also indicates that structure fires account for the majority of all property loss within the Town and within the Province (82% and 90%).

Table 38: Town of Milton and Province of Ontario Structure Fires and Property Loss (2012-2016)

Year	Town of Milton				Province of Ontario			
	Structure Fires	Property Loss ($)	% ALL Fires	% ALL Property Loss	Structure Fires	Property Loss ($)	% ALL Fires	% ALL Property Loss
2012	51	$2,056,174	9%	10%	7,496	$543,115,732	14%	15%
2013	69	$4,037,700	12%	19%	7,191	$576,249,175	13%	16%
2014	71	$4,842,892	12%	23%	7,063	$784,681,080	13%	22%
2015	73	$2,488,708	13%	12%	7,240	$658,957,595	13%	18%
2016	69	$3,732,502	12%	18%	7,169	$654,466,771	13%	18%
Total for Structure Fires	**333**	**$17,157,976**	**58%**	**82%**	**36,159**	**$3,217,470,353**	**66%**	**90%**
Total for All Loss Fires	**571**	**$20,814,115**	**-**	**-**	**54,457**	**$3,573,005,208**	**-**	**-**

(Source: O.F.M.E.M. Standard Incident Reporting)

11.1.2   Fires by Occupancy Type

The analysis of historical fires by occupancy type highlights the occupancies which may be more vulnerable to fires than others. To assess the fire loss by occupancy classification, data retrieved from the O.F.M.E.M.'s Standard Incident Reporting was analyzed. This data is illustrated in **Table 39** for a five year period from 2012 to 2016. Analysis indicates that of the total structure fires which occurred in Milton between this time period, 221 or 67% of fires occurred in Group C – Residential occupancies. Group C – Residential occupancies account for 81% of property loss ($). For this same period, 73% of the fires with a loss in Ontario occurred within Group C – Residential occupancies, 6% higher than Milton.

Group F – Industrial occupancies account for 10% of fires within the Town higher than the Province by 2.5%. Group A – Assembly occupancies account for the second most significant source of property loss in the Town accounting for 9% of structure fire loss and 7% of the total structure fires over the same period. On the other hand, the occupancy type that accounts for the third highest percent of total structure fires is other occupancies – not classified within the O.B.C. at 11%.

Table 39: Town of Milton and Fire Loss by Occupancy Classification (2012-2016)

Group	Occupancy Classification	Fires	% Fires	Property Loss	% Loss	Ontario % of Structure Fires	Ontario % of Structure Fire Property Loss
Group A	Assembly occupancies	23	7%	$1,525,278	9%	4.0%	3.3%
Group B	Care or Detention occupancies	5	2%	$22,000	0%	1.4%	1.1%
Group C	Residential occupancies	221	66%	$13,812,973	81%	73.4%	61.5%
Group D	Business and Personal Services Occupancies	7	2%	$5,000	0%	2.5%	2.2%
Group E	Mercantile occupancies	7	2%	$177,000	1%	3.4%	5.1%
Group F	Industrial occupancies	33	10%	$708,605	4%	7.5%	20.2%
Other occupancies	Not classified within the Ontario Building Code	37	11%	$907,120	5%	5.1%	1.2%
	Classified under National Farm Building Code	N/A	N/A	N/A	N/A	2.6%	5.5%
Total		**333**	**100%**	**$17,157,976**	**100%**	**36,159 (100%)**	**$3,217,470,353**

Source: O.F.M.E.M. Standard Incident Reporting

Key Risk: Although occurring at a lower proportion compared to the Province, Group C – Residential occupancies account for 66% of structure fire loss within the Town.

Key Risk: Group F – Industrial occupancies account for 10% of structural fires within the Town. This is 2.5% more than the provincial proportion at 7.5%.

Key Finding: Group A – Assembly occupancies account for 7% of structure fire loss within the Town. This is 3% higher than the Province (4%).

11.1.3 Civilian Fire Fatalities and Injuries

Reviewing historic fire deaths or injuries by age and gender of victims can help to provide insight for the purposes of targeted community risk reduction programs. These trends can be used to inform programming for the Town of Milton. As mentioned previously in **Section 6.0**, seniors represent the highest proportion of fire fatalities in the Province of Ontario and males are more likely to be injured from a fire or lose their life in a fire.

As shown in **Table 40**, according to the 2012 to 2016 O.F.M.E.M. Standard Incident Reporting, during this period there were 20 reported injuries and no reported fatalities within Milton. The majority of injuries within the Town occurred in Group C – residential occupancies. This finding is consistent with

the fire loss statistics by occupancy, whereby the majority of fire losses within the Province and within the Town occurred in Group C – Residential occupancies.

Table 40: Town of Milton Reported Civilian Injuries and Fire Fatalities (2012-2016)

Occupancy Classification (O.B.C.)	Occupancy Definition Fire Risk Sub-model (O.F.M.E.M.)	Injuries	Fatalities
Group A – Assembly	Assembly occupancies	0	0
Group B – Care or Detention	Care or Detention occupancies	0	0
Group C - Residential	Residential occupancies	19	0
Group D - Business	Business and Personal Services Occupancies	0	0
Group E - Mercantile	Mercantile occupancies	0	0
Group F - Industrial	Industrial occupancies	0	0
Other occupancies	Not classified within the Ontario Building Code (i.e. farm buildings)	1	0
Total		**20**	**0**

(Source: O.F.M.E.M. Standard Incident Reporting)

Key Risk: *19 out of 20 reported fire related civilian injuries occurred in Group C – residential occupancies.*

11.1.4 **Reported Fire Cause**

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 O.F.M.E.M. fire loss reporting, there are four categories of cause utilized to classify the cause of a fire. These include intentional, unintentional, other, and undetermined.

The "intentional" category recognizes the cause of a fire to be started for a specific reason. These are typically classified as arson fires, and for example can be related to acts of vandalism, or to achieve personal gain through insurance payment. As indicated in **Table 41**, 6% of the fires reported over a five year period (2012-2016) were intentional, lower than the Provincial total of intentional fires (9%).

The "unintentional" category recognizes a number of the common causes of a fire that represent both human behavioural causes (e.g., playing with matches) and equipment failures (e.g., mechanical failure). Unintentional fire causes represented 47% of the cause for the 266 fires during this period. This suggests a need for targeted education programs about fire causes and prevention.

The percentage of undetermined fires represents a total of 16% of all fire causes which is a lower rate compared to Province at 19%. While this is a lower rate, there may be an opportunity to improve to reduce this gap.

Table 41: Town of Milton Reported Fire Cause (2012-2016)

Nature	Fire Cause	Town of Milton		Province of Ontario	
		Number of Fires	% of Cause	Number of Fires	% of Cause
Intentional	Arson	19	3%	2,136	5.9%
	Vandalism	19	3%	808	2.2%
	Other Intentional	N/A	N/A	13	0.0%
	Children Playing	5	1%	167	0.5%
Unintentional	Design/Construction/Maintenance deficiency	37	6%	2,861	7.9%
	Mechanical /Electrical failure	83	15%	5,373	14.9%
	Misuse of ignition source	72	13%	10,903	30.2%
	Other unintentional	24	4%	2,532	7.0%
	Undetermined	35	6%	2,682	7.4%
	Vehicle Collision	10	2%	25	0.1%
Other	Other	47	8%	1,818	5.0%
Undetermined	Undetermined	90	16%	6,808	18.8%
Unknown, not reported	Unknown, not reported	N/A	N/A	33	0.1%
Total		**441**	**100%**	**36,159**	**100%**

(Source: O.F.M.E.M.)

11.1.5 Ignition Source

Table 42 illustrates the fire loss by source of ignition based on an analysis of the data provided from 2012 to 2016 from the O.F.M.E.M. for the Town of Milton and the Province. The source of ignition was reported as "undetermined" for 23% of fire loss incidents in the Town, an observation that is consistent with the Province's data where the source of ignition could not be determined for 24% of fire loss incidents.

The most common known causes of fires in the home within the Town are "other electrical/mechanical" and "miscellaneous" ignition sources at 19%.

Table 42: Town of Milton and the Province of Ontario Fire Loss Reported Source of Ignition (2012-2016)

Reported Ignition Source	Town of Milton		Province of Ontario	
	Number of Fires	% of Fires	Number of Fires	% of Fires
Appliances	12	3%	1,651	5%
Cooking equipment	38	8%	6,427	18%
Electrical distribution	30	7%	3,181	9%
Heating equipment, chimney etc.	17	4%	2,921	8%

Reported Ignition Source	Town of Milton		Province of Ontario	
	Number of Fires	% of Fires	Number of Fires	% of Fires
Lighting equipment	6	1%	1,195	3%
Open flame tools/smokers articles	39	9%	4,976	14%
Other electrical/mechanical	82	19%	1,532	4%
Processing equipment	13	3%	458	1%
Miscellaneous	65	14%	3,685	10%
Exposure	39	9%	1,473	4%
Undetermined	103	23%	8,627	24%
Unknown, not reported	N/A	N/A	33	0%
Total	**444**	**100%**	**36,159**	**100%**

Source: O.F.M.E.M. Standard Incident Reporting

The Town has noted that there have been a number of sump pump incidents due to electrical/mechanical failures in recent years resulting in fire loss ($). There have been a total of 6 incidents of this type over five years (2012-2016) resulting in a loss of $263,100 overall. The Town has undertaken a number of initiatives to educate the public on the potential for electrical/mechanical failure of sump pumps by distributing relevant information through local news outlets, the M.F.D. website as well as the department's Home Safe Home pamphlets and fire station signage.

Key Risk: *Of the fires occurring within the Town from 2012-2016, 19% of fires occurred as a result of other electrical/mechanical in Milton, approximately 15% higher than that of the Province.*
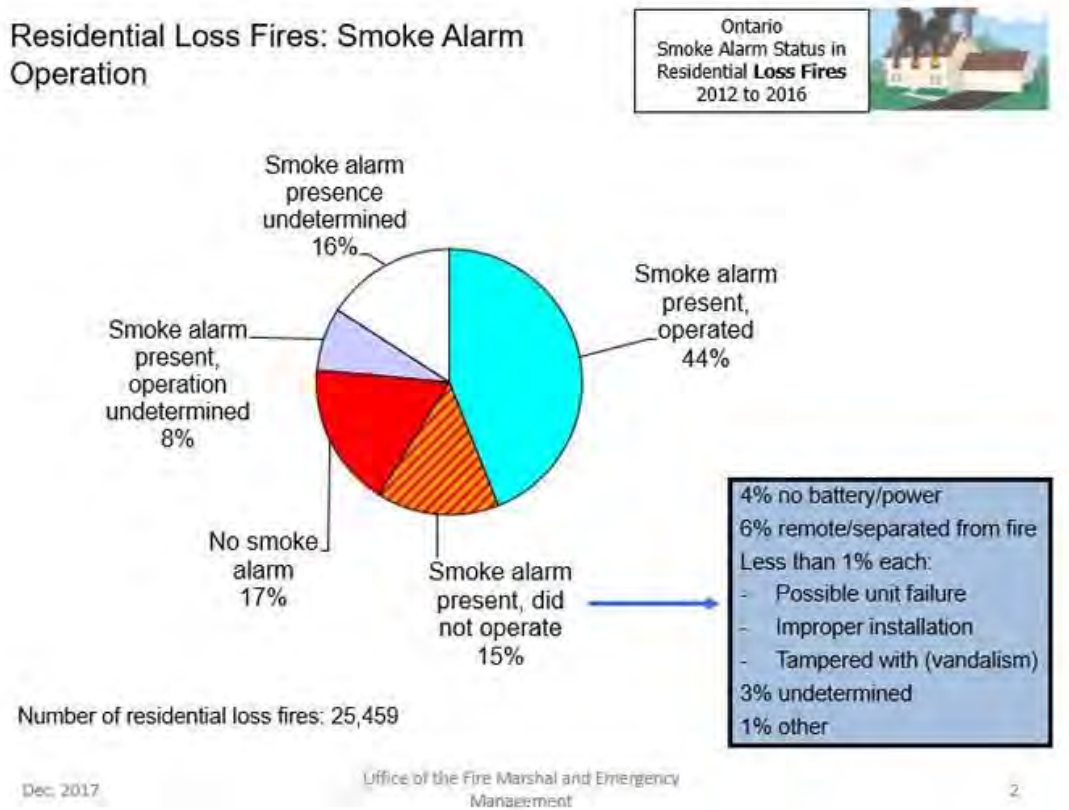
11.1.6   Smoke Alarm Status

Smoke alarms are required on every storey of a dwelling in the Province of Ontario. Smoke alarm programs are also one of the required services to be provided by a fire department per the F.P.P.A. As a result, smoke alarm programs and compliance are a key component of public education and fire prevention activities provided by the municipal fire departments across the Province.

Data is publically available at the provincial level for the smoke alarm status in the event of a fire but not at the municipal level. For the period of 2012-2016, the O.F.M.E.M. reported on the fires in Group C – Residential occupancies that resulted in a fire loss (financial or casualty) across the province. The results are shown in **Figure 16** (from O.F.M.E.M.) and highlights that in 32% of the instances, there was no smoke alarm or one was present but did not operate. In 15% of cases, a smoke alarm was present but

did not operate. This includes 4% of all loss fires where the smoke alarm did not have a battery or power. Smoke Alarms operated in 44% of these home loss fires.[33]

Figure 16: Smoke Alarm Status in the Province of Ontario, Group C – Residential Occupancies

(Source: O.F.M.E.M.)

Currently the M.F.D. provides reporting on the smoke alarm status presence and activation with the fire call data to the O.F.M.E.M. In regards to smoke alarms in a typical residential dwelling, **Table 43** highlights whether a smoke alarm was present and operating on the floor or in the suite of fire origin for the period of 2012-2016.

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[33] Ontario Smoke Alarm Status in Residential Fires 2012-2016." Ontario Ministry of Community Safety and Correctional Services. Last Modified: May 7, 2018:
https://www.M.C.S.C.S..jus.gov.on.ca/english/FireMarshal/MediaRelationsandResources/FireStatistics/OntarioFires/SmokeAlarmStatusinHomeFires/stats_sa_status.html

Table 43: Town of Milton and the Province of Ontario Smoke Alarm Operations

Smoke Alarm Status on Floor of Origin	Town of Milton Residential Occupancies							Province of Ontario (Group C - Residential)
	2012	2013	2014	2015	2016	Total	%	2012-2016
No smoke alarm	3	15	9	18	14	59	24%	17%
Smoke alarm present and operated	11	14	16	18	16	75	31%	44%
Smoke alarm present, did not operate	8	2	9	8	7	34	14%	15%
Smoke alarm present, operation undetermined	5	4	9	5	6	29	12%	8%
Smoke alarm presence undetermined	6	9	14	9	10	48	20%	16%
					Grand Total	**245**	**100%**	**100%**

Source: O.F.M.E.M. Standard Incident Reporting, and O.F.M.E.M. website,
https://www.M.C.S.C.S..jus.gov.on.ca/english/FireMarshal/MediaRelationsandResources/FireStatistics/OntarioFire
s/SmokeAlarmStatusinHomeFires/stats_sa_status.html

During this five year period, there was no smoke alarm present for 24% of occurrences. In 31% of occurrences a smoke alarm was present and operated. Provincial and local statistics support having a targeted and proactive smoke alarm program in place. The statistics also suggest that there is value in formally compiling and analyzing this data at a local level. This information could be used to enhance the local smoke alarm program, and, over time, measure trends.

Key Risk: Based on the analysis of smoke alarms present and operating, the information available indicates that there is a potential risk that in 38% of the instances there was either no smoke alarm present or it was not operational.

11.2   Event History

Event history seeks to apply the historic call data to develop an understanding of community risks. The analysis provided within this profile is based on all historical calls responded to by the M.F.D. for the years 2013-2017. Where a provincial comparison is made, 2012 to 2016 data is used in the analysis. This section provides a statistical assessment of historic call volumes for the Town as a whole by different time segments (e.g. annual calls, weekly calls, daily calls, etc.). It also provides detailed breakdowns of calls by type and corresponding volumes. The call volume by type is compared to the Province of Ontario's call volume by type to determine Milton specific risks. The volume and frequency of historic calls informs the understanding of response probability. The types of calls inform the potential consequences of the M.F.D. responses and calls for service. The combined consideration of these elements provides an understanding of community risk, based on past calls for service.
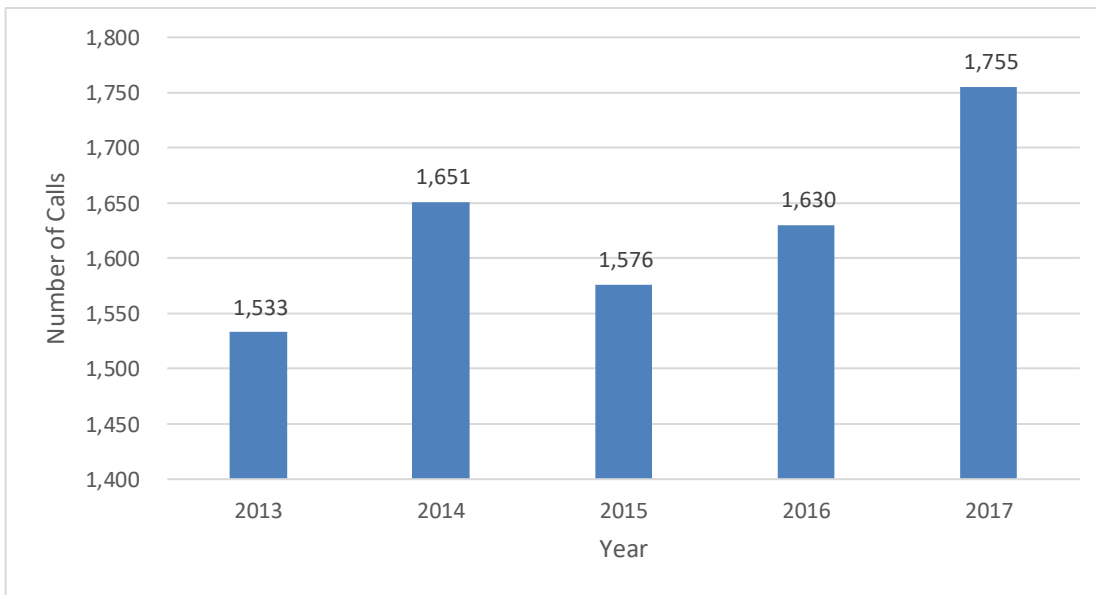
11.2.1   **Call Volume – All Incidents**

This section captures call volume by year, month, day of week and time of day for all incidents responded to by the M.F.D.

11.2.1.1   **Annual Call Volume – All Incidents**

The annual call volume provides a high level understanding of the probability of incidents occurring within Milton. A summary of the total number of calls within the Town from 2013-2017 is shown in **Figure 17**. Overall, the number of calls responded to by the M.F.D. has increased by 14% from 2013 to 2017, with the lowest number of calls received in 2013.The most dramatic increase in call volume occurred between 2016 and 2017 over this five year time span with an increase in 125 calls. The second largest increase occurred in 2013 and 2014. It has been noted by the M.F.D. that the fluctuation in 2014 can be attributed to an increase in non-emergency calls for public assistance. Given the Town's population growth (30.5% increase from 2011 to 2016) it is not surprising that the requests for service have also increased.

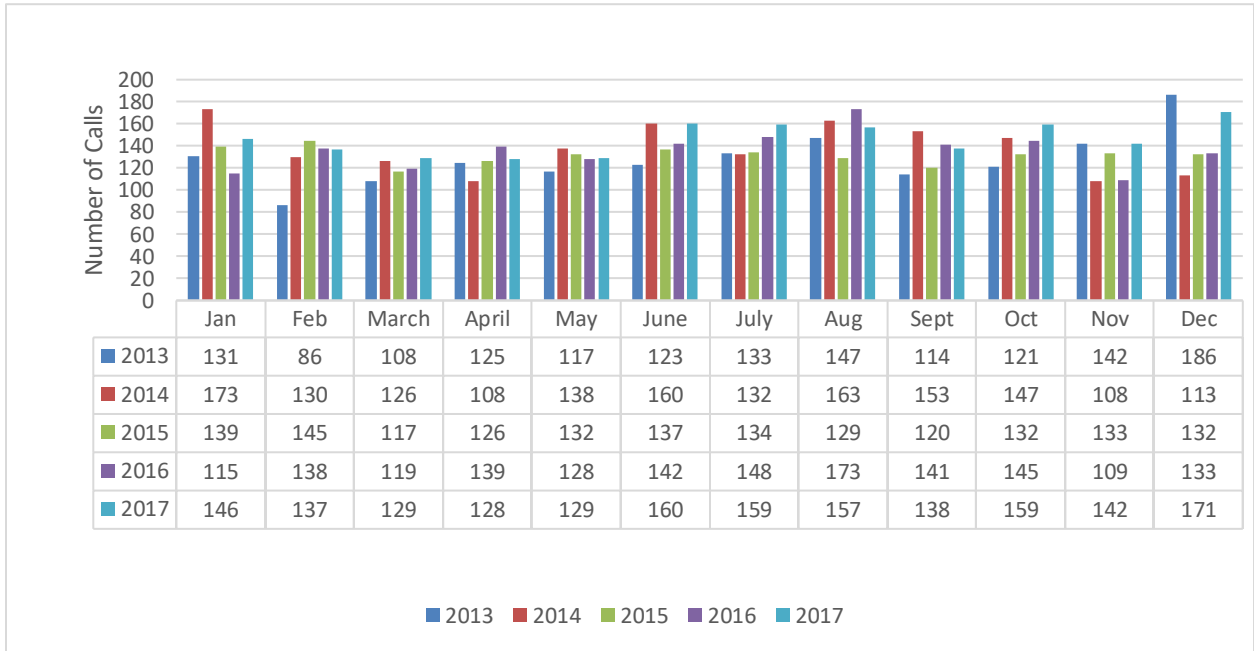**Figure 17: Annual Call Volume – All Incidents (2013-2017)**

(Source: M.F.D.)

Key Finding: *Annual call volume increased by 14% from 2013 to 2017.*

11.2.1.2   **Call Volume by Month – All Incidents**

As shown in **Figure 18**, call volume by month is for all incidents is fairly consistent across all months. On average, the highest call volume occurs in August while the lowest call volume occurs in March.

Figure 18: Call Volume by Month – All Incidents (2013-2017)

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2013	131	86	108	125	117	123	133	147	114	121	142	186
2014	173	130	126	108	138	160	132	163	153	147	108	113
2015	139	145	117	126	132	137	134	129	120	132	133	132
2016	115	138	119	139	128	142	148	173	141	145	109	133
2017	146	137	129	128	129	160	159	157	138	159	142	171

(Source: M.F.D.)

11.2.1.3 **Call Volume by Day of Week – All Incidents**

Similar to call volume by month, call volume is fairly consistent across all days of the week, as **Figure 19** below illustrates. Ton average, highest call volume occurs on Fridays, while the lowest call volume occurs on Sundays. The difference between the highest and lowest call volumes is 45 calls.

Figure 19: Call Volume by Day of Week – All Incidents (2013-2017)
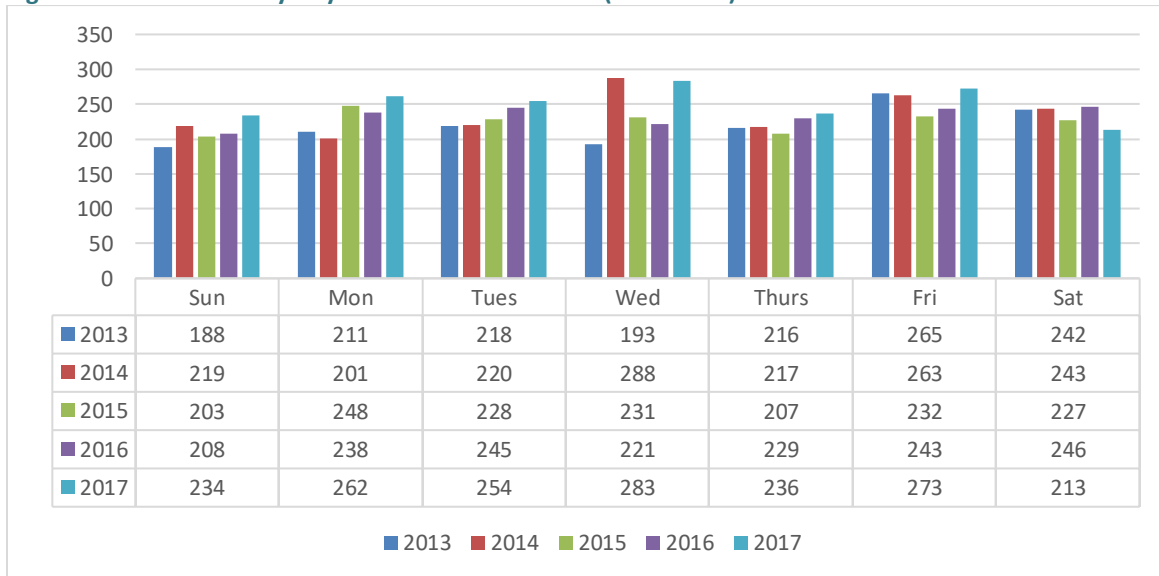
	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
2013	188	211	218	193	216	265	242
2014	219	201	220	288	217	263	243
2015	203	248	228	231	207	232	227
2016	208	238	245	221	229	243	246
2017	234	262	254	283	236	273	213

(Source: M.F.D.)

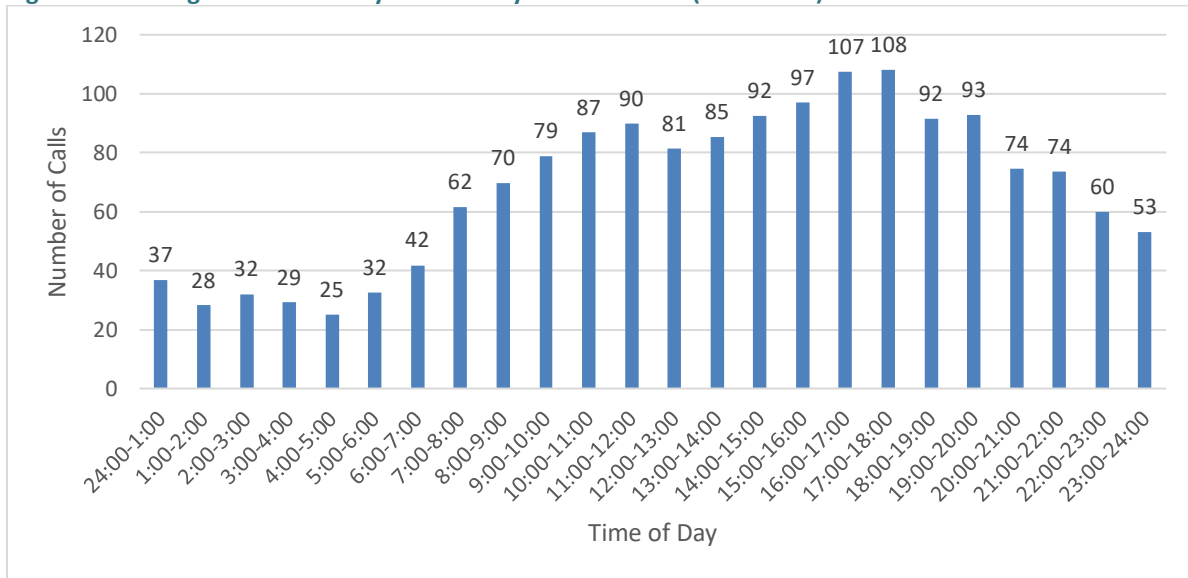*Key Finding*: *Analysis of call volume by day of week for the period of 2013 to 2017 indicates that the highest proportion of calls occurs on Fridays.*

11.2.1.4   Average Call Volume by Time of Day - All Incidents

Figure 20 indicates that on average, there is a higher occurrence of calls between 4pm and 6pm. The lowest average call volume takes place between the hours of 4am and 5am. This trend of high call volume between 4pm and 6pm coincides with daily times of higher commuter traffic and the lowest average call volume between 4am and 5am occurs when the majority of the population is typically asleep.

Figure 20: Average Call Volume by Time of Day – All Incidents (2013-2017)

(Source: M.F.D.)

Key Finding: *Analysis of call volume by time of day for the period of 2013 to 2017 indicates that the highest call volume occurs between the hours of 4pm and 6pm.*

Key Finding: *Analysis of call volume by time of day for the period of 2013-2017 indicates that calls decline at 10pm and remain at the lowest levels until approximately 6am.*

11.2.2   Call Volume by Milton Response Type

Understanding the historic call volume and the risks associated with each call requires a more detailed analysis of call type. A list of six categories was provided by the Milton Fire Department: rescue, public assistance, medical, fire, alarms and other. Each call over the five year period (2012-2016) was assigned to one of the six categories.

The average annual calls by Milton response type, shown in **Figure 21**, illustrate that the M.F.D. responds to a large average volume of public assistance calls.

Figure 21: Annual Call Volume (2012 - 2016) by Milton Response Type

	Alarms	Fire	Medical	Other	Public Asistance	Rescue
2016	316	29	136	14	816	319
2015	299	49	48	5	893	286
2014	320	37	114	9	886	284
2013	314	29	113	14	821	242
2012	286	69	105	11	728	257
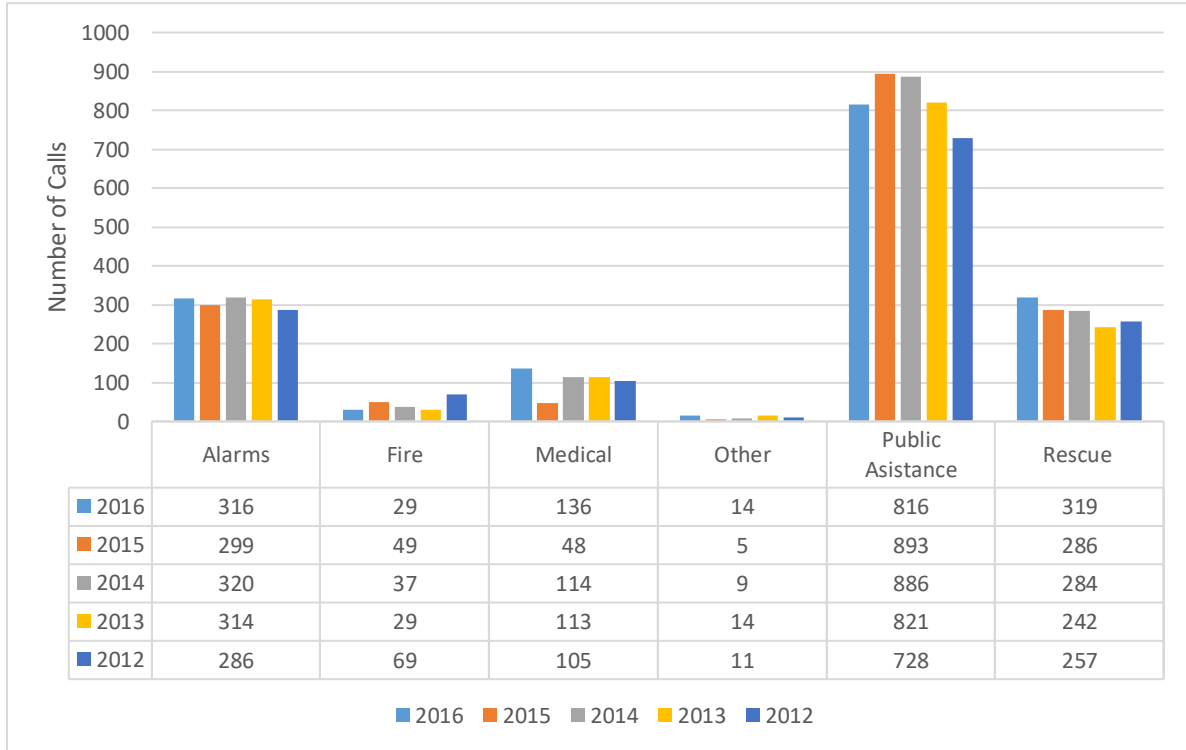
(Source: M.F.D.)

Key Finding: *Based on analysis of M.F.D. Response Types, Public Assistance calls account for the highest proportion of call types responded to within the Town over a five year period from 2013-2017.*

11.2.3 Town of Milton and Province of Ontario Comparison (by O.F.M.E.M. Emergency Response Types)

Each fire department in Ontario must report their calls to the Office of the Fire Marshal and Emergency Management (O.F.M.E.M.) annually. The O.F.M.E.M. requires each call to be identified by an O.F.M.E.M. emergency response type. The O.F.M.E.M.-defined response types are used by jurisdictions throughout Ontario for comparative reporting purposes. Milton response types and O.F.M.E.M. emergency response types are compared below in **Table 44**.

**Table 44: Milton Response Types and O.F.M.E.M. Emergency Response Types**

Milton Response Type	O.F.M.E.M. Response Type
Fire	Property Fires/Explosions
Rescue	Rescue
Alarms	False Fire Calls
Medical	Medical/Resuscitator
Other	Other Response
Public Assistance	Overpressure Rupture/Explosion (No Fire)
	Pre-Fire Conditions
	Co False Alarms
	Public Hazard
	Burning (controlled)

Source: Milton Fire Department

11.2.3.1 Calls by O.F.M.E.M. Emergency Response Type

Calls responded to by the M.F.D. are shown in **Figure 22** based on the O.F.M.E.M. Emergency Response Type. **Figure 23** shows the proportion of calls across the province based on O.F.M.E.M. Response Type for 2012-2016 (based on data provided by the O.F.M.E.M. – Ontario Key Facts Emergency Calls and Fires). A comparison of calls by emergency response type was completed between the Town and the Province using the O.F.M.E.M. response types.

Figure 22: Percentage of MFD Calls by O.F.M.E.M. Response Type (M.F.D. Response data – 2012-2016)
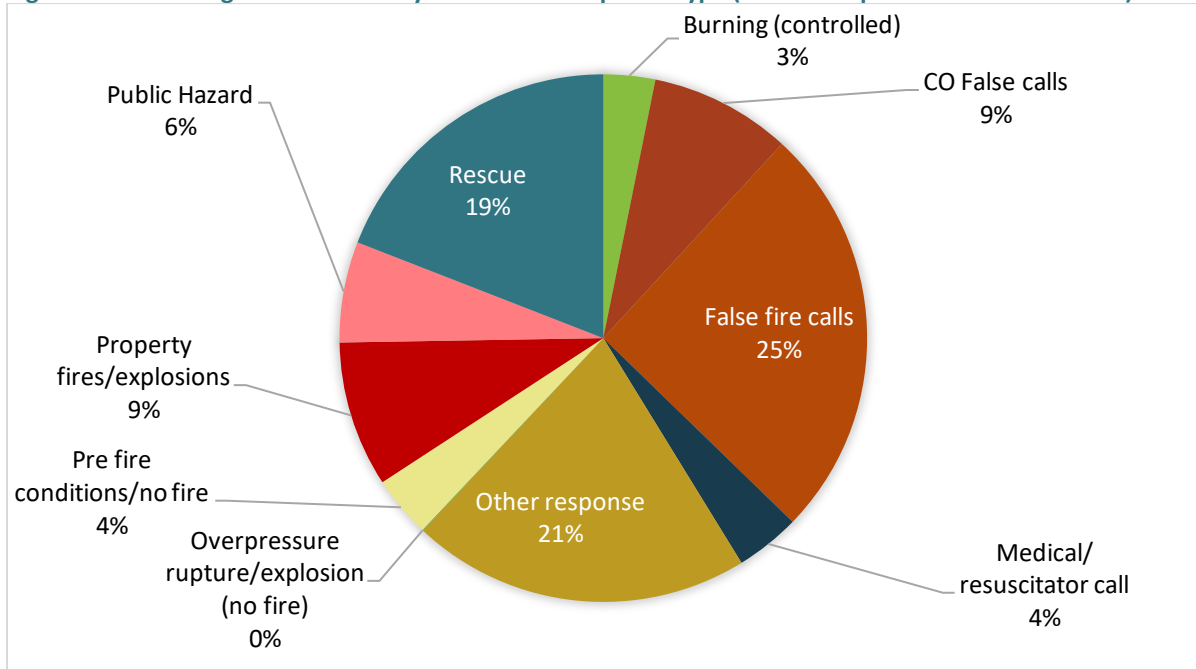
(Source: Milton Fire Department)

Figure 23: Percentage of Provincial Calls by O.F.M.E.M. Response Type (O.F.M.E.M. Data – 2012-2016)
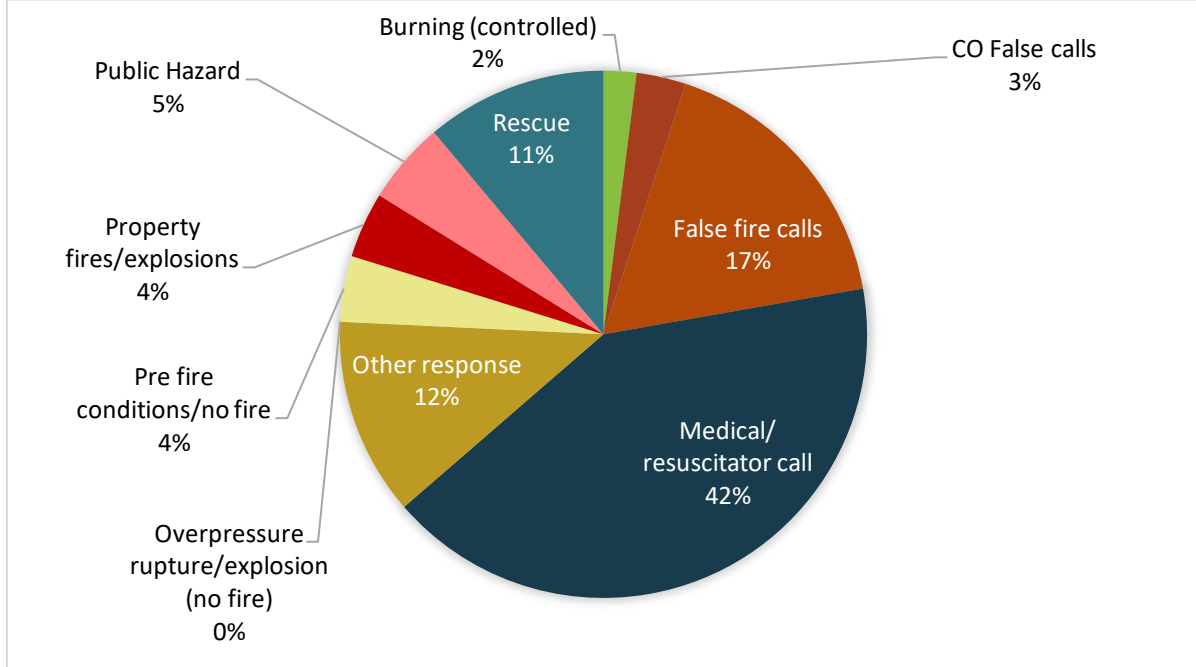
(Source: O.F.M.E.M.)

Medical calls are the most common response type on the provincial level (42%), followed by false fire calls (17%) and other calls (12%). Only 4% of provincial calls are fire calls. The call volume by O.F.M.E.M. Response Type observed in Milton varies compared to the Province. Some key differences are that the M.F.D. responds to 38% less medical/resuscitator calls than the Province, but experiences 8% more false fire calls, 6% more C.O. false calls, 5% more property fires/explosions calls and 9% more other response calls.

The M.F.D. responds to emergencies based on the information reported by the 9-11 caller, which is consistent with fire departments across the Province. Personnel and apparatus are dispatched based on the information received from the individual reporting the incident. Responding personnel may encounter conditions that are different from what was reported upon arrival.

Key Finding: Based on O.F.M.E.M. Response Types, M.F.D. call volumes are comprised of 8% more false fire calls, 6% more C.O. false calls, 5% more property fires/explosions calls, 9% more other response calls and 38% less medical calls.
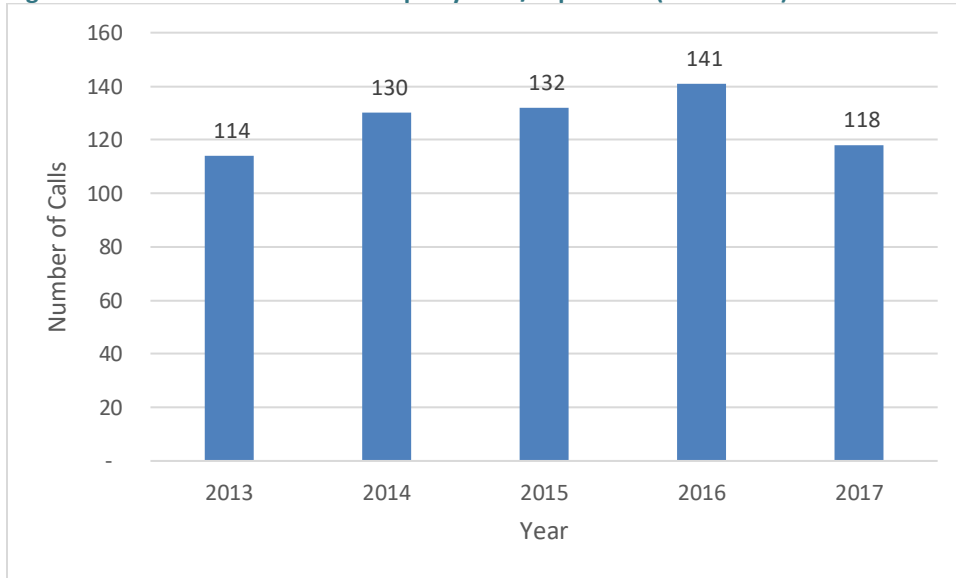
11.2.4   **Call Volume – Property Fires/Explosions**

This section captures call volume by year, month, day of week and time of day for property fires/explosions responded to by the M.F.D.

11.2.4.1 **Annual Call Volume – Property Fires/Explosions**

Figure 24 summarized annual call volume for incidents categorized as property fires/explosions. Over a five year timeframe, the highest call volume pertaining to this type of incident occurred in 2016.

Figure 24: Annual Call Volume – Property Fires/Explosions (2013-2017)
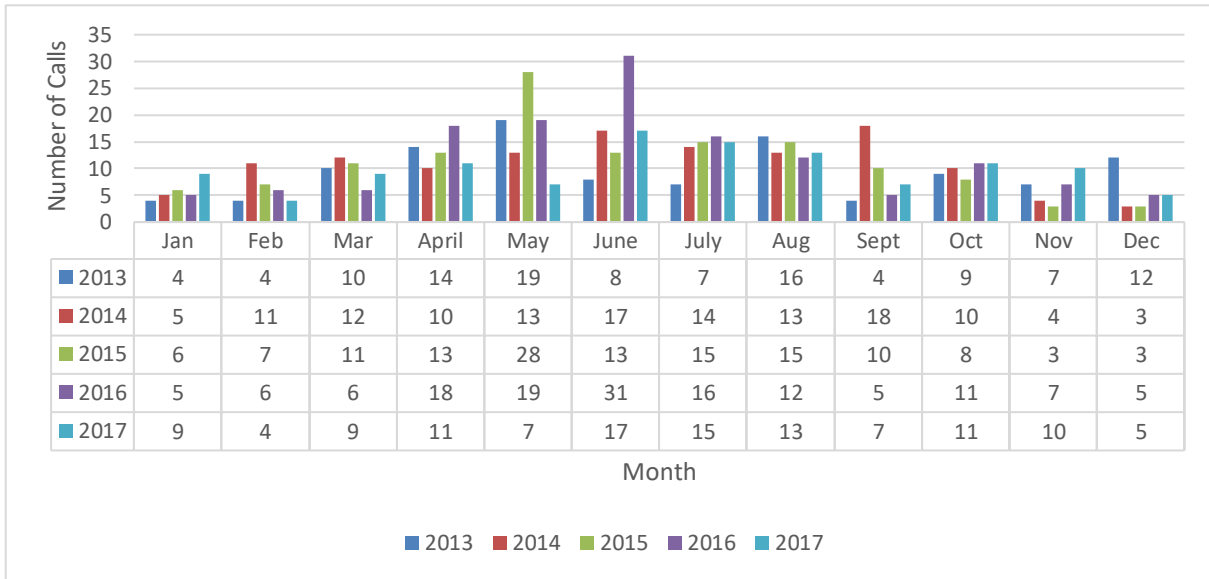

(Source: M.F.D.)

11.2.4.2 **Call Volume by Month - Property Fires/Explosions**

Figure 25 captures call volume by month for property fires/explosions. On average the highest call volume for this type of incident occurs in May and June. The summer months experience a higher volume of property fire calls and on average call volume decreases in the winter months.

Figure 25: Call Volume by Month – Property Fires/Explosions (2013-2017)

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2013	4	4	10	14	19	8	7	16	4	9	7	12
2014	5	11	12	10	13	17	14	13	18	10	4	3
2015	6	7	11	13	28	13	15	15	10	8	3	3
2016	5	6	6	18	19	31	16	12	5	11	7	5
2017	9	4	9	11	7	17	15	13	7	11	10	5

(Source: M.F.D.)

Key Finding: *There were more property fires/explosions in May and June during 2013-2017 when compared to other months of the year.*

11.2.4.3   Call Volume by Day of Week - Property Fires/Explosions

Call volume by day of week is depicted in **Figure 26**. As shown in the graph, call volume is relatively consistent for property fires/explosions throughout the week. Average call volume is highest on Saturdays for this response type.

Figure 26: Call Volume by Day of Week – Property Fires/Explosions (2013-2017)
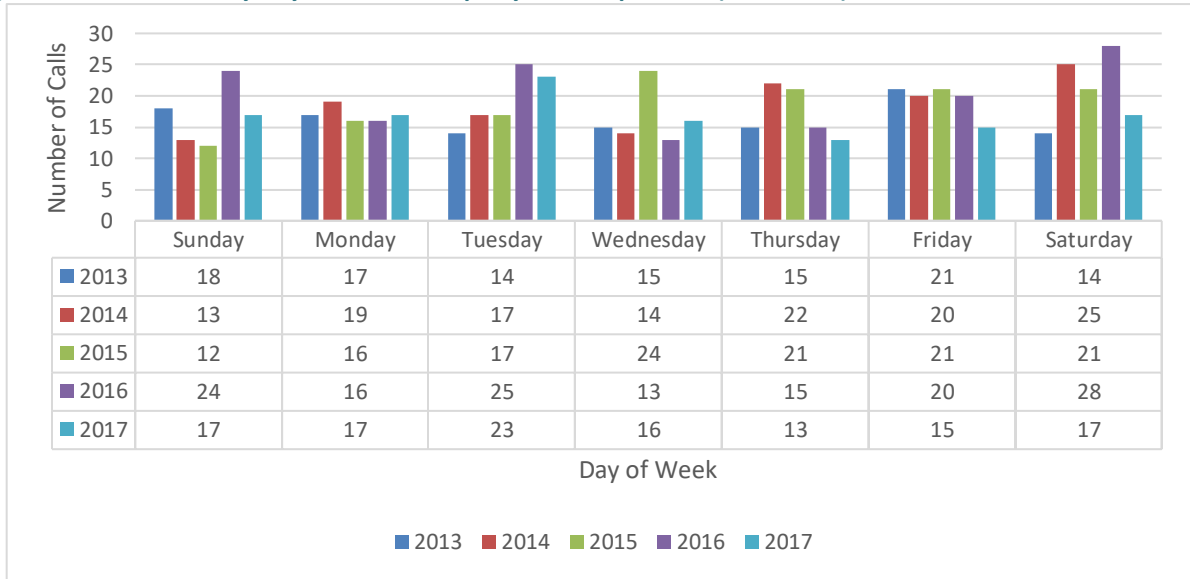
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2013	18	17	14	15	15	21	14
2014	13	19	17	14	22	20	25
2015	12	16	17	24	21	21	21
2016	24	16	25	13	15	20	28
2017	17	17	23	16	13	15	17

Day of Week

2013 2014 2015 2016 2017

(Source: M.F.D.)

Key Finding: *Analysis of call volume by day of week for the period of 2013-2017 indicates that the highest proportion of calls occurs on Saturdays.*

11.2.4.4   **Average Call Volume by Time of Day - Property Fires/Explosions**

Figure 27 shows that the average volume by time of day is the highest during 4pm and 6pm and between 11am and 12pm, likely attributable to cooking and meal preparations.

Figure 27: Average Call Volume by Time of Day – Property Fires/Explosions (2013-2017)
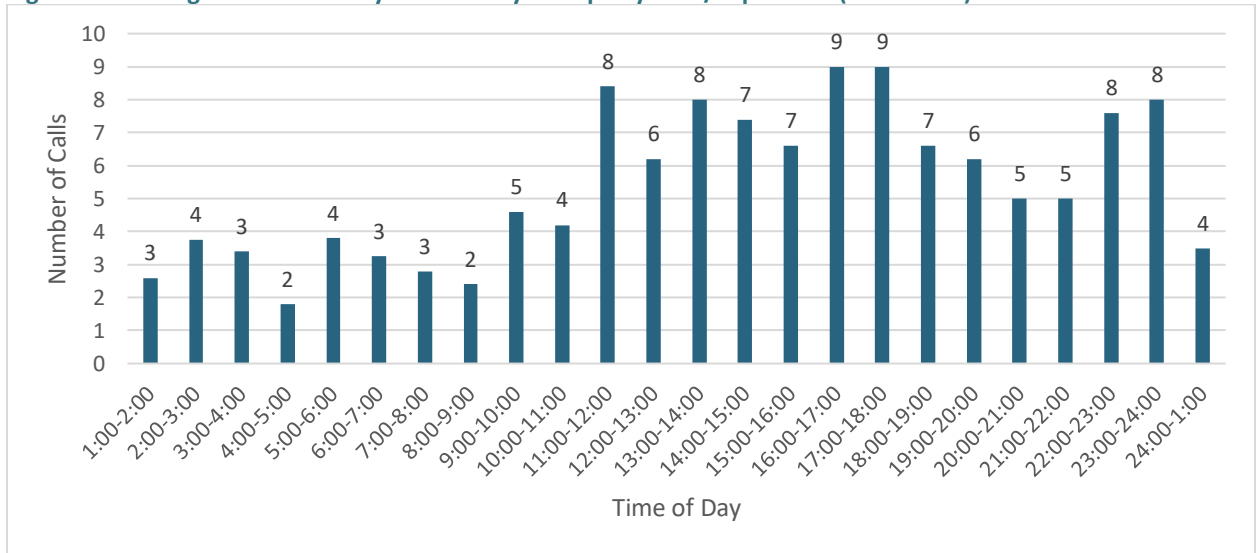
(Source: M.F.D.)

Key Finding*: Analysis of the property fire/explosion occurrences for the years 2013-2017 indicate the highest volume of calls for this response type is 4pm and 6pm, followed by 11am-12pm.*

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Risk Assessment Outcomes

This C.R.A. and F.M.P. are complementary documents. The findings of this report help to define local needs and circumstances and inform the recommendations identified within the Fire Master – and ultimately the service levels provided by a fire department. This section of the C.R.A. brings together all the risk assessment outcomes and frames how they can be used to inform the Fire Master Plan. This is accomplished by applying the risk outcomes in four layers:

1. Determine a probability level to assign to each event;
2. Determine a consequence level to assign to each event; and
3. Establish the risk level (e.g., numerical value / location on the matrix) and risk category (e.g., low, moderate or high) for each based on the identified probability and consequence for each event.
4. Develop a G.I.S. risk model based on the Risk Level/Risk Category.

12.1   Risk Prioritization – Key Risks

Risk is defined as the product of probability and consequence. Of the risk analysis outcomes presented throughout this C.R.A., some have been labelled as a **Key Risk**. This means that the analysis and information available provides the opportunity to quantify the risk through a risk assignment process. This process will inform the F.M.P. in two ways: first, it will help guide the prioritization of the risk analysis outcomes when it comes to the development of and implementation of the Fire Master Plan; and second, it will inform the risk model developed for assessing emergency response capabilities (see **Section 2.0** of this C.R.A.).

The assignment of risk for the key risks within each profile, including a rationale for the probability and consequence is presented in **Table 45.**

Table 45: Risk Prioritization – Key Risks

Key Risk	Probability	Rationale	Consequence	Rationale	Assigned Risk Level
Building Stock Profile					
94.72% of the Town's existing building stock is comprised of Group C – Residential Occupancies.	Likely	In considering the proportion of the property stock comprised of Group C - Residential occupancies as well as historic fire loss, the probability is likely.	Moderate	Potential for threat to life safety of occupants, moderate property loss, threat to small local businesses and/or to quality of the environment.	Moderate Risk
31% of the Town's residential building stock was built prior to the introduction of the Ontario Building Code and Fire Code.	Likely	In considering the proportion of the property stock comprised of Group C - Residential occupancies as well as historic fire loss, the probability is likely.	Moderate	Potential for threat to life safety of occupants, moderate property loss, and threat to small local businesses and/or to quality of the environment, especially with consideration to exposure based risk.	Moderate Risk
69% of the Town's residential construction has occurred since 2001 and includes new light weight wood construction methods and materials.	Likely	In considering the proportion of the property stock comprised of Group C - Residential occupancies as well as historic fire loss, the probability is likely.	Moderate	Potential for threat to life safety of occupants, moderate property loss, and threat to small local businesses and/or to quality of the environment, especially with consideration to exposure based risk.	Moderate Risk
The Town is continuing to experience a high volume in growth of residential occupancies and development that can be vulnerable to fire while under the construction process.	Almost Certain	An incident is almost certain to occur under the current circumstances.	Moderate	Potential for threat to life safety of occupants, moderate property loss, threat to small local businesses and/or to quality of the environment.	High Risk
22% of the Town's residential building stock is comprised of row housing, higher than the provincial total of 9%. Attached dwellings have a higher risk of a fire spreading to an adjacent exposed building.	Likely	An incident is likely to occur under current circumstances	Moderate	Potential for threat to life safety of occupants, moderate property loss, threat to small local businesses and/or to quality of the environment.	Moderate Risk
The M.F.D. has identified 22 occupancies with a height in excess of 18 metres, which have been defined as high-rise buildings.	Likely	In considering the proportion of the property stock comprised of Group C - Residential occupancies as well as historic fire loss, the probability is likely.	Major	Potential for large loss of life and significant property damage due to density	High Risk
There are 19 registered vulnerable occupancies within the Town.	Possible	An incident in a Vulnerable Occupancy might occur under the current circumstances	Catastrophic	Potential for large loss of life due to the nature of the vulnerable occupants and long term disruption of businesses, local employment, etc.	High Risk
E.C. Drury School for the Deaf, Maplehurst Correctional Complex and the Vanier Centre for Women present unique life-fire safety risks.	Possible	An incident in one of these vulnerable occupancies might occur under the current circumstances.	Catastrophic	Potential for large loss of life due to the nature of the vulnerable occupants and long term disruption of businesses, local employment, etc.	High Risk
Demographic Profile					
People between the ages of 45 and 64 who are aging towards the seniors demographic of 65 or over make up 22% of Milton's population.	Likely	Will probably occur at some time under current circumstances. Known through O.F.M.E.M. data that seniors are at a greater risk of experiencing a fatality in a residential fire.	Moderate	Potential for threat to life safety of occupants, moderate property loss, threat to small local businesses and/or to quality of the environment.	Moderate
In comparison to the Province, Milton's total population contains a high proportion of persons aged 0 to 14 (26% versus 17%).	Likely	Will probably occur at some time under current circumstances.	Moderate	Potential for threat to life safety of occupants, moderate property loss, threat to small local businesses and/or to quality of the environment.	Moderate
There are substantial shifting commuting populations throughout the year. This population shift may impact collision calls and the demand for fire protection services.	Likely	Will probably occur at some time under current circumstances.	Moderate	Potential for threat to life safety of occupants, moderate property loss, threat to small local businesses and/or to quality of the environment.	Moderate

Key Risk	Probability	Rationale	Consequence	Rationale	Assigned Risk Level
Past Loss and Event History Profile					
Group F – Industrial occupancies account for 10% of structural fire loss within the Town. This is 2.5% more than the provincial proportion at 7.5%.	Possible	Might occur under current circumstances.	Catastrophic	Potential for significant loss of life, long term disruption of businesses, local employment and tourism, and/or environmental damage that would result in long-term evacuation within Group F - industrial occupancies.	High
Although occurring at a lower proportion compared to the Province, Group C – Residential occupancies account for 66% of structure fire loss within the Town.	Likely	Will probably occur at some time under current circumstances.	Moderate	Potential for threat to life safety of occupants, moderate property loss, threat to small local businesses and/or to quality of the environment.	Moderate
19 out of 20 reported fire related civilian injuries occurred in Group C – residential occupancies.	Possible	Might occur under current circumstances.	Moderate	Potential for threat to life safety of occupants.	Moderate
Of the fires occurring within the Town from 2012-2016, 19% of fires occurred as a result of other electrical/mechanical in Milton, approximately 15% higher than that of the Province.	Likely	Will probably occur at some time under current circumstances	Moderate	Potential for threat to life safety of occupants, moderate property loss, threat to small local businesses and/or to quality of the environment.	Moderate
Based on the analysis of smoke alarms present and operating, the information available indicates that there is a potential risk that in 38% of the instances there was either no smoke alarm present or it was not operational.	Likely	Will probably occur at some time under current circumstances	Moderate	Potential for threat to life safety of occupants, moderate property loss, threat to small local businesses and/or to quality of the environment.	Moderate

Risk Categorization

When it comes to aligning service levels with risks that define local needs and circumstances, it is important to recognize that not all risk analysis outcomes align with the services provided by a fire department in the same way. For this reason, the risk outcomes - Key Findings and Key Risks - are categorized based on how they can be used to inform the activities, strategies, and services provided by the M.F.D. This categorization is then directly used within the F.M.P.

The categories used for this process are based on the three lines of defence: Public Fire Safety Education; Fire Safety Standards and Enforcement, and Emergency Response as shown in **Table 46**.

Table 46: Risk Analysis Outcome Categorization

Category	Overview	Purpose
Line 1 Public Fire Safety Education	Education is the first line of defence. As a proactive approach to mitigating fire risk, the identified risk outcome can and should be considered as part of informing a Community Risk Reduction Plan including public education programming.	For consideration within the proposed Public Education Program
Line 2 Fire Safety Standards and Enforcement	Inspection/Enforcement is the second line of defence. As a proactive approach to mitigating fire risk, the identified risk outcome can and should be considered as part of informing a Community Risk Reduction Plan including inspection cycles, and enforcement strategies.	For consideration within the proposed Inspection/Enforcement Program
Line 3 Emergency Response	Emergency response is the third line of defence. The identified risk outcomes can and should be considered as part of assessing emergency response coverage aligned with local needs and circumstances, as well as the level of service provided by the municipality.	For consideration within the proposed Emergency Response Deployment Options

The risk outcomes from each profile that inform local needs and circumstances are aligned with the three lines of defence. **Table 47** presents the Key Findings and **Table 48** presents the Key Risks in a matrix format indicate the ways in which the risks can be addressed by the fire department and ultimately considered within the F.M.P. analysis and recommendations.

Table 47: Categorization of Key Findings

Profile	C.R.A. Key Findings Analysis Outcomes	FIRST LINE OF DEFENCE For consideration within the proposed Public Education Program	SECOND LINE OF DEFENCE For consideration within the proposed Enforcement Program	THIRD LINE OF DEFENCE For consideration within the proposed Emergency Response Program
Building Stock	A building not classified under the Ontario Building Code account for 2.86% of the Town's building stock.	√		
	Group F – Industrial occupancies represent 1.48% of the Town's total building stock.		√	√
	There a number of buildings that present an increased fire risk due to their large floor areas. Some of these facilities store dangerous goods.	√	√	√
	There are a number of properties within the Town that have fuel load concerns, primarily linked to building supplies.		√	
Demographic	Over 15 years (2001-2016) Milton's total population increased by 250% and the number of residential dwellings in the Town increased by 233%.	√		√
	Individuals aged 40-64 were the highest proportion of individuals reported as persons associated with ignitions reported in the M.F.D. Fire Loss data from 2012-2016.	√		
	According to M.F.D. fire loss data for 2012-2016, the person associated with the ignition source was male for 33% of instances compared to females in 9% of instances.	√		
Past Loss and Event History	Group A – Assembly occupancies account for 7% of structure fire loss within the Town. This is 3% higher than the Province (4%).	√	√	
	The cause of 22% of fires occurring in Milton between 2012 and 2016 was unknown, not reported.			√
	Annual call volume increased by 14% from 2013 to 2017.			√
	Analysis of call volume by day of week for the period of 2013 to 2017 indicates that the highest proportion of calls occurs on Fridays.			√
	Analysis of call volume by time of day for the period of 2013-2017 indicates that calls decline at 10pm and remain at the lowest levels until approximately 6am.			√
	Analysis of call volume by time of day for the period of 2013 to 2017 indicates that the highest call volume occurs between the hours of 4pm and 6pm.			√
	Based on analysis of M.F.D. Response Types, Public Assistance calls account for the highest proportion of call types responded to within the Town over a five year period from 2013-2017.			√
	Based on O.F.M.E.M. Response Types, M.F.D. call volumes are comprised of 8% more false fire calls, 6% more C.O. false calls, 5% more property fires/explosions calls, 9% more other response calls and 38% less medical calls.	√	√	√
	There were more property fires/explosions in May and June during 2013-2017 when compared to other months of the year.	√	√	√
	Analysis of call volume by day of week (property fires/explosions) for the period of 2013-2017 indicates that the highest proportion of calls occurs on Saturdays.			√
	Analysis of the property fire/explosion occurrences for the years 2013-2017 indicate the highest volume of calls for this response type is 4pm and 6pm, followed by 11am-12pm.			√
Geographic	There can be longer emergency response times for fire suppression services in rural areas as a result of the size of the geographical area and other geographical elements within the Town.			√
	As development continues in and around the Town, traffic congestion will become an increasingly significant consideration from the perspective of providing emergency response.			√
	Incidents on Highway 401 can cause increased traffic congestion resulting in longer response times both on the highway and within the Town.			√

Profile	C.R.A. Key Findings	FIRST LINE OF DEFENCE	SECOND LINE OF DEFENCE	THIRD LINE OF DEFENCE
	At-grade rail crossings can negatively impact part-time firefighters responding to the fire station as well as the response of apparatus particularly in the rural area.			√
	There are several conservation areas located within the Town that present varying types and levels of risk associated with residents and visitors participating in activities such as rock climbing, hiking and swimming/boating.			√
	Milton has a mix of woodland areas as well as grasslands on the lower slopes of the escarpment. Emergency incidents might include forest fires or grass fires.			√
Hazard	The top five identified hazards within the Town include freezing rain/ice storms, energy emergency (supply), explosion/fire, snowstorm/blizzard and flood-urban flood.			√
Economic	The Town has key employers that contribute to the economic vitality and well-being of the community. If a fire were to occur at one of these facilities it could have a negative impact on the financial vitality of the Town.	√	√	
	There are a number of significant developments planned for Milton's future that are likely to play an integral role in the Town's economy. If a fire were to occur at one of these facilities it could have a negative impact on the financial vitality of the Town.	√	√	
Critical Infrastructure	The only hospital in Milton is a significant distance from the Town's rural community to the north; however, the closest major hospitals to Milton's rural residents are St. Joseph's and Guelph General Hospital.			√
	Electrical malfunctions at substations/transformers would leave a large portion of the Town without power. Electrical malfunctions at transformers sometimes include electrical arcs, fires and oil ignition which pose as a special risk to residents, property and the environment.			√
Public Safety Response	Public safety response agency statistics are reflective of an increased demand for service in a growing community.			√

Table 48: Categorization of Key Risks

Profile	C.R.A. Key Risks Analysis Outcomes	Risk Level	FIRST LINE OF DEFENCE For consideration within the proposed Education Program	SECOND LINE OF DEFENCE For consideration within the proposed Enforcement Program	THIRD LINE OF DEFENCE For consideration within the proposed Emergency Response Program
Building Stock	94.72% of the Town's existing building stock is comprised of Group C – Residential Occupancies.	Moderate	√	√	√
	31% of the Town's residential building stock was built prior to the introduction of the Ontario Building Code and Fire Code.	Moderate	√		
	69% of the Town's residential construction has occurred since 2001 and includes new light weight wood construction methods and materials.	Moderate	√		
	The Town is continuing to experience a high volume in growth of residential occupancies and development that can be vulnerable to fire while under the construction process.	High			√
	22% of the Town's residential building stock is comprised of row housing, higher than the provincial total of 9%. Attached dwellings have a higher risk of a fire spreading to an adjacent exposed building.	Moderate	√	√	√
	The M.F.D. has identified 22 occupancies with a height in excess of 18 metres, which have been defined as high-rise buildings.	High	√	√	√
	There are 19 registered vulnerable occupancies within the Town.	High	√	√	√
	E.C. Drury School for the Deaf, Maplehurst Correctional Complex and the Vanier Centre for Women present unique life-fire safety risks.	High	√	√	√
Demographic	People between the ages of 45 and 64 who are aging towards the seniors demographic of 65 or over make up 22% of Milton's population.	Moderate	√		
	In comparison to the Province, Milton's total population contains a high proportion of persons aged 0 to 14 (26% versus 17%).	Moderate	√		
	There are substantial shifting commuting populations throughout the year. This population shift may impact collision calls and the demand for fire protection services.	Moderate			√
Past Loss and Event History	Group F – Industrial occupancies account for 10% of structural fire loss within the Town. This is 3% more than the provincial proportion at 7%.	High		√	√
	Although occurring at a lower proportion compared to the Province, Group C – Residential occupancies account for 67% of structure fire loss within the Town.	Moderate	√	√	√
	19 out of 20 reported fire related civilian injuries occurred in Group C – residential occupancies.	Moderate	√	√	√
	Of the fires occurring within the Town from 2012-2016, 19% of fires occurred as a result of other electrical/mechanical in Milton, approximately 15% higher than that of the Province.	Moderate	√	√	
	Based on the analysis of smoke alarms present and operating, the information available indicates that there is a potential risk that in 38% of the instances there was either no smoke alarm present or it was not operational.	Moderate	√	√	

Town of Milton G.I.S. Risk Model

This section provides a brief outline of the scope and methodology used in order to provide insight into the modelling procedures adopted to assess risk that will be used to develop appropriate risk reduction strategies for each line of defence as defined by the O.F.M.E.M. Strategies that affect the third line of defense, including emergency response is dependent on the building occupancy type that, for this C.R.A., is based on current provincial data and existing and future zoning provided by the Town..

This C.R.A. assigns a relative risk level (high, moderate, low) to land uses in Milton that are defined by the Ontario Building Code (O.B.C.) occupancy classification and the Town's Zoning By-law No. 016-2014 for existing and future risk respectively. Existing risk was mapped for each parcel based on the dataset of building and parcels provided by the Ministry of Natural Resources and Forestry (MNRF) and associated risk code assigned by the O.B.C. The assignment of O.B.C. risk based on occupancy class can be found in **Table 49**. Zoning provides a general indication of the type of buildings allowed in each area, thus determining future risk based quantitative information for fire loss in land use category. The assignment of a base risk level for each Milton land use category used for future risk mapping is presented in **Table 50.**

The G.I.S. risk model was constructed by linking these occupancy categories or land uses, and respective risk levels, with parcel data or larger zones data to produce a map of both current and future risk in the Town. High rise and high risk buildings are also identified on the fire risk maps that were defined as residential buildings of greater than six storeys as well as hospitals, schools, prisons, nursing homes, and certain industrial land uses such as fuel storage and areas within 20 miles of a rail line. Future risk used the same categorization of risk levels and assigned risk to areas based on future land uses identified in secondary plans for the Phase 3 and 4 lands based on the phasing identified in the Town's Official Plan. The current risk is shown in **Figure 28** and future risk is shown in **Figure 29**.

The highest risk areas are located in the 401 Industrial Park and in particular areas within close proximity to the rail corridor where there are large warehousing and light industrial land uses. The transport of flammable and dangerous goods through these corridors increases the fire risk of the surrounding area. Future high risk includes Halton Region's Ontario Street property currently occupied by a number of institutional uses including the E.C. Drury School as well as areas around Milton GO Station where significant high rise development is planned to occur in order to meet the planned 200 people and jobs per hectare provincial density targets. Much of the new development planned to 2031 in Milton's Phase 3 and Phase 4 lands will be moderate risk in the future risk model.

Table 49: O.B.C. Risk Assignment based on Occupancy Classification

Occupancy Classification (O.B.C.)	Occupancy Definition Fire Risk Sub-model (O.F.M.E.M.)	Base Risk Zone Category Assigned
Group A – Assembly	Assembly occupancies	Moderate
Group B - Institutional	Care or Detention occupancies	High
Group C - Residential	Residential occupancies	Moderate
Group D - Business	Business and Personal Services Occupancies Mercantile occupancies	Moderate
Group E - Mercantile		Moderate
Group F1 - Industrial	Industrial occupancies	High
Group F2 - Industrial		Moderate
Group F3 - Industrial		Low
Other occupancies	Not classified within the Ontario Building Code (i.e. farm buildings)	Low

Table 50: Risk Level Attributed to Town. Land Uses

Zoning Category	Risk
Business Commercial Area	Moderate
Business Park	Moderate
Business Park Area	Moderate
Centre Tributary	Low
Character Area	Moderate
Community Park	Low
Cul-De Sac	Moderate
District Park	Low
Employment Area	Moderate
Environmental Linkage	Low
Environmental Linkage Area	Low
Escarpment Protection Area	Low
Escarpment Protection Area - Gb	Low
Escarpment Protection Area - Greenlands A Area	Low
Escarpment Protection Area - Passive Open Space	Low
Escarpment Rural Area - Spa 13	Low
Floodplain	Low
Gateway	Moderate
Greenlands A	Low
Greenlands A Area	Low
Greenlands B	Low
Greenlands B Area	Low

Zoning Category	Risk
Greenlands Restoration	Low
Industrial	Moderate
Industrial Area	Moderate
Institutional	High
Institutional Area	High
Linkage	Low
Local Commercial	Moderate
Local Commercial Area	Moderate
Major Commercial Centre	Moderate
Major Institutional	High
Major Secondary Mixed Use	Moderate
Minor Sub-Node Area	Moderate
Neighbourhood Centre	Moderate
Neighbourhood Centre Area	Moderate
Neighbourhood Park	Low
N.H.S.	Low
N.H.S. Oriented Site	Low
N.H.S. Oriented Temporary Use	Low
Node-Spa	Moderate
Office Employment Area	Moderate
Planned Hwy 401 Interchange	Moderate
Prestige Office	Moderate
Residential	Moderate
Residential Area	Moderate
Residential Special Policy	Moderate
Residential/ Office Area	Moderate
Residential/Office	Moderate
Secondary Commercial Sub-Area	Moderate
Secondary Mixed Use	Moderate
Secondary Mixed Use Node	Moderate
Street Oriented Site	Moderate
To Be Determined	Moderate
Utility Corridor	Moderate
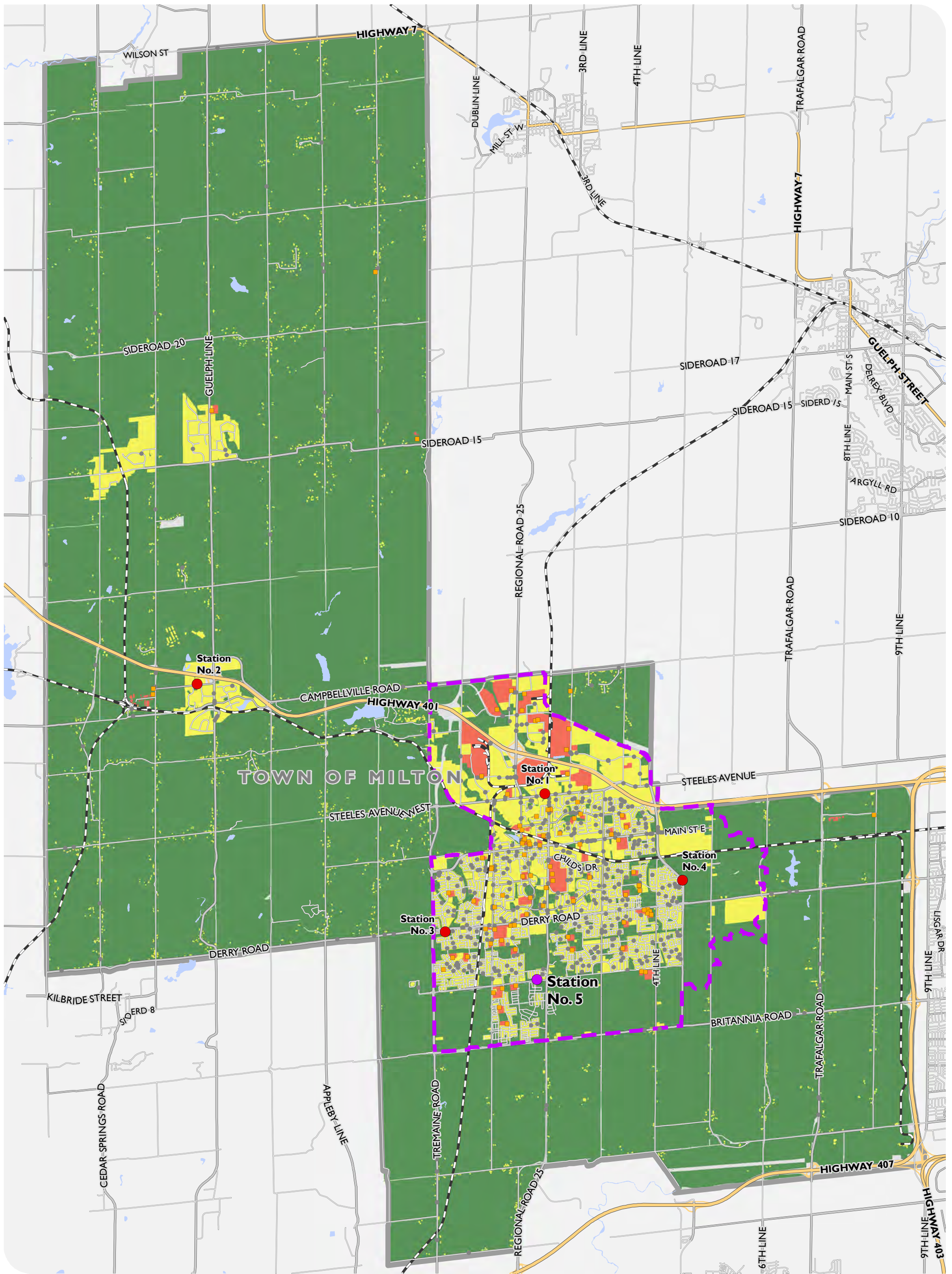
TOWN OF MILTON
FIRE MASTER PLAN UPDATE

EXISTING COMMUNITY FIRE RISK MODEL

FIGURE 28

Legend

- High-Rise High Risk Building
- ● Existing Fire Station
- ● Future Fire Station
- ● Historic Call (2013-2017)
- Urban Boundary
- Railway
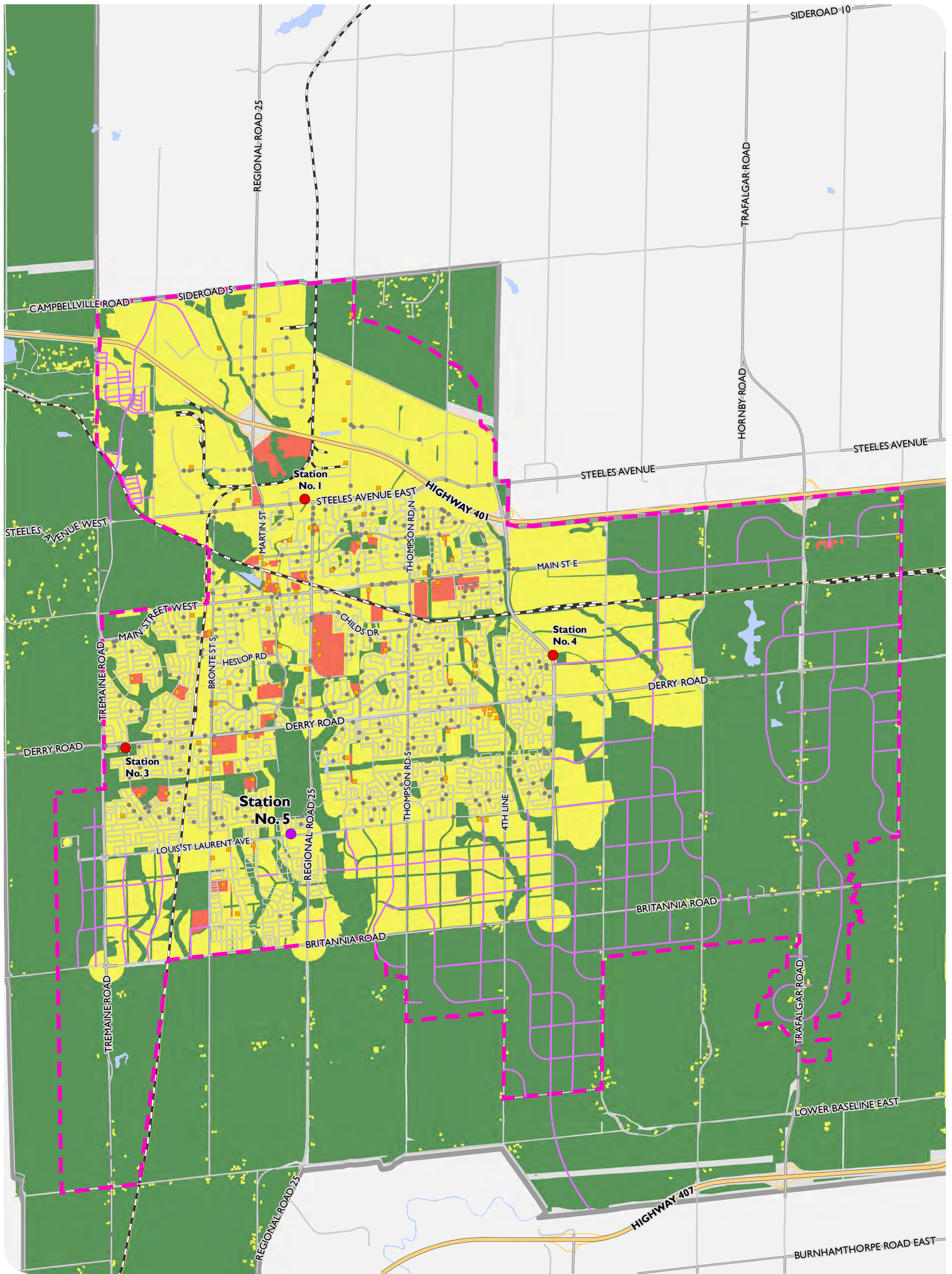
Risk
- Low
- Moderate
- High

DILLON
CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY AJAX

MAP CREATED BY: GM
MAP CHECKED BY:
MAP PROJECTION: NAD 1983 UTM Zone 17N

1:90,000
0 250 500 1,000 m

PROJECT: 187286   STATUS: DRAFT   DATE: 2018-10-23

FILE LOCATION: I:\GIS\188072 - Milton FMP\mxd\Existing Community Fire Risk Model.mxd

TOWN OF MILTON
FIRE MASTER PLAN UPDATE

**FUTURE COMMUNITY
FIRE RISK MODEL**
FIGURE 29

Legend

High-Rise High Risk Building
Existing Fire Station
Future Fire Station
Historic Call (2013-2017)
Proposed Road
Urban Boundary (Future)
Railway

Risk

Low
Moderate
High

DILLON
CONSULTING

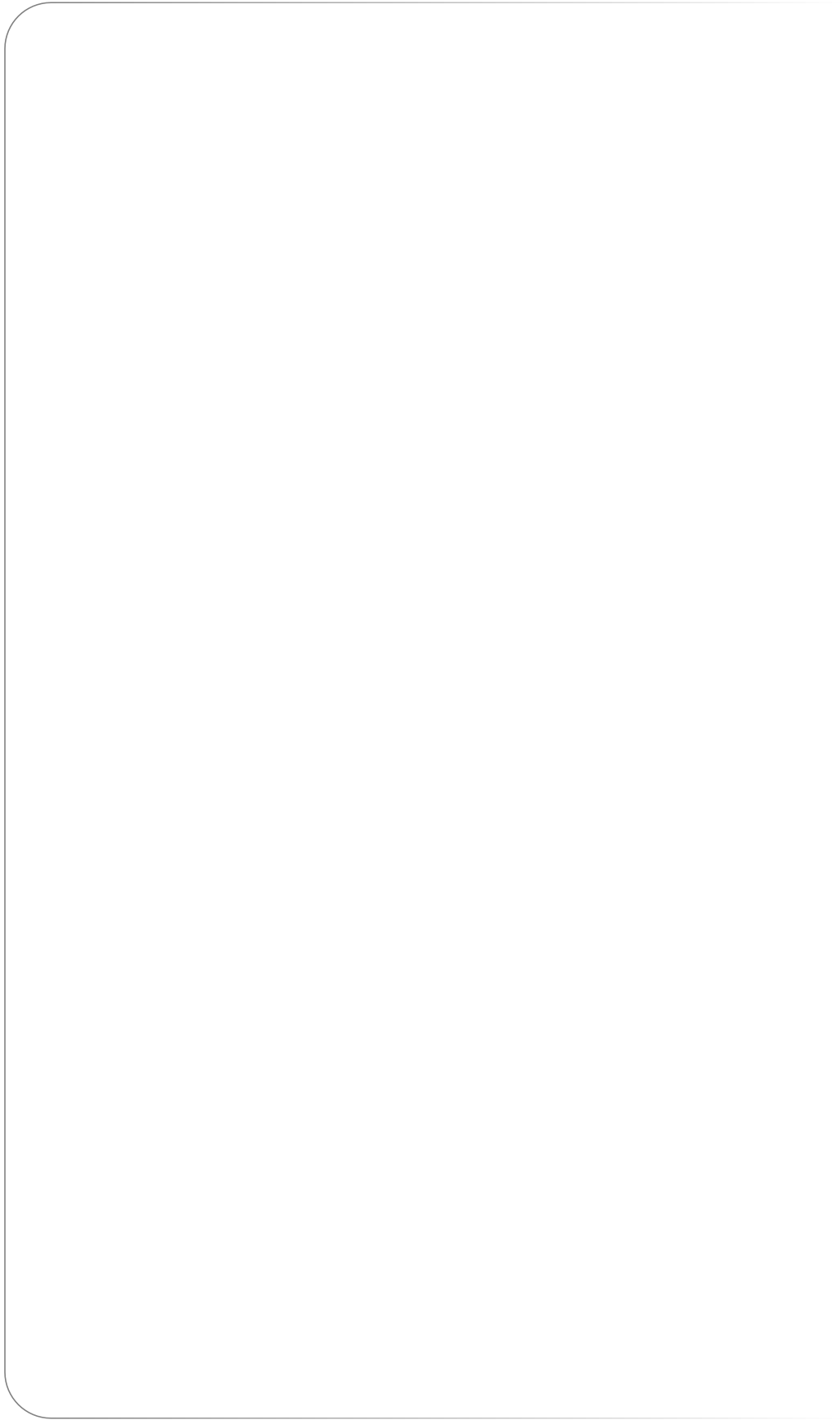MAP DRAWING INFORMATION:
DATA PROVIDED BY AJAX

MAP CREATED BY: GM
MAP CHECKED BY:
MAP PROJECTION: NAD 1983 UTM Zone 17N

1:50,000
0   250 500   1,000 m

PROJECT: 187286   STATUS: DRAFT   DATE: 2018-10-31

FILE LOCATION: I:\GIS\188072 - Milton FMP\mxd\Future Community Fire Risk Model.mxd

Appendix B

Verdict of Coroner's Jury

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Verdict of Coroner's Jury
Verdict du jury du coroner

The *Coroners Act* – Province of Ontario
Loi sur les coroners – Province de l'Ontario

Inquest into the death of:
Enquête sur le décès de :

Holly Harrison, Marilee Towie, Benjamin Twiddy, Kevin, Jennifer, Robert and Cameron Dunsmuir

JURY RECOMMENDATIONS
RECOMMANDATIONS DU JURY

To the Office of the Fire Marshal and Emergency Management

1.   To consult with stakeholders to define the meaning of "public education" in section 2(1)(a) of the Fire Protection and Prevention Act through a Directive.

2.   To develop a public education program related to public fire safety in accessory apartments.

3.   To educate the public on its responsibility to maintain and not dismantle/vandalize smoke alarms.

4.   To work with the Insurance Bureau of Canada and other stakeholders to increase insurance policy requirements for residential smoke alarms/smoke detectors and carbon monoxide detectors and to develop public service announcements to promote awareness of the importance of working smoke alarms/detectors and carbon monoxide detectors.

5.   To continue and expand the accessibility of all training resources to municipalities by providing standard curriculum e-learning, Train the Trainer packages, local training opportunities and teaching materials to municipalities to provide for consistent province wide training and standards.

To the Office of the Fire Marshal and Emergency Management and Municipal Fire Departments

6.   To consider incorporating lessons learned from East Gwillimbury and Whitby incidents into future course materials (with personal information and identifiers removed and without using the audio of the 911 calls), such as fire college symposia and training materials, including but not limited to suggestions for self-evacuation and/or self-preservation.

7.   Fire Inspectors to notify tenants of Landlord's non-compliance via letter.

8.   Inspectors (fire or building) must have visual proof of compliance, e.g. confirming drywall installation for fire separation. (Verbal confirmation by property owner is not sufficient).

9.   Develop a provincial "red-flag" system which would trigger a re-inspection of properties with a history of non-compliance/conviction under the Fire Code.

10.   Canvass neighbourhood/community post fire to promote awareness of fire safety and prevention.

To the Office of the Fire Marshal and Emergency Management and Municipalities

11.   To continue and expand public education on the fact that upon discovery of smoke or fire every person must immediately get out and stay out of the building.

12.   As part of public education, promote awareness of different types and appropriate use of fire extinguishers. Included in this education, could be demonstrations and hands-on practice.

To Municipalities

13.   Consult with stakeholders to explore the installation of clearly visible house numbers.

14.   Work towards a provincially integrated computer software program to assist dispatching of 911 calls.

To the Ontario Association of Fire Chiefs

15.   Fire Departments to explore re-allocating their current resources, and/or utilizing resources from the suppression area, for fire prevention, public education and fire safety inspections in their municipalities. This could include a Home Visit Public Education program and literature that will provide occupants home fire safety information, such as the presence of smoke detectors, CO detectors, escape plans, vulnerable occupants (physical and cognitive disabilities), appliance (e.g. dryer) safety, delivered by fire fighters as provided by the municipality. Such programs may include a home inspection as determined by the municipality.

To the Ontario Association of Fire Chiefs and the Ontario Association of Chiefs of Police

16.   To encourage collaboration between fire departments and police services in the area of training with a view to ensuring a safe and efficient response to structure fires and the preservation and collection of fire investigation related evidence.

To the Ministry of Education

17.   To consult with the Office of the Fire Marshal and Emergency Management and develop fire safety curriculum for high school students and young adults leaving home for the first time and their parents focusing on fire safety and fire prevention skills, including safe cooking, smoke alarms, the need for a means of egress and having and practicing an emergency exit plan in case of fire.

18.   To make available to the School Boards the OFMEM burn room videos and "No Time To Spare" video to raise awareness of how fast and deadly the by-products of fire can be (e.g. smoke).

19.   Explore opportunities to work with fire prevention and detection officers, as part of the mandatory volunteer hours curriculum for high school students. For example, students could work together to find ways to promote fire safety amongst their peers, e.g."Cop Lights Bling". A video produced by the RCMP to raise awareness of moving over when cruisers lights are on.

To the Ministry of Community Safety and Correctional Services

20.   To make a Regulation, pursuant to clause 78(1)(k) of the Fire Protection and Prevention Act, requiring mandatory certification and training, to recognized industry standards, for all personnel (as defined in the Fire Protection and Prevention Act) whose primary job function is to perform: 1) fire inspections, 2) public education, and/or 3) communications (call-taking / dispatch).

21.   To work with the Technical Standards and Safety Association (TSSA) to promote the installation of Carbon Monoxide detectors through HVAC technicians who install gas fired appliances.

22.   To amend section 9.8 of the Fire Code to address interior finishes of the means of egress in accessory apartments with only one means of escape and, in particular, require that such finishes have a maximum flame spread rating of 150.

For example:

a.   9.8.3.2 (2). Where a dwelling unit is served by one means of escape conforming to Sentence (1), the flame spread rating of interior wall and ceiling finishes adjacent to stairs within the dwelling unit leading to the means of escape shall not exceed 150.

b.   9.8.3.3. (3). Where a dwelling unit is served by one means of escape conforming to Sentence (1), or (2) the flame spread rating of interior wall and ceiling finishes adjacent to stairs within the dwelling unit leading to the means of escape shall not exceed 150.

23.   Legislation and or code be created pursuant to the FPPA that mandates that a municipality clearly and understandably educate the residents of the community on the fire protection services provided by the municipality. This shall be done on fire department/municipal web pages, and printed literature produced by the municipality. This information should indicate whether fire protection is being provided by full time fire fighters, volunteer fire fighters or a combination of the two and their respective hours of operation.

To the Ontario Safety League

24.   To liaise with existing fire safety agencies and councils, such as the Office of the Fire Marshal and Emergency Management's Public Fire Safety Council, to address the issues of fire safety campaigns, programs and education

curriculums. Refer to recommendation # 11.

To the Ontario Safety League and the Office of the Ontario Fire Marshal and Emergency Management

25.   Explore the idea of using transit services advertising as a method of raising fire safety awareness, e.g. "seconds count" and "get out, stay out".

To the Media:

26.   Ask the media to assist in raising awareness around fire safety including the importance of early detection through smoke alarms and the "get out, stay out" message. The public needs to be aware that the fire department may not be able to effect a rescue and therefore needs to be more vigilant with regard to fire prevention and fire detection to ensure their own safety.

To The Ministry of Municipal Affairs and Housing, the Office of the Fire Marshal and Emergency Management and the Ontario Association of Fire Chiefs

27.   To consult with stakeholders, research and promote the installation of sprinklers as a component of fire and life safety in all newly constructed residential homes with the appropriate amendment under the Ontario Building Code.

28.   To consult with stakeholders to research and promote two forms of egress for accessory apartments with the appropriate amendment under the Ontario Building Code.

29.   Consult with the Real Estate Board and other stakeholders to explore the ability to list locations of fire halls and level of service they provide to prospective homeowners, e.g. location of schools.

30.   When a building permit has been granted for renovations or retro-fit, a fire inspection must be completed, as well as a building inspection.

31.   Regulation be passed pursuant to the Fire Protection and Prevention Act mandating that municipalities provide information on tax assessments indicating the level of fire protection provided to individual property owners. This information should indicate whether fire protection is being provided by full time fire fighters, volunteer fire fighters or a combination of the two and their respective hours of operation.

32.   Consider communicating any changes to the fire code regarding dwelling units to property owners through the property tax assessment form.
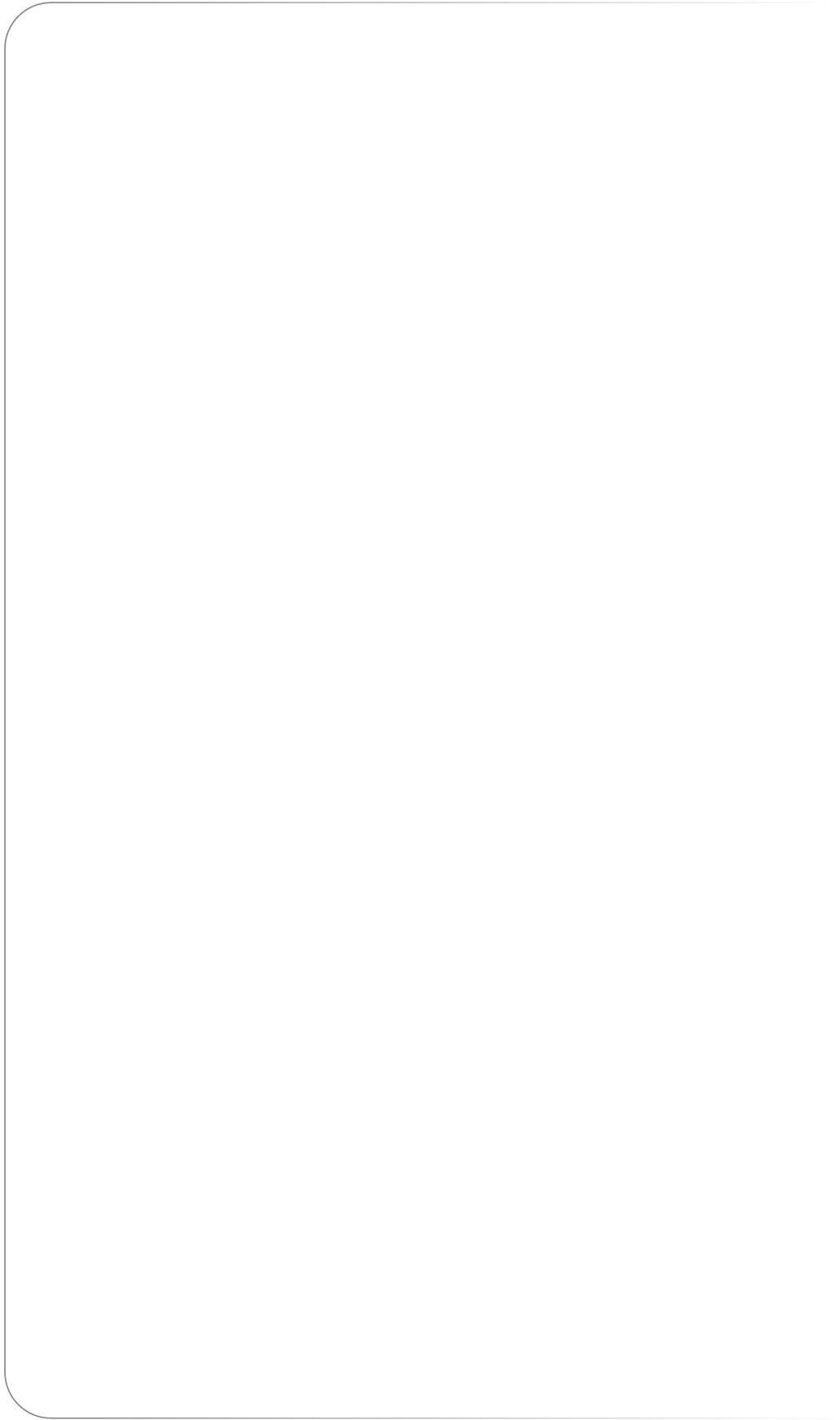
To The Office of the Chief Coroner

33.   The Office of the Chief Coroner shall request that all organizations and institutions receiving these recommendations provide reports updating their responses within a year of receipt. To inform the public of the contents of these reports, the Office of the Chief Coroner shall convene a press conference a year from the date that the recommendations were sent out to the recipient parties. Copies of the reports shall be forwarded to the jurors who will be invited to attend the press conference. All recommendations to be reviewed annually for the next two years with public reports filed providing an update on the status of the jury's final recommendations.

Appendix C

Online Public Survey Results

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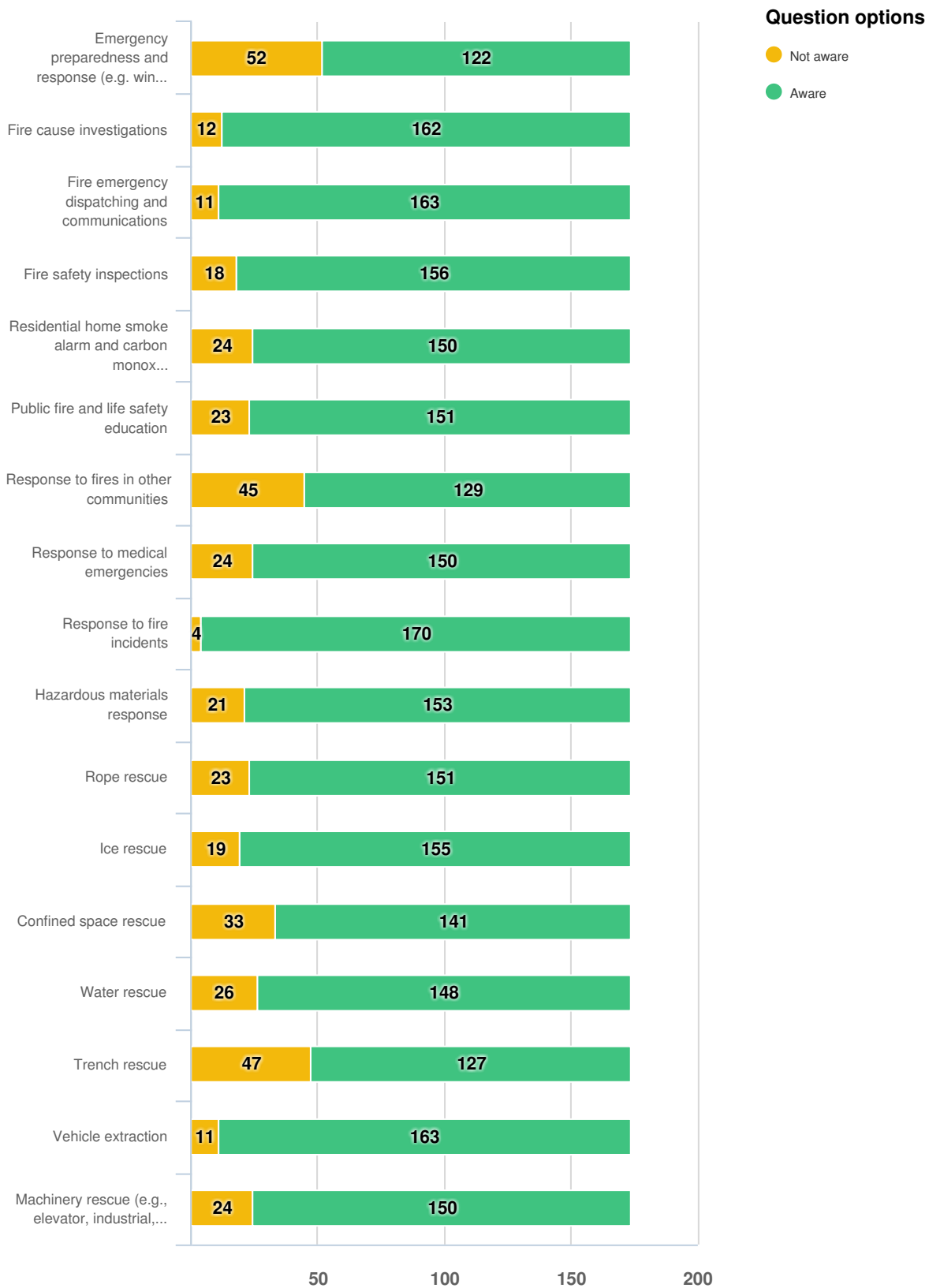Error! No text of specified style in document.

Fire Department Master Plan Survey

SURVEY QUESTIONS

Q1 **The Milton Fire Department provides a range of services as outlined below. Are you aware that the Milton Fire Department pr...**

Question options
🟡 Not aware
🟢 Aware

Emergency preparedness and response (e.g. win... 52 122

Fire cause investigations 12 162

Fire emergency dispatching and communications 11 163

Fire safety inspections 18 156

Residential home smoke alarm and carbon monox... 24 150

Public fire and life safety education 23 151

Response to fires in other communities 45 129

Response to medical emergencies 24 150

Response to fire incidents 4 170

Hazardous materials response 21 153

Rope rescue 23 151

Ice rescue 19 155

Confined space rescue 33 141

Water rescue 26 148

Trench rescue 47 127

Vehicle extraction 11 163

Machinery rescue (e.g., elevator, industrial,... 24 150

Mandatory Question (174 response(s))
Question type: Likert Question

Q1 | **The Milton Fire Department provides a range of services as outlined below. Are you aware that the Milton Fire Department pr...**

Emergency preparedness and response (e.g. wind storms, floods, 72-hour preparedness)
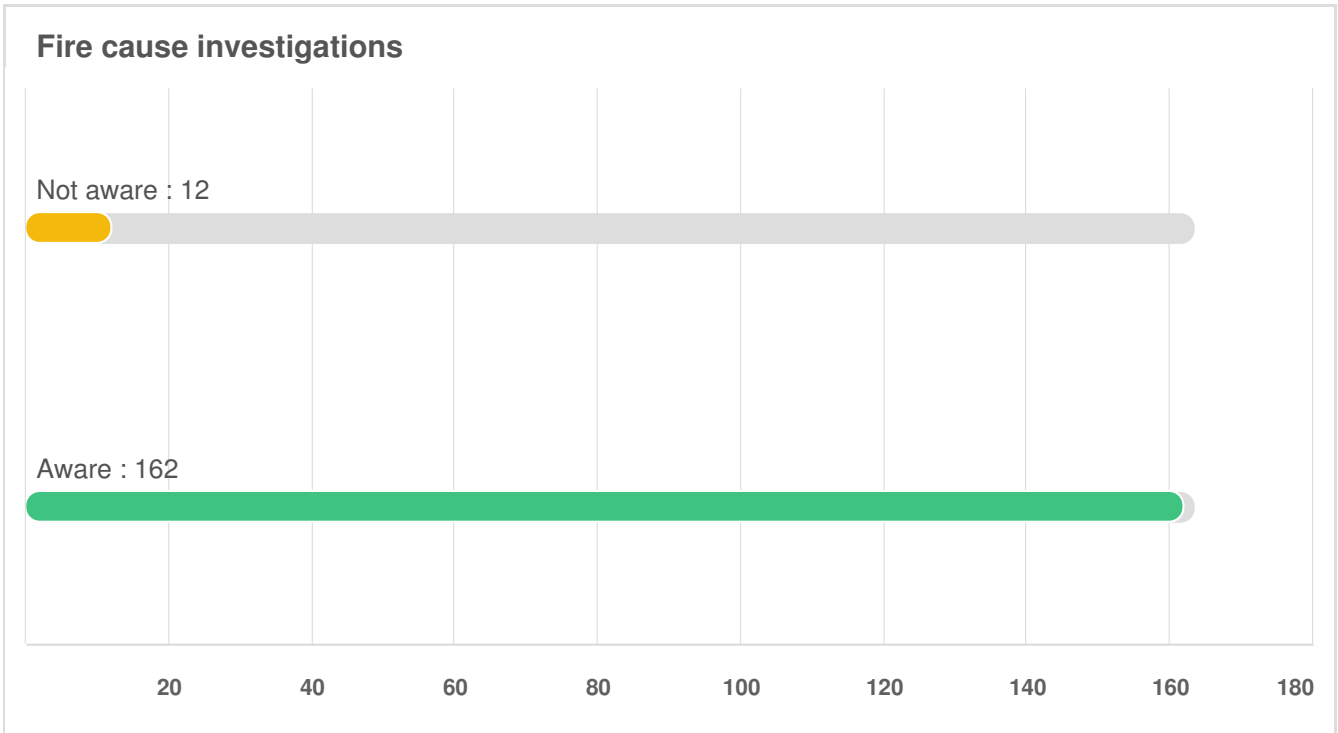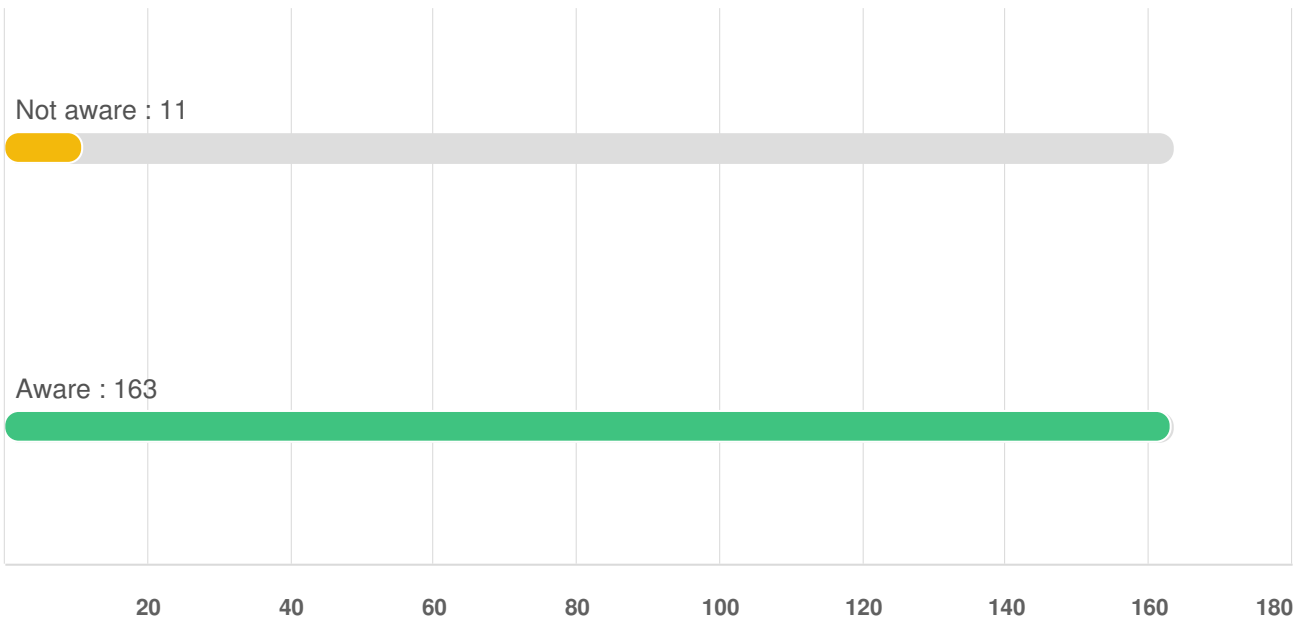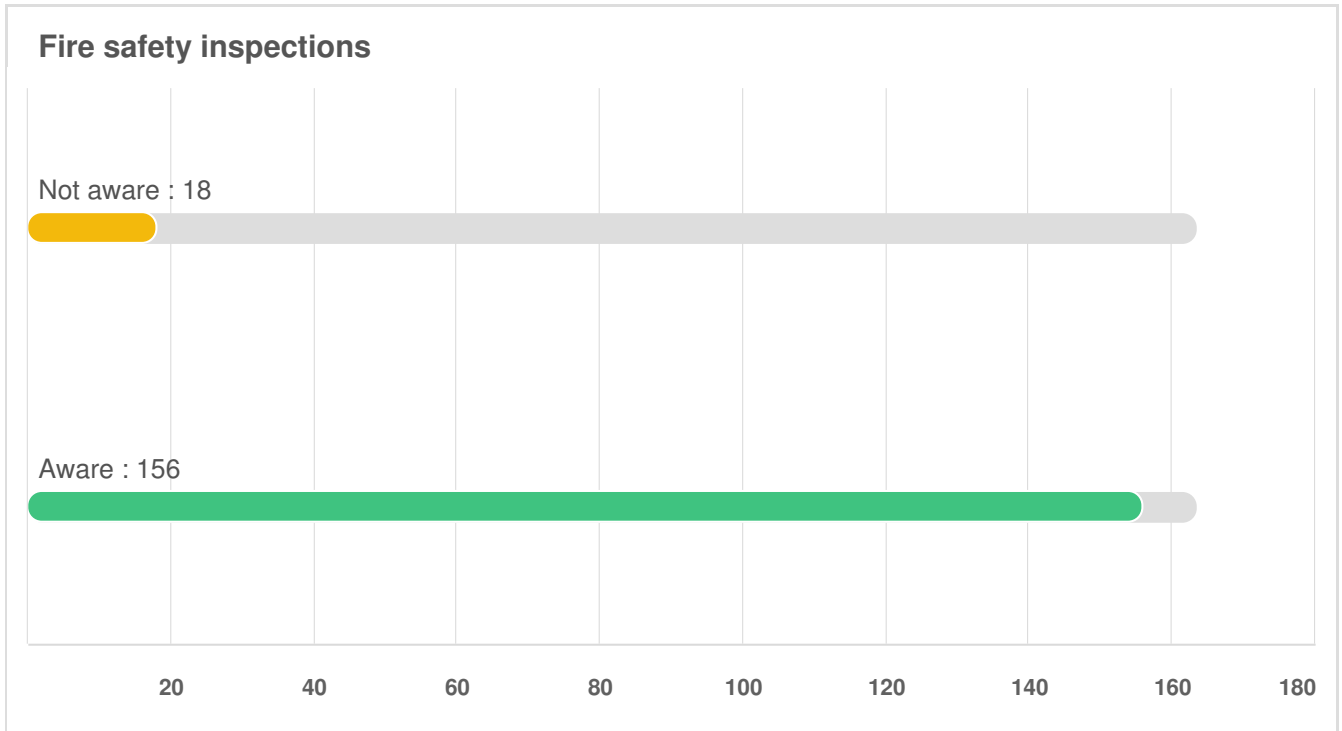
Not aware : 52

Aware : 122

| 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 |

Fire cause investigations
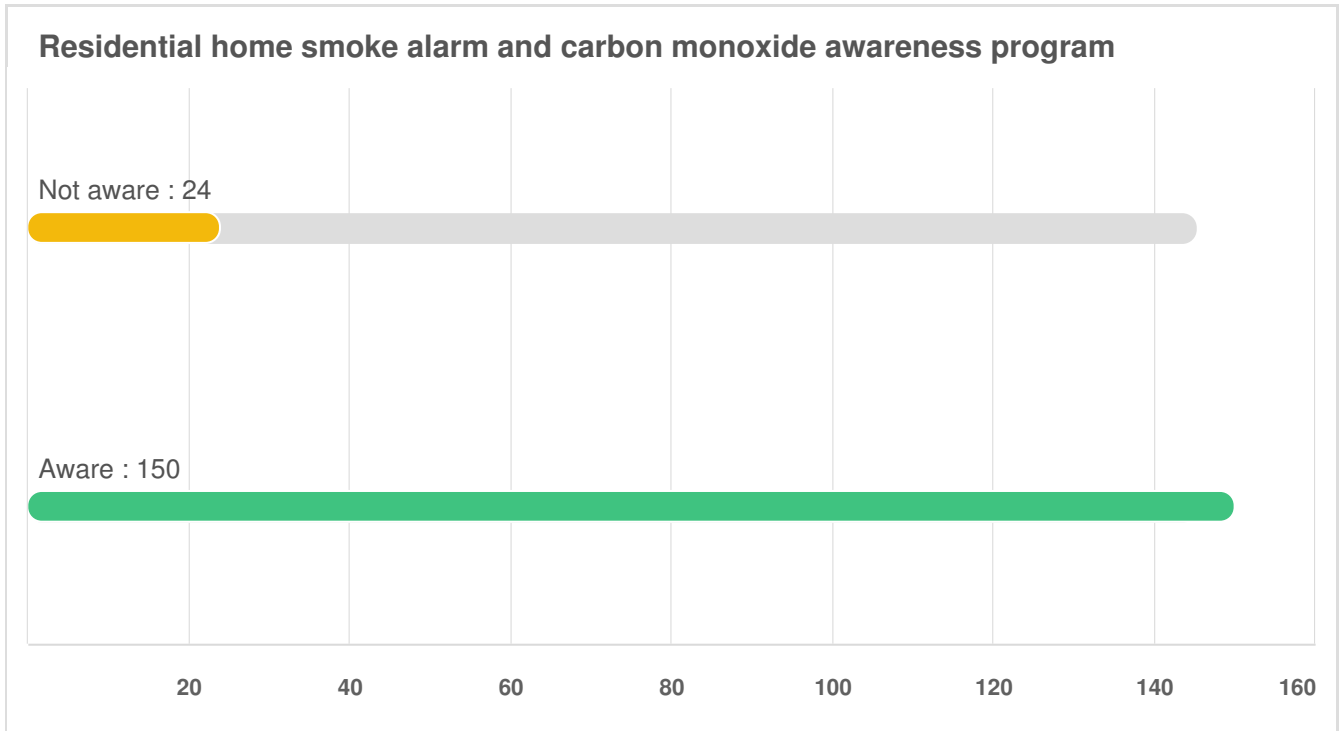
Not aware : 12

Aware : 162

| 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 |

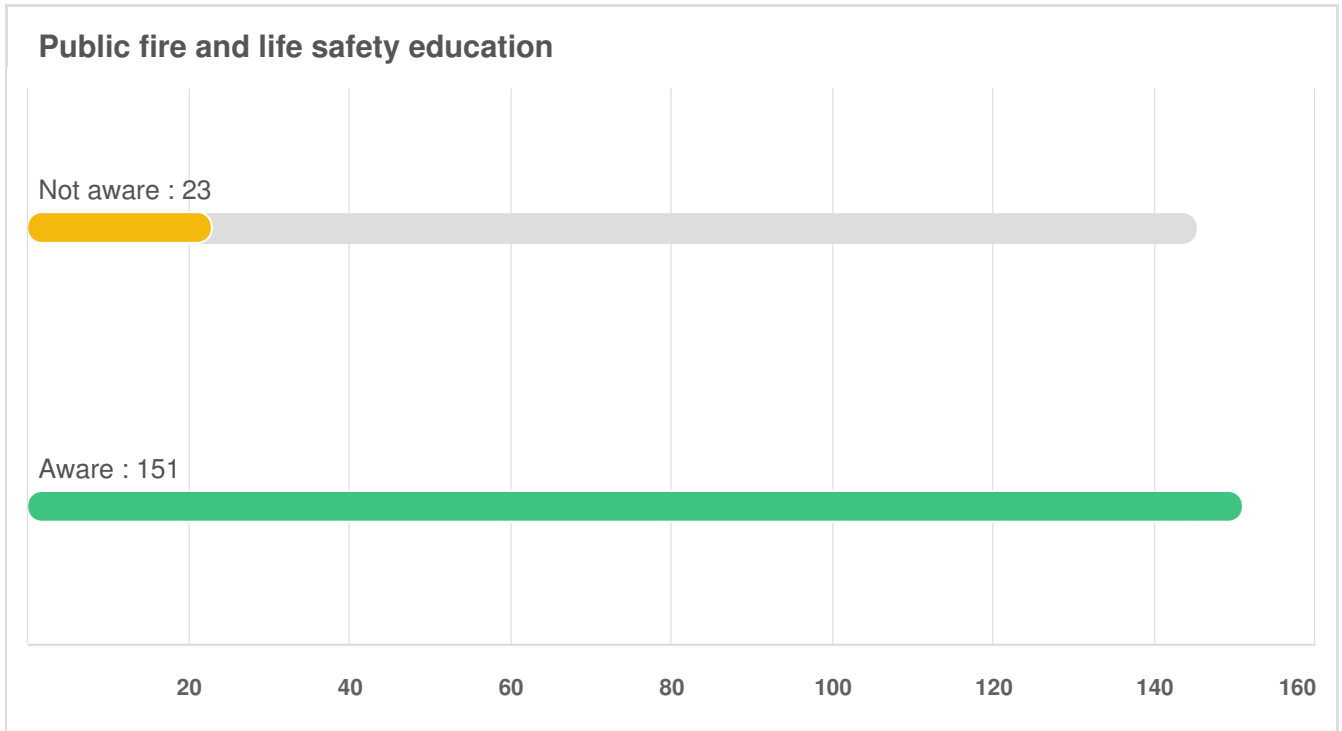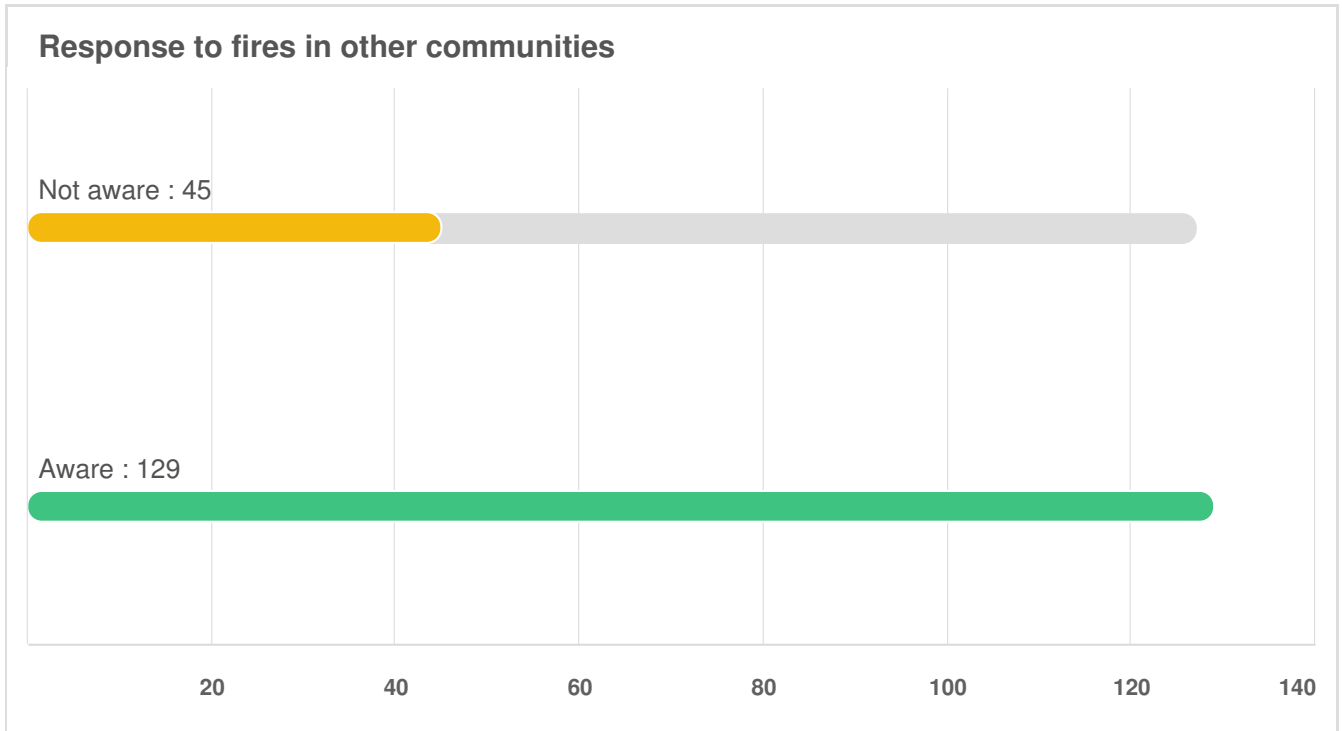**Fire emergency dispatching and communications**

Not aware : 11

Aware : 163

| 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 |

Fire safety inspections

Not aware : 18

Aware : 156

20	40	60	80	100	120	140	160	180

Residential home smoke alarm and carbon monoxide awareness program

Not aware : 24

Aware : 150

20	40	60	80	100	120	140	160

Public fire and life safety education

Not aware : 23

Aware : 151

20	40	60	80	100	120	140	160

Response to fires in other communities

Not aware : 45

Aware : 129

20	40	60	80	100	120	140

Response to medical emergencies

Not aware : 24

Aware : 150

| 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 |

Response to fire incidents

Not aware : 4

Aware : 170

| 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 |

Hazardous materials response

Not aware : 21

Aware : 153

| 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 |

Rope rescue

Not aware : 23

Aware : 151

20   40   60   80   100   120   140   160

Ice rescue

Not aware : 19

Aware : 155

| 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 |

Confined space rescue

Not aware : 33

Aware : 141

| 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 |

Water rescue

Not aware : 26

Aware : 148

20	40	60	80	100	120	140	160

Trench rescue

Not aware : 47

Aware : 127

20	40	60	80	100	120	140

Vehicle extraction

Not aware : 11

Aware : 163

20	40	60	80	100	120	140	160	180

Machinery rescue (e.g., elevator, industrial, farm equipment)

Not aware : 24

Aware : 150

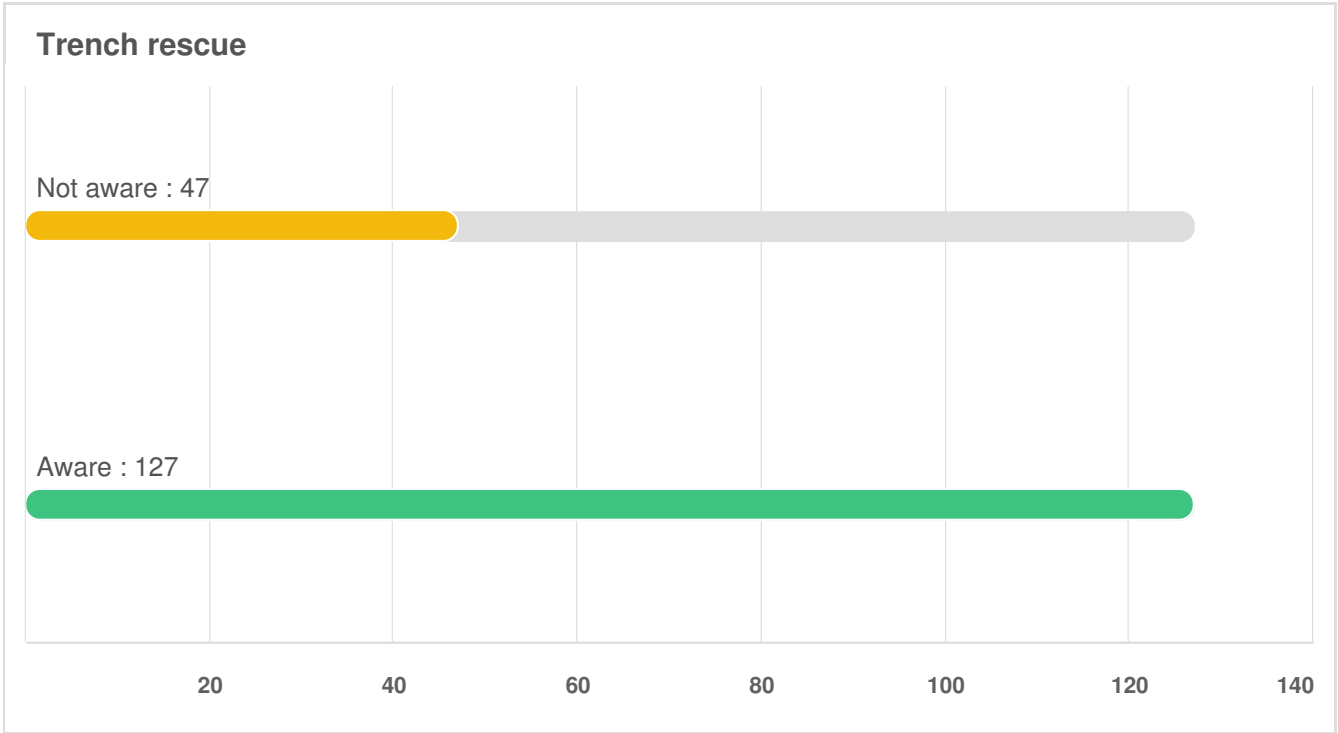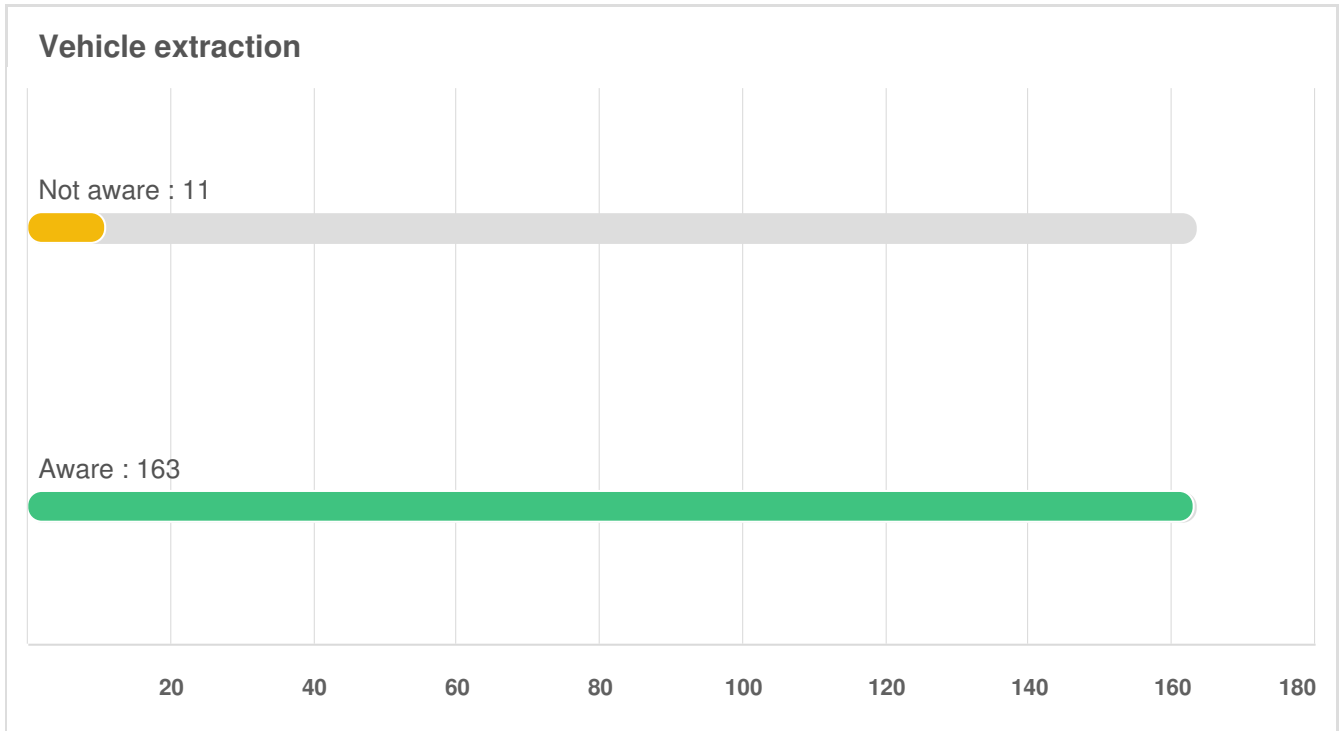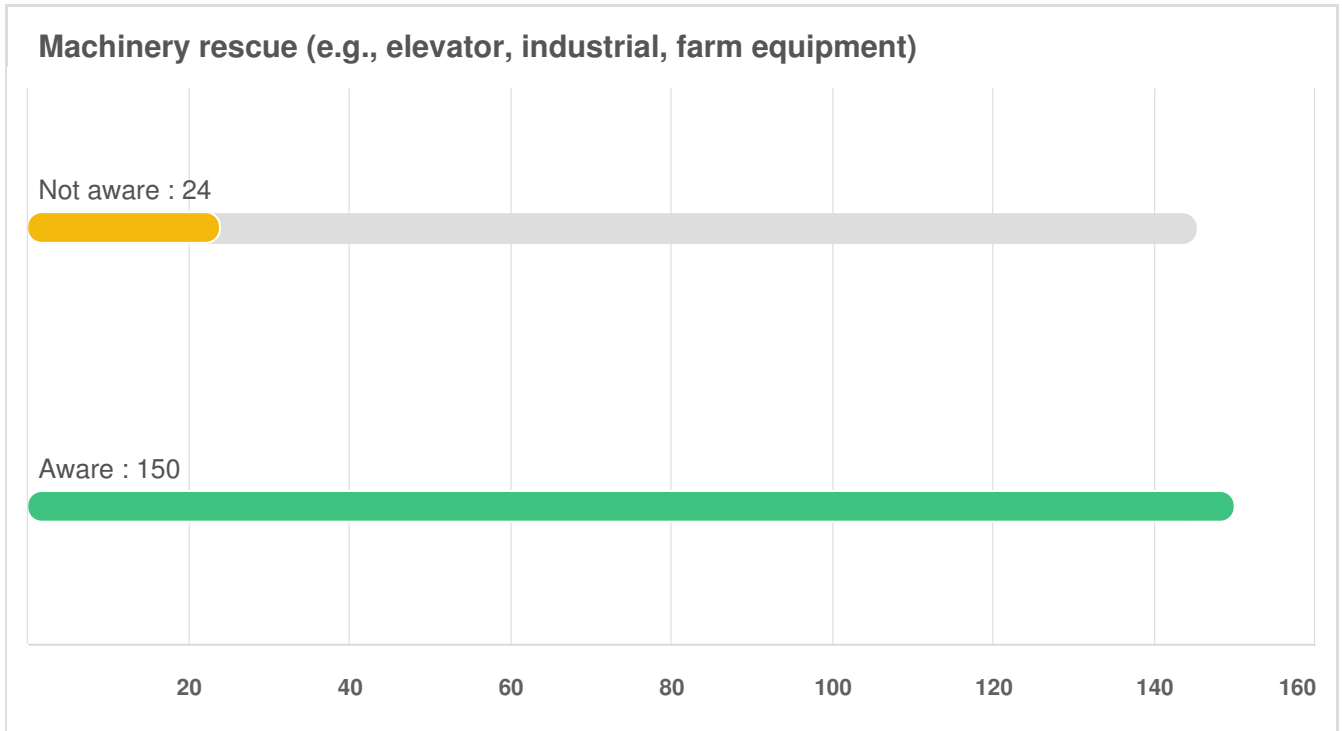|							
20	40	60	80	100	120	140	160

Q2 **There are 17 core services provided by the Milton Fire Department. Which services are most important to you? Please rank in...**

OPTIONS	AVG. RANK
Response to fire incidents	1.80
Response to medical emergencies	5.61
Fire emergency dispatching and communications	5.84
Vehicle extraction	7.55
Hazardous materials response	8.34
Emergency preparedness and response (e.g. wind storms, floods, 72-hour preparedness)	8.72
Fire safety inspections	9.22
Ice rescue	9.23
Public fire and life safety education	9.54
Rope rescue	9.60
Fire cause investigations	9.74
Water rescue	9.80
Response to fires in other communities	10.50
Residential home smoke alarm and carbon monoxide awareness program	10.63
Confined space rescue	11.16
Machinery rescue (e.g., elevator, industrial, farm equipment)	11.55
Trench rescue	12.76

Optional question (166 response(s), 8 skipped)
Question type: Ranking Question

Q3 **In your opinion are the services the Milton Fire Department provides meeting the needs of the Milton community?**
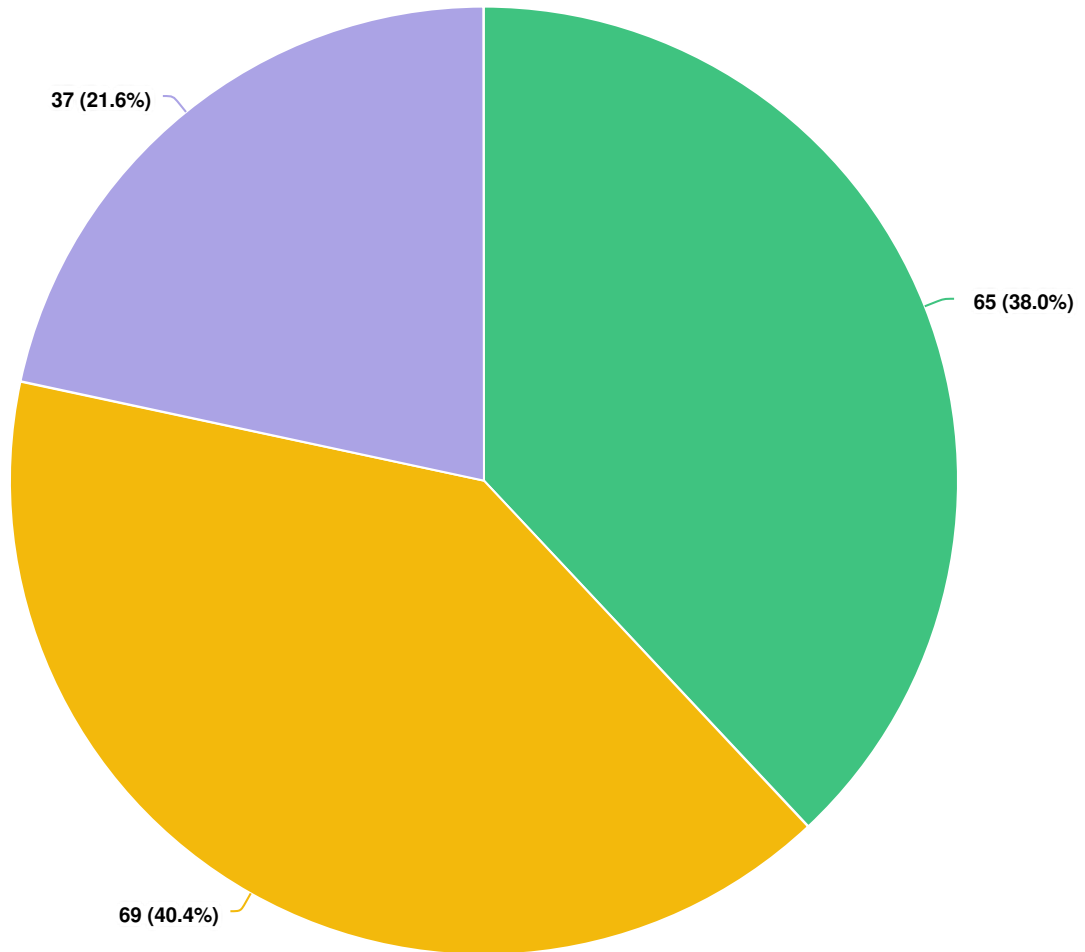
37 (21.6%)

65 (38.0%)

69 (40.4%)

Question options

🟣 Unsure   🟡 No   🟢 Yes

Optional question (171 response(s), 3 skipped)
Question type: Radio Button Question

Q4 | **If you answered "No" to Question 3, please describe how the services the Milton Fire Department provides could better meet with the needs of the Milton community.**

Anonymous
4/12/2021 08:52 AM

Provide faster response to the rural area of town.

Anonymous
4/12/2021 09:04 AM

We had a fire caused by a lightning strike several years ago on ███████ ██ Fire Dept was slow to arrive (at least 30 minutes despite the fact we have a station literally around the corner). The fire hydrant in our street didn't work which further delayed their response as they searched for a working fire hydrant. The firemen did not seem to know how to fight a townhouse fire. ie. they didn't seem to know that the fire should be driven toward the firewall. 3 townhomes were destroyed, and a 4th nearly was.

Anonymous
4/12/2021 09:16 AM

The present members of our fire service are doing their best but there needs to be more of them. Milton has historically been understaffed compared to comparable communities and reluctant to hire firefighters, particularly fulltime ones.

Anonymous
4/12/2021 09:22 AM

Minimum staffing is putting the community and your firefighters safety at risk. More full time firefighters is the answer and I am more than okay with a tax increase to make this a reality. Dispatch could also be amalgamated with other Halton departments allowing for more than one person to dispatch and call take a time. Especially when during structure fires or High call volume times such as wind events.

Anonymous
4/12/2021 09:25 AM

There is a lack of closeness with the community beyond the families with young kids

Anonymous 4/12/2021 11:19 AM	Need full-time professional firefighters with NFPA compliant staffing levels on each apparatus Need a platoon chief position filled on every shift.
Anonymous 4/12/2021 12:37 PM	Perhaps more inspections in homes on demand.
Anonymous 4/12/2021 01:34 PM	Better response time
Anonymous 4/12/2021 01:37 PM	We need significant increases in staffing... we are WELL BELOW provincial standards
Anonymous 4/12/2021 02:29 PM	As I understand they are limited in Medical Calls. I would think Choking and unconscious patients should be added Lean on Full Time staff as well. Hire more
Anonymous 4/12/2021 02:46 PM	Lack of younger full time firefighters causes gaps in knowledge, ability and will lead to issues with safety both for service persons and the community.
Anonymous 4/12/2021 03:18 PM	Inadequate response times. And under utilizing available equipment and staff. Not enough career staff to meet minimum standards based on population. Also see trucks regularly showing up to scenes with only 3 FF's on board. There should be no less than 4 on each truck
Anonymous 4/12/2021 03:38 PM	Not enough full time Fire Fighters to OFM standards for the number of Milton residents.
Anonymous 4/12/2021 03:46 PM	I believe that it is time Milton has more full time fire fighters. Part time is great for smaller communities but that is not what Milton is anymore.
Anonymous 4/12/2021 03:57 PM	From talking to firemen I know who work in other communities, Milton is known to have more of the best equipment than anyone else but not

the manpower to use it or provide 24/7 protection.

Anonymous
4/12/2021 03:59 PM

Question if growth is keeping up with the needs of the growing size of the town. What about all of the new distribution and logistics centres that have been built - is there any chance Fire is capable of handling a fire in one of these properties and what is stored inside them?

Anonymous
4/12/2021 04:12 PM

More staffing

Anonymous
4/12/2021 04:40 PM

More staffing

Anonymous
4/12/2021 05:21 PM

Seriously understaffed for the size of the town. Slow response time to my area.

Anonymous
4/12/2021 05:49 PM

Respond to medical calls

Anonymous
4/12/2021 06:26 PM

Cut costs use volunteers more and decide only to tier medical if EMS asks

Anonymous
4/12/2021 07:50 PM

I feel the department is underfunded and far to heavily dependent on part time staff.

Anonymous
4/12/2021 09:56 PM

Less firefighters and equipment than other communities ie Guelph considering larger population and larger geographic area

Gallaghr
4/12/2021 10:10 PM

Milton needs more full time firefighters, more trucks and all 5 stations staffed 24 hours per day to meet the current and future needs of Milton. Less part time firefighters and more if not all, full time firefighters.

Anonymous
4/12/2021 10:42 PM

With the advent of new high rise buildings planned for Milton up to 25 floors and maybe even higher.. It is of the utmost importance that the Fire Dept. become experts in fighting fires

and rescues on the upper floors of these future buildings. Making sure that these new buildings have Stand Pipe Connections.

Anonymous
4/13/2021 01:38 AM

I am ashamed that the Town of Milton does not support Tierd Response. As a community of over 100,000 and the Town spread out, you would think that would be in their best interest. But money is more important than safety.

Anonymous
4/13/2021 02:34 AM

Maybe need more fire-fighters with town growing . Faster response in care serious something could happen too much traffic and need more crews

Anonymous
4/13/2021 08:00 AM

Milton is a community of over 100 thousand people. The staffing and front line vehicles that you provide are embarrassing and unsafe for the town. There is no possible way the town meets NFPA recommendations for vehicles and personnel on scene for structure fires or any other emergency. It's no wonder most house fires turn into total losses and firefighters fear for their safety

Anonymous
4/13/2021 09:13 AM

Need for adequate staffing and apparatus. Response time for rural/remote rescue and defense operations.

Anonymous
4/13/2021 09:58 AM

Tiered response, meet responce times set out by NFPA.

Anonymous
4/13/2021 10:33 AM

With the rapid expansion of housing in the community the response capabilities of the fire department has not caught up. Milton needs to have an effective response force to address the risks of a single family dwelling fire - 10 to 14 firefighters within a 10 minute or less response time to control the spread of these fires. If not then any development

occurring outside its response areas should only be approved on the condition that these properties be protected by sprinklers.

Anonymous
4/13/2021 11:53 AM

We need more full time fire fighters and more 24/7 service. As the town grows the odds of multiple simultaneous incidents of significance is increasing. Versus comparable cities of a similar size we have not kept pace with fire services.

Anonymous
4/13/2021 12:20 PM

More Full Time Firefighters needed to meet and exceed the needs of the growing community

Anonymous
4/13/2021 03:16 PM

By adding more staff to Our current compliment Increasing full time staffing to what are current acceptable levels in regards to staffing of surrounding departments

Anonymous
4/13/2021 03:30 PM

We have lived in town for over 40 years. The Fire Department has always seemed poorly trained, and under staffed. Milto loses far to many structures in this town. There is also away to much political involvement from Town Hall. I have spoken to local Councillors over the years and when they are asked about the deficiencies in the department they just lie with their answers. Please get more funding for this department and stop political interference.

Anonymous
4/13/2021 03:52 PM

I do not believe we have a robust fire prevention program.

Anonymous
4/13/2021 04:02 PM

What idiot came up with this survey? Are you seriously going to drop any of your core services? The town is woefully inadequately served, with bare bones coverage.

Anonymous
4/13/2021 04:33 PM

I'm concerned on the lack of full time fire fighters. Too many volunteer fire fighters. New stations opened with limited crews.

Anonymous

4/13/2021 05:03 PM

There are not enough full time fire fighters for a town of this size. There are not enough fire halls equipped to handle emergency situations in this town, especially if more than 1 event happens at the same time. We have industries and warehouse operations as well as a hospital that could potentially have disastrous situations. Not to mention the conversation areas and rescues needed. What if the CN hub is built the fire department will see an increase in calls for that as well. The safety of the firefighters is very important. No firefighter should have to be afraid for their own safety and are there enough fire fighters on scene in the event of a serious situation and a a crew member has to be rescued. Part time firefighters have left to go elsewhere to other departments for full time work at the expense of Milton having trained them and then having to hire to replace. The town is expanding and high rise buildings are being constructed. Can the fire department handle fires at these structures with the trucks and equipment in place. After viewing NFPA videos it really makes me wonder. The town's budget needs to meet the growing needs of the fire department and not wait for someone to be killed before they act or are forced to act. All of the services of the fire department are extremely important for public safety and citizens expect the fire department to respond, not wonder if the department is equipped and properly staffed to respond.

Anonymous

4/13/2021 09:43 PM

There are not enough paid fulltime firefighters on duty to meet the needs. You need to hire crews to operate 24/7 at all 5 stations.

Anonymous	They can only provide these services
4/13/2021 09:54 PM	with more staff

Anonymous	Not enough full time staff for the
4/14/2021 12:03 AM	population of our growing
	community. Milton should hire more
	full-time staff to be able to respond
	timely to fire and emergency
	situations.

Anonymous	More inspections of premises, fire
4/14/2021 07:53 AM	prevention

Anonymous	Have the stations employed with
4/14/2021 09:01 AM	adequate staff. Watched 2 houses
	burn down before a fire truck
	arrived... 25 minutes after the initial
	phone call.

Anonymous	Town continues to grow, yet fire
4/14/2021 09:17 AM	department staff is not being
	expanded to adequately provide
	proportionate coverage

Anonymous	Change your staffing schedule to a
4/14/2021 11:04 AM	regular shift program...same as
	police and healthcare. Taxpayers are
	paying for your staff to sleep and
	help them have 2nd jobs to fill all
	their spare time

Anonymous	Community is growing, Milton needs
4/14/2021 07:00 PM	more

Anonymous	Milton station 1,3 and 4 must go full
4/14/2021 08:30 PM	time. No half measures by going
	composite. Station 2 you may be able
	to justify staying composite. Behind
	the times and you're just waiting for
	someone to die before you change.
	Be proactive not reactive. Not a small
	town anymore.

Anonymous	Response times are not great
4/14/2021 08:38 PM	

Anonymous	Increase staff. Update equipment.
4/15/2021 08:05 AM	Better 24/7 coverage.

Anonymous	
4/15/2021 08:18 AM	MFD is in need of more full time people and equipment. Trucks/pumpers etc should ALL be in good working condition. Firefighters should have proper gear and equipment to do their job.
Anonymous	
4/15/2021 03:18 PM	The service lacks the staffing to truly meet the risk profile of a municipality the size of Milton . No staffing for a newly built station. No 24 he staffing for the Steeles Ave station . Staffing hasn't kept pace with growth and demands for service .
Anonymous	
4/15/2021 05:08 PM	You clearly don't meet standards in terms of career firefighter employment. How are you response times?
Anonymous	
4/15/2021 05:20 PM	You don't have enough fire suppression staff. What are you going to do when you finally hire and staff your trucks correctly. You won't be able to hire new recruits as you can't staff all your trucks with new hires. You will need to source them from other departments. $$$$$$. Your neighbours to the south have roughly 1FF TO EVERY 1000ppl Showing up to a house fire with 6 full time staff and part timers eventually is unacceptable.
Anonymous	
4/15/2021 06:38 PM	They do not have enough staff if more than one major incident happen. With the size of Milton there should be more fulltime firefighters working. They should also have a larger fleet of trucks for the size of Milton. For what the fire department has to work with they are doing great but they should be a lot larger for the size of the town they are serving
Anonymous	
4/15/2021 08:45 PM	We have 5 firehalls but not all are staffed fully.
Anonymous	More personnel

4/15/2021 09:15 PM

Anonymous
4/15/2021 09:19 PM

NFPA clearly states the adequate number of firefighters required to effectively carry out duties in the event of an emergency, Milton for years and continues to be dangerously understaffed in the operations division, this is dangerous for residents and firefighters.

Anonymous
4/15/2021 09:44 PM

Milton FD does a great job! But I'm always worried about their numbers.. it seems like not many firefighters are at fires compared to Toronto and other Ontario's cities ???

Anonymous
4/15/2021 09:45 PM

We need more firefighters for our community. We are exponentially growing, our emergency providers need to increase for the town need and capacity.

Anonymous
4/15/2021 10:03 PM

I live in ████ and if I require the services after 5pm. I fear I will be dead or watching you arrive to ashes of my burning home. You need to up grade to a 24/7 operation throughout your area of responsibility.

Anonymous
4/16/2021 07:42 AM

Need more fulltime firefighters

MSly82
4/16/2021 10:28 AM

Appropriate full-time suppression staffing, followed by proper prevention and educational fire programs that engage the public. There is a large density of ordinary and wood frame construction types in Milton. All of which use new types of materials that fail quickly in fire conditions. Six full-time staff/ 2 trucks is an inadequate response and falls short of NFPA requirements for a fire response. Especially for the growing size of the town. Also, proper fire and safety programs within the public will help engage the department in the public eye and help residence of

milton understand proper fire and life safety initiatives.

Anonymous
4/16/2021 12:01 PM

More full time fire stations please.

Anonymous
4/16/2021 03:04 PM

I feel very unsafe having a fire service that is understaffed and still relying largely on volunteers.

Anonymous
4/17/2021 12:52 AM

Adequate staffing of more full time crews to operate efficiently at incidents which are primarily handled by the Fire service. Better preparedness to respond to/operate at medical emergencies. MFD responds to very few medical incidents. Therefore, when operating at a medical incident, they are not proficient, and can not be relied upon to the same level of other, comparable, Southern Ontario Fire crews. MFD could either respond to more medical calls, with the aim of becoming more proficient in their role/s. And/or, dedicate more time to ongoing training with/without other local medical responders.

Anonymous
4/18/2021 10:02 AM

The fire department is way understaffed for the size of our town. More full time fire fighters are needed

Brysonh
4/18/2021 04:32 PM

I don't feel comfortable knowing how few full time firefighters there are to service a large and growing community. Despite having part time members, the time that these prefab houses ignite and are destroyed does not allow to firefighters to be called into a station and then attend to a fire. Lives are at stake.

Anonymous
4/19/2021 03:38 PM

Too long to respond. No full time staff at all departments with full coverage. Way to many times I have see trucks responding driving across town when there was a closer station but that station didn't have any members at

the station

|	
Anonymous 4/20/2021 07:07 PM	The community is growing very fast. Not sure if fire service is keeping up.
Anonymous 4/21/2021 09:34 AM	Compared to other communities of the same size there are to few staff on the first response trucks.
Anonymous 4/21/2021 03:17 PM	We need more full time fire fighters. More fire fighters for rural milton
Anonymous 4/21/2021 06:36 PM	More firefighters, have part time staff fill in for full time staff to ensure all trucks have full complement at all times, keep up with the growth of this community!
Anonymous 4/22/2021 05:00 AM	Man power and response time
Anonymous 4/28/2021 09:23 AM	There doesn't seem to be a lot of fire stations for how fast the community is growing. Especially with all the commercial businesses and new residential areas going up so fast
Anonymous 4/29/2021 02:45 PM	From what I hear we do not have enough fire fighters to cover to city
Anonymous 4/29/2021 09:57 PM	Serious lack of Public education. Very little information available to the public. Station message boards speak to smoke detectors and not alarms. Doesn't seem credible. Many fire code violations in a variety of OBC building classifications throughout the town. Poor inspection practices.

Optional question (77 response(s), 97 skipped)
Question type: Essay Question

Q5 Within the past five years, have you called 9-1-1 or been involved in an emergency response provided by the Milton Fire Department? This may have included a response to a fire, medical emergency, or any other emergency incident.
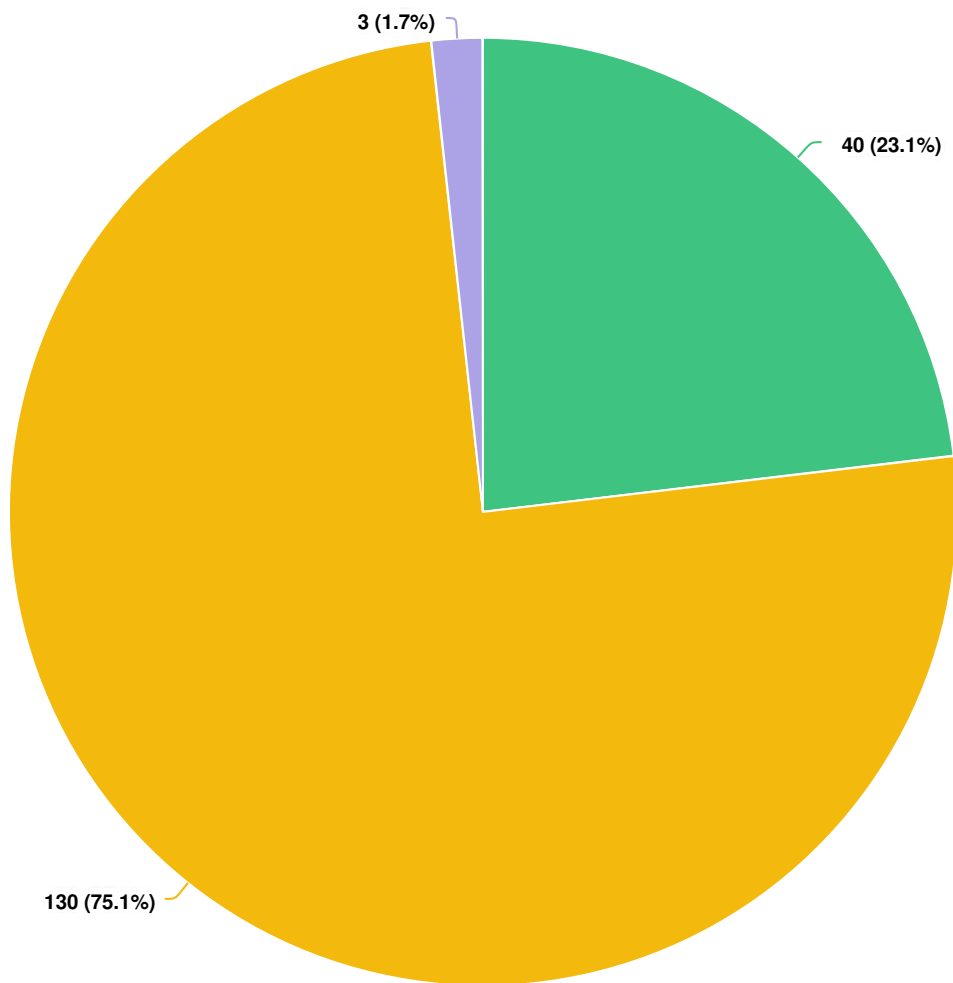
3 (1.7%)

40 (23.1%)

130 (75.1%)

Question options

● Unsure ● No ● Yes

Optional question (173 response(s), 1 skipped)
Question type: Radio Button Question

| **Q6** | **If you answered "Yes" or "Unsure" to Question 5, please provide an overview of the interaction.** |

Anonymous 4/12/2021 09:04 AM	Our townhouse on ▮▮▮▮▮▮▮▮ was involved in a fire caused by a lightning strike. The fire response was slow. 911 was called several times over a 20 minute period before they finally arrived. The fire hydrant on our street didn't work, further delaying their response as they had to go searching for a working fire hydrant. They didn't seem to know how to fight a townhouse fire, and drive the fire towards previously uninvolved townhomes instead of toward the firewall resulting in the full destruction of a 3rd townhome, and damage to a 4th. Our home fortunately was the 4th home, and we narrowly escaped major damage to our home.
Anonymous 4/12/2021 09:22 AM	Multiple interactions. Alarm activation and a grass fire. Also a paramedic so many medical, mvc, rescue and fire responses. Great staff, need more of them.
Anonymous 4/12/2021 09:25 AM	Call 911 for a car accident and the dispatcher ask me to self evaluate if maybe I would need an ambulance, both my car and the small truck were totally lost. We block the Avenue, but still myself have to find my way out of my car.
Anonymous 4/12/2021 11:19 AM	Response for smoke from an appliance
Anonymous 4/12/2021 01:36 PM	I have phoned 911. Fire arrived before police and ambulance. Pleasant experience.

Anonymous 4/12/2021 01:45 PM	Medical emergency a few times
Anonymous 4/12/2021 03:18 PM	Witness to a motor vehicle accident involving a DUI with kids involved, luckily only minor injuries. Also called in regarding a house fire I could see at my neighbours down the street
Anonymous 4/12/2021 03:57 PM	Burnt food in our over last year prompting a very quick response from the Fire Station at Main and Savoliine, (there was no fire but I apologized profusely!).
Anonymous 4/12/2021 03:59 PM	Motor vehicle accident in Moffat, interaction was very positive and they were very effective - once they got there. It took what seemed to be a very long time to arrive and I was very surprised to hear they came from James Snow
Anonymous 4/12/2021 05:21 PM	I was in a car accident.
Gallaghr 4/12/2021 10:10 PM	Co call, medical emergency and an MVC
Anonymous 4/13/2021 01:38 AM	We had smoke in our building, I must say the fire fighters were professional, and very effecient
Anonymous 4/13/2021 02:34 AM	Saw a car on fire on way home and took over 15 min for crews to get there car was piping on road
Anonymous 4/13/2021 08:00 AM	Our Neighbours home Carbon monoxide alarm was going off continuously for 30+ minutes. We were unsure if the occupants were home and 911 was called. Milton fire department took 22 minutes to respond to this alarm and failed to do their due diligence to check the safety of the attached home and ensure the occupants were not home. Milton fire department left after doing a perimeter check with

their 4 gas detectors and claimed there was nothing they could do. Several hours later when the occupants returned to their home the Carbon Monoxide alarm was still in alarm. Union Gas was called and the home had peak readings of over 250ppm which could have rendered the occupants unconscious if they were home. This is 10x the acceptable limits and the fire departments complete lack of understanding and due diligence for a simple alarm like that is embarrassing.

Johnny tickets 4/13/2021 12:21 PM	To report drunk driver or someone needing medical attention
Anonymous 4/13/2021 03:30 PM	It was 2012 and our house was destroyed by the untrained actions of the Milton Fire Department. Our house was one of five destroyed within three weeks.
Anonymous 4/13/2021 04:02 PM	I prefer not to answer
Anonymous 4/13/2021 11:20 PM	Witness an accident called
Anonymous 4/14/2021 09:34 AM	Heartattack
Anonymous 4/14/2021 11:04 AM	Medical emergency...response was timely
Anonymous 4/14/2021 06:45 PM	Came in timely manner to check out carbon monoxide detector which kept going off
Anonymous 4/15/2021 01:41 AM	Had someone in seizure and not responding
Anonymous 4/15/2021 08:10 AM	Car accident
Anonymous	Transport to hospital because of a

4/15/2021 03:09 PM	medical emergency
Anonymous 4/15/2021 03:18 PM	911 for suspected heart attack, but Paramedics were only group who responded.
Anonymous 4/15/2021 05:08 PM	Fire
Anonymous 4/15/2021 06:38 PM	Had an electrical fire and a grass fire in the field beside our house.
Anonymous 4/15/2021 09:44 PM	Amazing service very professional
Anonymous 4/15/2021 09:45 PM	Pedestrian was hit by car by the hospital and we needed to call 911
Anonymous 4/16/2021 07:42 AM	called 911 for a house fire in Milton
Anonymous 4/16/2021 03:04 PM	Witnessed a house fire that was a complete loss due to lack of firefighters when time matters . Luckily everybody was out of the house or else losses would have been much more serious.
Anonymous 4/17/2021 12:52 AM	Similar to Q-4. MFD is not proficient at their medical roles. Are cumbersome to work with on patient care. Can not be relied upon as much as other Souther Ontario Fire services.
Brysonh 4/18/2021 04:32 PM	Coaching at a highschool football game, we waited almost 40m for a student who had a broken femur and dislocated knee. Both ambulance and firetruck arrived at the same time.
Anonymous 4/19/2021 03:08 PM	Location of sprinklers below an active transformer
Anonymous 4/19/2021 03:38 PM	Professional call taker
Anonymous	a fire truck was there but I didn't see

|	
4/19/2021 07:27 PM	the fire fighters
Anonymous 4/20/2021 07:07 PM	A friend was involved in a motorcycle collision. The fire department assisted EMS with care for my friend.
Anonymous 4/21/2021 09:34 AM	
Anonymous 4/21/2021 06:36 PM	Had a fire at my house. Truck came. Put the fire out.
Anonymous 4/22/2021 08:14 PM	Fire responded to pulled alarm at our condo building.
Anonymous 4/25/2021 06:46 PM	Motor vehicle accident by glen eden entrance.

Optional question (40 response(s), 134 skipped)
Question type: Essay Question

Q7 **If you answered "Yes" to Question 5, please indicate how satisfied you were with the response provided by the Milton Fire Department.**

18 (25.0%)

31 (43.1%)

8 (11.1%)

5 (6.9%)

10 (13.9%)
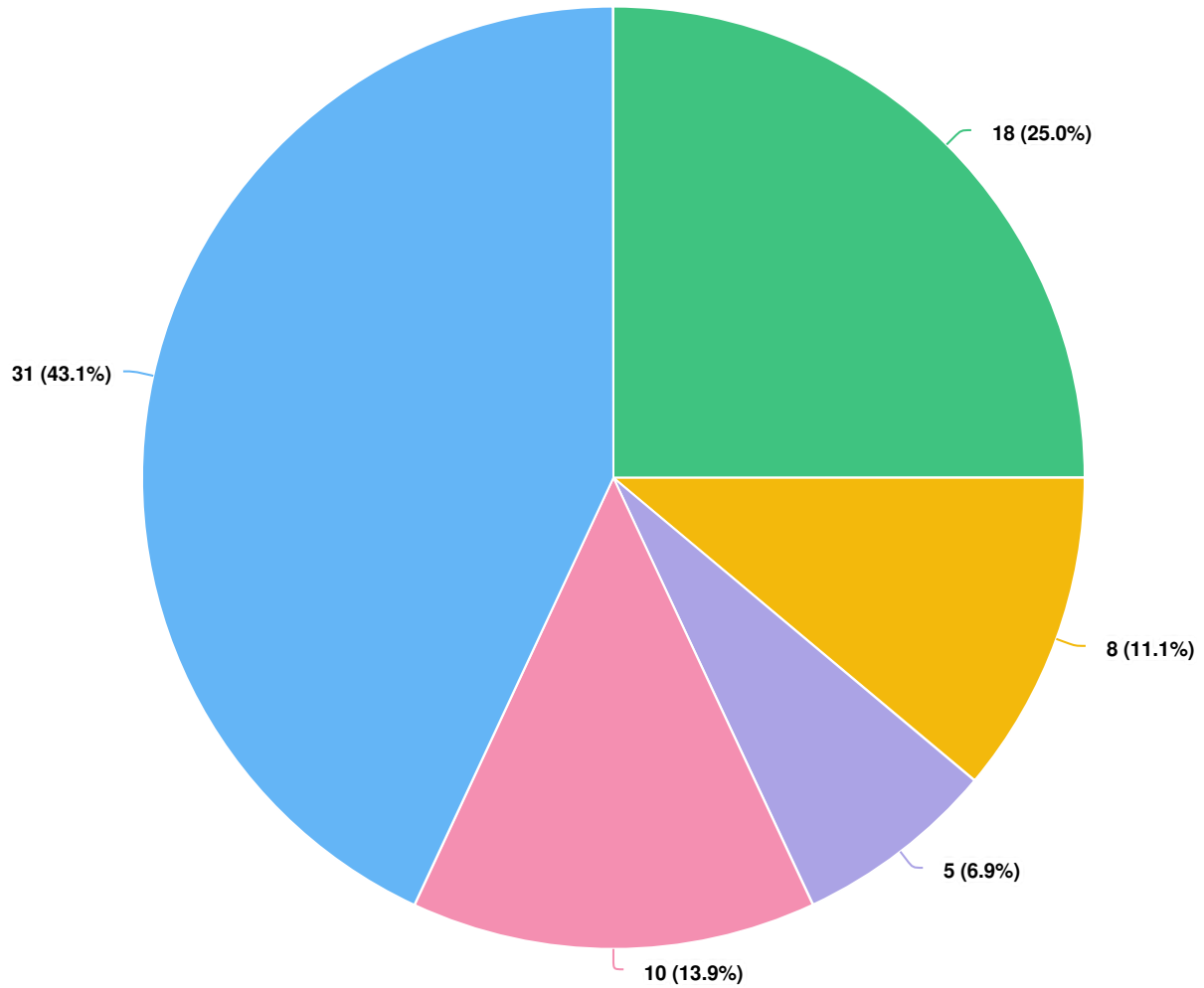
Question options

● No response ● Not satisfied ● Somewhat satisfied ● Satisfied ● Very satisfied

Optional question (72 response(s), 102 skipped)
Question type: Radio Button Question

Q8 Within the past five years, have you been provided services by the Milton Fire Department related to fire prevention or public education (e.g., home smoke alarm check by firefighters, information through social media, fire inspection, community eve...
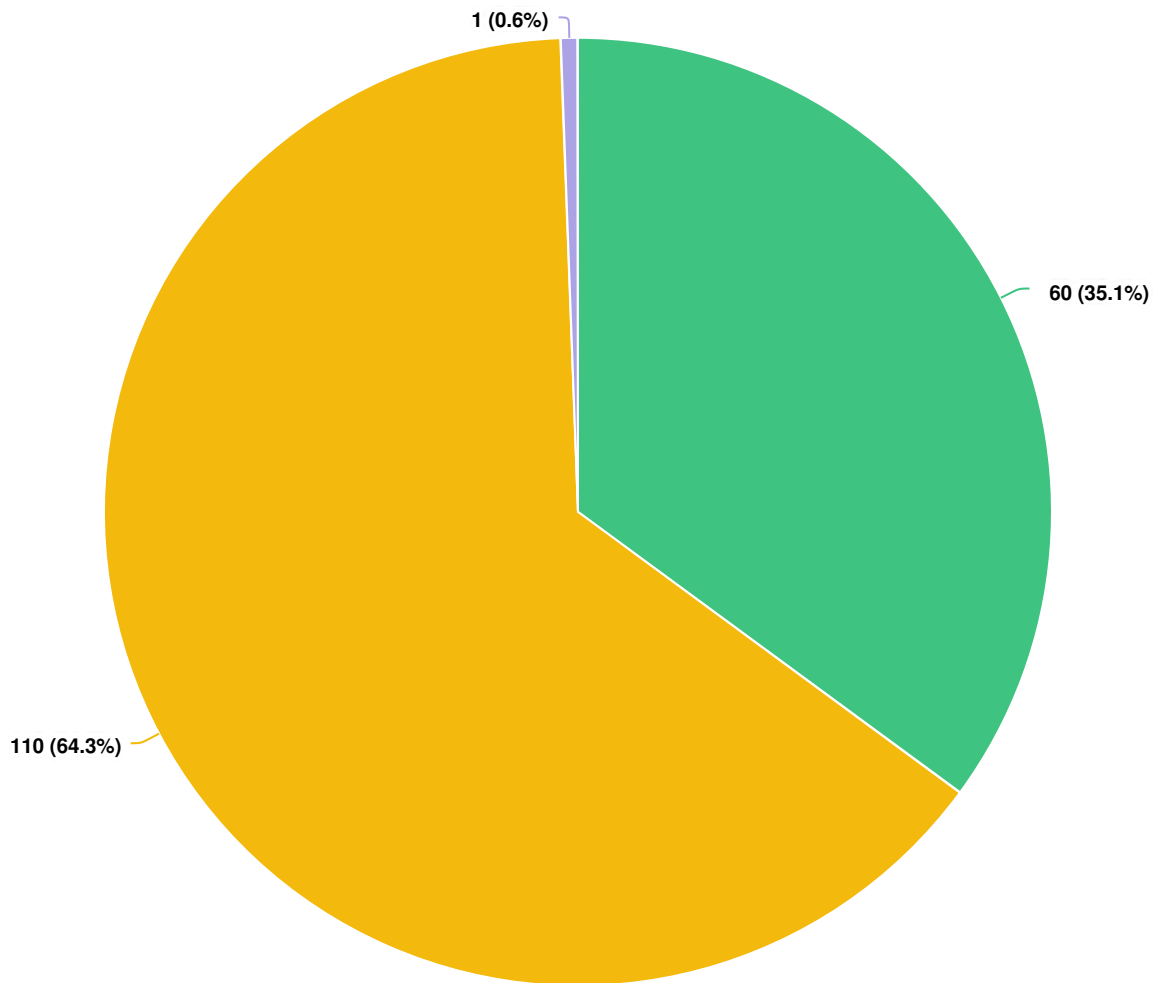
1 (0.6%)

60 (35.1%)

110 (64.3%)

Question options

● Unsure　　● No　　● Yes

Optional question (171 response(s), 3 skipped)
Question type: Radio Button Question

Q9 | **If you answered "Yes" or "Unsure" to Question 8, please provide an overview of the interaction and any feedback you may have to improve the service.**

Anonymous 4/12/2021 09:16 AM	There was an inspection and an extra smoke detector was recommended. One was provided and we were billed for it. No feedback. We were very happy with the service.
Anonymous 4/12/2021 09:22 AM	Follow on social media now that Milton has a Twitter account finally.
Anonymous 4/12/2021 11:19 AM	Social media; regular messaging with different types of prevention information Social media; with information regarding the department's operations
Anonymous 4/12/2021 12:03 PM	Info seen through social media, following on Twitter, Instagram & LinkedIn
Anonymous 4/12/2021 12:37 PM	Pamphlet and door visit.
Anonymous 4/12/2021 01:06 PM	Twitter. Newspaper
Anonymous 4/12/2021 01:34 PM	Fire Department Open House
Anonymous 4/12/2021 01:36 PM	N/A
Anonymous 4/12/2021 02:29 PM	Subscription to Twitter account
Anonymous 4/12/2021 03:46 PM	Wonderful. They came once to ask about our smoke alarms.
Anonymous 4/12/2021 03:57 PM	Fireman called to remind us about changing batteries in our alarms,

(glad to report I had changed them the week before).

Anonymous
4/12/2021 03:59 PM

Kids camp in the summer several years ago.The kids learned a great deal from that event. Don't really see much of the department in the community other than when lights are going.

Anonymous
4/12/2021 07:50 PM

Staff was great at providing fire safety information.

Anonymous
4/12/2021 09:03 PM

Home inspection baler fire HHFD first respomce88

Anonymous
4/12/2021 09:34 PM

Fire Truck at Milton farmers market

Gallaghr
4/12/2021 10:10 PM

I have lived in Milton for 11 years and I have had firefighters come to my door to provide smoke alarm information once. I have also received education from firefighters at a Saturday morning farmers market many times.

Anonymous
4/12/2021 11:37 PM

Great idea. Should do this for all residences once every 10 years.

Anonymous
4/13/2021 01:38 AM

We had a safety meeting I think 2 people showed. It was a little speech on fire prevention and a handout.

Anonymous
4/13/2021 02:34 AM

Fire house open house events are great

Anonymous
4/13/2021 09:07 AM

Home smoke alarm check

Anonymous
4/13/2021 09:13 AM

Higher online/social media and community presence.

Anonymous
4/13/2021 09:58 AM

Social media. More online activity especially during covid restrictions. Educational videos etc...

Anonymous
4/13/2021 11:36 AM

smoke alarm info

Anonymous 4/13/2021 11:53 AM	MFD has annually donated a Home Safe Home Fire Safety package to help Milton Rotary's Annual Online Auction and promote and encourage fire safety.
Anonymous 4/13/2021 01:23 PM	There have been a few interactions over the last 5 years - at the Milton Summer market, the grocery store awareness campaigns and neighbourhood check - and they are always informative. We have small children, so the interaction may first start with them but usually transitions to a discussion about our home safety and fire prevention awareness. It is always a nice reminder and welcomed.
Anonymous 4/13/2021 03:16 PM	Flier in door
Anonymous 4/13/2021 04:02 PM	I prefer not to answer
Anonymous 4/13/2021 06:12 PM	Checking for Smoke detectors and carbon monoxide detectors
Anonymous 4/13/2021 08:21 PM	Fire prevention week is very well done. All community events are very well received by our kids and family. Very informative and well organized.
Anonymous 4/13/2021 11:20 PM	School visit
Anonymous 4/14/2021 12:03 AM	Fire education at my children's school. And attended Open house at fire department to learn about fire safety. Both were great.
Anonymous 4/14/2021 11:46 AM	Home check
Anonymous 4/14/2021 02:25 PM	Well done

Anonymous	We were satisfied
4/14/2021 06:45 PM	

Anonymous	Community event at the station
4/14/2021 07:00 PM	during fire safety week

Anonymous	Smoke and carbon monoxide checks
4/14/2021 07:24 PM	

Anonymous	Food donations
4/14/2021 08:30 PM	

Anonymous	Went to an open house and
4/15/2021 08:18 AM	community events. Was interesting how some of the equipment works.

Anonymous	Home awareness program
4/15/2021 05:20 PM	

Anonymous	I have seen program information on
4/15/2021 06:27 PM	social media (ex. smoke detector inspection). However, I was unaware of the many services provided by the department. It would be good to share more about everything the department does.

Anonymous	Professional and courteous service
4/16/2021 07:42 AM	for residential smoke alarm visit

Anonymous	home check by firefighters
4/16/2021 02:48 PM	

Anonymous	home check for smoke alarms etc
4/16/2021 04:53 PM	

Anonymous	Answered fire pit question and came
4/17/2021 05:15 PM	by for fire alarm reminder.

Anonymous	In school presentation and at fairs
4/18/2021 10:02 AM	markets etc.

Anonymous	Professional
4/19/2021 03:38 PM	

Anonymous	Girl guides visit

4/20/2021 12:59 AM

Anonymous	Has smoke and CO detectors
4/21/2021 03:18 AM	inspected. Very thorough and informative. Wonderful to work with 10/10!

Anonymous	Information through social media,
4/21/2021 11:53 AM	yearly burn permit application, community events and media releases

Anonymous	Assistance with the Fire Safety Plan I
4/25/2021 03:34 PM	was updating for our Church.

Anonymous	Amazing, given the level of service
4/25/2021 06:46 PM	that we received from Station 2 (Chief and Firemen) given the global pandemic when we stopped by to see the truck outside, with my sons!

Anonymous	Had a chance to speak with fire
4/28/2021 09:23 AM	fighters at the farmers market, very pleasant group of guys

Optional question (52 response(s), 122 skipped)
Question type: Essay Question

Q10   If you answered "Yes" to Question 8, please indicate how satisfied you were with the response provided by the Milton Fire Department.
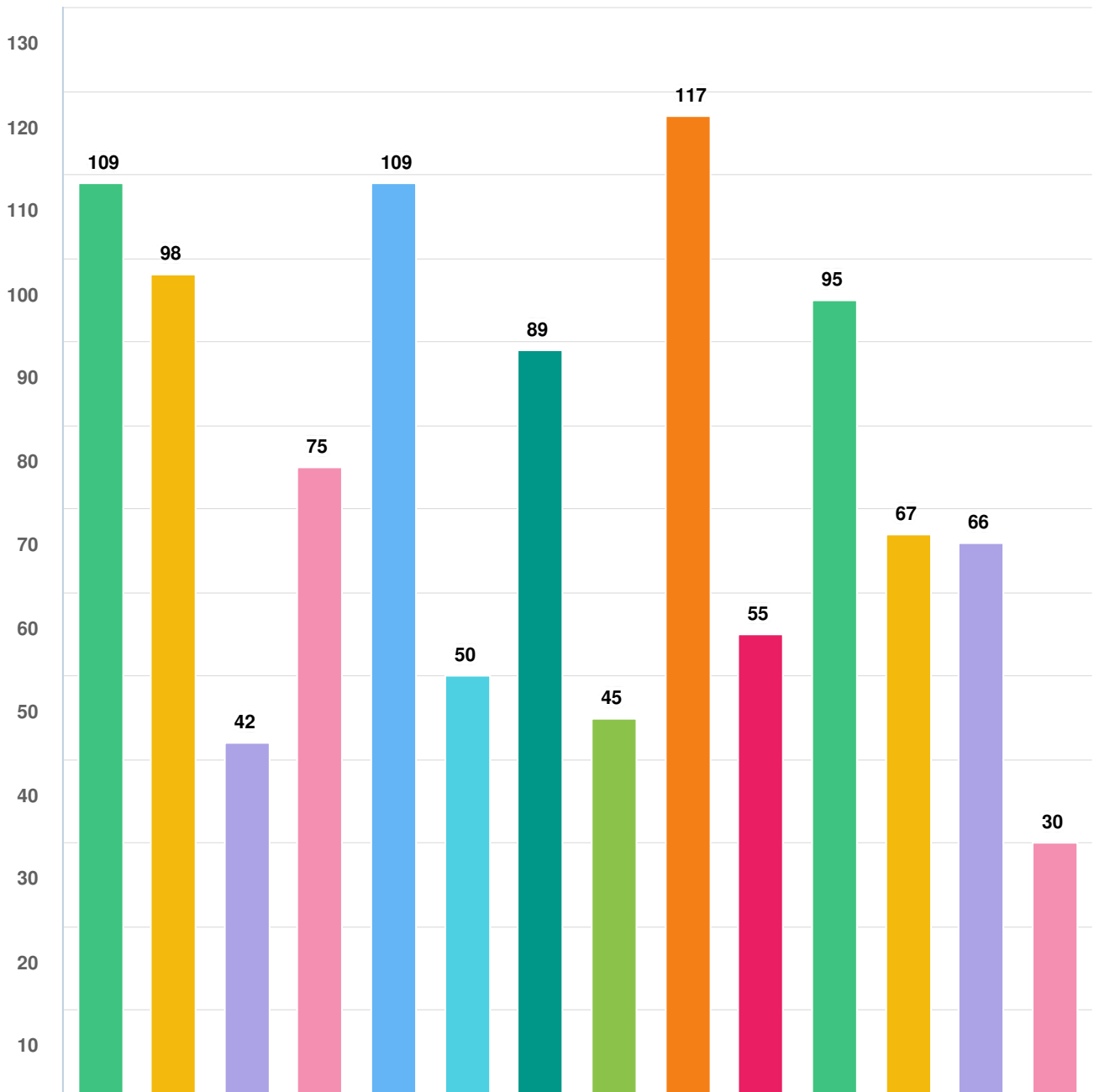
20 (25.3%)

1 (1.3%)

6 (7.6%)

13 (16.5%)

39 (49.4%)
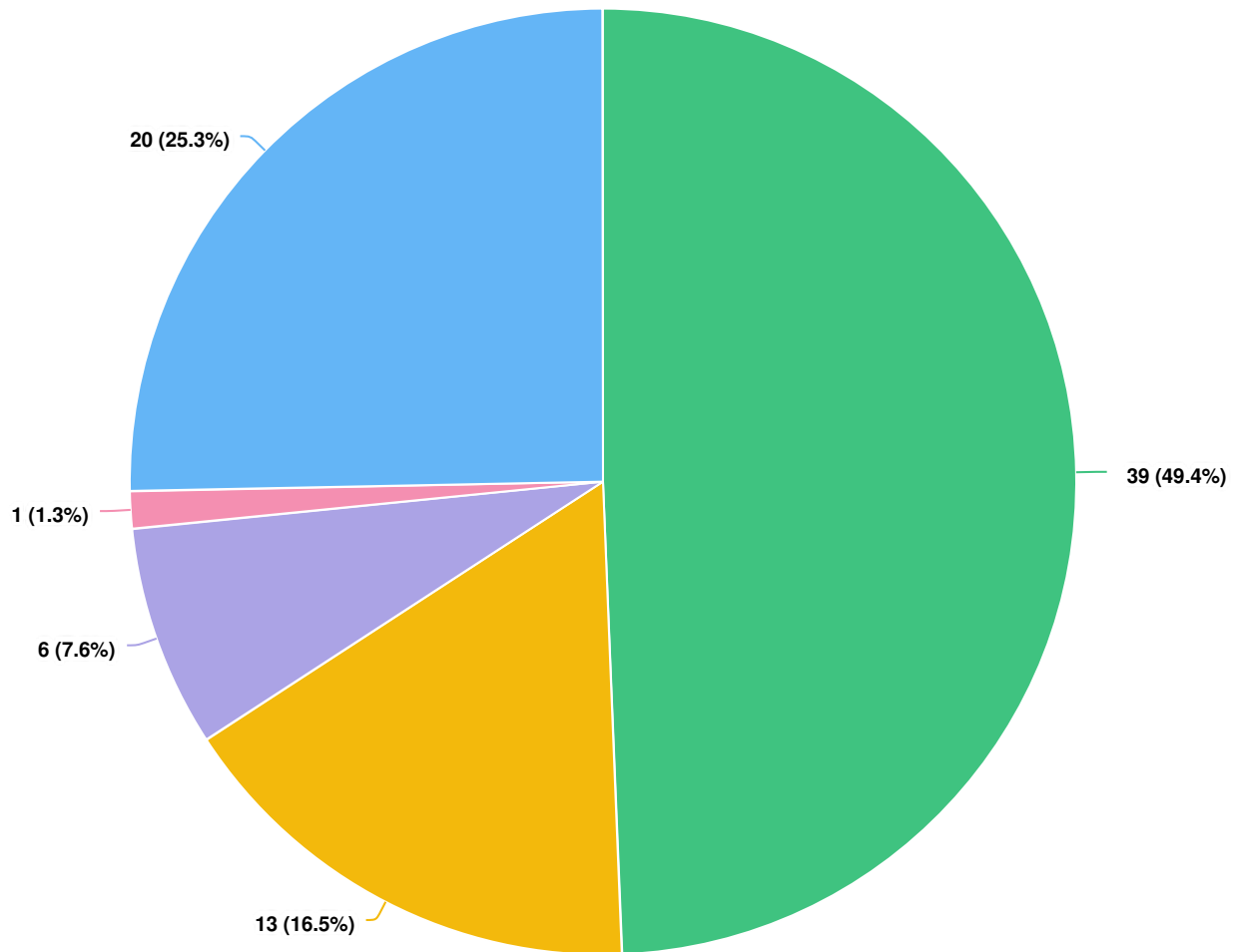
Question options

● No response   ● Not satisfied   ● Somewhat satisfied   ● Satisfied   ● Very satisfied

Optional question (79 response(s), 95 skipped)
Question type: Radio Button Question

Q11 How would you like to receive public safety information from the Milton Fire Department? Please select all that apply.

Question options

- Social media - LinkedIn
- Social media - Twitter
- Social media - Instagram
- Social media - Facebook
- Signage in Town facilities (e.g. facility television screens, etc.)
- School programs
- Promotional materials (e.g. flyers, brochures, posters)
- Open houses
- Local advertising (e.g. newspaper, radio, etc.)
- Fire Department presence at community events
- Fire Department visits to neighbourhoods
- Newsletters
- Fire Department website
- Town of Milton website

Mandatory Question (174 response(s))
Question type: Checkbox Question

Q12   The province requires that homeowners and building owners have working smoke alarms on every storey of a residence and outside all sleeping areas. Do you currently have working smoke alarms in your home? Please select the response that best reflect...

0 (0.0%)

0 (0.0%)

1 (0.6%)

7 (4.0%)

166 (95.4%)
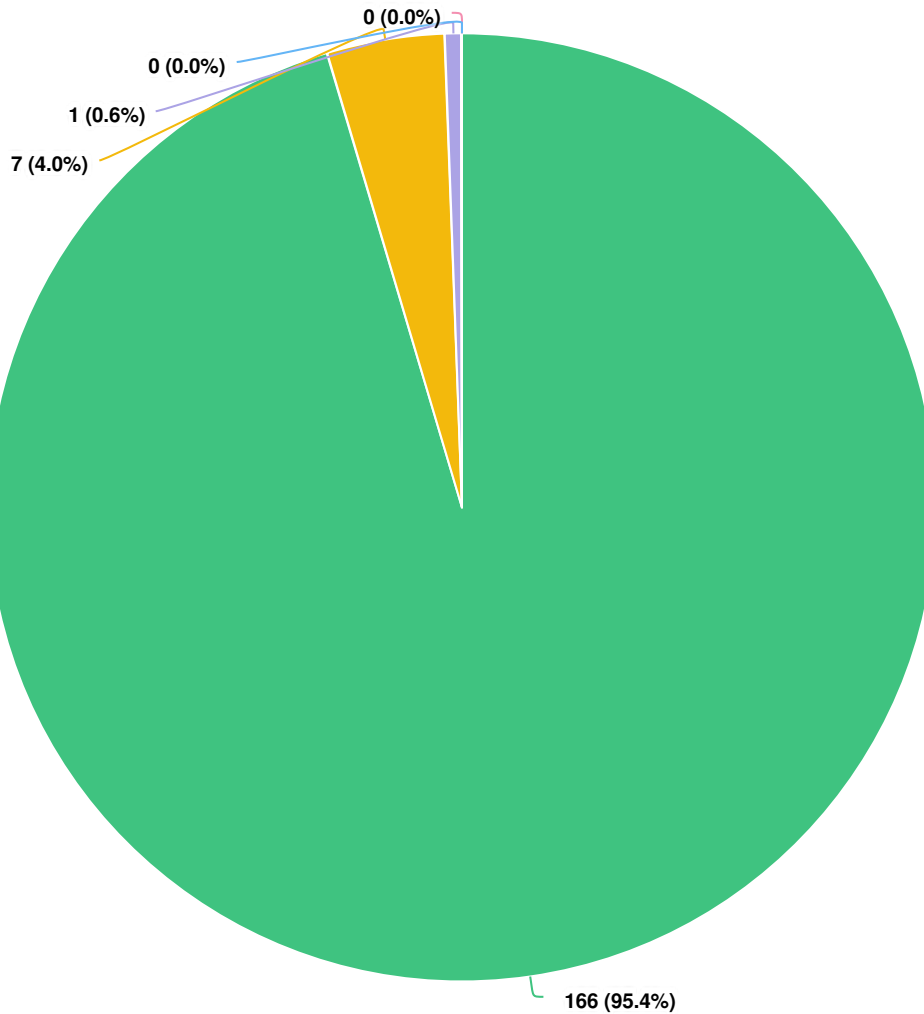
Question options

● No   ● No, but after reading this I will get them   ● Unsure   ● Yes, on at least one storey of my home

● Yes, on every storey of my home

Mandatory Question (174 response(s))
Question type: Radio Button Question

Q13   The province requires that homeowners and building owners install carbon monoxide alarms adjacent to each sleeping area if there is a fuel-burning appliance or fireplace within the home or if there is an attached garage. Do you currently have a wor...

3 (1.7%)

2 (1.1%)

1 (0.6%)

35 (20.1%)

133 (76.4%)
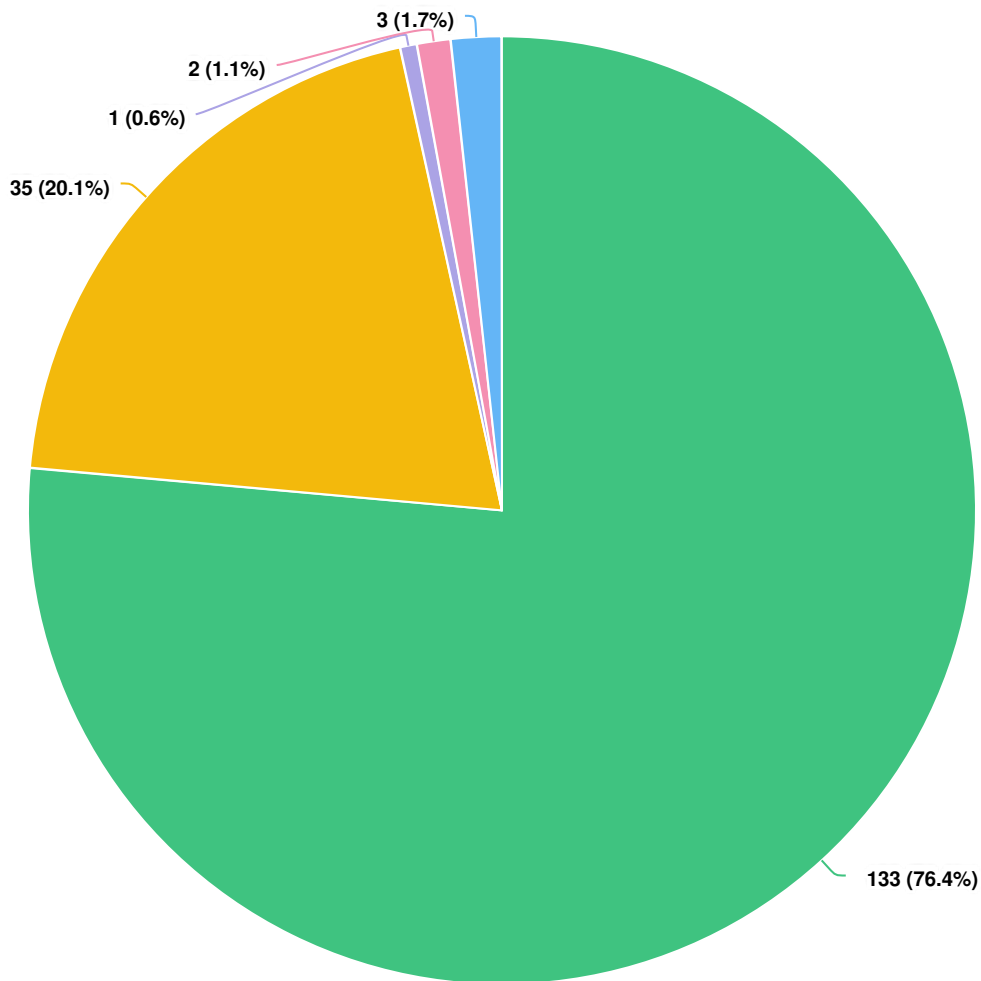
Question options

● Unsure   ● No   ● No, but after reading this I will get one   ● Yes, at least one

● Yes, near all sleeping areas (as my home has fuel burning appliances and/or an attached garage)

Mandatory Question (174 response(s))
Question type: Radio Button Question

Q14   Fire spreads fast; you may have less than 60 seconds to safely escape a fire in your home. There is very little time to figure out how to escape after the fire starts. It is important for your household's safety to develop a home fire escape plan a...
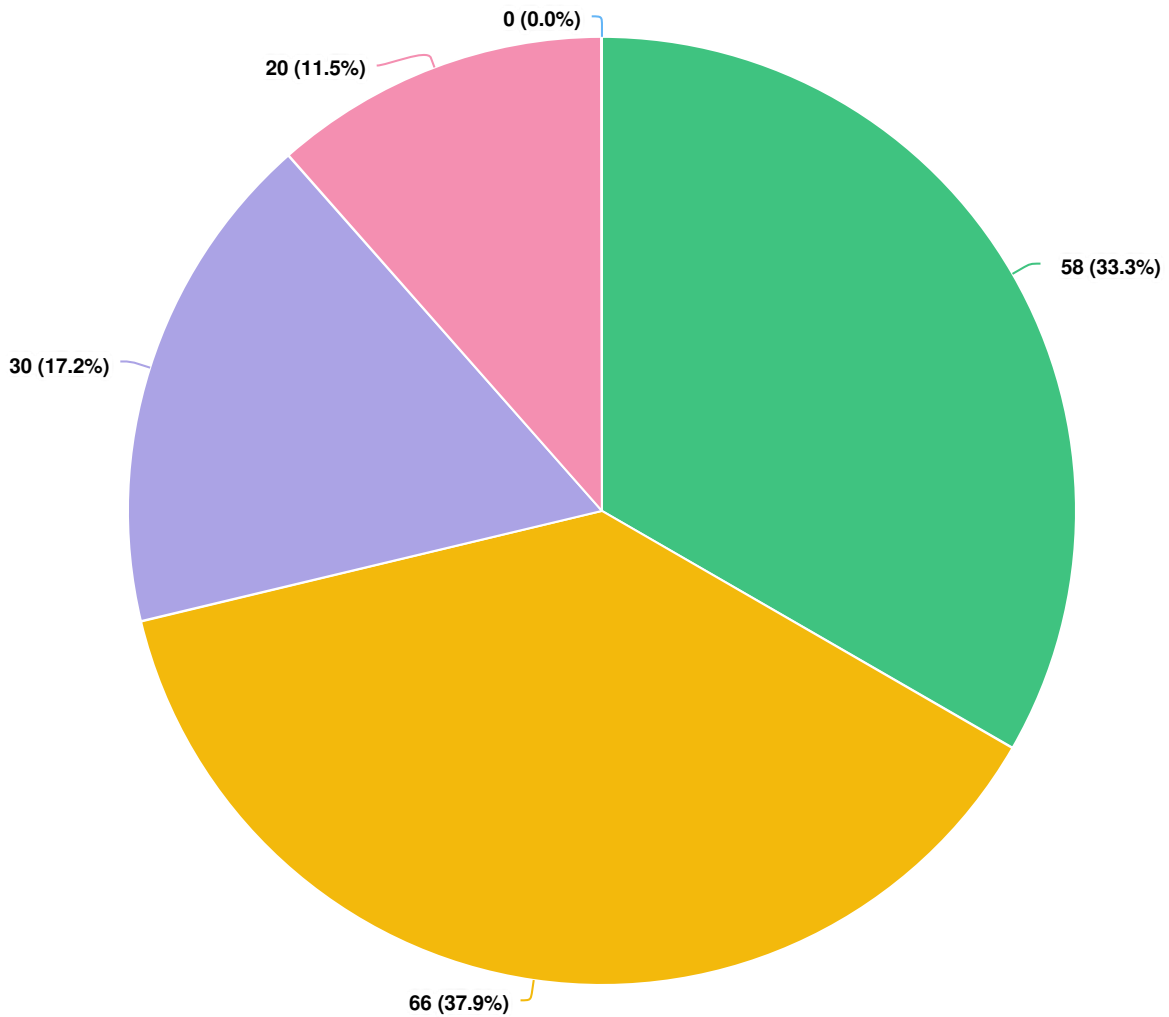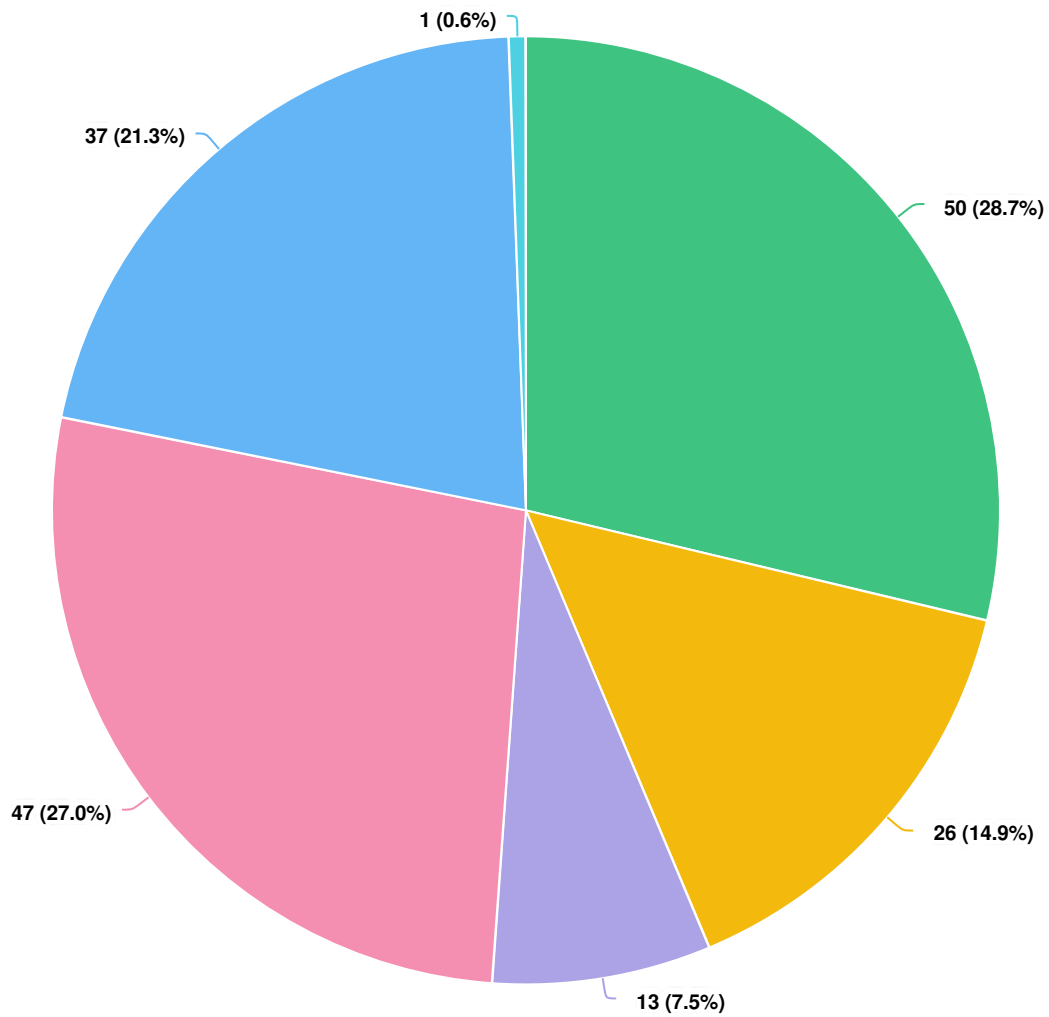

Question options

- Unsure
- No
- No, but after reading this we will prepare and practice a home escape plan
- Yes, we have prepared a home escape plan but have not practiced it
- Yes, we have prepared a home escape plan and practiced it with the entire household

Mandatory Question (174 response(s))
Question type: Radio Button Question

Q15 If an emergency happens in your community, it may take emergency workers some time to reach you. You should be prepared to take care of yourself and your family for a minimum of 72 hours. Is your household prepared in the event of a community emerg...

1 (0.6%)

37 (21.3%)
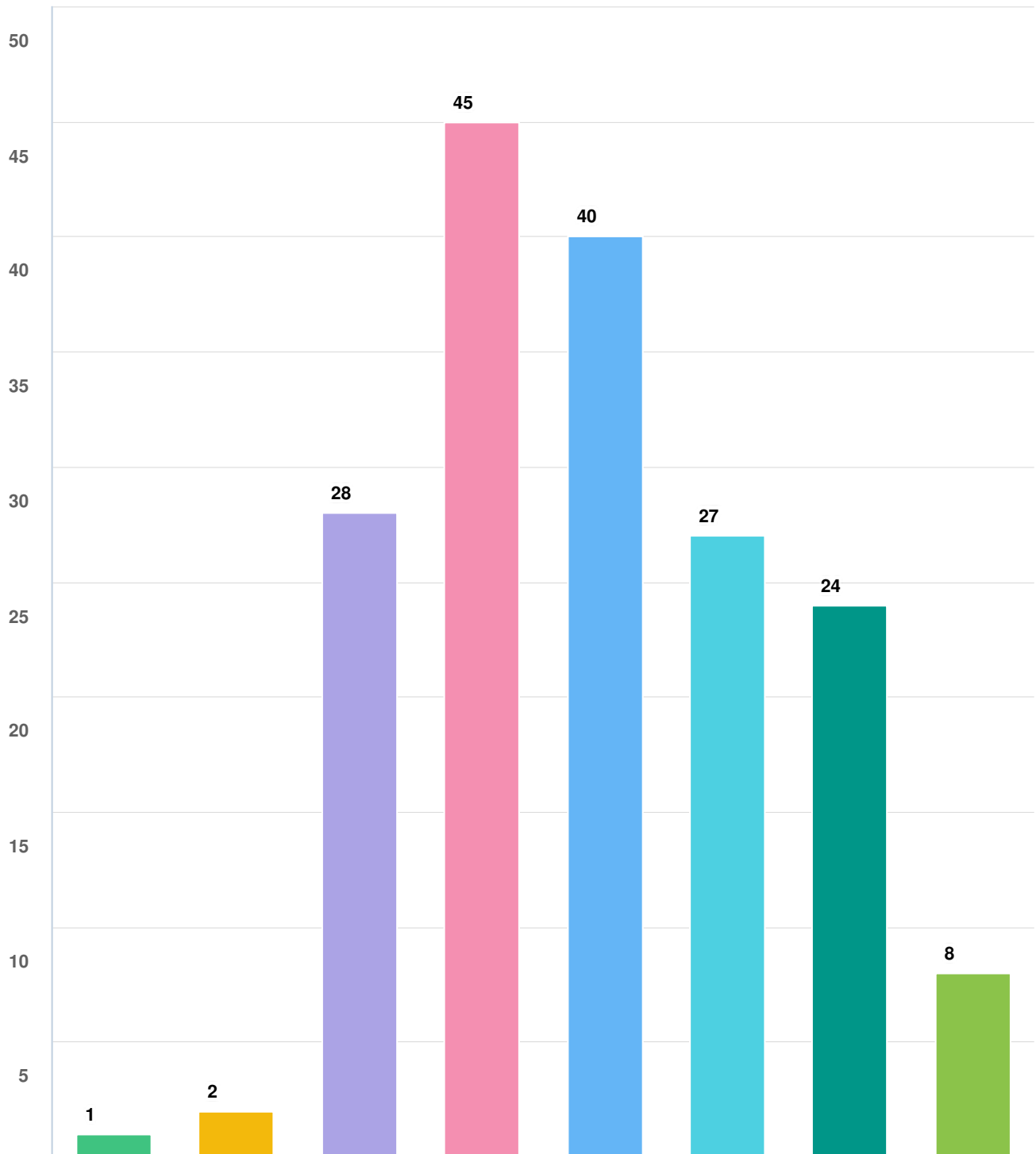
50 (28.7%)

47 (27.0%)

26 (14.9%)

13 (7.5%)

Question options

● Unsure ● No ● No, but after reading this we will get better prepared ● Yes, we have 72-hour emergency kit

● Yes, we have an emergency action plan ● Yes, we have an emergency action plan and a 72-hour emergency kit

Mandatory Question (174 response(s))
Question type: Radio Button Question
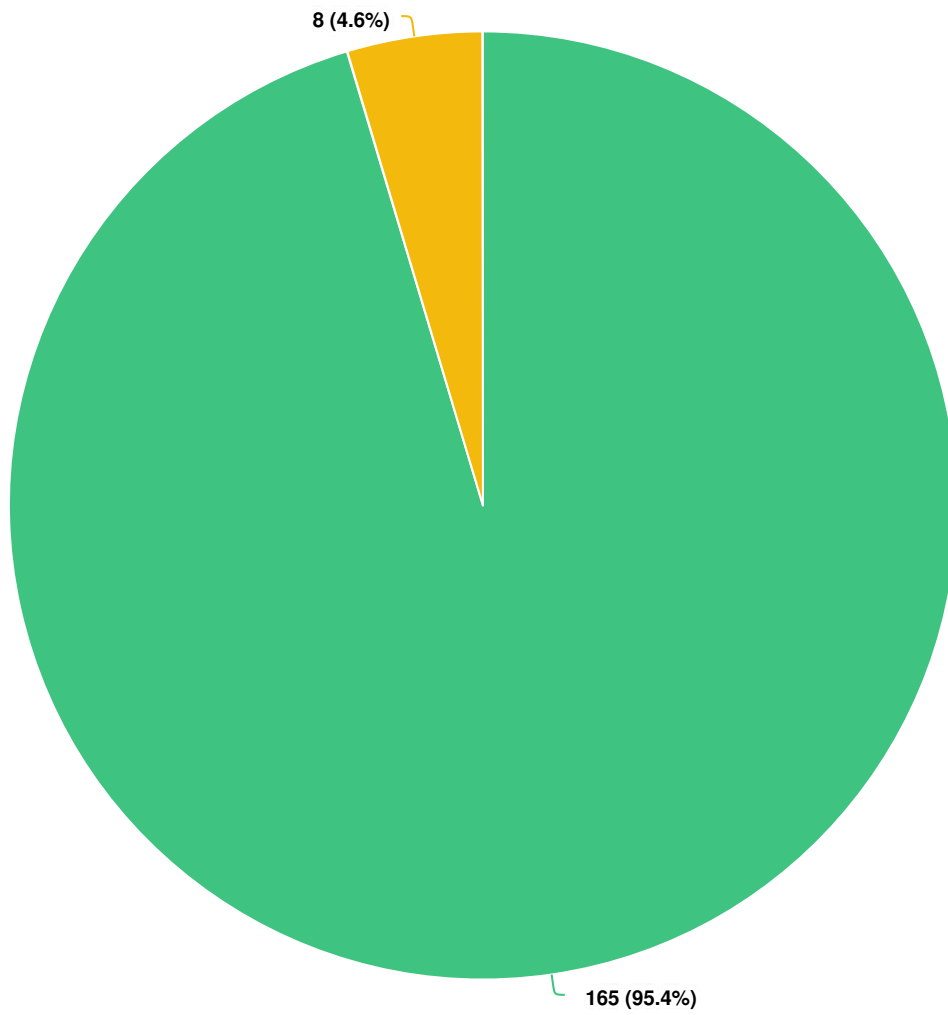
Q16   How old are you?

Question options

● 75+   ● 65-74   ● 55-64   ● 45-54   ● 35-44   ● 25-34   ● 18-24   ● 17 and under

Optional question (174 response(s), 0 skipped)
Question type: Checkbox Question

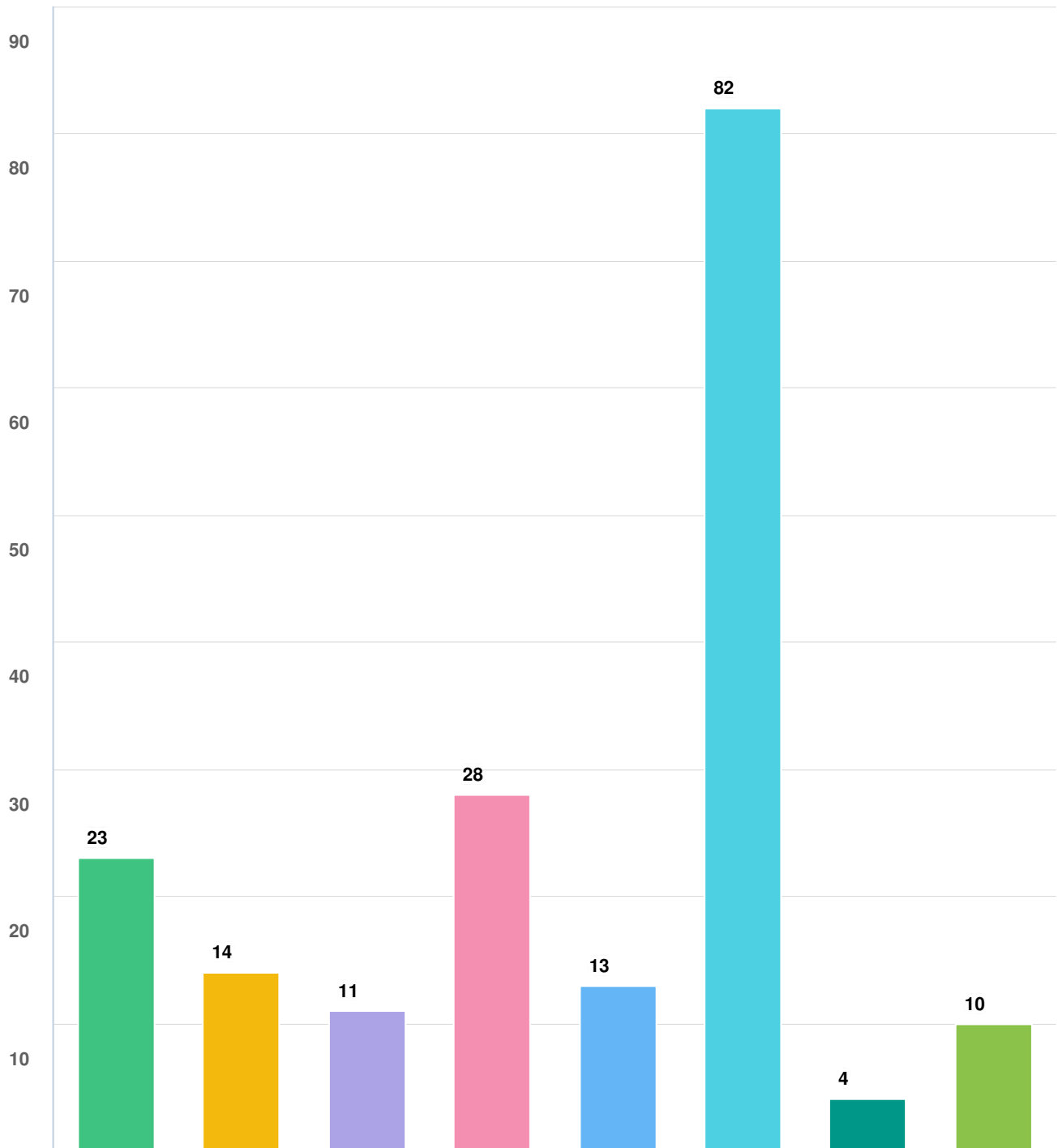**Q17   Are you a Milton resident, and/or Milton business/property owner?**

8 (4.6%)

165 (95.4%)

Question options

● No   ● Yes

Optional question (173 response(s), 1 skipped)
Question type: Radio Button Question

Q18   How did you learn about this community engagement opportunity?

Question options

- Town of Milton Twitter
- Town of Milton LinkedIn
- Town of Milton Facebook
- Milton Fire Department Twitter
- Word of mouth
- Newsletter
- Let's Talk Milton website
- Town of Milton website

Optional question (173 response(s), 1 skipped)
Question type: Checkbox Question