2024

Emergency Management Group

Municipality of Huron East

Community Risk Assessment

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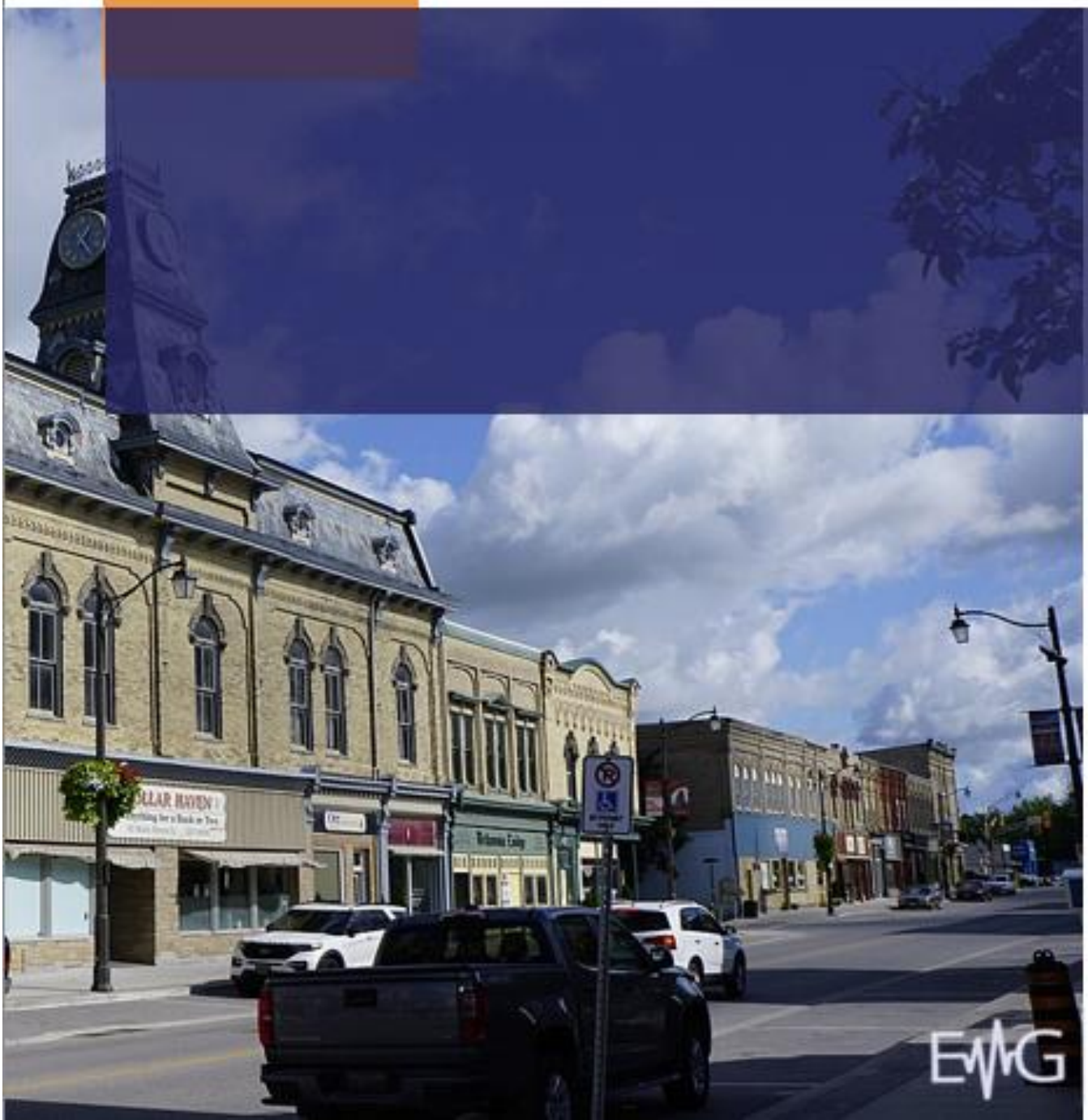
ACRONYMS

AODA	Accessibility for Ontarians with Disabilities Act
ATV	All-Terrain Vehicle
CBRNE	Chemical, Biological, Radiological, Nuclear, and Explosives
CEMC	Community Emergency Management Coordinator
CRA	Community Risk Assessment
CRR	Community Risk Reduction (Plan)
E&R	Establishing and Regulating (By-law)
ECG	Emergency Control Group
EMCPA	Emergency Management and Civil Protection Act
EMG	Emergency Management Group Inc.
EOC	Emergency Operations Centre
ERP	Emergency Response Plan
FPO	Fire Prevention Officer
FUS	Fire Underwriters Survey
HAZMAT	Hazardous Materials
HCPS	Huron County Paramedic Services
HEFD	Huron East Fire Department
HIRA	Hazard Identification and Risk Assessment
IMS	Incident Management System
LPG	Liquefied Petroleum Gas
LWC	Lightweight construction

ACRONYMS

MPAC	Municipal Property Assessment Corporation
MVC	Motor Vehicle Collision
NFPA	National Fire Protection Association
OBC	Ontario Building Code
OFC	Ontario Fire Code
OFM	Office of the Fire Marshal
OPP	Ontario Provincial Police
PFLSE	Public Fire Life Safety Educator
RSMP	Risk and Safety Management Plan
SCBA	Self-Contained Breathing Apparatus
SOG	Standard Operating Guidelines
SOP	Standard Operating Procedures
TIC	Thermal Imaging Camera
TSSA	Technical Standards and Safety Authority
USAR	Urban Search and Rescue
UTV	Utility Terrain Vehicle
WETT	Wood Energy Technology Transfer

Introduction



Emergency Management Group

INTRODUCTION

Completing a Community Risk Assessment (CRA) allows the municipality and its fire service to make sound decisions on the fire protection it will provide its residents. Emergency Management Group Inc. (EMG) completed this CRA for the Municipality of Huron East (the Municipality) and the Huron East Fire Department (HEFD). It follows the Office of the Fire Marshal's (OFM) Regulation 378/18, which came into effect on July 1, 2019. The OFM regulation requires municipalities to complete a new CRA every five years.

This document has three sections:

- Section One: General Risk Overview - A general community overview and summary of the key risks identified in the community.
- Section Two: Profile Risks and Preferred Treatment Options – A culmination all the profile worksheets (required by the OFM).
- Section Three: Appendices - Contains all OFM-related worksheets and data retrieved during this CRA.

Through this review, the reader can obtain an overview of the township's risks in section one and utilize sections two and three as supporting information.

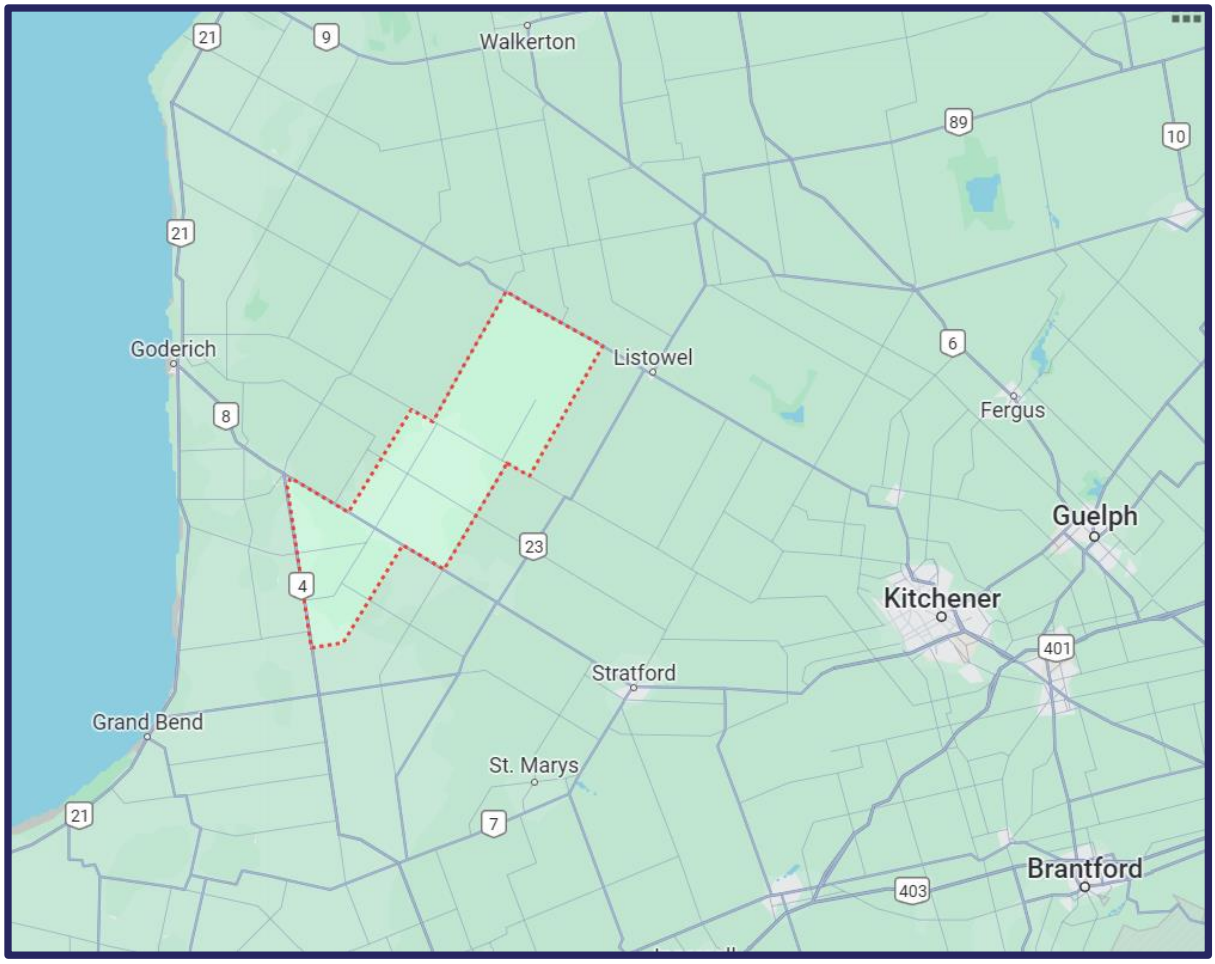
Community Overview

The Municipality of Huron East became incorporated in 2001 in the County of Huron after amalgamating the former Townships of Grey, McKillop, and Tuckersmith with the Town of Seaforth and the Village of Brussels.[1] Its land mass of 669.15 km² has a population density of 14.2 km².[2] The many hamlets, villages and towns making up the Municipality include:

[1] "Huron East, Ontario." Wikipedia. Accessed May 21, 2024. https://en.wikipedia.org/wiki/Huron_East,_Ontario

[2] Statistics Canada. 2023. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 15, 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed May 21, 2024).

FIGURE #1 – HURON EAST



- **Communities from the former Township of Grey include** Brussels, Cranbrook, Ethel, Molesworth, Walton, Henfryn, Ethel, Jamestown, Mcnaught, Moncrieff and Silver Corners.

- **Communities from the former Township of McKillop include** St. Columban, Seaforth, Winthrop, Leadbury, Dublin, Beachwood, Manley, Roxboro and Slabtown.

- **Communities from the former Township of Tuckersmith include** Brucefield, Egmondville, Harpurphey, Hensall, Kippen, Vanastra, Clinton and Chiselhurst.

The Municipality maintains its primarily rural setting with an agriculturally driven economy, predominantly through the sale of soybeans, corn, and swine. Niche crops are emerging, supporting trending markets such as wineries and craft breweries. The County of Huron has some of the best farmland in the country, with flourishing conventional farming such as livestock and cash crops, including orchards, greenhouses, and nurseries. In the County of

Huron, there are some 2,564 farms with assets of over $12.2 billion.[3] Surprisingly, only 14% of the farm families have succession plans to ensure the continuity of family farming operations. There is a need for multi-generational agreements to reduce this risk to the farming community and ensure the industry's sustainability.

The Municipality is bordered by the County of Perth to the east, , the Township of Howick and the Municipality of Morris-Turnberry to its north and north-west. To the west lies the Municipalities of Central Huron and Bluewater, with the Municipality of South Huron along the southern edge.

The municipality has several creeks and watersheds, most flowing to Lake Huron. The local conservation authority is under the authority of the Ausable Bayfield and the Maitland Valley Conservation Authorities, vested in preserving the natural resources found in Huron East and many other communities. The primary watershed in the municipality is the headwaters of the Bayfield River. The conservation authority has involved the local school children in preserving nature's beauty in conservation areas such as the Rock Glen near Arkona.

FIGURE #2 – HURON COUNTY

[3] "Agriculture." Huron County. Accessed May 21, 2024. https://www.huroncounty.ca/economic-development/key-sectors/agriculture/

What is Risk?

Risk measures the probability and possibility of an event that could adversely affect the community, including health, property, organization, environment, and society. The best possible mitigation of any fire risk is to deal with the threat before the fire department is required to respond.

To develop an effective community fire and life safety program, the OFM identifies a fire protection planning strategy known as the "Three Lines of Defence." (Refer to TABLE #1). Applying this strategy highlights the importance of recognizing that there are options for developing an effective community safety plan through education, code enforcement, and emergency response. Although emergency response will always be required, this is a reactive endeavour. A fire service must proactively optimize public fire safety programs within the community.

TABLE #1 - OVERVIEW OF THE THREE LINES OF DEFENCE

Line of Defence	Description
1. **Public Education and Prevention**	Educating community residents on ways to fulfill their fire and life safety responsibilities is a proven method of reducing the incidence of fire and other risks. Only by educating residents can fires be prevented and can those affected by fires respond correctly to save lives, reduce injury, and reduce the impact of fires.
2. **Fire Safety Standards and Enforcement**	Completing inspections and enforcing the Ontario Fire Code (OFC) will ensure that buildings have the required fire protection systems and safety features. This necessity may require property owners or tenants to complete fire safety plans and maintain functioning smoke alarms and sprinkler systems, which will aid in minimizing the effects of a fire. Inspections may not only address fire hazards but may also reduce other indirect risks, such as trip or fall hazards.

Line of Defence	Description
3. Emergency Response	Fire departments need to have well-trained and equipped firefighters directed by capable officers to suppress the spread of fires once they occur and protect residents' lives and safety.

Note: *Some comments may appear generalized and may not be considered relevant or specific to the organization.*

Along with the three lines of defence, the community and its fire service also have partnerships with other agencies, such as police and ambulance, and some non-government agencies, like St. John Ambulance, to create a safer community.

The CRA process guides fire services in determining the service levels concerning public fire and life safety education, OFC inspections and enforcement, and emergency response.

Based on nine mandatory sections, the CRA examines the following:

1. **Geographic Profile**: A general overview of the community's geography includes the topography, waterways and wetlands, and the road system, and identifies any related challenges.

2. **Building Stock Profile**: This profile includes an assessment of the building stock within the community and the risks posed by each occupancy's classification.

3. **Critical Infrastructure Profile**: This profile examines risks that may or could exist in the critical infrastructure found within a municipality and includes municipal services and outside resources such as oil and gas, allied emergency services, etc.

4. **Demographic Profile**: This profile identifies age groups, economic status, visible minorities, Indigenous status, and risks.

5. **Hazard Profile**: This profile identifies the critical hazards of the township based on data found in the Municipality's Hazard Identification and Risk Assessment (HIRA).

6. **Public Safety Response Profile**: Examine the response capabilities of other safety organizations, such as police and EMS, while identifying any issues and concerns. Other allied non-emergency agencies (i.e., power, natural gas, and telecommunications) were also reviewed.

7. **Community Services Profile**: Services presently offered by non-government organizations.

8. **Economic Profile**: Review economic sectors affecting the community that are critical to its financial stability. Identifies challenges relating to a community's economic sustainability if an event occurs, such as the loss of power, telecommunications, water, and weather.

9. **Past Loss and Event History Profile**: Reviewing past loss statistics can help identify present and possible future challenges.

The reader should interpret each profile according to its relevance to fire protection service delivery.

In addition to these mandatory sections, the Fire Marshal Directive 2022-001[4] identifies the need for municipalities to determine the number and locations of applicable structures incorporating lightweight construction (LWC) material as found in O. Reg. 217/22.[5] This requirement does not include houses per the Ontario Building Code (OBC) amendments. LWC consists of the following materials: wooden I-beams, fastening systems, lightweight steel frame construction, other engineered construction components, and roof trusses. This type of material can lose its integrity and rapidly fail once flame impingement occurs, which is a high risk to the occupants' and firefighter's safety.

Fire departments should maintain the documentation required by O. Reg. 378/18 annually. This documentation should include the following:

- All changes to any of the mandatory profiles.
- Any changes to assigned risk levels or fire protection services that occur because of the review.
- Any other information the fire department deems appropriate to the review or changes to fire protection services.

During the annual assessment, any changes in risk identified in the document will need to be updated accordingly.

[4] "Office of the Fire Marshal's communiqués 2022." King's Printer for Ontario. Accessed May 21, 2024. https://www.ontario.ca/page/office-fire-marshals-communiques-2022#section-6

[5] "O. Reg. 217/22: BUILDING CODE." King's Printer for Ontario. Accessed May 21, 2024. https://www.ontario.ca/laws/regulation/r22217

Note(s): *Due to the confidential nature of the information contained within this CRA, access to this report should be discrete. This CRA includes information from the Municipality's Critical Infrastructure and HIRA documents.*

County of Huron Land Acknowledgment Statement

We acknowledge that the land we stand upon today is the traditional territories of the Anishinaabe, Haudenosaunee, and Neutral peoples and is connected to the Dish with One Spoon wampum, under which multiple nations agreed to care for the land and its resources by the Great Lakes in peace.

We also acknowledge the Upper Canada Treaties signed in regard to this land, which include Treaty #29 and Treaty #45 ½.

We recognize First Peoples' continued stewardship of the land and water as well as the historical and ongoing injustices they face in Canada. We accept responsibility as a public institution and as treaty people to renew relationships with First Nation, Métis, and Inuit people through reconciliation, community service, and respect.

Section 1

Overview of Risks

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SECTION ONE: OVERVIEW OF RISKS

This section outlines risks to life safety and the suggested means of reducing or mitigating the risks. Using the preferred treatment options, the Fire Chief will put forward strategies to address the hazards, including public education and OFC enforcement, within the level of fire service provision approved by the council. Ultimately, these decisions for community risk management will form the basis of the Municipality's Community Risk Reduction (CRR) Plan.

A thorough review and sound strategic planning should garner success in fewer fires, reduced fire-related injuries, and lower dollar property loss through ongoing fire prevention initiatives. These fire prevention initiatives include early warning detection systems (i.e., smoke alarms), proactive inspections, and public education.

Risk Overview

There is always the possibility of an event that could adversely affect the community, including health, property, organization, environment, and society. The best possible mitigation of any fire or life safety risk is to deal with the threat before it occurs.

This document aims to identify potential risks within a community and provide options for mitigating those risks. NFPA 1300, *Standard on Community Risk Assessment and Community Risk Reduction Plan Development* defines what low, moderate, and high risks are:

Low Risk: A risk that is unlikely to occur or have a significant impact on life, property, operations, the environment, and/or economic and social factors. A low risk does not require immediate action or attention but should be monitored periodically.

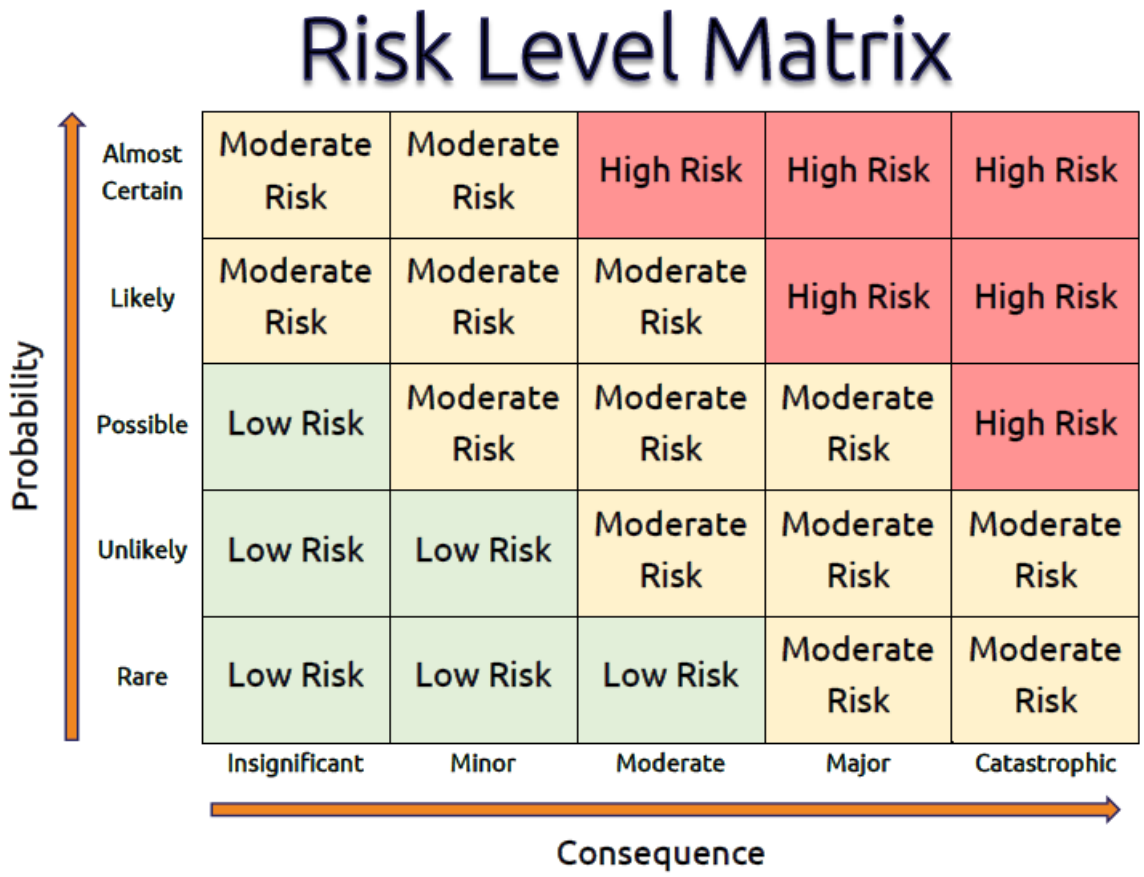
Moderate Risk: A risk within the acceptable risk range but not considered low risk.

High Risk: A high risk is a risk that has a high probability of occurrence and a high potential impact. High risks are usually given the highest priority in developing a community risk reduction plan.

Within this document, the charts that identify risks have been colour-coded and listed from high to low:

Low	Moderate	High

FIGURE #3 – RISK LEVEL MATRIX



Note: The following features are in the order of their level of risk.

Risk	Level of Assigned Risk

Hazardous Material Incidents – Under the Establishing and Regulating (E&R) By-law, the HEFD responds to hazardous materials (HAZMAT) incidents to the Awareness Level. When certifying in the National Fire Protection Association (NFPA) 1001, I and II, the firefighters have components per NFPA 1072, *Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications* at the Operations Level. Mitigation of HAZMAT incidents depends on the chemical(s) involved and the level of training and equipment necessary. Several standards from NFPA regulate response to HAZMAT incidents, the key ones being:
• NFPA 470: Hazardous Materials Standards for Responders
  ○ This standard was released in October 2019 and consolidates the content of three previous standards: NFPA 472 (Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents); NFPA 473 (Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents); and NFPA 1072 (Professional Competence of Emergency Responders to Hazardous Materials/Weapons of Mass Destruction Incidents). NFPA 470 outlines minimum core performance competencies for HAZMAT responders at various levels (Awareness, Operations, and Technician).
• NFPA 475: Recommended Practice for Organizing, Managing, and Sustaining a Hazardous Materials/Weapons of Mass Destruction Response Program[2]
  ○ This standard guide establishing and maintaining effective HAZMAT response programs.
• Other relevant NFPA standards include
  ○ NFPA 600: Standard on Facility Fire Brigades
  ○ NFPA 704: Standard System for the Identification of the Hazards of Materials for Emergency Response
  ○ NFPA 1072: Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications
	High

Risk	Level of Assigned Risk
Each standard plays a crucial role in ensuring the safety and competence of responders during HAZMAT incidents. While the list is imposing, the HEFD could develop a mission-specific program more relevant to the community's needs. The municipality and the HEFD must develop a mitigation strategy for handling HAZMAT incidents, including contractual agreements with outside resources such as other fire departments or third parties. For the number of times that a HAZMAT incident occurs, it would be cost-prohibitive for the department to enhance its level of response above that of the Awareness Level. The cost of maintaining the training, skill sets/competencies, and equipment is very high. Many members of HEFD have not obtained their certification to NFPA 1001, 1 & II and should not be participating in any HAZMAT-related activities until achieving this milestone. Develop a comprehensive Hazardous Material Response Plan. As a priority, HEFD should enhance its training and policies related to responding to and mitigating HAZMAT incidents. All HEFD staff should obtain at least the NFPA Hazmat Awareness Certificate, with officers aiming to achieve the NFPA HAZMAT Operations Certificate. HEFD should also establish a policy and Standard Operating Guidelines (SOGs) for handling hazardous incidents and consider contracting specialized HAZMAT response teams. Given that external HAZMAT teams may take considerable time to assemble and arrive on the scene, HEFD needs additional training to manage and mitigate risks effectively while waiting for these agencies. Considering the substantial use of hazardous materials in the farming industry, Huron East should amend its Fees and Charges By-law to include provisions for recovering costs associated with HAZMAT responses.	

Risk	Level of Assigned Risk
Technical Rescues—including trench, confined space, high and low angle, ice, surface water, and swift water rescues—require comprehensive preparedness. This includes having Standard Operating Guidelines (SOGs), policies and procedures, specialized equipment, and training tailored to each type of rescue. HEFD is authorized to perform ice and surface water rescues at the Awareness Level, which permits attempts from shore using throw-and-reach techniques. However, members are not permitted to leave the shore, venture onto the ice, or use vessels to enter the water. The HEFD does not respond to other technical rescue calls such as trench, low slope, high angle, swift water, flood water, elevator, and confined space. The E&R By-Law 78 for 2003 states that the HEFD responds to non-fire emergencies and includes search and rescue in that list. Not having SOGs, policies, training, and equipment to the minimum Awareness Level per NFPA 1006 and the requirements of the Ministry of Labours Section 21 Firefighter Guidance Notes places the department in contravention of the by-law and places residents, firefighters, and the Municipality at risk. The HEFD must analyze its requirements to train all its firefighters to the Awareness Level for all technical rescues, including elevators. Elevator rescues should not occur until SOGs, equipment acquisition, and training are in place. The firefighters must train to the standards established by the Sections 21 Committee's G-N 6-32 and, if mitigating a rescue, train to the Technical Standards and Safety Authority (TSSA) standards. Even though there are few elevators in the Municipality, a mitigation strategy for handling elevator emergencies is required. Several manufacturing industries are operating in the Municipality, and each brings a risk of injury and entrapment with the use of specialized equipment. The E&R By-law states that firefighters respond to rescue from motor vehicle collisions (MVC) and industrial accidents. The firefighters must train to the awareness level per NFPA 1006 – Machinery Rescue.	High

Risk	Level of Assigned Risk
Once the firefighters have trained to the Awareness Level, they still require a mitigation strategy for these highly complex rescue techniques. The HEFD with the Municipality must enter a response agreement with an outside resource, be it another fire department or a third party. A standby fee as well as a response fee may be attached to such a contract. The Municipality must have provisions within its Fees and Charges By-law that permit it to recover the costs of mitigating these rescues. HEFD must create technical rescue policies and response protocols regarding technical rescues, such as trench, confined space, low and high rope, ice, surface water, and swift water rescues. HEFD requires more training and equipment to respond to basic technical rescues. Create a response plan/contract for outside agencies to provide services when needed. Developing the skills and obtaining the equipment required for technical rescues will take time, but it is achievable. Contracting these services is an excellent interim measure until HEFD is ready to conduct these rescues safely. The main issue with contracting out these services is response times. It just takes a long time to contact the outside agency and have them assemble, respond, set up, and mitigate rescues successfully, as opposed to a recovery. Having response agreements in place beforehand eliminates the time required to determine what agency has the resources to help, obtain the necessary approvals, muster a team and respond.	
Fire Stations – An assessment of the current and future needs of the fire stations is in the Fire Master Plan. When planning new fire stations, design them for future growth, including additional apparatus such as tankers, aerial devices, and career firefighters (if necessary). Depending on the land available, an addition to existing fire stations may be all that is required. In some cases, moving the fire station to a new location may improve service response times. The stations lack post-disaster engineering components, a direct connection to the source exhaust extraction system, and a bunker gear storage room with a negative-pressure ventilation system. They also lack fitness rooms.	High

Risk	Level of Assigned Risk
To understand the actual condition of the stations, engage a structural engineer and energy consultants to complete an in-depth evaluation of each station and return with recommended upgrades that include pricing estimates. The fire stations lack proper exhaust extraction systems. Recommended is an at-source capture exhaust extraction system per Section 21 Firefighters Guidance Note 3-1 Controlling Exposure to Diesel Exhaust: "*Install direct capture (tailpipe) exhaust system extractors, which are considered to be the most effective engineering control.*" The National Building Code of Canada also calls for at-source exhaust extraction systems. Long-term planning for fire stations is essential. An assessment and strategic plan should be developed to evaluate the need for significant renovations or replacements. This will enhance firefighters' health and safety, improve disaster resilience, and optimize operational performance. Alternatively, constructing new stations that meet current industry standards and relocating them to better serve the community may be considered. Additionally, all fire stations should be equipped with standby generators capable of powering the entire building. The Seaforth Station should be prioritized for upgrades, followed by the Grey Station.	
Firefighter Certification and Retention – Since July 1, 2022, Ontario's firefighters must obtain mandatory minimum certification for specific job roles, ensuring they are well-trained and qualified to serve their communities. In Ontario, firefighters must be certified by NFPA Standards. These standards cover various aspects of firefighting, including fire prevention, fire investigation, public education, and emergency telecommunications. On April 14, 2022, the Ontario government filed O. Reg. 343/22: Firefighter Certification under the *Fire Protection and Prevention Act, 1997*[6]. The regulation came into force on July 1, 2022. Existing firefighters can access the training and education programs offered by the OFC. Several OFC courses are available to volunteer	High

[6] "O. Reg.343/22: Firefighter Certification." King's Printer for Ontario. Accessed May 13, 2024. https://www.ontario.ca/laws/regulation/r22343

Risk	Level of Assigned Risk
firefighters. The courses align with NFPA standards and cater to firefighters at different stages of their careers. The compliance deadline for certification varies depending on the specific fire protection service. For some services, it is July 1, 2026; for others, it is July 1, 2028. Training and equipping new firefighters costs approximately $15,000 to $20,000 per recruit. Losing these firefighters within a year or two represents a significant financial burden, as the department must invest in new recruits and start the training process anew. Although the annual turnover rate is relatively low, it still affects the department financially and results in the loss of valuable experience. The HEFD needs to establish a certification and a recruitment and retention program that involves the participation of some of the existing members. Its members are the most valuable asset of HEFD; the Chief Officers, with the support of the Council, must initiate efforts to retain them. Create a detailed training plan for recruits to ensure they complete training to NFPA Firefighter 1001, Level II, before responding to calls. Establishing a two-year training syllabus would ensure all firefighters receive the correct training to maintain and increase their skill sets. The HEFD needs to develop an Officer Development Program. Given that equipping and training each new firefighter costs approximately $20,000, it is essential to maintain recruitment and retention programs year-round, rather than implementing them sporadically during hiring periods. The Council of the Municipality of Huron East and its Fire Department must create a program and policies to ensure adequate daytime response of staff. These programs often take years to fully implement due to the complex nature of hiring and training daytime fire personnel before results are achieved.	

Risk	Level of Assigned Risk
Bodies of Water – The Bayfield, South Maitland Rivers, and several creeks flow through the Municipality. Each body of water presents its share of risks. These include flooding during the spring thaw, fast-flowing currents, slippery shorelines, ice and surface water rescues, etc. The HEFD will need its policies, Standard Operating Guidelines (SOGs), equipment, and training to align with its level of response to these types of incidents as determined by the Council in the Establishing & Regulating (E&R) By-law. The department provides shore-based rescue whereby firefighters cannot leave the shore and venture onto the ice or surface water. The municipality and the HEFD must collaborate to establish a mitigation strategy for handling marine-related rescues.	Moderate
Domestic Terrorism - The threat of domestic terrorism exists in Canada, with numerous incidents producing havoc and terror among the populace. Active shooter incidents may occur in factories, schools, supermarkets, and seasonal facilities. Situations have occurred in several Canadian cities with catastrophic consequences. The Municipality promotes tourism year-round, catering to the summer crowd to visit any of its four main beaches. Unfortunately, an influx of visitors often correlates to an influx of crime. NFPA 3000 – Standard for an Active Shooter/Hostile Event Response (ASHER) Program, defines ASHER as "*an incident where one or more individuals are or have been actively engaged in harming, killing, or attempting to kill people in a populated area by means such as firearms, explosives, toxic substances, vehicles, edged weapons, fire, or a combination thereof.*" It further describes the ASHER Program as "*a community-based approach to preparedness, mitigation, response, and recovery from an ASHER incident, including public or private partnerships, emergency management, the medical community, emergency responders, and the public.*"	Moderate

Risk	Level of Assigned Risk
Communities frequently wait until after a catastrophic event with significant loss of life to recognize the need for public education and preparedness. Terrorist attacks often target specific religious groups, and with the rise of such nefarious activities globally, the risk of a terrorist event occurring locally has increased. It is crucial for residents and visitors to be prepared for potential incidents and to engage in proactive public education and readiness efforts. HEFD must develop Standard Operating Guidelines (SOGs), policies, training, and response protocols to prepare its members for potential domestic terrorism events, which could range from hostage situations to mass casualties or suspicious packages. Given recent incidents of violence towards municipal staff at client service counters, the municipality should install protective glass to create a barrier between staff and the public. Additionally, in collaboration with the Ontario Provincial Police (OPP), the municipality should implement training focused on corporate policies and procedures for handling active shooter or hostage situations. This training should include identifying a munitions-resistant safe room for staff to take shelter in. These procedures must be incorporated into the Annex of the Emergency Response Plan (ERP) and regularly practiced.	
Weather Events – This area of southern Ontario is known to receive severe weather events ranging from snowstorms to extreme wind events, including tornadoes. The Municipality lacks access to a public notification app that residents could install on their cell phones. Another early warning option is to convert the sirens on the fire stations to storm sirens. In 2011, a tornado ripped through the Town of Goderich, causing catastrophic structural damage to many areas in and outside the town.	Moderate

Risk	Level of Assigned Risk
The Building Department needs to promote the installation of hurricane clips for residential occupancies during construction to lessen the damage caused by the high winds. In cooperation with all the municipalities of the County of Huron, the Municipality could implement a rebate program like the County of Dufferin established after the 1985 tornado ripped through the Grand Valley and Orangeville areas. The severity of some weather events may require the Municipality's Emergency Operations Centre (EOC) to be activated. Preparations in handling such events include either tabletop or real-time training exercises that include the participation of the Municipality's Emergency Control Group (ECG) and allied agencies. A public notification system is needed to alert the public about impending weather emergencies. This can be achieved by developing a cell phone-based emergency notification app in collaboration with the County of Huron. An enhancement to this system could involve integrating emergency storm sirens in populated areas and implementing a public education program to inform residents about weather emergencies.	
Inspections and Public Education – During the composition of this CRA, the Fire Prevention Officer resigned. The current time allotted to fire prevention in the Municipality of Huron East is 18 hours each week, divided between it and the Township of North Huron. Fire inspections are completed based on complaints and requests, mandatory vulnerable occupancies, and some high-risk areas such as schools and industries. The frequency of inspections does not align with NFPA 1730, *Standard for the Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plans Review, Investigation, and Public Education Operations*, or Fire Underwriters Survey (FUS). The Municipality is of a size and has the building stock that requires a robust fire inspection program, which it does not have due to the lack of resources. The first two lines of defence are public education, and fire safety inspections and enforcement. Given its current resources, HEFD does not have a fire prevention program that is as effective as it should be.	Moderate

Risk	Level of Assigned Risk
The Municipality is reviewing options for employing a Fire Chief and Deputy Fire Chief to assist with training or fire prevention. Either position must be certified in NFPA 1031 and 1035 to assume the responsibilities of fire prevention and public education. In the coming year or two, Huron East should consider expanding the hours dedicated to fire prevention activities, code enforcement, and public safety education. This can be achieved by increasing the hours of the part-time Fire Prevention Officer or by assigning additional public fire safety responsibilities to the Fire Chief or Deputy Chief. Additionally, a Home Smoke & Carbon Monoxide Alarm Program should be established promptly in compliance with the FPPA.	
Building Stock - There could be illegal accessory dwelling units existing within the municipality. The Municipality should require every accessory dwelling and short-term accommodation to be registered, licensed by the municipality, and inspected by the Building Department and HEFD annually. While permitted, accessory dwelling units must comply with OBC and OFC requirements. There is no short-term accommodation by-law. Owners of these residences must be aware that they must comply with municipal by-laws such as Property Standards and Open-Air Burning. A requirement should be for those with wood-burning appliances to complete a Wood Energy Technology Transfer (WETT) inspection to ensure compliance with building and manufacturers' installation requirements.	Moderate

Risk	Level of Assigned Risk
Day-time Availability of Firefighters – HEFD is not unlike any other volunteer fire department in Ontario with paid-on-call firefighters (volunteers). Their availability during the daytime is waning, and having an adequate number of firefighters to operate on the fire ground safely is becoming a challenge. For some departments, this challenge is worse than others. When conducting recruitments, focus on applicants with daytime availability. The municipality needs to analyze the need to increase the number of firefighters per station. Relying on mutual aid to increase staffing is not beneficial for the responding department, as it reduces the number of staff members at the home fire department; council associated with these departments may question the practice as it removes resources from protecting their municipality. Such Council may insist that calls for assistance may only be requested if necessary. Mutual aid is not to supplement day-to-day operations but on an as-needed basis.	Moderate
Industries – The Municipality is progressively promoting industry opportunities to move into the community. Manufacturing accounts for 15% of the industry sector, while agriculture, forestry, fishing, and hunting account for 19%.[7] The shutter of any larger organizations would significantly impact the Municipality's economy. According to the 2021 census, 585 residents worked in the manufacturing industry; of these residents, not all employment was in industries based in Huron East.[8]	Low

[7] "Community Profile." Municipality of Huron East. Accessed May 12, 2024. https://www.huroneast.com/en/business-and-development/resources/EDO/Huron-East-Community-Profile---Final.pdf

[8] Statistics Canada. 2023. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 15, 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed May 22, 2024).

Risk	Level of Assigned Risk
Lightweight Construction – The OFM has identified the risks associated with occupancies using lightweight construction (LWC) practices. Municipalities are to inventory all building stock, including LWC practices. Failure to comply with this requirement is illegal and exposes the Municipality to enforcement risk. HEFD and the Building Department should collaborate to develop an ongoing list of all building stock based on the OBC Occupancy Classifications.	Low
Demographics – Demographic statistics are constantly growing and are forecasted to increase by 30 to 40% in the County of Huron between 2022 and 2046.[9] Several studies have been completed that project a variety of growth statistics in the coming years, varying from little increase to more significant numbers. Fruition of these projections depend upon the speed of this growth and whether the infrastructure can support it without substantial upgrades. With this growth, HEFD must anticipate all facets of the department that will witness an increase in demand, including call volume, demands placed on fire prevention for inspections, and the need for enhanced levels of public education. To meet the community's needs, the HEFD needs to review their current capacity to meet the required number of inspections and public education events per NFPA 1730 and FUS versus the need for additional resources, including acquiring a full-time Fire Prevention Officer/Public Fire Life Safety Educator (FPO/PFLSE).	Low

[9] "Ontario population projections." King's Printer for Ontario. Accessed May 12, 2024. https://www.ontario.ca/page/ontario-population-projections

Risk	Level of Assigned Risk
Railway - The Goderich Exeter Railway runs from Goderich into Exeter, transporting freight commonly in the form of cash crops and salt from the Goderich mines. There are no hazardous materials transported via this rail line. The speed of the trains is regulated and must remain at a slow rate for safety reasons. Trains travel over trestles not accessible by road. It requires signage at the ends of the trestle warning people about the dangers of travelling along the rail line. It could be a long walk for firefighters to transport anyone injured out of the area. The HEFD should acquire a multi-purpose UTV to transport injured parties to safety. The UTV could also be utilized for combating wildland fires and for transporting injured individuals from snowmobile trails during winter.	Low

Community Risk Reduction Planning

With the CRA completed and all risks identified, developing a Community Risk Reduction (CRR)Plan begins. When correctly applied, the CRR Plan coordinates emergency operations with prevention and mitigation efforts throughout the community and at the fire station level. The involvement of the personnel in the fire stations is critical for gathering local risk data and performing activities necessary to implement the CRR Plan.

Aside from the primary benefits to the community, a CRR Plan can positively impact the fire department. The CRR Plan improves firefighters' and emergency responder safety and occupational health, reducing line-of-duty deaths.

In addition to firefighter safety, there are several other reasons why departments should begin developing a CRR Plan, including:

- The identification of the presence of new and emerging hazards makes the community safer.
- Declining budgets among fire departments and local governments, thereby better allocation of resources.
- Community demographics are changing rapidly.
- It engages the members of the community.
- High-risk residents tend to remain underserved.
- May avoid the potential ramifications of ignored or not fully addressed hazards.
- It better defines the fire department's purpose and value within the community beyond just fighting fires.

A CRR Plan is not the sole responsibility of the Fire Prevention Division; it includes the participation of all fire department members. There are several steps in developing a CRR Plan, two of which were identified and completed with this CRA (i.e., Identifying and Prioritizing Risks). The steps are:

- Identification and Prioritization – Upon completing the CRA, identify the various community risks and the priorities determined and document the results for use in the remaining planning process. The document does not need to be complex or complicated but in a clear and concise format that enables the reader to understand the risks and those that should have the highest priority.

During this process, consider the following:

- Why and how the risk occurs and, sometimes, when.
- Whom does the risk affect the most and why?
- How are the community and the fire department affected by the threat?
- What about this risk, which ranks it higher than others?

- Develop Mitigation Strategies / Tactics – This requires input from various individuals involved, including those most affected by the risk. It will necessitate decisions to determine what tactics and strategies will be necessary to prevent and mitigate those risks with the highest priority. Stakeholder involvement is paramount and should be a part of the decision-making process.

  During the development of the plan, five elements include:

  - *Education* - Determining the appropriate type and mix of educational messaging necessary to inform the public and effect behavioural change. More encompassing education through different mediums of social media.
  - *Enforcement* - Identifying whether more vigorous enforcement is necessary or if newer codes and standards need implementation. Notification of the public on successful convictions through the justice system.
  - *Engineering* – Determine whether there are engineering or technological solutions to address the identified risk(s).
  - *Emergency Response* – This may require changes to the protocols, SOGs, Standard Operating Procedures (SOPs) and policies to meet a particular risk. Meeting these needs may require additional resources such as stations, apparatus, equipment, staffing, and or enhanced levels of training.
  - *Economic Incentive* – Identifying whether financial incentives will improve compliance or help increase awareness of community needs.

- Prepare the CRRP – Once risks are identified and prioritized, and prevention and mitigation strategies and tactics are determined, it will be necessary to develop a written plan.

- Implementation of the CRRP – Implementing the completed CRR Plan involves several steps. This process should include timelines which can be quick and focused or slow and methodical. The implementation may rely on the fire department, community partners, or a combination.

- Monitor the Progress, Evaluate Your Findings and Modify the CRRP – The final step involves monitoring and evaluating the plan's effectiveness and adjusting as necessary. This monitoring will enable the organization to determine if they are achieving their desired goals and if the project impacts them. Ongoing monitoring allows for plan modifications promptly.

The CRR Plan is a gateway to the reinvention of the fire service culture. It requires buy-in from the council, vision, and strong leadership to advocate for the needed change and navigate the process. A successful CRR Plan will bring additional resources to the effort through partnerships within the fire department and the community it serves. The community-based approach increases public safety because of the collective work within the community to understand, assess, and provide inclusive solutions to community safety issues.

Fire Master Plans, also known as Strategic Plans, in many aspects establish the basis of a CRR Plan. In its development, the Plan has identified the risks of the fire department while mapping out a direction for reducing or mitigating those risks through programs and outcomes that are established or need establishment.

Having completed the Fire Master Plan and the CRA, the fire chief will have the information available to make informed decisions on how best to develop and deploy the CRR Plan.

Section 2

Profile, Risk and Preferred Treatment Options

Emergency Management Group

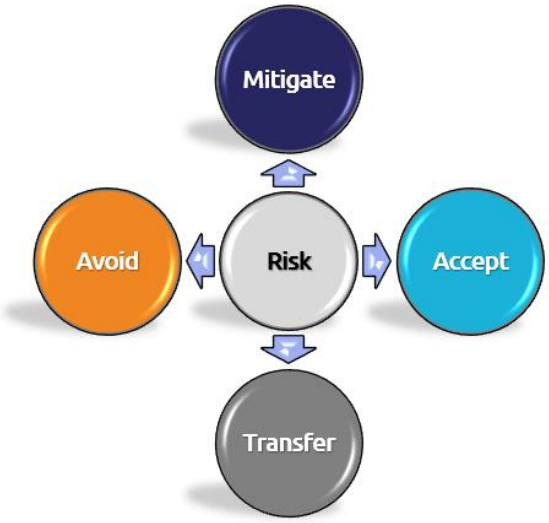
SECTION TWO: PROFILE, RISK, AND PREFERRED TREATMENT OPTIONS

EMG prepared this summary overview while compiling the nine mandatory profiles. It outlines the key risks, issues and concerns, and preferred treatment options. For more information on each mandatory profile, please refer to the appendices.

Identifying Treatment Options for the Top Risks in the Community

The following worksheet contains the identified risks, the recommended treatment level, and the recommended means of handling the threats. The Council will use this information with the Fire Chief's assistance to formulate community risk mitigation strategies.

When assessing and identifying treatment options, fire departments can determine how best to treat each risk and the resources required once risk levels are assigned.



Options for treating risks include the following:

1. Avoid the Risk
2. Mitigate the Risk
3. Accept the Risk
4. Transfer the Risk

Avoid the Risk

Avoiding the risk means implementing programs and initiatives to prevent a fire or emergency from happening. For example, public fire safety education initiatives aim to change people's behaviours. Inspections and enforcement help to ensure that buildings comply with the Fire Code.

Mitigate the Risk

Mitigating the risk means implementing programs and initiatives to reduce a fire or emergency's probability and consequence. For example, a routine OFC inspection and enforcement program to ensure OFC compliance helps to reduce the likelihood and impact of a fire.

A pre-planning program involving fire suppression crews allows the fire department to learn about specific community buildings and their contents, fuel load, fire protection systems, etc. These activities can reduce the probability and consequence of a fire. It can also assist suppression crews in planning fire suppression operations should a fire occur in a building. Share the information gathered with fire inspection prevention staff, who ensure the structure complies with the OFC. Pre-incident plans should comply with NFPA 1620: *Standard for Pre-incident Planning*, which requires funding and training for personnel.

Accept the Risk

Accepting the risk means that after identifying and prioritizing a threat, the fire department may determine that no specific programs or initiatives are required to address this risk. In this treatment option, the fire department accepts the potential risk and will respond if it occurs.

For example, typically, fire departments do not implement programs to prevent MVCs. Fire departments accept that MVCs will happen and that they will respond when they occur. Similarly, a fire department program or initiative cannot prevent environmental hazards (e.g., ice storms) and medical calls, but fire departments typically respond when these emergencies occur.

When accepting risks, fire departments should consider their capacity (i.e., equipment, personnel, training, etc.) to respond.

Transfer the Risk

A community can establish a Fire Protection Agreement with a neighboring community to address some or all aspects of the Three Lines of Defence (see Table #1). This transfer of risk involves shifting the impact and management of risks to another organization or entity. Examples include contracting public fire safety education, OFC inspection and enforcement, or emergency response services to a neighboring municipality or another organization.

Setting the Type and Level of Fire Protection Services

When setting the type and level of fire protection services, the Three Lines of Defence will aid in establishing the impact each will have on the probability or consequence of the identified risks. Once the fire department has determined the preferred treatment option for each hazard, they can plan and implement activities that address those possibilities. Things to include are the fire department's current resources, staffing levels, training, equipment, and authority versus those that may be required to implement the preferred treatment options.

Fire departments should also ensure that SOPs and SOGs address the levels of service and activities required to handle each risk. Setting goals and objectives and determining resources, training, equipment, activities, and programs are necessary across the Three Lines of Defence.

The process of making informed decisions about the provision of fire protection services should include careful consideration of the following:

- Implementing public fire safety education, OFC inspections and enforcement, and appropriate emergency response will aid in addressing the causes, behaviours, or issues associated with identified risks.
- Capabilities and capacity of the fire department (e.g., financial and staffing resources, training, equipment, authority, etc.) may be required to implement preferred treatment options.
- Strategic partners with common interests are part of the process while reviewing the available resources or skill sets that could assist in addressing risks using the applicable risk assessment profiles.
- E&R By-law, operational policies, and SOGs reflect the fire protection services that address the identified risks.
- Establish goals, objectives, strategies, timelines, and evaluations for the proposed fire protection services.
- Communicate with the council and public on the types and levels of fire protection services available.

Note: *The following worksheet is a compilation of the nine mandatory profiles. Supporting information about each profile (numbers one to nine) can be found in the appendix.*

Council must understand that any new programs or assets acquired will require their ongoing support, be it financial for ongoing maintenance, repairs, and replacement planning, or program support in principle.

Worksheet 10 rows are assigned a level of risk by colour code and not listed in order of severity.

Low	Moderate	High

Profile Legend

Occupancy & Profile Legend	Worksheet #
Geographic Profile	1
Building Stock Profile	2
Critical Infrastructure Profile	3
Demographic Profile	4
Hazard Profile	5
Public Safety Response Profile	6
Community Services Profile	7
Economic Profile	8
Past Loss and Event History Profile	9

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
Geographic Profile (Refer to Appendix - A for additional information)	Body of Water, including, rivers, streams, and wetlands *Body of Water Impacts Training, Equipment, Response Time Recreational/ Tourist Activities*	**Risks –** Flooding may make roads impassable, and property may be damaged. The most significant risk of flooding occurs during the spring thaw or a torrential weather event. The public's knowledge of the dangers of bodies of water and where they are when an emergency arises may be limited. HEFD provides shore-based ice-water rescues to the Awareness Level of training. A response agreement with an outside fire department or third party is not in place to provide operations-level mitigation of ice, swift water, flood water or surface water rescue to the Municipality. *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • HEFD needs to maintain and update ice/water rescue training protocols, SOGs, policies, and activities on an ongoing basis. • Evaluate the need to update equipment specific to ice/water rescues. • Assess the need to move to the Operations Level of ice rescues with crews leaving shore utilizing an inflatable raft tethered to the shoreline. • Ensure all federal and provincial laws and regulations relating to water rescues are followed, including levels of training. • Enter into a response agreement with a neighbouring fire department that mitigates ice/water rescues to the Operations Level per NFPA 1006.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Recreational/Tourist Activities • Install signage at key locations of bodies of water identifying the risks of water bodies and thin ice. • Review the need for enhancements in the number of social media platforms HEFD uses to provide fire safety messaging. • The Municipality, in cooperation with the conservation authorities, posts warning signs along the banks of rivers frequented by residents and visitors. Flooding • Monitor water levels in the spring when the snowpack is melting. • Firefighters should be aware of alternate detour routes established due to flooding. These may be required to assist with resident evacuations. • HEFD should conduct a needs analysis to upgrade their level of response to Operations, including adherence to NFPA 1006: Technical Rescue Standard regarding swift water and floodwater rescues. • The Municipality should encourage residents to reference the Emergency Planning sites on their website for information on being prepared for a flood. These include: o https://www.redcross.ca/how-we-help/emergencies-and-disasters-in-canada/types-of-emergencies/floods o https://www.ontario.ca/page/protecting-people-property-ontarios-flooding-strategy o https://www.ontario.ca/page/floods

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
	Agriculture *Livestock*	**Risks –** Many first responders are unfamiliar with animal handling during a barn fire or MVC involving livestock, making the scene more dangerous or challenging. It is not uncommon for farmers to try and rescue animals, putting themselves at risk of severe injury or death. Having emergency livestock plans in place before an incident can significantly reduce risks. The loss to a farmer of their husbandry could be financially devastating. *Treatment Options* **Avoid and Mitigate Risk –** This may be achieved by: • Consider training members of the HEFD in large animal rescue to the Awareness Level. • Consider adding livestock handling training to the training program. • Encourage local farming organizations to collaborate with FARM 911, The Emily Project, an initiative focused on enhancing farm safety in Ontario. • Encourage owners to have a livestock emergency and evacuation plan based on programs such as FARM FIRESMART.[10]

[10] "Fire Safety Know-how from Industry Experts." Farm FireSmart. Accessed May 13, 2024. https://farmfiresmart.ca/resources/knowledge-base/knowledge-base-articles/22-general-safety/15-the-importance-of-planning#:~:text=Fire%20safety%20planning%20starts%20with%20you.%20Identify%20exits,be%20evacuated%20from%20the%20barn%20in%20a%20fire

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Analyze the need to acquire rescue equipment and develop SOGs, procedures and training for livestock rescue and handling. Although some members have already received livestock rescue training through the University of Guelph, it is important to review the current training level and consider enhancements based on evolving community needs. Additionally, this training should be extended to other HEFD members.
	Agriculture *Silo & Grain Bin Rescues*	**Risks –** Farming operations include the risks of persons falling, collapsing, or being trapped in silos and grain bins. These confined spaces produce toxic, oxygen-deficient atmospheres that could immediately overcome anyone who enters, causing death or serious bodily injury. Silo and grain bin rescues require specialized rescue training and equipment. The HEFD does not have the training to mitigate these technical rescues at any level. There needs to be an SOG on confined space, silo, or grain bin rescues. *Treatment Options* **Mitigate and Avoid Risk** – This may be achieved by: • Develop SOGs for responding to a silo and grain bin rescue. • Ensure SOGs reference Section 21 Guidance Note *6-5 Confined Space Rescue* and 6-31 *Agricultural Silos.* • Ensure members train to NFPA 1006 Confined Space Rescue, Awareness Level.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Consider requesting a Firefighter Grain Rescue Training Course from the Canadian Agricultural Safety Association.[11] • Enter into a response agreement with an outside fire department that provides confined space rescue mitigation. • Ensure there are provisions in the Fees and Charges By-law to recover the costs associated with this type of rescue.
	Agriculture *Fire / HAZMAT*	**Risks –** Farm operations carry many risks to firefighters and citizens, including HAZMAT incidents and fires. HAZMAT There are the hazardous risks of hydrogen sulphide, methane, carbon monoxide, carbon dioxide, nitrogen dioxide, anhydrous ammonia, and various pesticides. Protecting the firefighters is of utmost importance when responding to these incidents. O. Reg. 63/09 requires that anyone who stores a Class A pesticide must give annual written notice to the fire department responsible for the area where the pesticide is stored[12]. Relying on external Hazmat response teams can result in significant delays before they arrive on the scene of a Hazmat incident. HEFD requires additional training to effectively manage and mitigate risks during the interim. Given the large quantities of hazardous

[11] "Firefighter training." Canadian Agriculture Safety Association. Accessed December 4, 2023. https://casa-acsa.ca/en/begrainsafe/firefighter-training/

[12] "O. Reg. 63/09: General." King's Printer for Ontario. Accessed May 13, 2024. https://www.ontario.ca/laws/regulation/090063

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		materials used in the farming industry, it is crucial for HEFD to be well-prepared to handle these situations promptly. Fire Barn fires and the spontaneous combustion of hay are significant concerns for farmers that can bring sizeable monetary loss, equipment and livestock loss, business interruption, loss of production, and extreme stress on the farmer's family. Extinguishment of these fires will often require copious amounts of water that may not be available nearby. Firefighters must use extreme caution when fighting a hay fire due to the combustion products, where bales have chemical preservatives. Bales treated with preservatives containing ethoxyquin and butylated hydroxytoluene produce hydrogen cyanide gas when they reach temperatures around 115º C (240º F). This gas is very deadly. *Treatment Options* Mitigate and Avoid Risk – This may be achieved by: • Create a Hazardous Material Response Plan. • As a priority, HEFD should enhance its training and policies related to responding to and mitigating HAZMAT incidents. • All HEFD staff should have a minimum NFPA Hazmat Awareness Certificate. o Officers should aim to obtain their NFPA Hazmat Operations Certificate.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• HEFD should create a policy and SOGs for responding to hazardous incidents and contract external HAZMAT response teams. • Members of HEFD become familiar with the ESA Bulletin 22-3-7.[13] • Ensure SOGs for silo, barn, and pesticide storage fires are in place. • Ensure the SOGs align with Section 21 Guidance Note 6-31 *Agricultural silos* and 6-30 *Pesticide storage fires.* • Consider developing pre-incident plans for each pesticide storage site. • Encourage farmers to create a Farm Fire and Emergency Sketch.[14] • Encourage owners to develop Farm Safety Plans where applicable.[15] • Work with local farming community organizations to deliver fire safety messaging. • Review opportunities to install dry hydrants if a water source, such as a pond or creek, is available on the farm. • Promote prevention practices that can help reduce the risk of barn fires.[16] • Huron East should amend its Fees and Charges By-law to include provisions for recovering costs associated with HAZMAT responses.

[13] "Bulletin 22-3-7 Electrical equipment in farm buildings housing livestock Rules 22-002, 22-102 to 22-108, 22-202 and 22-800 to 22-808." Ontario Electrical Safefy Code. Electrical Safety Authority. Accessed May 13, 2024. https://esasafe.com/assets/files/esasafe/pdf/Electrical_Safety_Products/Bulletins/22-03-7.pdf

[14] Jacqui Empson-Laporte. "Farm Fire and Emergency Sketch." Ministry of Agriculture, Food, and Rural Affairs. Accessed May 13, 2024. https://equineguelph.ca/pdf/tools/fire_safety/Farm%20Fire%20Safety%20Sketch.pdf

[15] "Canada FarmSafe Plan." Canadian Agricultural Safety Association. Accessed May 13, 2024. https://casa-acsa.ca/en/resources/canada-farmsafe-plan/

[16] "Ontario Supporting Fire Safety on Farms." Ontario Newsroom. King's Printer for Ontario. Accessed May 13, 2024. https://news.ontario.ca/en/release/50863/ontario-supporting-fire-safety-on-farms

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
	Forests *Huron County's 14 Forest Tracts*	**Risks –** The County of Huron owns 14 forest properties spanning 647.49 hectares (1,600 acres).[17] Nine tracts are open for passive recreational use, and forest fires may occur. Needles and duff lying on the forest floor create a fast-burning fuel if ignited. Due to the many layers of duff, deep-seated burning may occur underground, concealing the fire's location. Some forests have unmapped trails and roadways that meander throughout the bush for miles. These conditions make navigating the forest difficult for firefighters, especially if smoke obscures their vision. A fire may burn for some time before its discovery, and a poor road system and unmarked trails may hamper firefighters' ability to get resources into the fire. Many fire departments have acquired UTVs to fight wildland fires and provide patient transport capabilities. These units have tracks rather than wheels for better traction, making it a year-round apparatus. The HEFD does not have such an apparatus. *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • HEFD must ensure it has the SOGs, training, and equipment required to mitigate wildland fires.

[17] "County of Huron encourages use of Huron County Forests this Fall." Huron County. Accessed May 13, 2024. https://www.huroncounty.ca/news/county-of-huron-encourages-use-of-huron-county-forests-this-fall/

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• The department works collaboratively with the County of Huron Forestry Services to map forest tracts in their municipality. • Complete a pre-incident plan for each forest tract.
	Climate Change	**Risks –** Extreme weather due to climate change is a reality, and fire services have a role in preparing for the effects and adjusting their response accordingly. *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • During fire inspections, the fire department's staff could include a discussion on flood-proofing buildings and property, including the installation of back-flow valves on septic lines and ensuring that sump pumps are operational. • In cooperation with other departments of the municipality, the fire department has a role in building and maintaining a resilient community, especially concerning overland flooding, as infrequent as it is in the Municipality of Huron East.
	Oil and Gas Wells	**Risks –** The 19 identified oil and gas wells in the Municipality of Huron East are inactive and abandoned. Whether active or not, risks include potential explosions or fires. Well infrastructure may not be visible above ground level. The Building Division needs to be aware of the locations of wells to ensure no structures are built over them. Additional information is available at https://www.ontario.ca/page/oil-and-gas and https://www.ontario.ca/page/locating-existing-water-gas-or-oil-wells#section-5.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Several hazards exist with oil and gas wells, including:[18] • Product leakage to the surface, identified by soil staining or dead vegetation. • Hydrogen sulphide may escape from a leaking well. • High-pressure oil and highly flammable gas may be present from a leaking well. The level of risk is low, with no active wells in the municipality and, therefore, no drilling operations. *Treatment Options* **Avoid and Mitigate Risk -** This may be achieved by: • With so many wells in the municipality, the HEFD must ensure that SOGs, policies, and training are in place to respond to oil/gas well emergencies. • Ensure maps of the oil and gas well locations are available, whether active or not, and this information is available at: o https://geohub.lio.gov.on.ca/datasets/lio::petroleum-well/explore?location=43.629519%2C-81.253776%2C10.26 • Monitor whether any become reactivated or new wells drilled, and if they are, establish a database of the active wells and include emergency contact information. • If any sites become active, joint training on site familiarity and drilling operations should be conducted with companies that may be operating in the municipality.

[18] "Oil and gas." King's Printer for Ontario. Accessed May 13, 2024. https://www.ontario.ca/page/oil-and-gas

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Ensure a section in the ERP addresses oil/gas well emergencies and complete training on these types of emergencies. • The Municipality could reference the *Oil, Gas and Salt Resources Act, R.S.O. 1990*, for additional material. • Families that live on a property containing an oil or gas well need to be aware of the hazards and have an emergency plan that includes alternate shelter, evacuation routes, required family household items, and contact information for family members. • Monitor the investigation findings into the abandoned gas well explosion in Wheatly, ON.
	Railways	Accept Risk – Freight trains travel into and out of the Municipality. The risk of railway/ vehicle or pedestrian incidents and derailments exists. The train transports freight only, no dangerous goods. A motorist is 40 times more likely to die in a collision involving a train than in one with another motor vehicle, and most collisions between automobiles and trains happen within 40 km of the motorist's home[19]. In Ontario, crossing and trespasser accidents have caused severe injuries and death. In most cases, these incidents are preventable.

[19] Rail Safety FAQ." Operation Lifesaver Canada. Accessed May 10, 2024, https://www.operationlifesaver.ca/rail-safety-faq/

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option

Ontario Rail Transportation on Occurrences in 2021* [20]		
Incident		Total
Main-Track Derailments		13
Non-Main Track Collisions		9
Non-Main Track Derailment Accidents		89
Crossing Accidents		20
	Fatal Accidents	2
	Persons Injured	1
Trespasser Accidents		35
	Fatal Accidents	28
	Persons Seriously Injured	6

Treatment Options

Avoid and Mitigate Risk – This may be achieved by:

- The municipality should work with the railway to install safety signage.
- Joint training opportunities involving the rail lines should be encouraged.

[20] Rail Transportation Occurrences in 2021." Transportation Safety Board of Canada. Accessed May 12, 2024. https://www.tsb.gc.ca/eng/stats/rail/2021/sser-ssro-2021.html

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Training should focus on engine design, electrical dangers, and techniques for removing those injured from cars. • Ensure rail response SOGs, policies, and training are current. • Promote Operation Lifesaver presentation for organizations around the community.[21] • Promote Rail Safety Week on the Municipality's webpage.[22]
	Provincial Highways, County, Municipal *Electric Vehicles* *Road Closures* *HAZMAT Incidents*	**Risks –** By September 2023, 135,000 electric vehicles were registered and travelling in Ontario[23]. By 2030, there will be over one million on Ontario's roads. For the most part, fire services are behind in preparing firefighters for incidents involving electric vehicles. Fire service personnel usually respond to conventional fossil-fueled vehicle fires. Electric vehicles run on high-voltage lithium-ion batteries, which can result in dangerously high temperatures if ignited. Firefighters are also at risk of electric shock from damaged lithium batteries when handling electric vehicles. The high-voltage battery comprises many cells tightly packed in a water-tight, fire-resistant box. The heat released from one cell transfers to the neighbouring cells, which also causes their failure.

[21] "Who We Are." Operation Lifesaver Canada. Accessed May 14, 2024. https://www.operationlifesaver.ca/

[22] "Rail Safety Week 2024." Rail Safety Week. Accessed May 14, 2024. https://www.railsafetyweek.org/

[23] "Rail Transportation Occurrences in 2021." Transportation Safety Board of Canada. Accessed May 13, 2024. https://www.tsb.gc.ca/eng/stats/rail/2021/sser-ssro-2021.html

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Other notables include: • Each fire in an electric vehicle has different characteristics. • Foam is not an excellent extinguishing agent. • Batteries are not made of solid lithium, making Class D fire extinguishers ineffective. • Pancake nozzles are relatively ineffective as there are no means of spraying water inside the box. • Piercing nozzles used in structural firefighting should never be used to penetrate the box due to the electrocution risk. • The best course of mitigation when attending an electric vehicle fire is to let it burn itself out under controlled conditions, as gaining access to the batteries inside the box is nearly impossible. Once the battery has burnt out, use water to extinguish the remaining Class A material that is still burning. Roads Closures • Roads are often closed so Public Works Department staff can execute repairs and complete construction projects, possible MVCs, weather events, etc. HAZMAT Incidents • MVCs involving transport trucks carrying hazardous material can be highly complex. The HEFD can mitigate some HAZMAT calls as personnel train at the Awareness Level.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Treatment Options **Avoid and Mitigate –** This may be achieved by: Electric Vehicles • HEFD must create lesson plans and policies for responding to EV fires and extrication incidents. • Firefighters must ensure the vehicle is de-energized during an extrication incident to prevent electrical shock if electrical cabling becomes compromised. • HEFD should consider taking the NFPA online training course Alternative Fuel Vehicles Training Program for Emergency Responders. • HEFD needs to source training courses and acquire specialized equipment for fighting fires in electric vehicles. • HEFD must ensure that all SOGs, procedures, and training are current when responding to electric vehicle emergencies. • Consider the purchase of an Emergency Plug® that communicates with the vehicle's software, preventing its operation and the risk of it moving.[24]

[24] "Emergency Plug®." Darley. Accessed May 13, 2024. https://www.edarley.com/emergency-plug/?utm_source=hp&utm_medium=topbanner&utm_campaign=eplug

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Road Closures • Public Works should notify the HEFD and Owen Sound dispatch centre of all road closures. The message should include the reason(s) the road is closed, its anticipated duration, and possible alternate travel routes available. HAZMAT Incidents (Also refers to Agriculture - Fire / HAZMAT) • As with any HAZMAT incident, the Municipality may need to implement its ERP or open its reception centres. • Ensure that ECG members are trained and familiar with HAZMAT incidents and familiar with their responsibilities during the emergency. • The municipality must enter a response agreement with an outside fire department or third party to mitigate HAZMAT incidents. • Include provisions in the Fees and Charges By-law to recover costs associated with the incident.
Building Stock Profile (Refer to Appendix - B for additional information)	Fires	**Risks –** Fires can be due to design, construction, maintenance deficiencies, human error, or mechanical/ electrical failures. The region has a history of severe weather; lightning strikes have ignited some fires. *Treatment Options* **Avoid and Mitigate Risk** – The risk of fires occurring may be reduced by: • During inspections, provide public education on the advantages of completing preventive maintenance of mechanical and electrical equipment.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Discuss the misuse of ignition sources, such as candles, related safety practices, and possible evacuation protocols.
	Crop Storage Facilities	**Risks –** The municipality is rural, and agriculture is a solid presence, so there is a higher risk of fires in a farm operation structure. Crop storage buildings/infrastructure are usually massive and made of ordinary building materials or metal, with a higher incidence of fires. Fire causes include faulty wiring, mechanical failure, heating systems, hot works, arson, and spontaneous ignition. Hoppers are a typical means of storing a variety of crops. Several manufacturers in the municipality use hoppers to store wood shavings and dust from making wooden items. Dust fires/explosions are hazardous to extinguish due to rapidly changing conditions. Most storage facilities lack early fire detection equipment monitored by a third party. They also lack fire doors and separations, emergency lighting, signage, and fire extinguishers. *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • Promote the need for farm safety plans. • Develop pre-incident plans for high-hazard storage facilities. • Promote the installation of dry hydrants at locations with water sources close by. • Promote the value of installing cisterns. • Complete fire inspections.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Ensure SOGs, policies, and training are in place for responding to high-hazard storage units. • Reference Section 21 Guidance Notes 6-27, 6-30, 6-31, and 6-33. • Ensure that firefighters understand the dangers of interior firefighting in storage buildings due to the collapse of walls from the weight of the produce against them during fire conditions.
	Fertilizer Retail Outlets	**Risks –** Fertilizers are necessary for most farming operations to enhance crop yields. Unfortunately, some come with risks, such as ammonium nitrate. During fire conditions, fertilizers have explosive risks. Ammonia is transported in tanks to farmer's fields on trailers that are at risk of overturning and leaking, which is a life risk if inhaled. The run-off from farmer's fields with high quantities of fertilizer may pollute streams, rivers, and water supply for communities. *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • Based on NFPA 1730, rate fertilizer operations as industrial high-hazard risk occupancy with annual inspections. • Arrange for firefighters to make site visits for familiarization. • Complete a pre-incident plan for each location. • Identify water sources close by and install dry hydrants with easy access to the water.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Based on the quantities of hazardous products on site, determine evacuation perimeter and safe zones. • Ensure that the SOGs, training, and equipment required are in place. • Ensure fire safety plans are in place if the occupancy falls within Section 2.8 of the OFC.
	Municipality of Huron East **Huron East Fire Department** *Single Family Dwelling* *Lightweight Truss Construction* *Municipality's accessory residential units, additional residential units, garden suites., and short-term accommodations*	**Risks –** This occupancy experiences the most fires in the Municipality, with 22 residential fires between 2018 and 2022. In 2022, the estimated dollar loss involving residences was over $1.3 million. Most fire fatalities occur in residential fires. HEFD has not publicized how having residential fire sprinklers may lessen the risks when a fire occurs. Unfortunately, this is due to the lack of interest from the building contractors and insurance companies. While sprinklers may not extinguish the fire, they will assist in managing it, which may provide time for the occupants to escape. New home purchasers need to be mindful of the importance of sprinklers as a fire safety feature and the savings available in their insurance. Statistics show that residential sprinklers save lives and reduce fire loss. In turn, property owners will reap savings on insurance costs and see an increase in the property value. The effects of Ontario's Bill 23 will impact the number of rental units available, hypothetically increasing the affordability and attainability of housing. Short-term effects of this bill include shortened wait times for planning approvals, reduction of parks/greenspaces requirements, introducing 'gentle intensification,' eliminating the

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
	Possible Illegal Units *WETT Inspections*	need for rezonings in the applicable instances, and implying burden and uncertainty regarding appropriate servicing on lots. Lightweight Construction • These roof trusses and floor joists are made at an off-site manufacturing facility and then transported to the on-site location. Roof truss failures have killed many civilians and firefighters. Metal studs, often used in interior walls, are also considered LWC. Accessory residential units/additional residential units, and garden suites., and short-term accommodations • An unknown number of illegal rental suites could be operational in the Municipality. • The Zoning By-Law 52-2006 allows accessory residential units, additional residential units, and garden suites. • The Municipality should develop a by-law governing the operation of short-term accommodations, which needs to include their registration and licencing, and require annual building and fire inspections. WETT Inspections Many homes rely on wood burning as their primary or secondary means of heat. Solid fuel-burning appliances are a source of many house fires. With many occupancies burning wood, chimney fires would increase, resulting from poor maintenance, such as annual cleaning of the chimney. Neither HEFD or the Building Department have yet to conduct WETT inspections. To the FPO's credit, they are completing the course which permits them to complete WETT inspections.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option

		The Municipality requires building permits for all solid fuel-burning appliance installations. This inspection ensures all new installations or upgrades meet the needs of the OFC and manufacturer. As part of the application, the building department should require a WETT inspection and provide a certificate of compliance. Insurance companies often require WETT inspections when buying a residential structure equipped with a wood-burning appliance.
		
		Treatment Options
		
		Avoid and Mitigate Risk – The risk of fires occurring may be reduced by:
		
		Single Family Dwellings
		
		• Provide public fire safety education on smoke alarms beginning with school children. In schools, promote the need for students to remind their parents to regularly test their smoke alarms.
		• Historically, HEFD's FPO has not been promoting the installation of residential sprinklers.
		  ○ In cooperation with developers, present a public demonstration of the difference residential sprinklers make during a fire.
		  ○ Encourage the installation of residential sprinklers in the planning phase of new developments.
		  ○ With new residential developments, fire prevention could work with the developer/builder to promote their value as an upgrade in new home construction.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Secondary dwellings, accessory dwelling units, additional residential units, garden suites, and short-term accommodations: • The Municipality of Huron East should develop and enact a by-law regulating secondary dwellings, accessory dwelling units, additional residential units, and garden suites, requiring their registration and license to operate with the municipality and a mandatory inspection by the building and fire departments. • HEFD should know the location of all secondary dwellings, accessory dwelling units, additional residential units, and garden suites, along with short-term accommodations for inspection. • Establish a means of reporting possible illegal accommodations. • Add the inspection fee to the Fees and Charges By-law 005 for 2023. • Consider requiring any accommodations with a wood-burning appliance to complete a WETT inspection. WETT Inspections • A WETT inspection should become mandatory as part of the licensing requirements for such residences. • Before municipal staff commence WETT inspections, a discussion with the Municipality's insurance provider and legal council should review possible liability exposures when completing them.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Lightweight Construction • Through Fire Marshal's Directive 2022-001, the OFM has mandated that municipalities must inventory all building stock. The focus shall include identifying all those that incorporate some LWC material. • The Municipality must comply with the Fire Marshal's Directive. • The building stock inventory must include all occupancies based on the Occupancy Classifications of the OBC, except for houses. • Complete a pre-incident plan for occupancies with high life risks. The HEFD Incident Commander will therefore know the dangers of such construction practices while completing their initial size-up. • A collapse could occur at any time, and a defensive fire attack is required when the length of time of flame impingement is unknown. • There should be enhancements to firefighter training on building construction, which identifies structures that may have LWC and the associated risks to the early collapse of these building components.
	New Residential Building Stock *Damage resistant Measures During Severe Windstorms.*	**Risks –** Severe thunderstorms (tornadoes or straight-line winds) can devastate a building, resulting in severe damage or the loss of the structure. The amount of property loss from such events is staggering. Each year, more tornadoes of greater strength occur in Ontario. Measures that enhance the structure's integrity and significantly reduce the damage incurred during a tornado should be included during construction.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Treatment Options **Avoid and Mitigate Risk** – This may be achieved by: • Install hurricane clips during construction to ensure the walls can uphold the roof. • Enhance wall-to-sill plate connections on the foundation. • The Municipality should review what other municipalities are doing to reduce the damage caused by severe windstorms, such as the City of Barrie lobbying for changes to the OBC. Mirroring the County of Dufferin's Hurricane Clip Rebate Program is an option. • Lobby the County of Huron to begin a rebate program for installing hurricane clips to new residential construction.
	Fuel Retail Outlets *Gasoline, Diesel*	**Risks -** A large fuel spill is a HAZMAT incident. If ignited, it could present a significant fire requiring additional resources to extinguish. Several retail outlets are in business in the Municipality; each has bulk fuel stored on-site in large quantities. *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • Inventory of all locations that have bulk fuel storage. • Complete pre-incident plans of bulk fuel depots. • Provide training on fighting flammable liquid fires, including the use of foam.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Ensure foam concentrate is free of fluorine, a cancer-causing agent known as a forever chemical due to its inability to break down over time. These chemicals are not environmentally friendly. • Ensure containment booms and absorbent pads are available for spills and leaks into waterways.
	Huron East Fire Department *Inspections and Enforcement* *Plans Examination* *Fire Safety Plans* *Historic Buildings* *Mercantile Core(s)* *Seasonal Campgrounds* *Smoke and CO Alarms*	**Risks -** Currently, the HEFD does not conduct fire inspections based on either NFPA 1730, *Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations* or the FUS recommended schedule, as it is difficult to achieve with the current staffing level and number of occupancies requiring inspections. A part-time FPO/PFLSE addresses inspections based on request or complaint. They comply with inspecting the vulnerable and multi-unit occupancies as mandated by the OFM. They also inspect residential occupancies when requested due to real estate transactions. None of the firefighters have completed NFPA 1031 or 1035; if they had done so, they could assist the FPO in whatever capacity as needed. The FPO has also completed plan examinations during the approval process. The plan examination process ensures OBC compliance from a fire response perspective. While doing the reviews, they may identify areas of the plans requiring more compliance. This examination would also allow notifying firefighters of any proposed buildings with hazards or specialized fire protection systems that are in place.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Historic Buildings Historical buildings within older areas of the municipality may be made of heavy timber construction, thereby providing a higher fire load. Inspections of heritage buildings are often missed and should be completed annually due to their age and community significance. Mercantile Core The inability to inspect each premise may lead to OFC violations that, if not found and corrected, could lead to a fire. Seasonal Campgrounds and Residential Trailer Parks Seasonal campgrounds may pose the following hazards: • Units are parked very close to each other to maximize the space on the property, which can create exposure risks. • Lack of working carbon monoxide and/or smoke alarms • Many campers and residential trailers use propane for cookstoves or heating purposes. These tanks may pose a risk if a leak is present. Smoke and Carbon Monoxide Alarms • Far too many fatalities in the province result from missing or inoperable smoke and carbon monoxide alarms.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Many residential structures may have smoke and CO alarms past their recommended life span, requiring replacement. Smoke alarms have a ten-year life span, whereas carbon monoxide alarms have a life span of seven years. • HEFD carries smoke and carbon monoxide alarms on its apparatus to ensure one is in place and operational before departing a residential occupancy. • HEFD does not have an active door-to-door smoke/ carbon monoxide alarm checks program whereby firefighters drop by residences to answer fire safety questions while ensuring working alarms are in the optimal locations in the home. This program was active once but has not been for some time. *Treatment Options* The OFC states that certain occupancies require Fire Safety Plans to be completed and be readily accessible to fire personnel upon arrival. Due to the constant staff turnover in some of these occupancies, training needs to be improved. Those in charge of operations in the occupancy are responsible for training new staff to understand the plan and their responsibilities in the event of a fire. Fire Prevention is required to review Fire Safety Plans during inspections and reinforce the need for staff employed at the occupancy to be aware of the plan's contents. At the same time, they are to ensure the level of training is current. Avoid and Mitigate Risk – This may be achieved by: • The rate of inspections should strive for compliance with either FUS or NFPA 1730 frequency schedules. The current staffing levels in fire prevention prohibit HEFD from achieving this goal.

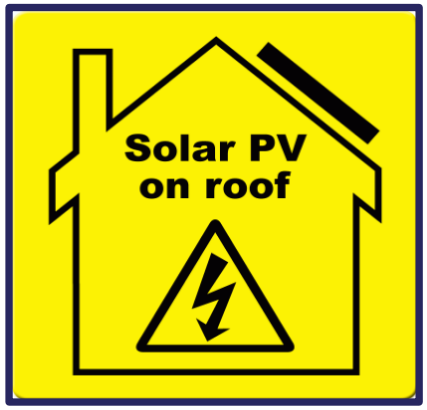
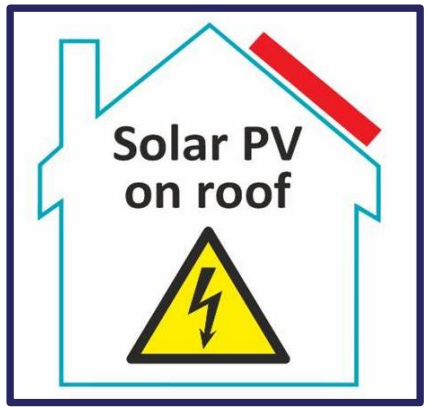
Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Maintain frequency of fire inspections of high-risk and vulnerable sector occupancies per Fire Marshal's Directive 2014-002 (revised April 27, 2022). • Ensure enforcement of the OFC. Successful convictions for OFC violations that include significant fines should be publicized in the media while keeping those involved anonymous. • Staff at a vulnerable occupancy may not understand their role in the event of a fire alarm or the location of the building's fire panel. This is a training deficiency for those in the care and control of buildings. Historic Buildings • If a mercantile occupancy, offer to educate the building owner(s) and staff on fire prevention and safety, • Suggest they install a fire alarm system that a third party could monitor. • Provide training on fire extinguisher use. • A schedule for the inspections of vacant structures should be established and implemented. • Work with property owners to ensure known vacant buildings are secure. • If the structure is occupied and used, conduct fire inspections annually or regularly as resources allow and according to the building classification (high risk – annually, low risk – every third year). • Promote smoke alarms and fire extinguishers. • Promote the need to secure and make any vacant structures safe. • Work with the local heritage society to identify occupancies with the heritage site designation.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Complete a Pre-Incident Plan for each location. Mercantile Core • Conduct annual inspections. Utilize the frequency charts noted in NFPA 1730 or FUS as a guideline. • Work with local business groups to promote fire safety messaging. Seasonal Campgrounds and Residential Trailer Parks • HEFD has an inventory of the municipality's campgrounds/parks. The list should include staffing levels, the number of guests, risks, and particular features or concerns. Further, ensure roadways are accessible and that a list be kept of locations requiring annual inspections and public education, etc. • Some parks may have retail outlets onsite. Ensure maintained fire extinguishers are present. • Fire safety material should be made available and distributed to clients as they register to highlight dangers when cooking, campfires (if permitted), the need for smoke and carbon monoxide alarms, safety when changing LPG tanks, etc. • Train seasonal staff on fire safety, fire extinguisher use, etc. Smoke and Carbon Monoxide Alarms • HEFD should participate in and develop programs the OFM promotes, such as the "Alarmed for Life" and "Saved by the Beep" campaigns. • Enhancements in public education that promote the necessity for working smoke/carbon monoxide alarms, establishing escape routes, using fire extinguishers, and installing residential fire sprinklers.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option

		• Initiate a zero-tolerance policy at locations with a record of lacking smoke and carbon monoxide alarms, including the possibility of Fire Code (Part 1) charges.
		• Promote the need for well-maintained wood-burning appliances/chimneys and encourage cleaning before the season begins.
		• The municipality could require installing residential fire sprinklers in certain circumstances. Some municipalities mandate sprinklers through a by-law specific to the development based on the following specifications:
		  ○ The lack of a water source close by
		  ○ Access to the properties, such as dead-end roads
		  ○ The distance from a fire station
		  ○ The value of the building constructed.
		• Work with merchants to start having smoke alarms for sale with life-long batteries. This change would help reduce the incidents of battery removals or dead batteries.

	Properties with Solar Photovoltaic Systems	**Risks -** There are locations in the Municipality where solar photovoltaic system panels are installed either on top of roofs or at ground level. These panels produce high voltage, which must be disconnected. Fires in structures with solar panels on a roof have a higher potential of early roof failure due to the extra weight load. The Municipality's Business and Development Department does not require a building permit when installing solar equipment on commercial roof-mounted panels or residential units. Most municipalities require building permits to install all solar power generation equipment. *Treatment Options* **Avoid and Mitigate Risk –** This may be achieved by:

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Maintain documented identification of locations with solar panels. • HEFD should ensure SOGs, training, and pre-incident plans are in place and current. • Ensure that warning signage is in place as required at each location. • Develop and initiate a by-law requiring signage on roadside 9-1-1 signs identifying the use of solar panels at that address. Have them made with reflective materials. • The Municipality should analyze the requirement for a building permit to install solar equipment due to the added weight placed on a roof with roof-mounted systems.  

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
	Vulnerable Citizens and Caregivers *Inspections and Enforcement*	**Risks –** Having the most vulnerable residing in occupancies with fire safety violations risks their well-being. Currently, two vulnerable occupancies are in the Municipality of Huron East. It is not uncommon for able-bodied family members to care for vulnerable loved ones in their homes rather than placing them in a long-term care facility. An unknown number of residences could house vulnerable occupants. *Treatment Options* **Avoid Risk** – This may be achieved by: • Provide public education on escape planning. • Train public on fire extinguisher usage. • Promote education relating to knowing and practicing building escape routes. • Address the needs of those with mobility and cognitive behavioural issues in escaping a fire. • HEFD should reach out to caregivers to provide public education on fire safety and what to do in the event of a fire. The visit would be crucial when the one they care for has mobility issues.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
Critical Infrastructure Profile (Refer to Appendix - C for additional information)	Electricity *Loss of Power*	Risks – Loss of power will adversely affect all forms of daily life. Businesses, schools, industries, residences, and emergency services rely heavily on an uninterrupted power supply. As an emergency services facility, the loss of power at any fire station could negatively affect the response capabilities of the HEFD. Only HEFD's Brussels fire station has an automatic standby generator that supplies power to the entire building. The other two stations have no standby generator. *Treatment Options* Accept Risk – This may be achieved by: • The Municipality needs to budget for installing emergency standby generators at its Seaforth and Grey fire stations with the capacity to energize the entire building. • The Municipality should promote the advantages of an automatic standby generator to community residents as part of their emergency planning. • Ensuring all community facilities, primarily the EOCs and reception centres, have standby generators energizing the entire building. • Use social media platforms to promote the safe operation of generators, including never operating one indoors. • Reliability is an essential aspect of operating a generator. Promoting the importance of servicing the unit per the manufacturer's specifications will reduce the risk of the unit's failure.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
	Municipality of Huron East's Arenas and Swimming Pools *Ammonia Leaks*	**Risks –** The lack of maintenance and care in refrigeration operations can result in the leakage of harmful fluids in arenas and swimming pools. Ammonia and chlorine, when released in closed environments, are very detrimental to workers' health and safety and can even result in explosions. *Treatment Options* **Avoid and Mitigate Risks –** This may be achieved by: • HEFD considers joint training exercises with arena and pool personnel. • HEFD to ensure policies, SOPs, and training are current for responding to chemical, biological, radiological, nuclear, and explosives (CBRNE) incidents. • Ensure responses align with NFPA Standards and Section 21 Guidance Note 6-9 HAZMAT/ CBRNE response. • Complete a tabletop exercise with the Municipality's ECG that involves an ammonia or chlorine leak at one of the arenas or pools requiring residents' evacuation. • As members of the ECG gain an understanding of their role during emergencies, organize a real-time exercise that includes allied agencies.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
	Water *Domestic Water Supply Wet Hydrants* *Dry Hydrants and Cisterns* *Rural Water Supply*	Risks –The pace of growth and development activities may place stressors on supplying enough water to meet these challenges. A failure within the infrastructure may hinder firefighting operations. The current infrastructure is in good condition. Six drilled water wells support the communities of Seaforth, Brussles, and Brucefild, with three below-grade reservoirs in which to store water. The water mains are a minimum size of 100 mm (4 inches). Some regions have 50 mm (2 inches) watermains which would have difficulty supplying enough water for firefighting purposes. Industrial areas have a minimal size of 200 mm (8 inches) water mains. Ontario's minimum diameter for water mains depends on the specific context. The following are the relevant guidelines: • Distribution Systems Designed for Fire Protection o For systems designed to provide fire protection, the minimum diameter of watermains should be 150 mm. However, beyond the last hydrant on cul-de-sacs, the minimum diameter may be as small as 25 mm[25]. • Distribution Systems Not Designed for Fire Protection o For systems that are not designed to provide fire protection, the minimum diameter of watermains should be 75 mm.

[25] "Watermain Design Criteria for Future Alterations Authorized Under a Drinking Water Works Permit." King's Printer for Ontario. Accessed May 17, 2024. https://www.ontario.ca/page/watermain-design-criteria-future-alterations-authorized-under-drinking-water-works-permit

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Hydrants • The municipality has over 249 municipal hydrants and no private ones. No matter the short period, a hydrant's failure could become a life safety risk under fire conditions. • The hydrants are serviced annually and are NFPA 291 and OFC compliant. Dry Hydrants and Cisterns There are no dry hydrants or cisterns in the Municipality from which HEFD can obtain water. Having dry hydrants installed strategically throughout the Municipality would provide additional water sources for fighting fires. The installation and maintenance of dry hydrants and cisterns must comply with the NFPA 22 *Standard for Water Tanks for Private Fire Protection* and the NFPA 1142 *Standard on Water Supplies for Suburban and Rural Firefighting.* In Ontario, the maintenance of hydrants must be per the OFC's *Part 6, Fire Protection Equipment*. The HEFD has not attained its Superior Water Shuttle Accreditation per FUS standards. Within FUS' *Alternate Water Supplies for Public Fire Protection* document, it states that "recognition of Shuttle Service for fire insurance grading purposes is limited to the flowing road travel distances from the insured property":

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Savings on insurance costs may be available to residents and businesses that install a cistern containing a large quantity of water for fire protection. It may be a significant investment of between $20,000 and $35,000, but the insured may save, in certain instances, approximately $20,000 in insurance costs. *Treatment Options* Mitigate Risk – This may be achieved by: Hydrants • Huron East should review the existing fire hydrant system and future hydrant systems for flow capacity. • Increase the minimum size of the water mains from the current 50 mm (2 inches) in cul-de-sacs to 150 mm (6") or greater. Doing so will enhance the constant supply during firefighting operations and the water pressure and volume of water available, which could further lead to additional building construction as supply meets the demand. Upgrade fire hydrants and municipal water mains where possible. • Installing hydrants may lower insurance rates for those living in areas with water supply but no hydrants. • Water flow from hydrants should meet the FUS Water Supply for Public Fire Protection guide. • Maintenance of hydrants must comply with the OFC, Article 6.6.4 and NFPA 291. Fire hydrants should be marked as-per NFPA standards.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• During the plans review stage, promote the installation of private hydrants at commercial or manufacturing facilities on large expansive properties. When private hydrants begin to be installed in the Municipality, follow up with the owners to ensure they understand their responsibilities per OFC and NFPA 291. • When determining the flow rate of each hydrant, the water departments install flow rate identification on each, according to NFPA 291. This identification could be in the form of coloured reflective markers on the 65 mm ports that correspond with the flow rate. • Budget to retrofit hydrants with threads on the steamer ports to Storz lugs. Dry Hydrants and Cisterns • As per the Ontario Building Code, consideration should also be given for dry hydrant systems and cisterns for fire protection. • The Municipality should analyze the need to install dry hydrants at key water source locations, per NFPA 1142. Strategically place dry hydrants throughout the municipality. Install cisterns per NFPA 1142 near built-up areas or buildings with a high fire risk. • Upon installation, maintain each per the NFPA standard and install signage along the roadway, asking motorists not to block site access or impede fire apparatus refilling. • Promote the value of installing dry hydrants for property owners with access to a water supply or cisterns for water supply for firefighting purposes. Doing so may reflect lower insurance premiums. • Upon installing either water source, ensure signage identifies their location on the property. This is especially prudent in winter when snowbanks may impede their visibility.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Once dry hydrants are in place along roadsides, develop maps identifying their locations, with circles determining the response distances. These become available to the residents to provide to their insurance provider. This service may permit the residents to take advantage of savings on their insurance premiums. • Complete a pre-incident plan for all locations with access to cisterns. Cisterns must be installed and maintained according to NFPA 22, *Standard for Water Tanks for Private Fire Protection*. Rural Water Supply • Review NFPA 1142, *Standard on Water Supplies for Suburban and Rural Firefighting,* to identify enhancements HEFD could include in their rural operations. • Obtain a Superior Tanker Shuttle accreditation to reduce fire insurance rates to homeowners.
	Municipality of Huron East and the Huron East Fire Department *Radio System and Infrastructure*	Risks –The radio coverage throughout the Municipality is poor to fair. There is a risk of a radio system failure and power loss. Poor radio communications risk missed transmissions that could result in injury or deaths of firefighters. Radio towers in the municipality have batteries for backup power. A fixed generator or portable unit should be available onsite to recharge the batteries during prolonged power outages. The system should use digital technologies with repeaters. A mobile repeater is available in the Brussels Rescue to improve radio signal strength. Digital signals are more substantial than analogue signals, radio signals lose strength as the further they travel; digital signals are at a consistent power output level. The HEFD has no radio interoperability with other municipal departments or local fire services.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		A reliable radio system is imperative for the health and safety of firefighters. *Treatment Options* **Avoid and Mitigate Risks –** This may be achieved by: • The Municipality needs to complete a radio system audit of the entire system to identify deficiencies and make recommendations that will improve radio coverage. Doing so may identify the need to switch the current system to simulcast technologies, strategically placing additional radio towers to improve radio coverage while enhancing firefighter safety. The completed audit should identify a short- and long-term remediation plan to provide seamless municipal radio communications. • Pending the ability to do so, install the radio frequencies of other municipal departments of the Municipality and surrounding fire services. • When it comes time to replace portable radios, consider purchasing intrinsically safe models moving forward. Doing so will provide an even safer work environment for the firefighters.
	Natural Gas and Liquified Petroleum Gases (LPG) *Propane*	**Risks -** Loss of natural gas supply in transmission line breakages. There is an ongoing risk of leaks/accidents involving the distribution and use of natural gas. With a robust agricultural sector in the municipality, heaters that use large amounts of fuel dry the crops once removed from the fields. The dryers operate using either LPG or natural gas. Propane • Some residences will have large LPG storage tanks for heating, cooking, and fuel for standby generators. Construction sites may have LPG tanks over 200 kg (441 lbs) for

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		heat during the colder months. There is a risk of leaks going undetected and creating an explosion. All retail sites must complete a Propane Risk and Safety Management Plan (RSMP). *Treatment Options* Accept Risk – This may be achieved by: Natural Gas • Work with local service authorities concerning public education/notification initiatives during disruptions. • HEFD must complete pre-incident plans for all-natural gas pumping stations or above-ground infrastructure. Propane • Ensure the RSMPs comply with OFC and TSSA regulations. • Provide public education on transporting, storing LPG tanks, and connecting hose lines. HEFD posts LPG safety information on its website. • Promote safe barbeque and portable stove usage to prevent leaks and fires involving propane tanks. • Contact TSSA for all locations with installed consumer LPG tanks of 1,000 US gal or greater and complete a pre-incident plan for each site.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
Demographic Profile (Refer to Appendix – D for additional information)	General Population *Growth between 2022 and 2046* *Senior Citizens* *Visible Minority Populous* *Youth - Juvenile Firesetters* *Indigenous Communities*	**Risks –** Ontario growth projections for the County of Huron indicate a growth rate of 30% - 40% between 2022 and 2046.[26] In 2021, 1,830 children aged 0 to 14 were in the Municipality of Huron East, representing 20% of the total population. An increase in population, as well as an increase in residential buildings, will, over time, increase the number of fire calls. Pending the approvals of higher multi-unit occupancies will intensify the population in those areas. The working-age population between 15 and 64 represented 60% of the total population. In 2021, 2,060 persons aged 65 and over were in the municipality, representing 21% of the total population.[27] The County of Huron Housing and Projects Study was completed in March 2024, stating that Huron East will accommodate 14% of the County's population, reaching a population of 13,500 by 2051.[28] The forecasted annual growth rate is 1%. Meanwhile, the County of Huron's Official Plan says that Huron East will have 15.4% of the County's population in 2041, some ten years earlier.[29]

[26] "Ontario population projections." King's Printer for Ontario. Accessed April 11, 2024. https://www.ontario.ca/page/ontario-population-projections

[27] Statistics Canada. 2023. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 15, 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed May 24, 2024)

[28] "Huron County Official Plan." Huron County. Accessed April 20, 2024. https://www.huroncounty.ca/wp-content/uploads/2021/10/FINALHuron-County-Official-Plan-5-Year-Review-October-18.pdf

[29] "Huron County Official Plan." Huron County. Accessed May 2, 2024. https://www.huroncounty.ca/wp-content/uploads/2021/10/FINALHuron-County-Official-Plan-5-Year-Review-October-18.pdf

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option

Table 2: Population Projections (2016 – 2041)

	2016	% of County	2021	2026	2031	2036	2041
Ashfield Colborne Wawanosh	5,422	9.1%	5477	5541	5587	5587	5559
Bluewater	7,136	12.0%	7209	7293	7353	7353	7317
Central Huron	7,576	12.8%	7653	7742	7806	7806	7768
Goderich	7,628	12.9%	7706	7796	7860	7860	7821
Howick	3,873	6.5%	3912	3958	3991	3991	3971
Huron East	9,138	15.4%	9231	9339	9416	9416	9370
Morris-Turnberry	3,496	5.9%	3532	3573	3602	3602	3585
North Huron	4,932	8.3%	4982	5040	5082	5082	5057
South Huron	10,096	17.0%	10199	10318	10403	10403	10352
County of Huron	59,300	100.0%	59,900	60,600	61,100	61,100	60,800

Seniors

- The senior demographic should receive tailored fire safety messaging, which has been somewhat limited for various reasons. Between 2022 and 2046, the senior population in the County of Huron will grow by 35 to 50%. Estimates indicate that by 2046, 25 to 30% of the people in the County will be seniors.[30]

[30] "Ontario population projections." King's Printer for Ontario. Accessed December 11, 2023. https://www.ontario.ca/page/ontario-population-projections

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Visible Minorities • Based on the 2021 census, there are 200 visible minorities living in the Municipality. Even though this demographic is not identified as a significant risk at this time, with the forecasted growth that may take place, this issue could become more prevalent in the coming years. Youth and "The Arson Prevention Program for Children" (TAPP-C) • A troubled youth who created fires may need to attend a Juvenile Fire Setter Intervention/ The Arson Prevention Program for Children (TAPP-C). o This program includes the involvement of family members and could consist of other community partners. This program should be active within HEFD and become the responsibility of the FPO/PFLSE. Indigenous Community • In 2021, there were 175 Indigenous members in the community. HEFD has not previously contacted the leaders of this demographic. Indigenous members should not miss receiving culturally specific fire safety messaging as this group has a higher fire-related fatality rate.[31] • A tradition of the Indigenous demographic is conducting sacred fires. As with any open fire, there is always the risk of the fire getting out of control.

[31] Len Garis and Mandy Desautels. "Fire Risk for Indigenous People." Firefighting in Canada. Accessed December 7, 2023. https://www.firefightingincanada.com/fire-risk-for-indigenous-people/

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		○ In cooperation with the fire chief, the FPO could work with Indigenous leaders to locate and designate a site for this demographic to continue this sacred tradition. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: General Population • Amid population growth would be a suitable time for promoting the benefits of residential sprinklers during the planning stages of any new residential occupancies. As new residential occupancies are approved, this would be an opportune time to discuss offering residential fire sprinklers as an upgrade with builders. Seniors • Future public education opportunities should discuss the following topics of interest: the sound of fire, the importance of working smoke and CO alarms; emergency preparedness in the event of an evacuation, prolonged power loss, or severe weather events; dangers of using oils and grease for cooking; develop and practice an escape plan for their place of residency; how to extinguish a cooking fire; fall prevention; burn prevention; the senior's safety book; open-air burning; etc. An area often missed during discussions with seniors is the danger of wearing loose-fitted clothing over cooking appliances. Commonly used synthetic clothing material may be more prone to catching fire at lower ignition temperatures.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Visible Minorities • Obtain multi-lingual language cards with emergency-related phrases for the apparatus. Youth • At least one member of the HEFD has completed the TAPP-C course so that they may deliver it. It would be beneficial if the FPO were also to complete the program. • Provide and distribute fire safety educational material to community youth groups and centres. Include career education material focused on youth. • Some fire services have implemented junior firefighter programs for the youth to assist around the fire stations and learn about fire safety and firefighting. Opportunities may be available by permitting township youth to achieve their required community service hours by helping around the fire station or at public education events by dressing as the fire service mascot, Sparky. • The HEFD needs to complete a program analysis and identify the targeted age group before a Junior Firefighter Program becomes active. Indigenous Community • HEFD should develop a smoke alarm Outreach Program for the Indigenous community, involving local stakeholders to support their efforts. Complete a needs analysis before implementing based on fires within the indigenous community and increased smoke alarm calls. • Assist this group in conducting a fire-safe sacred fire.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
	Public Education Programs for Schools *Festive Seasons*	**Risks –** School children are an essential demographic for deliverance of public education material, promoting fire safety in the home. Elementary school children often take their fire safety materials home to share with their parents or guardians. The HEFD delivers an assortment of topics to school children during the year, which include several facets of fire safety and home escape planning. Schools are to conduct four fire drills annually; the HEFD will attend to monitor the drill upon request. There are no formal programs for high school students because there are no high schools in the municipality. Festive Seasons • During festive times of the year, fires may occur. Dried-out Christmas trees may catch fire when exposed to hot Christmas lights or the failure of a strand of lights. Fires are also caused by burning candles when residents leave the residence or forget to blow them out before retiring for the evening. • Some cultural festivals held throughout the year traditionally use fireworks, which is also a safety hazard. *Treatment Options* **Avoid and Mitigate Risk –** This can be achieved by:

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Schools • The HEFD should analyze the need for a part-time dedicated PFLSE to provide proactive public education to all sectors of society. They would need to be certified in NFPA 1035. • A dedicated PFLSE should promote fire safety by developing and rehearsing a Home Escape Plan as a contest. A contest could include the children recording their family, practicing their escape plan and arriving at the meeting place. Teach children how to crawl on the floor through smoke and the dangers of playing with ignition sources. Festive Season • Provide public education messaging on the dangers of unattended cooking, uncleaned or unmaintained chimneys, aged electrical and mechanical equipment, and lack of good housekeeping practices. • Promote artificial candles during the holiday season to reduce the risk of fires. • Educate the public on the dangers of using real candles on Christmas trees, sprays, or wreaths. • HEFD should promote the 12 Days of Christmas fire safety messaging through social media and the municipality's website.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
	Huron East Fire Department *School Inspections*	**Risks –** HEFD is required to conduct fire inspections within the municipality's schools. This occupancy is a high hazard, as referenced in NFPA 1730. Fire inspections of this occupancy are crucial for the children's fire safety and enforcement of the OFC. *Treatment Options* **Avoid Risk** – This may be achieved by: • Complete fire inspections and drills per OFM Directives, NFPA, or FUS' recommended frequency.
	Residents *Lines of Communications*	**Risks –** Municipalities are now utilizing Emergency Notification Systems as a secondary means of notifying residents of active/pending events such as tornadoes, road closures, flooding, etc. This means of notification is valuable as not everyone carries a cell phone and may not be aware of an upcoming weather event. The Municipality currently has no access to any emergency public notification system. Through a proprietary public notification system, the municipality could post maintenance notices regarding the infrastructure, which could expand to communicate water levels during spring thaws or severe weather events. In 2016, the County of Huron discontinued its emergency notification system as it appeared redundant with all the other social media platforms available for citizens' use. HEFD, in cooperation with the Municipality of Huron East, as part of its Emergency Management program, should encourage residents to monitor the following social media outlets to remain informed during significant events:

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• **"X" formerly Twitter**: https://x.com/HuronEast. • **Facebook**: https://www.facebook.com/HuronEast/ • **Website:** https://www.huroneast.com/en/index.aspx *Treatment Options* **Mitigate Risk** – This may be achieved by: • If the Township has a page in the local paper for community updates and general information, post this information on that page. • Collaboratively work with Conservation Authorities when posting weather-related advisories on the Municipality's website.
	Municipality of Huron East *Domestic Terrorism*	**Risks -** The threat of domestic terrorism exists in Canada, with numerous incidents producing havoc and terror among the populace. Attacks have occurred in several Canadian cities with devastating consequences. Active shooter incidents may occur in factories, schools, supermarkets, and seasonal facilities. Acts of war around the world have heightened the risk of domestic terrorism to a high rating. NFPA 3000 – Standard for an Active Shooter/Hostile Event Response (ASHER) Program, defines ASHER as "an incident where one or more individuals are or have been actively engaged in harming, killing, or attempting to kill people in a populated area by means such as firearms, explosives, toxic substances, vehicles, edged weapons, fire, or a combination thereof."

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		It further describes the ASHER Program as "a community-based approach to preparedness, mitigation, response, and recovery from an ASHER incident, including public or private partnerships, emergency management, the medical community, emergency responders, and the public." Too often, communities wait until an event has occurred with catastrophic consequences and loss of life before identifying the need for public education and preparedness to handle such incidents. Terrorism attacks quite often focus on those of religious faith. The Municipality must have procedures for each facility regarding staff's responsibilities during a domestic terrorism event (e.g., an active shooter or violent client at the customer service counter in the Municipal Office). Each location needs to have a designated safe room with bullet-resistant walls. *Treatment Options* Avoid and Transfer Risk – This may be achieved by: • Emergency responders and community groups should work together to develop and deliver education programs to the responders and public on avoiding or mitigating a situation to preserve life and prevent further harm. • Focus groups should include camps and campgrounds, places of worship, financial institutions, and schools. • HEFD should have SOGs and policies for responding to locations experiencing a terrorist/active shooter attack.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		○ Reference NFPA 3000 and Section 21 Guidance Note 6-37 Active Attacker Events for information during the development of SOGs and Policies. • Reference materials should also include *NFPA 1600 – Standard on Continuity, Emergency, and Crisis Management* and the *Emergency Management Standard* developed by the Emergency Management Accreditation Program in the United States.[32] • The Municipality needs to develop a strategy for responding to a domestic terrorism event occurring in any of the Municipality's assets. Include the identification of "safe rooms." • Include an active shooter response guide within the Municipality's ERP and practise those procedures to ensure every member understands the vital role they are to play during active shooter events.

[32] "Welcome to EMAP." EMAP. Accessed May 24, 2024. https://emap.org/

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
Hazard Profile (Refer to Appendix – F for additional information)	Weather Event/Reception Centres *Tornadoes, Ice and Snowstorms, Extreme Heat and Cold Events, and Intense Rainstorms.*	Risks - During a weather event or forest fire, residents, visitors, and the transient public may need a location to take refuge. The Municipality of Huron East has two locations designated as reception centres. Both have an automatic emergency standby generator capable of energizing the entire building. If the need arises, portable generators would be in service. The problem with using portable generators is their limited power supply and the need for extension cords, which are trip hazards and, consequently, a liability. Fortunately, the reception centres have food preparation and washroom facilities, including showers. There is a lack of space at both sites for use as a dormitory. The two locations comply with the *Accessibility for Ontarians with Disabilities Act (AODA)*. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: • The Municipality arranges for the Canadian Red Cross to evaluate each reception centre to assess its suitability as a reception centre, considering the number of residents it may need to accommodate. ○ During the evaluation process, they will examine whether the site is suitable for long-term operations, whether there is an emergency power supply, and what amenities are available.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Contact a neighbouring municipality to see if they have a reception centre, suitable to use as a dormitory, that the Municipality of Huron East could assign as its tertiary location during long-duration events.
Public Safety Response Profile (Refer to Appendix - G for additional information.)	Huron East Fire Department *Marine Emergencies*	**Risks –** The municipality primarily has wetlands, rivers, streams, and a few larger bodies of water. Several farms, golf courses, and industries have private ponds. The Municipality does not operate boat launching or slips. Water levels are high and fast-flowing during heavy downpours and the spring thaw. Individuals risk getting too close and slipping in the fast-flowing water, requiring rescue. HEFD does not operate water vessels to mitigate water rescues, nor does it seem necessary. Surface water rescues are performed at the Awareness Level, limiting the firefighters to shore-based rescues. The department conducts no swift or flood water mitigation. *Treatment Options* **Avoid and Mitigate Risk –** This may be achieved by: • Conduct a needs analysis to determine whether there is a need to conduct offshore rescues at the Operations Level.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
	Huron East Fire Department *Technical Rescue Mitigation*	**Risks -** HEFD does not perform technical rescues such as off-shore ice-water, trench, low/high angle rope rescue, confined space rescue, or swift water rescue. They also do not mitigate HAZMAT incidents. Firefighters train to NFPA 1072 per the NFPA 1001 certification process but respond at the Awareness Level for HAZMAT responses, restricting their active participation in this discipline. Water rescues are shore-based, and the department lacks training in elevator rescues. The HEFD should review the costs associated with establishing a team versus the risk in the community and assess if there is an opportunity to share these costs with fire departments in the area through an automatic/mutual aid agreement. *Treatment Options* **Avoid and Mitigate Risk –** This may be achieved by: • The HEFD should initiate training on the following Technical Rescue disciplines to a minimum of the Awareness Level: confined space, trench rescue, low/high angle rope, and elevator. • Completing this training will bring the department in compliance with the Ontario Fire Service Health and Safety Advisory Committee's Guidance Notes, as required under Section 21 of the *Occupational Health and Safety Act*. The department should also review NFPA 1670, Standard on Operations and Training for Technical Search and Rescue Incidents.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Procedures should be in place for the activation of outside resources to attend to these types of incidents in the form of a response agreement with another fire service or a contractual agreement with a third party. This strategy may include calling the Provincial EOC and requesting assistance from the closest agency that performs such rescues/mitigations; a third-party response may result in a lengthy response time. • Amend the Municipality's Fees By-Law to permit the full cost recovery for expenses incurred by these types of incidents.
	Huron East Fire Department *Firefighter Recruitment and Retention, Daytime Availability*	**Risks –** The success or failure of fighting structure fires weighs heavily on a couple of factors for volunteer fire services – the number of firefighters available, especially during the daytime, and the quickness of the initial apparatus leaving the station. Presently, HEFD is short approximately eight members between the three stations. Firefighter Recruitment and Retention Approximately 5% (4 to 6 firefighters) leave HEFD annually for numerous reasons. While low compared to other fire departments, it should be a concern when these positions remain unfilled due to the lack of applications or suitable applicants. The Department may see an increase in firefighters resigning from the department due to the new requirements for becoming NFPA certified and the time it takes to complete the training. The demands of HEFD to attend calls and training may make it difficult for members to commit. A lack of attainable and affordable housing may exacerbate firefighter retention challenges. HEFD lacks a structured recruitment and retention program.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Daytime Availability HEFD has challenges with low staffing during the daytime, similar to most other volunteer fire departments across Canada. Having adequate staffing to fight a structure fire during the daytime, Monday to Friday, is challenging and a health and safety concern. Lacking staffing also places the public at risk of injury or death if trapped inside a burning structure. While contacting neighbouring fire departments to assist is a common practice, this does not solve the issue of staffing availability. Mutual Aid is intended to be used only during severe emergencies and not to supplement daily staffing shortages. It is a common practice to request additional stations be sent for extra support when staffing is inadequate. According to NFPA Standards, a residential structure fire that is 2,000 ft² (185.8 m²) requires 17 firefighters. During the day, HEFD has trouble mustering enough firefighters. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: • Establish a committee to develop a recruitment and retention program to be delivered by department members, encouraging females and visible minorities to join the department. ○ Incorporate social media platforms to publicize the recruitment and the need for new members with daytime availability. • The fire chief should investigate opportunities to promote the retention of volunteer firefighters, such as:

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		○ Conduct station barbeques for firefighters and their families and include the council. Hand out any awards during this event. ○ Reimburse the cost of acquiring/ renewing Class D licenses with air brake endorsement to members who obtain the license solely for fire department use. ○ Provide merit pay for those who take on other department responsibilities that they previously did not. ○ Provide annual performance incentives to those who attend more than the minimum training nights and those who attend more than the minimum percentages of yearly responses. ○ Review the advantages of offering medical benefits to long-standing members who may not have benefits from their full-time employment. ○ Consider offering joint contributions to a Registered Retirement Savings Plan. ○ Show appreciation to employers that allow their staff to leave work and respond to fire calls. ○ Recognize families for "loaning" their family members to the HEFD so they may respond and assist their neighbours during a time of need. • Future recruitments should focus on attracting new members with daytime availability. Keep in mind that an individual's availability may change.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
	Huron East Fire Department *Firefighter Certifications to NFPA Standards.*	**Risks -** On April 14, 2022, the Ontario government filed O. Reg. 343/22: Firefighter Certification under the *Fire Protection and Prevention Act, 1997*.[33] The regulation came into effect on July 1, 2022. The regulation sets out the mandatory minimum certification standards, corresponding job performance requirements of firefighters delivering specific fire protection services, and a compliance deadline (a four- or six-year timeline, depending on the fire protection service). Specific firefighters are exempt from these certification standards based on their prior knowledge, training, and skills. At the time of this composition, 50% of the HEFD members were certified to the standards. Becoming certified takes significant time and involves theory-based sessions; others include a performance-based component. The primary firefighter standards are NFPA 1001, Levels I & II, and NFPA 1072, and each officer position has its standard for which members need certification. The Municipality will need to ensure funding is allocated for this to be a reality for the members of HEFD. *Treatment Options* **Avoid and Mitigate Risk –** This may be achieved by: • The HEFD will begin training all its members to NFPA standards 1001 and 1072. • Depending on the rank, officers are to complete certification for that position.

[33] "O. Reg. 343/22: Firefighter Certification. King's Printer for Ontario. Accessed May 13, 2024. https://www.ontario.ca/laws/regulation/r22343

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• The Seaforth Fire Station property has considerable space, and the department needs to analyze the establishment of a training facility to run evolutions in preparation for certification testing. An economical facility would include used sea containers. • The Council of Huron East recognizes O. Reg. 343/22 Firefighter Certification and allocates yearly funding to complete this much needed training.
	Huron East Fire Department *NFPA 1720 - Response Times and Staffing*	**Risks –** The time it takes for firefighters to arrive at a fire with enough firefighters to suppress a fire properly is proportionate to the fire loss. A quick response with adequately staffed apparatus will result in effective fire ground operations. As a volunteer department, NFPA 1720 is the standard to strive for regarding response times. Although NFPA is not a mandated standard, it is a recognized industry best practice. The NFPA suggests that response times should be used as a primary performance measure to provide the fire department with a more precise focus on the ultimate goals of emergency response criteria. Not setting a response time goal makes it challenging to identify areas of improvement or concerns in response times. The Municipality's 2021 population density of 14.3 per km^2 (0.03 / $mile^2$) categorizes the municipality as a rural area according to the NFPA 1720 specifications.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option

NFPA Response Goal Expectations

Demand Zone	Demographics	Minimum FF to Respond	Response Time (Minutes)	Meets Objective (%)
Urban area	>1000 people/mi² >386 people per km²	15	9	90
Suburban area	500-1000 people/mi2 193-386 people per km²	10	10	80
Rural Area	**<500 people/mi² <193 people per km²**	**6**	**14**	**80**
Remote Area	Travel distance > 8 mi (12.87km)	4	Directly dependent upon travel distance	90
Special Risks	Determined by Authority Having Jurisdiction	Determined by Authority Having Jurisdiction	Determined by Authority Having Jurisdiction	90

Based on NFPA 1720, HEFD should strive to have six firefighters on the scene within 14 minutes, 80% of the time.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Treatment Options **Avoid and Mitigate Risk –** This may be achieved by: • HEFD should monitor response times to ensure compliance with NFPA 1720. • The department may need to enhance its staffing levels by hiring firefighters with daytime availability.
	Huron East Fire Department *Apparatus Maintenance and Replacement Schedule*	**Risks –** HEFD does not follow the FUS recommended replacement schedule for fire apparatus. As the FUS schedule not followed, no plan is in place for apparatus replacement. Some in the fleet are 37 years old. Pumpers/Engines should operate as front-line vehicles for up to 15 years and become a spare unit up to age 20. NFPA 1911 recommends that all front-line apparatus be on a 15 to 20-year life cycle, depending upon the size of the community they serve. HEFD has spare apparatus, but their reliability is a concern due to each's age. Apparatus over 20 years old may harm insurance rates for the residents of the Municipality, increasing premiums. Fire apparatus must be in a state of readiness and reliability; failing this may expose the Municipality to litigation. The maintenance of the apparatus is crucial; a maintenance program that includes annual pump testing needs to be initiated. HEFD has no maintenance division, a third-party handles apparatus repair. No loose equipment should be in any apparatus's driver and passenger compartments. Per NFPA 1901 and ULC S-515, HEFD must ensure all ancillary equipment is secure for safety reasons.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option

Apparatus Age	Major Cities [3]	Medium Sized Cities or Communities Where Risk is Significant [4]	Small Communities and Rural Centres [5]
0 – 15 Years	First Line Duty	First Line Duty	First Line Duty
16 – 20 Years	Reserve	2nd Line Duty	First Line Duty
20 – 25 Years [1]	No Credit in Grading	No credit in grading or reserve [2]	No credit in grading or 2nd Line Duty [2]
26 – 29 Years [1]	No Credit in Grading	No credit in grading or reserve [2]	No credit in grading or reserve [2]
30 Years +	No Credit in Grading	No Credit in Grading	No Credit in Grading

[1] All listed fire apparatus 20 years of age and older are required to be service tested by a recognized testing agency on an annual basis to be eligible for grading recognition (NFPA 1071).

[2] Exceptions to age status may be considered in small to medium-sized communities and rural centres conditionally when the apparatus condition is acceptable, and the apparatus successfully passes required testing.

[3] Major cities are defined as an incorporated or unincorporated community that has:

- a populated area (or multiple areas) with a density of at least 400 people per square kilometre; AND

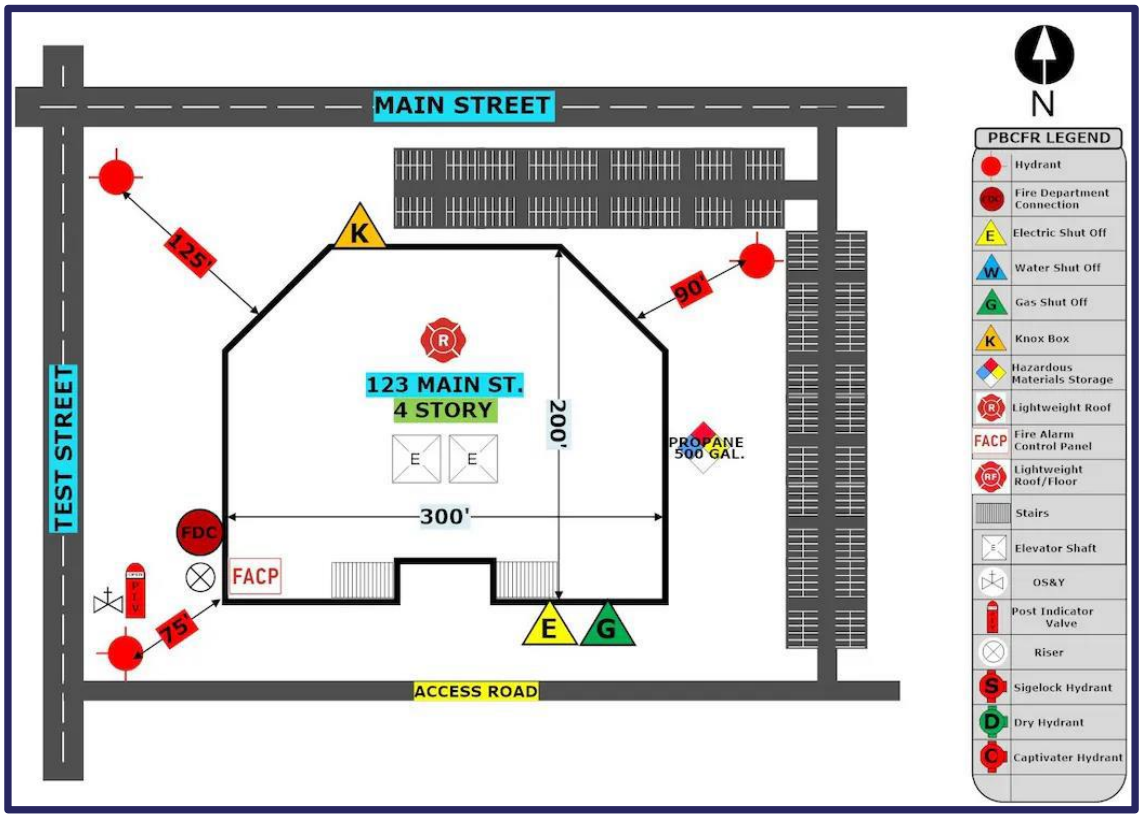
Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		○ a total population of 100,000 or greater. [4] Medium Communities are defined as an incorporated or unincorporated community that has: ○ a populated area (or multiple areas) with a density of at least 200 people per square kilometre, AND ○ a total population of 1,000 or greater. [5] Small Communities are defined as an incorporated or unincorporated community that has: ○ No populated areas with densities that exceed 200 people per square kilometre; AND does not have a population in excess of 1,000. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: • Replace the apparatus based on the FUS frequency chart to ensure reliability and prevent negative impacts on insurance rates. • When an apparatus is 15 years old, implement the budgeting process for replacement so that the new apparatus is built, delivered and in service when the apparatus reaches 20 years of service. • It can take up to one year to develop the specifications, begin the bidding process, complete the evaluation process of the bids, and then issue the purchase order. • It now takes at least 2 ½ to 4 years for an apparatus to have the specifications developed, tendered, ordered, built, and delivered. • Rescues transport firefighters and equipment to the scene. Fire services are beginning to consider Pumper-Rescue-Tanker vehicles for increased versatility. The apparatus needs a water tank capacity of a minimum of 1,000 gallons (4,550 L) to be NFPA 1901 compliant as a tanker.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• If space in the fire stations permits, explore the acquisition of Tankers with a tank capacity greater than 2,500 gallons (9,463 L). Many fire services are moving towards higher capacity Tankers of 2,500 gallons (11,365 L), with some up to 3,000 gallons (13,356 L). • Some municipalities now lease smaller vehicles in the fleet as a cost-saving measure. At the end of the lease, the municipality can purchase the vehicle. Leasing is becoming typical for chief vehicles, which may be purchased and used as support vehicles to transport firefighters and equipment upon replacement. • Fire departments in the United States lease their fire apparatus and turn them in after ten years for a new one. These come on the market for a fraction of the cost of new vehicles and, if in good condition, would be reliable for another 10 to 15 years. As the HEFD typically responds to few calls, purchasing a used apparatus would be a viable and cost-effective option. • Expand the HEFD apparatus fleet to include a multi-purpose UTV and trailer.
	Huron East Fire Department *Response Procedures*	Risks – There is a lack of response protocols or policies to which all stations must adhere when responding to an incident. The procedures include going to the station to obtain their bunker gear and responding in a departmental apparatus rather than responding directly to the call in their vehicle. Procedures should also identify that no bunker gear is to be transported in personal vehicles to reduce the possible exposure to cancer-causing agents of combustion that may be adhered to the gear. Standard Operating Guidelines for responding to emergencies are relatively quick to develop and greatly enhance firefighter safety and on-scene performance.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option

		Treatment Options
		
		Avoid and Mitigate Risk – This may be achieved by:
		• Develop a departmental policy that requires firefighters to attend the fire station to pick up their bunker gear and ride on the apparatus to the call.
		  ○ There may need to be an exception in the event no fire apparatus is available for the firefighter to respond with.
		  ○ Develop a policy on transporting bunker gear in a personal vehicle that defines when and how this is permitted.

	Huron East Fire Department *Pre-Incident Plans*	**Risks -** HEFD lacks a pre-incident plan program and, therefore, has no pre-incident plans available for the Incident Commander to refer to during an emergency. Staff resources, including tablets, should be allocated to ensure the plan's completion is consistent and current. Several companies offer pre-incident plan programs to assist fire departments in their development. At a minimum, HEFD should develop pre-incident plans for all high-occupancy and high-hazard buildings. The following is an example of a plan:

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Treatment Options **Avoid Risk –** This may be achieved by: • Initiate a pre-incident plan program that complies with Ontario Fire Service Health and Safety Guidance Note 6-45 Pre-Incident Planning and NFPA 1620 – Standard for Pre-Incident Planning, maintain it in the Records Management System, and make it accessible remotely. • Tablets are needed for all front-line pumpers. • Completed plans should be available on tablets in the apparatus. • Ensure the tablets in the apparatus have consistent IT support and signal from a wireless service provider.
	Huron East Fire Department *Fire Stations – Exhaust extraction Cancer Prevention*	**Risks** - The contaminants of vehicle exhaust are a known cause of cancer. The Section 21 Guidance Note #3-1 Reducing Exposure to Diesel Exhaust should be referenced. The National Building Code identifies that at-source exhaust capture systems are a requirement in specific applications, including fire stations. The fire stations have been using exhaust fans, which are less effective in clearing exhaust fumes. Firefighters have a higher risk and higher incidences of cancer than other professions. The HEFD lacks a Cancer Prevention Program, as legislated.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Treatment Options Avoid and Mitigate Risk – • HEFD must develop and implement a cancer prevention program that includes education on the risks, initial cancer screening and completion of the firefighters' cancer prevention checklist. [34] • HEFD needs an at-source exhaust extraction system in the fire stations. • SOGs and policies that provide direction on reducing firefighters' exposure to diesel exhaust contaminants should be in place.
	Wind Farms *Response Protocols*	Risks – A wind farm operates in the Municipality of Huron East in the Seaforth area with approximately 15 wind turbines. Wind turbines have a history of catching fire, or the brake system fails and causes the blades to rotate uncontrollably. A large collapse zone must be established during a brake failure, as the blades risk catastrophic failure, including shattering. If this situation arises, and anyone is nearby during a failure or fire, they risk serious, if not fatal, injuries. Rescues or fires in structures of this height and complexity are challenging for fire services.

[34] "Firefighter's Cancer Prevention Checklist." King's Printer for Ontario. Accessed May 18, 2024. https://www.ontario.ca/page/firefighters-cancer-prevention-checklist

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		If a fire were to occur, most fire services would not risk the lives of firefighters to scale the structure in the event of a catastrophic failure. Often, the decision is to let it extinguish itself or experience a structural loss as the risk outweighs the means. The fire department(s) providing response coverage to the farm area must understand the operations and risks around wind turbines. Due to the high level of risks and seriousness when incidents occur, very little mitigation occurs during emergencies. The company that owns the turbine often has a response team to attend fires and high-angle rope rescues. Fire department officers cannot risk members' lives during wind turbine emergencies. HEFD does not train or participate in high-angle rope rescues. *Treatment Options* Accept and Mitigate Risk – • Train all fire department members to Awareness Level for low slope and high angle rope rescue techniques. • Contact the wind farm operator to assist HEFD with training on wind turbines. • Develop policies and SOGs/SOPs regarding responses to wind farms and review and update them annually. • The fire department should have a pre-incident plan and mitigation strategy for every wind turbine emergency, including a list of fire services that can perform a high-angle rescue.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• The Municipality must ensure that the Fees By-law has provisions for full-cost recovery when outside resources are required to mitigate an incident.
	The Municipality of Huron East and the HEFD *Designated fire routes, Private Laneways/ Roadways*	**Risks -** Vehicles parked along streets/ private roads obstructing travel of fire apparatus along private property is a concern for the department. The lack of a clear roadway for fire apparatus to travel on will increase response times and cause further fire damage, putting lives at risk. The Municipality regulates fire routes through its Parking By-law No. 5 for 2012. *Treatment Options* **Avoid and Mitigate Risk –** This may be achieved by: • Change the policies on road building into by-laws to regulate the construction of private roads. • HEFD should work with commercial facilities and industries to ensure that security gates, if present, are not impeding access to a complex. • Update By-Law No. 5 for 2012 to include OFC Articles 2.5.1.2. (1), 2.5.1.3. and 2.5.1.3.[35] ○ 2.5.1.2. (1) Fire access routes and access panels or windows provided to facilitate access for firefighting operations shall not be obstructed by vehicles, gates, fences, building materials, vegetation, signs, or any other obstruction.

[35] "Ontario Regulation 213/07 Fire Code." Fire Protection and Prevention Act, 1997. Accessed May 15, 2024. https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fdu0tsrdospf80.cloudfront.net%2Fdocs%2F070213_e.doc&wdOrigin=BROWSELINK

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		○ 2.5.1.3. Fire access routes shall be maintained to be immediately ready for use at all times by fire department vehicles. ○ 2.5.1.4. Approved signs shall be displayed to indicate fire access routes.
	Municipality of Huron East *Emergency Management Program and Plan* *Mutual Assistance Agreement*	**Risks -** Under the *Emergency Management and Civil Protection Act* R.S.O. 1990 *(EMCPA)*, municipalities must have an ERP. The plan is to be updated annually, along with completing training exercises. Council passed the latest Emergency Management Program, the Municipal ERP, in By-Law 100-2017. The ERP was last updated and edited in 2022. Even though it is not a provincial mandate, the Municipality of Huron East has implemented the Incident Management System (IMS) as referenced in the ERP. Even though the level of training prescribed to Members of the ECG is not in either the by-law or the ERP, a good practice would be for them to complete IMS 200 as a minimum. All ECG members should also complete the Basic Emergency Management course. The Municipality completes the required annual training, which may include tabletop and paper exercises. The Municipality has also completed a real-time exercise. During real-time activities, deficiencies are identified, and they, in turn, are rectified before they must be engaged in a real emergency. Many Ontario municipalities have never undertaken real-time training.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		Emergency Operations Centres The locations of the EOCs include: • Primary – Municipality of Huron East, Municipal Office, in the Council Chambers. • Secondary – HEFD, Brussels Fire Station • Tertiary – None Fortunately, both EOCs have an emergency backup power supply via a generator that energizes the entire structure. EOCs require reliable IT, Wi-Fi capabilities, meeting rooms, rest areas, and kitchen facilities for sustained operations. The dedicated EOC room needs to be large enough that many people can operate within it. EOCs should be located in facilities that are separate from fire stations, as fire stations are not ideal for EOC operations. During an emergency, fire stations are typically busy with firefighters and apparatus, and additional traffic in the area could impede their response efforts. EOCs – IT Connections A significant weather event may result in losing landline, cell phone, text messaging, and internet communications. Losing these essential services could incapacitate an EOC quickly, lessening the centre's functionality. In such cases, the EOC may need to rely on messengers to distribute information to those in the field. Most municipalities lack

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		redundancies when IT connections are lost. Technology can bridge this communication loss and resume operations within 30 minutes. Mutual Assistance Agreement During an emergency, it does not take long to tax a municipality's resources, making them unable to handle the demand for service. Additional staff and equipment will be required to properly operate reception centres around the clock or provide other heavy equipment and operators at the incident. The member Municipalities of the County of Huron have assistance agreements for emergencies. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: • As ECG members change, new members must complete the Basic Emergency Management Course. They should also complete the IMS 100 and 200 courses available, which are available online for free through Emergency Management Ontario. • The alternate Community Emergency Management Coordinator (CEMC) should complete IMS 300 as a minimum. • The senior management team, who are not ECG members, should complete the 100 and 200 emergency management courses.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		EOCs • For confidentiality reasons, remove the identity of the EOCs from the publicly accessible section of the ERP; place the location, instead, in the appendix. During an emergency, the location of the ECG should remain confidential to prevent public disruption and ensure uninterrupted operations. • The Municipality should set up each EOC every year to ensure the infrastructure is operational as required during a real emergency. • Consider an agreement with a neighbouring municipality allowing the Municipality to use its EOC if its primary and secondary locations are unavailable. • Ensure emergency standby generators are ready and can energize the entire building. Failure to have this feature might become a health and safety issue (e.g. if someone were to trip and fall while traversing dark areas). • Ensure security measures are in place to control access to the EOC. Security may require hiring agencies if other means are not in place, such as security swipe cards, fobs, etc. • Upgrade IT services to include redundancies for the event of a primary system failure. • Find another location to become the Secondary EOC. o The fire station will be fully occupied with its own operations during the declaration, so there will be no need to involve an EOC. EOCs – IT Connections • The Municipality should review this issue and the options for non-traditional IT services.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Options include acquisition in cooperation with a neighbouring municipality comprising portable satellite(s) receivers and associated infrastructure. • Obtain a subscription with a third party for internet provision, which relies on low-level satellites. Mutual Assistance Agreement • Update Mutual Agreements as needs and trends change.
	Marinas/Boat Launches	Even though there are several rivers in the township, none of the waterways are large enough to support the need for a marina or the Municipality's installation of a boat launch.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
	Northern 9-1-1 *It is the primary receiver of 9-1-1 calls for the County of Huron. Known as the Central Emergency Reporting Bureau / NG 9-1-1 Public Safety, Answering Point (PSAP)* Ontario Provincial Police *The secondary receiver is the OPP in London.*	**Risks -** Prepare for the Next-Generation 9-1-1 (NG-9-1-1) and its effects on the Municipality of Huron East emergency services. There has yet to be a confirmed cost provided by the federal government, which is bringing this new system into effect. Municipalities operating communications centres are budgeting millions of dollars for upgrades. The County of Huron is responsible for 9-1-1 services, and in turn, the lower-tier municipalities pay for this service through their assessments from the County. The new system will communicate with the caller via text messaging. Videos can also be sent to the communications centre and forwarded to responders. Once installed and operational, there will be an annual operating cost. There have yet to be any communications regarding the anticipated yearly operating expenditures. *Treatment Options* **Avoid Risk –** This may be achieved by: • Even though the County of Huron is responsible for 9-1-1 in the County, member municipalities of the 9-1-1 program should be budgeting for when this system comes into effect, which will begin in 2025. • The County of Huron should remove references to the Wingham Police Service from its 9-1-1 webpage, as the service disbanded in 2019.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
Community Services Profile *(Refer to Appendix – H for additional information)*	Huron East Fire Department	No risks were identified.
Economic Profile *(Refer to Appendix - I for additional information)*	Municipality of Huron East *Economic Downturn and its Financial Impacts*	**Risks –** The economic downturn has impacted the lives of just about everyone in Canada in one way or another. Families are experiencing financial challenges and become exasperated by increased interest rates on homes. This hardship eventually flows down the line to the municipality and paying property taxes. Failure of residents to pay their tax bills may negatively impact the operation of the fire department due to budgetary cuts. In extreme cases, programs may need to be scaled back or the purchase of new equipment deferred to another year. The closure of the hospital or railway line would negatively impact the Municipality. *Treatment Options* **Mitigate Risk –** This may be achieved by:

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Review other like-sized municipalities in Ontario and compare how much of the Municipality's budget is for the fire department's operations.
Past Loss and Event History Profile *(Refer to Appendix – J for additional information)*	Fire Cause Determination *NFPA 921 and 1033*	**Risks –** The FPO conducts fire investigations when called upon. They are trained and certified in NFPA 1033, *Standard for Professional Qualifications for Fire Investigators*, on fire cause and origin determination. With arson and undetermined fires, the department should ensure additional suppression officers complete an amended version of NFPA 1033. The officers must know what to look for when determining the origin and cause. During firefighting, changing conditions may be an identifier that accelerants are present. Fire investigations are very time-consuming to complete, and in some cases, this time is in limited supply, ultimately resulting in the fire's origin and cause being undetermined. To establish an apparent fire cause and origin, HEFD must ensure that documentation and a reasonable effort are in place. *Treatment Options* **Avoid and Mitigate Risk –** This can be achieved by: • All chief officers must complete and become certified to NFPAs 1033, *Standard for Professional Qualifications for Fire Investigator*. Failure to do so may bring their qualifications if questioned during legal proceedings. • Complete the training on NFPA 921, *Guide for Fire and Explosion Investigations.* A portion of this standard is with NFPA 1033.

Mandatory Profiles	Top Risk or Issues & Concerns – Assessed Level of Risk	Preferred Treatment Option
		• Having additional trained members on-scene may assist in observing items or events that are overlooked and may prompt further investigation by more experienced personnel. • If additional members of HEFD complete NFPA 1033, they must also ensure they achieve their Pro Board/ International Fire Service Accreditation Congress standards certification, like the chief officers. • Following the agency's directives, notify outside agencies such as the OFM, TSSA, Electrical Safety Authority, and OPP. • During investigations, the investigator should note if ongoing fire-cause trends are developing and act accordingly. • Communicate with other local fire chiefs to identify if they have had a similar cause and origin of fires they experienced.

Appendices

A Profile Worksheet #1 – Geographic Profile

B Profile Worksheet #2 - Building Stock Profile

C Profile Worksheet #3 - Critical Infrastructure Profile

D Profile Worksheet #4(a) – Demographic Profile

E Profile Worksheet #4(b) – Demographic Profile

F Profile Worksheet #5 – Hazard Profile

Profile Worksheets

G Profile Worksheet #6 – Public Safety Response Profile

H Profile Worksheet #7 – Community Services Profile

I Profile Worksheet #8 – Economic Profile

J Profile Worksheet #9(a) – Past Loss and Event History Profile

K Profile Worksheet #9(b) – Past Loss and Event History Profile

L Profile Worksheet #9(c) – Past History Profile Property Conservation

EMG Emergency Management Group

APPENDIX A - PROFILE WORKSHEET #1-GEOGRAPHIC

Appendices Profile Worksheets: Each profile worksheet identifies the recommended level of treatment and suggested means of mitigating the risks.

The Municipality's geographic profile describes the community's physical features. Such features may present current or potential risks that may impact the fire service in an emergency.

The region is known for its agricultural industry with rolling hills and prime soil conditions that reap high yields and excellent harvests. Several creeks and rivers support drainage flow into Lake Huron via the Ausable and Bayfield Rivers. Prime conservation areas with trails to explore include the Clinton Conservation Area and the Rock Glen Conservation Area.

FIGURE #4 - MUNICIPALITIES WITHIN THE COUNTY OF HURON

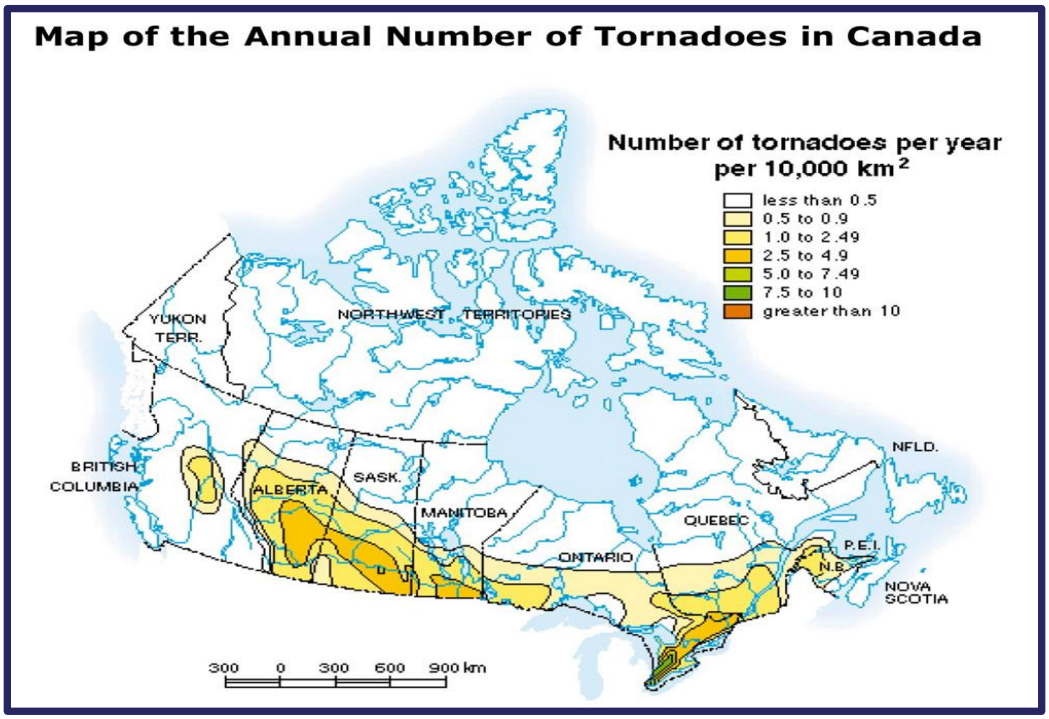
FIGURE #5 - LOCATION OF THE COUNTY OF HURON WITHIN ONTARIO

The area experiences severe thunderstorms that could develop into a tornado. In 2011, a devastating tornado ripped through Goderich and continued through the County, causing $130 million in damage, one fatality and 37 injuries.[36] More recently, a tornado ripped through South Huron in 2021.

Goderich Tornado

[36] "12 years ago, a deadly F3 tornado tore through Goderich, Ont." The Weather Network, Accessed May 27, 2024. https://www.theweathernetwork.com/en/news/weather/severe/this-day-in-weather-history-august-21-2011-the-goderich-tornado

FIGURE #6 - MAP OF PROMINENT TORNADO RISK AREAS IN CANADA



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

Within this document, some charts have identified risks that have been colour-coded and, in some appendices, listed from high to low risk:

Low	Moderate	High

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
Rivers, Lakes, Streams, Wetlands, and Watersheds	Will impact: *Training* – Aids in the mitigation of ice and water rescues, members must be trained per NFPA 1006, *Standard for Technical Rescue Personnel Professional Qualifications* to the minimal Awareness Level, which permits shore-based rescues. *Equipment* - HEFD will need to ensure its equipment is tested per manufacturer specifications and aligning regulations to ensure it is in a state of readiness. *Response and Travel Timelines* – Measure response time according to NFPA 1720. It may create an impact if the caller cannot provide accurate directions to the location of the incident. When flooding occurs, it may impact the following: *Property* - Assets are affected as water enters an occupancy. Occupancies may require extensive repairs that displace the occupants for long durations. A property becomes damaged and needs replacement. *Infrastructure* - Roads, culverts, and bridges may be damaged or destroyed. This damage includes non-municipally owned infrastructure such as power and telecommunications equipment. *Travel Routes* - may need to be closed for long periods for the water to recede, any damage evaluated, and repairs undertaken. *Response Times* - may be longer due to road closures or damaged access routes that may be impassable. Callers may be unable to provide accurate directions to the incident. • The municipality does not have a proprietary Emergency Flood Response Plan and refers to the Ausable Bayfield Conservation Authority and Maitland Valley Conservation Authority Flood Plan when required.

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
	○ The Municipality may need to implement the flood plan during flooding. ○ Most flooding events are weather-related. The frequency of these fierce storms has increased due to climate change. ○ Flooding is caused by: ▪ Extreme rainfall/ runoff from intense rainstorms and ice jams caused by rapid snow melting. ▪ Extreme weather overloads the storm and sanitary sewer system, creating water back-up. • In spring, fast-flowing water may result in water rescue calls. • HEFD does not have the capacity, ability, or training to perform swift or floodwater rescues. • HEFD has no marine vessels, nor does the department need to acquire one. • The risk of drowning occurs due to a lack of water safety knowledge and conditions. • In the winter, snowmobiles or persons walking on the ice may fall through. *Response/ Mitigation Options and Capabilities of HEFD* Current Capabilities • HEFD has the training and equipment to perform ice and water rescues at the Awareness Level and provides shore-based rescues 15 to 23 M (50 to 75') from shore. • Response levels are either Awareness, Operations, or Technician. For this CRA, the following best describes the levels, based on NFPA 1006, *Technical Rescue Personnel Professional Qualifications*. The levels of response, as quoted from NFPA 1006, are: ○ 1.5 Operational Levels. The AHJ shall establish written standard operating procedures (SOPs) consistent with one of the following operational levels for each of the disciplines defined in this document:

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
	(1) *Awareness level.* This level represents the minimum capability of individuals who respond to technical search and rescue incidents. (2) *Operations level.* This level represents the capability of individuals to respond to technical search and rescue incidents and to identify hazards, use equipment, and apply limited techniques specified in this standard to support and participate in technical search and rescue incidents. (3) *Technician level.* This level represents the capability of individuals to respond to technical search and rescue incidents and to identify hazards, use equipment, and apply advanced techniques specified in this standard necessary to coordinate, perform, and supervise technical search and rescue incidents. Mitigation Strategy • In cooperation with the Ausable Bayfield and the Maitland Valley River Conservation Authorities, the Municipality posts signage along the primary watercourses warning of swift water and slippery conditions when standing along the shore. • HEFD should review and update current response protocols and SOGs and develop new ones as required. o The Municipality should enter into a response agreement with a neighbouring fire department that provides water rescue to the Operations Level, which includes swift and flood water rescues. o Ensure that response agreements include responders meeting industry standards, such as Section 21 Guidance Notes and NFPA 1006.

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
Railways	**The Goderich Exeter Railway rail line runs through the Municipality of Huron East carrying primarily freight.** • In some cases, a train may derail. Still, due to the lower speeds this rail line has established, the risk is lower than seen on busier rail lines such as the Canadian National Railway and Canadian Pacific Railway. • The line runs from Exeter to Stratford, where it may interchange with Canadian National Railway infrastructure. *Response/ Mitigation Options and Capabilities of HEFD* Current Capacities • The ERP and the EOC may need activation during a rail incident if dangerous goods are on the rail line, which is infrequent. Mitigation Strategy • HEFD should have SOGs, policies, and training to mitigate rail traffic incidents. • The Municipality should obtain copies of the Emergency Plan for Goderich Exeter Railway. Include it as a point of reference in the ERP appendix. • HEFD should organize a real-time emergency training exercise that includes a rail accident involving mass casualties and all the ECG members. • Collaboratively work with the railways to install signage at crossings, warning of the risks of persons walking along train tracks or crossing trestles. • The HEFD must consider the railway impacts on the fire station location and response times.

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
	• Promote installing the AskRail™ app on the tablets in the fire apparatus and cell phones. [37]The app provides immediate access to data regarding the cargo in railcars so they may make informed decisions during an emergency. • HEFD should take advantage of any collaborative training opportunities with the rail line. Training should include the identification of dangers when working on or around rolling stock due to the risk of injury, including electrocution. • It requires signage at the ends of any trestles warning people about the dangers of travelling along the trestle. ○ The Municipality should work with the railway to install signage. • HEFD should acquire a multi-purpose UTV to transport injured parties out of the area. • Obtain a UTV configured so that it is used for wildland fires and secure a rescue basket.

Provincial Highways, County, Municipal and Private Roads	• The Municipality historically sees the highest volumes of traffic during the summer.
	• Many road vehicles are electric, which presents hazards not seen with traditional vehicles.
	  ○ Risks include electrocution during firefighting and extrication procedures if power is not de-energized properly.
	  ○ Require copious amounts of water to cool batteries and extinguish fires.
	• Road closures or construction detours adversely affect response times.
	• Special events that require street closures impact responses.
	• Traffic may become congested due to an MVC, which can impede the responding apparatus.
	• There is a volume of large trucks transporting goods into and out of the area, with an unknown number of loads that may contain dangerous goods.

[37] "AskRail™". Railway Association of Canada. Accessed May 27, 2024. https://www.railcan.ca/safety/askrail/

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
	• During snowstorms in the winter, visibility could be zero, and the roads impassable. • With the heavy flow of water during flooding, there is the risk of some roads experiencing damage that may result in closure. • None of HEFD's apparatus have pre-emptive traffic control devices, nor is there a need for them. *Response/ Mitigation Options and Capabilities of HEFD* Current Capacities • Forward data identifying locations that experience a higher number of MVCs to the Public Works Department for further review. Mitigation Strategy • Ensure SOGs, policies, and training are in place for responding to electric vehicle emergencies. • HEFD must be informed of road closures so that responding personnel are aware.
Aggregate Pits and Quarries	• There are over 30 quarries/pits in the Municipality of Huron East. • Some are more active than others based on licensing limits. • Working in pits and quarries poses many risks, such as slides, cave-ins, being struck by powered mobile equipment and falling materials, vehicle rollovers, exposure to excessive noise, working near conveyors and moving parts, and exposure to dust. • Quarries will often have explosives onsite. • Pits and quarries impact the natural movement of surface and groundwater.[38]

[38] "The Environmental Impacts of Aggregate Extraction" Toronto Environmental Alliance. Accessed May 12, 2024. https://www.torontoenvironment.org/gravel/impacts

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
	Response/ Mitigation Options and Capabilities of HEFD Current Capacities • HEFD has no response agreement with another fire service to provide technical rescue mitigation. Mitigation Strategy • HEFD should complete site visits to become familiar with the layout of more extensive operations. • Complete a pre-incident plan for sites that have explosives. • Ensure members of HEFD train to the Awareness Level for Confined Space Rescue. • HEFD to complete heavy equipment extrication training, including disentanglement from conveyor belts. • Ensure HEFD has the equipment required for heavy extrication and disentanglement.

Oil and Gas Wells	The level of risk involving an oil or gas well in the Municipality is low as those in place are inactive/ abandoned.
	
	• Approximately 20 oil and gas wells are in the Municipality.
	• Several hazards exist with oil and gas wells, including:[39]
	  ○ Product leakage could occur, which can be identified by soil staining or dead vegetation.
	  ○ Hydrogen sulphide may escape from a leaking well.
	  ○ High-pressure oil and highly flammable gas may be present from a leaking well.
	
	Response/ Mitigation Options and Capabilities of HEFD
	
	Current Capacities
	
	• HEFD does not have the resources and training to mitigate an emergency at an oil/gas well.

[39] "Oil and gas." King's Printer for Ontario. Accessed May 12, 2024. https://www.ontario.ca/page/oil-and-gas

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services

	Mitigation Strategy
	• HEFD must ensure that SOGs, policies, and training are in place to respond to oil/gas well emergencies.
	• HEFD to complete pre-incident plans for each active in the event one becomes active.
	• When active wells are in operation, develop a mitigation strategy for well fires with the operator.
	• Ensure maps of all well locations are available, whether active or not.
	  ○ To locate oil/gas wells in the Municipality, refer to the maps provided by the Province of Ontario at https://geohub.lio.gov.on.ca/datasets/lio::petroleum-well/explore?location=43.608731%2C-81.292160%2C10.33.
	  ○ Establish a database of any future active wells and emergency contact information.
	• Conduct joint training on site familiarity and drilling operations with companies that may be drilling or well reclamation in the municipality.
	• Ensure there is a section in the ERP that addresses oil/gas well emergencies and complete training on these types of emergencies.
	  ○ The Municipality could reference the *Oil, Gas and Salt Resources Act, R.S.O. 1990*, for additional material.
	• Monitor the ongoing investigation of the Wheatley explosion related to an abandoned gas well.

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
Aircraft, Airports, & Private Runways	There are small private airfields in the Municipality of Huron East. • The risks associated with both small and large aircraft incidents are ever-present. • The air ambulance and OPP may land at an incident to transport a patient in serious condition or for police investigations. *Response/ Mitigation Options and Capabilities of HEFD* Current Capacities • HEFD has a good supply of Class A/B multi-purpose foam concentrate. Mitigation Strategy • Ensure all foam concentrate is free of polyfluoroalkyl substances, which are chemicals that cause cancer. • Ensure all policies, SOPs, and training are in place for aircraft emergencies. • SOGs need to align with Section 21, Guidance Notes 6-21, *Aircraft Firefighting Hazards* and 6-41 *Safety Around Helicopters*. • HEFD should train firefighters in aircraft components and rescue techniques per NFPA 402, *Guide for Aircraft Rescue and Firefighting Operations.*

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
Agriculture	• The Municipality is primarily an agricultural community. Many risks exist, including confined space incidents in silos and grain bins and HAZMAT incidents from fertilizers and ammonia. These incidents result in economic loss. • Numerous commercial and mercantile outlets sell agricultural herbicides, pesticides, and fertilizers, all of which present risks to emergency responders. • There may be a lack of access to some agricultural fields. *Response/Mitigation Options and Capabilities of HEFD* Current Capacities • HEFD has no response agreements with a third party (i.e., a fire department) to provide technical rescue and HAZMAT mitigation. • HEFD does not have a Utility Terrain Vehicle (UTV) capable of fighting fires involving wildlands or fields of crops. Mitigation Strategy • HEFD needs to ensure members receive grain bin rescue training. • Ensure all firefighters train to the Awareness Level for technical rescues and HAZMAT response. • Ensure firefighters understand the dangers of some farm fertilizers, such as nitrogen and ammonia. • Members of HEFD should receive farm machinery rescue training. • Promote farm safety with the Huron County Federation of Agriculture, including developing pre-incident plans. • HEFD should collaborate with the Seaforth Agricultural Society to promote fire safety on the farm during the annual fall fair.

APPENDIX B - PROFILE WORKSHEET #2 - BUILDING STOCK

The building stock profile assessment should consider the characteristics of the buildings in the community. This profile can include the facility's use, density, age, construction type, height, and area. This information will assist fire departments in identifying the issues/concerns that will impact the delivery of fire protection services.

HEFD must identify LWC facilities and maintain their inclusion in decision-making during a fire. Structures containing LWC material are known to fail in under seven minutes.[40] This hazard is a severe health and safety consideration, as many firefighters have died in the line of duty due to truss failure. The Building Department must work with the HEFD to ensure knowledge of any new buildings containing these components during construction.

Safety considerations the Incident Commander must be mindful of include the following:

- The structure's construction, whether there is a sprinkler system, and how advanced the fire damage was before initiating firefighting strategies.
- When there is no threat to human life, consider initiating a defensive fire attack in structures with unprotected LWC.
- Continually evaluate the structural integrity of unprotected LWC.
- When uncertain if LWC materials are present, assume it is.

When developing procedures, consider the following:

- Any unique hazards present in structures with unprotected LWC while focusing on firefighter safety.
- Thermal imaging cameras (TIC) or other thermal technology used to identify the location of the fire.
    - Remember that while a camera may identify the fire's location, they do not assess the safety of the structure's floor.
    - Provide firefighters training on the use of a TIC.
- Stress the need for crews to use extreme caution when operating on or under unprotected lightweight truss roofs or floors.

[40] Jason Poremba. "Lightweight construction: Hazards you should know." FireRescue1. Accessed December 9, 2023. https://www.firerescue1.com/firefighter-safety/articles/lightweight-construction-hazards-you-should-know-DkQG9AMNOgsaXyru/

- The Incident Commander must evacuate firefighting crews once they know that flame impingement occurs on unprotected roof trusses.
- Ensure emergency warning procedures and training are in place to evacuate a building in danger of collapse, and regularly practise them.

While developing this database, prioritize which occupancy classification(s) the Department will focus on based on the history of fires in those occupancies and the Department resources available.

By using data obtained from the Municipal Property Assessment Corporation (MPAC), the Municipality of Huron East and the HEFD identify properties as single-family residential, multi-unit residential, assembly, detention/care/treatment, mercantile, commercial, industrial, and those not applicable to the OBC, such as farm buildings. It is generally wise to assume that all detached single-family residential occupancies have some form of lightweight construction materials included during construction. Older homes also have risks, especially those with balloon construction practises where fire may travel unimpeded up walls to the attic and roof due to the lack of stops inside the walls, such as braces.

Assign probability, consequence, and risk levels to each.

Assigning a level of risk assists fire departments in prioritization, which helps to determine how to address or treat each risk. The Risk Level Matrix in this section can assist fire departments in determining risk levels based on the probability and consequence of each identified risk. Insert a risk level in the Assigned Risk Level column on the relevant worksheets. Threats become categorized as either low, moderate, or high levels of risk.

Low Risk: A risk that is unlikely to occur or have a significant impact on life, property, operations, the environment, and/or economic and social factors. A low risk does not require immediate action or attention but should be monitored periodically.

Moderate Risk: A risk within the acceptable risk range but not considered low risk.

High Risk: A high risk is a risk that has a high probability of occurrence and a high potential impact. High risks are usually given the highest priority in developing a CRR plan.

***Note**: All statistics identified in this worksheet are the best available data.*

Within this document, some charts have identified risks that have been colour-coded and, in some appendices, listed from high to low:

Low	Moderate	High

TABLE #2 - TOTAL NUMBER OF OCCUPANCIES BASED ON MPAC DATA

Property Code: Occupancy Classification	Total Number of Occupancies				
	2024	2025	2026	2027	2028
100 Series: Vacant Land	347				
200 Series: Farm	1,802				
300 Series: Residential	2,690				
400 Series: Commercial	156				
500 Series: Industrial	136				
600 Series: Institutional	9				
700 Series: Special and Exempt	58				
800 Series: Government	6				
Total of All Occupancies	5,204				

TABLE #3 - OVERVIEW OF OBC OCCUPANCY CLASSIFICATIONS

OBC Occupancy Classification[41]	Division	Description of the Occupancy	OBC Definition of Occupancy
Group A - Assembly	1	Assembly occupancies intended for the production and viewing of the performing arts.	The classification is the occupancy or use of a building or part of a building by persons gathering for civic, political, travel, religious, social, educational, recreational, or for a similar purpose or the consumption of food or drink.
	2	Assembly occupancies not elsewhere are in Group A -2.	
	3	Assembly occupancies of the arena type are A-3.	
	4	Assembly occupancies in which occupants gather in the open air are under A-4.	
Group B – Care or Detention	1	Detention occupancies	The occupancy or use of a building or part thereof by persons dependent on others to release security devices to permit exit, receive special care and treatment or receive supervisory care.
	2	Care and treatment occupancies	
	3	Care occupancies	

[41] "O. Reg. 332/12: Building Code." King's Printer for Ontario. Accessed May 28, 2023. https://www.buildingcode.online/11.html

OBC Occupancy Classification[41]	Division	Description of the Occupancy	OBC Definition of Occupancy
Group C - Residential	–	Residential occupancies	Residential occupancy is for persons requiring sleeping accommodation yet not harboured or detained there to receive medical care or treatment or not involuntarily detained there.
Group D – Business and Personal Services	–	Business and personal services occupancies	These occupancies are for business transactions or professional or personal services.
Group E - Mercantile	–	Mercantile occupancies	The primary use of a mercantile occupancy is to display or sell retail goods, wares, and merchandise.
Group F – Industrial	1	High-hazard industrial occupancies.	An industrial occupancy is used for the assembly, fabrication, manufacturing, processing, repairing or storing of goods and materials.
	2	Medium-hazard industrial occupancies.	
	3	Low-hazard industrial occupancies.	

TABLE #4 – TOTAL NUMBER OF OCCUPANCIES BASED ON THE OBC OCCUPANCY CLASSIFICATIONS

Occupancy Classification Based on 2024 Data		Number of Occupancies 2024	Number with LWC From July 1st, 2022
Group A	Assembly		
Group B	Institutional		
Group C	Single-Family		Houses are Not Required*
	Multi-Unit Residential		
	Motel/Hotel		
	Mobile Homes and Trailers		
	Other		
Group D	Business and Personal Services		
Group E	Mercantile		
Group F	Industrial		
Occupancies not classified in the OBC, such as farm buildings. Include farms with businesses, residents, outbuildings and commercial or mercantile operations.			
Total of all Occupancies			
Total of all occupancies with LWC components			

Note: Ontario Regulation 332/12[42] states that occupancies incorporating LWC must be identified, except for houses. Fire Departments should assume all new residential occupancies contain LWC material and respond accordingly.

The data for Table #4 must be obtained from the Building Department and inserted into the table. This data is a mandatory requirement of the OFM, and failure to do so may result in fines.

TABLE #5 - CENSUS CANADA - HOUSEHOLD AND DWELLING CHARACTERISTICS BY YEAR

	2011[43]	2016[44]	2021[45]
Total Occupied Private Dwellings by Structural Type of Dwelling	3,540	3,630	3,705
Single-detached Home	3,020	3,090	3,155
Semi-detached Home	75	80	90
Row House	60	85	95
Apartment or flat in a duplex	20	10	10

[42] "O. Reg. 217/22: BUILDING CODE." King's Printer for Ontario., Accessed December 4, 2023. https://www.ontario.ca/laws/regulation/r22217

[43] Statistics Canada. 2012. Huron East, Ontario (Code 3540040) and Canada (Code 01) (table). Census Profile. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released October 24, 2012. http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E (accessed May 28, 2024).

[44] Statistics Canada. 2017. Huron East, MU [Census subdivision], Ontario and Ontario [Province] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed May 28, 2024).

[45] Statistics Canada. 2023. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 15, 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed May 28, 2024).

	2011[43]	2016[44]	2021[45]
Apartment in a building that has fewer than five storeys	280	300	310
Apartment in a building that has five or more storeys	0	0	5
Other single-detached houses	10	5	0
Moveable dwelling*	70	65	40

***Note:** The "moveable dwelling" category includes mobile homes and other moveable dwellings such as houseboats, recreational vehicles, and railroad cars.*

TABLE #6 - 2021 HOUSING CHARACTERISTICS [46]

Housing Characteristics	Municipality of Huron East	Ontario
Total Number of Private Households	3,885	5,703,122
Average Value Of Dwelling	$455,170	$635,196
Median Value Of Dwellings	$390,405	$475,166
Median Monthly Shelter Costs For Owned Dwellings	$1,216	$1,493
Average Monthly Shelter Costs For Owned Dwellings	$1,296	$1,696
Percentage Owned	79%	70%
Percentage Rented	21%	30%
Median Monthly Shelter Costs For Rented Dwellings	$899	$1,106
Average Monthly Shelter Costs For Rented Dwellings	$890	$1,215
Percent of the Population Spending 30% or More of Household Total Income on Shelter Costs	19%	28%

[46] "2022 Community Profile." Huron East. Accessed December 1, 2023. https://www.huroneast.com/en/business-and-development/resources/EDO/Huron-East-Community-Profile---Final.pdf

Building Stock Profile Risks

List your community building stock/occupancy types and the fire and other emergency issues/concerns for each.

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
Group A	Assembly	• It may have heavy timber construction. • There could be a high fire load. • Large open spaces • It may lack fire stops and sprinklers. • It may lack a monitored fire alarm system. • It may have poor housekeeping practices present. • Depending on the event taking place, there is the risk of overcrowding.	Rare	Minor	Low	Total number of structures that fall in this occupancy classification – Unknown The total number using LWC – Unknown

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
		• Where alcohol is available, patrons may be impaired, which could slow their exit from the building when the fire alarms sound. • Large quantities of combustible furnishings and decorations • Attendees may not be familiar with the building's safety features, such as the fire alarm pull station, emergency exits, and fire hose cabinets (if available). • Loud performances may lead to delayed notification in the event of an alarm or fire. • Some music concerts may want to use pyrotechnics as part of the performance. • The roof trusses may be made of LWC.				

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
Group B	Detention Occupancies	• There are no police detachments or detention centres in the Municipality. When considering future growth, include the potential of an OPP detachment or a regional provincial detention centre. • This occupancy classification includes holding cells in police detachments and extensive detention facilities. • There will be restricted access to areas and many occupants. • Potential for violent interaction and the potential for civil disobedience • It may have a maze of hallways that are difficult to navigate in smoke conditions.	Not Applicable	Not Applicable	Not Applicable	Total number of structures that fall in this occupancy classification – Zero The total number using lightweight construction – Not Applicable

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
Group B	Care & Treatment	There are six vulnerable occupancies in the Municipality of Huron East. • Elderly residents with mobility and cognitive behavioural issues • Some homes are not required to install sprinklers. • High occupancy • Increased building construction for seniors indicates an increase in the aged demographic. • Staff may not be familiar with emergency evacuation procedures. • Many of these facilities experience a high staff turnover, which may mean some new personnel have not received emergency protocol training.	Rare	Minor	Low	Total number of structures that fall in this occupancy classification – Six The total number using lightweight construction - Unknown

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
Group C	Single Family*	The Fire Department / Municipality considers the presence of LWC probable. Most fires in the Municipality of Huron East occur in this occupancy. • A lack of working smoke and carbon monoxide alarms may exist. • May lack a home escape plan and fire extinguishers. • Often a lack of residential sprinklers. • Most of the newer residential structures have LWC material within the roof, floors and, in some instances, the walls.	Almost certain	Major	High	Total number of structures that fall in this occupancy classification – Unknown The total number using LWC – Unknown

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
		• Some older buildings may have balloon construction practices. The risk arises when a fire occurs inside walls due to the lack of braces between the wall studs. During a fire, the flames will proceed upward inside the wall without any means of impeding their spread. • There could be hoarding or poor housekeeping practices. • High fire load in older structures with large support timbers. • Lack of distance between structures – creates exposure risks. • Some may have marijuana grow operations (potential fire concern).				

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)

		• Fires not monitored for safe operation or left unattended (e.g., candles, fireplaces, wood stoves, smoker's articles).
		• Dwellings are used as lodging for multiple inhabitants with bedrooms in basements, operating as the municipality's secondary dwellings, accessory dwelling units, additional residential units, and garden suites. Since their approval, interest in building these units has increased.
		  ○ It may lack direct egress from the basement to the outside.
		  ○ Property owners may not understand their responsibilities regarding fire safety and the OFC.				

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
		• HEFD should review its Fire Prevention resources regarding adequate staffing to inspect the Municipality's secondary dwellings, accessory dwelling units, additional residential units, and garden suites. • HEFD, in cooperation with the By-Law Department, should work collaboratively to establish and advertise a reporting method to identify possible illegal locations.				
Group C	Multi-unit Residential	The Fire Department/ Municipality considers the presence of LWC probable. • The units have a higher occupancy (than that of a single-family dwelling). • They may lack an escape plan.	Likely	Major	High	Total number of structures that fall in this occupancy classification – Unknown

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
		• There may be a lack of operable fire extinguishers, and residents may lack knowledge of their operation. • Vandalized hose cabinets may be present in the building. • Human behaviour (cooking, using candles, smoking, alcohol, hoarding, etc.) • Delayed detection due to improper placement, lack of maintenance, or missing smoke alarms. • There may be a lack of knowledge of the location of emergency exits. • It may be a lack of knowledge of shelter-in-place procedures. • The building may have LWC material within the roof.				The total number using LWC – Unknown

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
		• Zoning By-Law allows building height to be six storeys or 21.0 m (69 ft) • Fires in higher structures will be challenging for fire service resources. • Fires in higher structures may necessitate specialized training for firefighters on elevator operation, ventilation systems, smoke travel, firefighter deployment, thermal/smoke columns in stairways, sprinklers, and hose connections. • Tenants may not respond appropriately to fire alarms due to potential incidents of false alarms. • Fires could occur above and below ground level and in apartment buildings.				

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
Group C	Hotel/ Motel	There are opportunities for future growth in this occupancy classification in the Municipality. • Include bed and breakfast facilities in this category. • There may be LWC within the roof. • Inspections need to check for fire safety standard violation(s). When required, enforcing the OFC should be prioritized.	Rare	Minor	Low	Total number of structures that fall in this occupancy classification – Unknown The total number using LWC – Unknown

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
Group C	Mobile Homes, Trailers, and Other	There are three residential trailer parks in the municipality with 64 sites. In addition, there is one campground in operation with 224 sites. • They have high combustibility due to their construction materials. • The risk of high fire loads exists, and, in some cases, hoarding may be evident. • It may lack working smoke and carbon monoxide alarms. • Trailer parks can have limited access routes. This issue can hamper HEFD's response. • Lack of fire separation between trailers may present an exposure risk if a fire occurs. • Using propane cylinders for heating and cooking could be an explosive hazard.	Unlikely	Moderate	Moderate	The total number of structures that fall in this occupancy classification – Statistics Canada reports 40 moveable residences in the Municipality in 2021. That is down from the 65 recorded in 2016. The total number using LWC – Zero

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
		• Turnover of visitors, if not weekly, bi-weekly. • Most visitors do not consider fire safety a concern while at camp. • Multiple structures for administration, medical facilities, washrooms, crafts, and dining require inspections. • Yearly staff rotation could be an issue due to the knowledge of the area/facility. • Staff require fire safety training and (possibly) first aid training. • As with any facility, smoke alarms must be installed and operational in sleeping quarters. • HEFD may need to address any safety concerns related to bonfires.				

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
		• Many will use LPG for heating and cooking, which increases the risks of leaks and fires.				
Group D & E	Business & Personal Service & Mercantile	• Numerous small businesses will need to have fire inspections. Inspections may be an opportunity to provide public education. • HEFD may require additional resources to complete inspections and meet public education needs. • It may have heavy timber construction or common basements. • When a joined business incurs a fire, it may spread from one unit to another. • A high volume of occupants. • Highly combustible items, such as seasonal decorations, may be stored.	Rare	Minor	Low	The total number of structures that fall in this occupancy classification Group D – Business & Personal Services Occupancies – Unknown

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
		• The roof, floors, and walls may have LWC materials. • Most lack fire sprinklers. • HEFD lacks pre-incident plans. • Staff may not be familiar with the building's services or the layout. • It may lack a monitored fire alarm system. • Possibly be missing or have vandalized fire extinguishers. • May lack fire safety plans. • Exit routes from the building may become blocked with the merchandise.				**Group E** – Mercantile Occupancies – **Unknown** The total number using LWC – **Unknown**

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
Group F	Industrial	• The occupancy may lack a current emergency or fire safety plan. • HEFD lacks pre-incident plans. • High fire loads may exist due to the type of industry or stock. • The runoff of a product during a fire could have an environmental impact. • During manufacturing, there is the possibility of hazardous chemicals being present. • Processing activities with ignition sources. • Possible poor housekeeping and maintenance. • There may be insufficient fire safety training for the staff.	Unlikely	Moderate	Moderate	Total number of structures that fall in this occupancy classification – Unknown The total number using LWC– Unknown

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
		• Lack of sprinklers and fire alarm systems (possibly not required by Code when built). • It may not have an in-house fire brigade. • Lack of structural fire breaks with multiple lines of manufacturing. • The fire department may lack outer perimeter access, which could hamper its response.				
Other	Occupancies not classified in OBC. Farm buildings fall under the National	Consider the following points when dealing with occupancies not classified under the OBC or National Building Code. • Old construction of heavy timbers. • High fire loads (e.g., hay, straw, farm equipment).	Likely	Major	High	Total number of structures that fall in this occupancy – Unknown

Occupancy Classification		Issues/Concerns (i.e., age of buildings: use of facilities, building density, height and area, historic and culturally significant buildings, etc.)	Probability	Consequence	Assigned Risk Level	Identify the # of Buildings in Each Classification & # of LWC Buildings Where Presence is Known (if applicable)
	Building Code	• The lack of fire separations in driving sheds and barns allows fires to spread quickly throughout the structure. • Structures near each other become exposure risks. • Possibly poor housekeeping practices. • Due to their lack of security, remoteness, or vacancy, abandoned farm buildings are targets for arson or vandalism-caused fires. • Farm structures used for non-intended purposes (e.g., illegal drug activity). • Lack of water supply close by for fire suppression operations.				The total number using LWC – Unknown

APPENDIX C - PROFILE WORKSHEET #3 - CRITICAL INFRASTRUCTURE PROFILE

This section reviews and considers the community's critical infrastructure, including electricity distribution, water distribution, telecommunications, hospitals, marinas, docks, and airports within the Municipality of Huron East and how they relate to fire and other emerging risks in the community.

Note: *The information contained within this section should be considered confidential. The following features are not in the order of their level of risk.*

Critical Infrastructure Profile Risks

List the critical infrastructure in the community, including fire and other emergency issues/concerns relating to each.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
Domestic Water Distribution	**The Municipality has four water distribution systems—these are located in Seaforth, Vanastra (fed by Central Huron (Clinton), Brussels, and Brucefield.** • Each system has a generator and automatic transfer switch to provide backup power. • Some systems have a fire pump as a backup in the event of primary system failure. • There are three below-grade reservoirs, one in each community. *Other considerations include* • There is a risk of infrastructure failure due to winter's freezing temperatures. • The Municipality must comply with the OFC Section 6.6, Water Supplies for Fire Protection. ○ Hydrants need to be identified by their flow rate, per NFPA 291. • The minimum water pipe size should be 150 mm (6") to maximize flow rates during firefighting operations. The minimum pipe size is currently 100 mm.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
	• Risk of chemical leaks, which may require the evacuation of the immediate area and, in extreme situations, the ERP's activation. A response plan is in place in the event a spill occurs. • Steamer ports on hydrants should have Storz lugs instead of threads, thereby lessening the need for adaptors. • The water system can handle the current growth. Additional developments could challenge the water system's ability to support the need.
Wastewater and Storm Sewer Systems	There are three wastewater treatment facilities. They are in Brussels, Seaforth, and Vanastra. • The Municipality has automatic standby generators at each location to ensure uninterrupted operations. • There are chemicals on location to treat the effluent. • Depending on the type of chemicals, a leak may require the evacuation of areas. • There will be a delay in having a HAZMAT team arrive to mitigate an emergency. • Response plans are in place to handle a chemical leak at the wastewater treatment facility.
Municipality of Huron East Evacuation/ Reception Centres *Seaforth Arena* *Brussels Arena*	There are two designated reception centres. • Each has amenities to sustain operations for several days, such as eating, meeting areas, showers, and full kitchen facilities. Both lack facilities for dormitory use. • Each centre complies with the AODA. • Each has an automatic standby emergency generator that energizes the entire facility. • The ERP indicates that Social Services, which is a County responsibility, is to look after opening and operating the reception/evacuation centres. ○ The Municipality should have agreements with the County of Huron for their services in managing the centres' operations.

Identified Critical Infrastructure	Issues/ Concerns/ Operations

Municipality of Huron East Municipal Buildings and Operations
 	
Includes:
Administration Centre
Libraries
Arenas
Public Works
Emergency Operations Centres (2)
	Public Works maintains 540 km of roads, including 141 bridges/culverts. Twenty-two bridges are a shared responsibility with neighbouring municipalities.
	• The Public Works Yard has buildings used to complete vehicle repairs and provide equipment storage.
	• Large storage structures contain various aggregates.
	• Storage of sign inventories, streetlighting parts, wear parts, stormwater pumps and equipment, and typical Municipal maintenance items.
	• The Municipal Office has an automatic standby generator that energizes the entire building.
	• Risk of loss of power at all locations.
	• Arenas have the risk of leaking refrigerant used to cool the arena floor.
	• Emergency Operations Centres
	  ○ Municipal Building – Council Chamber
	  ○ Brussels Fire Station
	  ▪ Both need to be *AODA*-compliant.
	  ▪ Amenities required include kitchens, washrooms with showers, Wi-Fi, rest areas, security and adequate parking.
	  ▪ An emergency automatic standby generator that energizes the entire building is available to ensure uninterrupted operations.
	  ▪ Consider changing the alternate EOC from the fire station to another municipal building, as fire stations are typically bustling during a declared emergency, and there is high traffic in the area.

Wind Farms	• There are wind farms in the Municipality of Huron East.
Solar Farms	• Risk of failure of infrastructure. • Risk of electrocution.
Ministry of Natural Resources and Forestry	• The Municipality has no Community Wildland Interface Fire Prevention and Response Plan to prevent and mitigate wildland fires.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
Hydro One Power Distribution Inc. and Festival Hydro *Hydro One – supplies power to all the Municipality except for Seaforth and Brussels, where Festival Hydro Inc. provides its power.*	• Risk of power failures due to equipment failure/ breakages, lines down, and weather events. • Green energy components like wind and solar power infrastructure and transmission lines may fail. • Distribution stations are seeing an increase in the theft of copper wire, which in some cases has led to the electrocution.
9-1-1 Communications *(i.e., Central Emergency Reporting Bureau operated by the Northern 911 in Sudbury)*	• Risk of phone lines and breakdown of infrastructure.
Huron East Fire Department - Radio System	• Risk of a radio system failure or power loss due to a generator failure or dead backup batteries. A backup plan is required in the event of infrastructure failure. • Any new portable radios should be intrinsically safe. • Motorola will not support some radio systems post-2024. • HEFD may need to review whether new buildings high amounts of concrete and steel need bi-directional antennas installed to enhance radio coverage inside the structure. This enhancement would require the cooperation of both the Planning and Building Departments. ○ A mobile repeater is in one of the apparatuses.
London Central Ambulance Communications Centre	• The Province has established its performance standards, and it is not required to follow NFPA 1225. • Radio system infrastructure may fail. • Telecommunications systems may fail.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
Huron County Paramedic Service	• The County of Huron has a paramedic base at the corner of Huron Road and Kinburn Line. • Due to staffing or call volume, a limited number of ambulances may be available, creating response delays. • Ambulances may become delayed due to the location of the call within the Municipality and/or weather and road conditions.
Telephones – Landline, Wireless, Internet *Telephone - Bell Canada, Rogers, Tuckersmith Communications Cooperative and Perth Communications* *Internet - Rogers/ATT, Tuckersmith Communications Cooperative and Mitchell-Seaforth Cable TV*	• Possible failure of infrastructure • Upon failure of infrastructure, the Municipality lacks redundancies. ○ The Municipality should explore obtaining a subscription with a wireless company that utilizes low-flying satellites.
Natural Gas Transmission Systems – Enbridge (Union Gas)	• Leaks may occur due to infrastructure failure or damage by other means. • Explosion and fire risk– HEFD needs SOGs, procedures, and training for such events. • Major infrastructure failures with a leak and fire may require evacuations and the implementation of the ERP.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
Oil Industry – Fuel Supply	• HEFD has responded to fuel leaks/spills, creating the risk of fires and environmental impact. • Requiring containment equipment in case of a leak or spill is a higher risk during the offloading and re-filling of tankers. • A large cache of Class B foam is required to suppress the vapours or use it as an extinguishment agent. • Some foam concentrates contain "forever chemicals" that do not break down in time, and some are known to be carcinogenic. HEFD should evaluate the brand of foam concentrate they have in service due to the long-term health effects. Ensure the brand they purchase is free of the chemical fluorine.
Liquefied Petroleum Gas Retail Outlets *Propane*	• Leaks may occur from tanks at residential occupancies such as LPG fuel furnaces, cooking appliances, generators, hot water tanks, barbeques, etc. • Risk of explosion if a leak goes undetected. • HEFD must review the propane RSMP for Level II storage tanks with over 5,000 US gal storage. It is not mandatory to check Level I plans, but it is a good practice.
Railway	• There is a railway operating in the Municipality. • Trains run from Goderich to Stratford carrying freight only, no hazardous materials. • Trains maintain a low speed along the line. • Individuals walking and motoring along the rail line is a safety concern.
Farm Supply	• Fertilizer storage and sales with an enhanced supply during spring and summer. • Unknown quantities of herbicides and pesticides that may harm life and the environment. • Nitrogen fertilizer is an explosive compound. • Some may carry ammonia in tanks delivered to farms as fertilizer, which may leak. • Risk of domestic terrorism involving the use of fertilizer and diesel fuel.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
Municipal and County Roads and Highways	• An unknown quantity and type of chemicals transported through the Municipality and a HAZMAT incident could require an evacuation of residents. • During significant snow events, roads may become closed due to poor visibility and snow accumulation. • Downed trees from severe windstorms may block roads, hampering HEFD's ability to respond to calls. • Fixed bridges require inspections – to ensure load capacities do not restrict fire department vehicles. • Roads may be closed due to an MVC, and traffic may need to be rerouted onto an emergency detour route, resulting in traffic gridlock.
Financial Institutions	• Failure of financial machines such as automatic tellers and debit and credit card infrastructure could impede commerce in the community. • A power failure could result in bank staff being unable to open vaults with electric security systems. • In its emergency preparedness program, the Municipality needs to reinforce the importance of residents maintaining a stash of cash for emergencies.
Airports	• There are small private airfields in the Municipality.
Ausable Bayfield Conservation Authority and Maitland Valley Conservation Authority – Flood Control	• Responsible for operating conservation sites. • Conduct monitoring of watershed erosion and flooding. • Issues high water level advisories.

Identified Critical Infrastructure	Issues/ Concerns/ Operations

Hospital and Medical Treatment Centres
 	
Long-Term Care and Assisted Care Facilities
 	
County of Huron Public Health Unit
	• Medical clinics are available in Brussels and Seaforth.
	  ○ Often a local general family practitioner.
	  ○ Dental offices fall into this category.
	• The closest hospitals are in Seaforth, Stratford, or Clinton.

Bus Companies	• During evacuations, there may be the need for buses to transport residents. ○ School buses are typically unavailable during the school year, Monday to Friday, due to contractual obligations with school boards.
Long-Term Care Facilities	• There are long-term care facilities in Seaforth and Brussels.
Veterinary Clinics	No concerns noted.
Pharmacies	No concerns noted.
Food Retail *Foodland stores in Seaforth and Brussels*	No concerns noted.
Educational Facilities *Avon Maitland District School Board* *Huron-Perth Catholic District School Board*	• Risk of domestic terrorism directed at educational facilities. • Need to conduct annual fire drills and inspections.
Air Ambulance	• Helicopters may land at the location of an incident. • Some hospitals have heliports on site.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
Ontario Provincial Police	• Facilities – Huron County Detachment in Clinton and North Perth Detachment in Listowel. • Radio transmission equipment failures.
Huron East Fire Department *Seaforth, Brussels, and Grey Fire Stations*	• The Fire Master Plan discusses the condition and location of the three fire stations. • The security of stations can be a concern when not occupied. • Each fire station requires an automatic standby generator that energizes the entire building, reducing the risk of power-related hazards (trips/ falls in the dark). • Stations may require repairs, expansion, or replacement.
Media Outlets *Service Provision*	• The local radio stations may go off the air and cannot broadcast important messages during an emergency. • No television or radio stations are operating in the Municipality. • Local print media delay posting information on their website.
Provincial Resources	• Hazard-specific emergencies could occur, including domestic terrorism.
Federal Government Buildings *(e.g., Canada Post)*	• Hazard-specific emergencies could occur, including domestic terrorism.

APPENDIX D - PROFILE WORKSHEET #4(A) - DEMOGRAPHIC PROFILE

When completing the demographic worksheets, the characteristics of the Municipality's demographic profile will aid in identifying potential fire safety issues and concerns. The information will help the HEFD prioritize overall risk and decisions about providing fire protection services. For example, seniors, young children, recent immigrants, and people with disabilities are at the highest fire risk. Understanding if the community has increased the number of people in these demographic groups will help the HEFD prioritize its public fire safety education and OFC inspection and enforcement programs.

Demographic profile characteristics include age, culture, education, socioeconomics, transient populations, or other unique population characteristics throughout the community.

The following population distribution charts will assist in identifying high-risk or vulnerable demographic groups in the community.

Note: *The data and explanations behind each table in this profile are from the Government of Canada's 2011, 2016, and 2021 Census.*

TABLE #7 - DEMOGRAPHIC NUMBERS BY AGE

Age of Population	2011[47]	2016[48]	2021[49]
0-4	545	550	660
5-9	540	535	615
10-14	635	555	555
15-19	725	610	535

[47] Statistics Canada. 2012. Huron East, Ontario (Code 3540040) and Canada (Code 01) (table). Census Profile. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released October 24, 2012. http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E (accessed November 28, 2023).

[48] Statistics Canada. 2017. Huron East, MU [Census subdivision], Ontario and Ontario [Province] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed November 28, 2023).

[49] Statistics Canada. 2023. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 15, 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed November 28,2023).

Age of Population	2011[47]	2016[48]	2021[49]
20-24	550	595	500
25-29	540	490	605
30-34	460	495	565
35-39	495	480	540
40-44	545	515	490
45-49	670	525	480
50-54	745	665	520
55-59	635	735	660
60-64	575	660	730
65-69	460	540	635
70-74	350	435	515
75-79	280	315	390
80-84	240	210	250
85 & over	270	225	270
Total	**9,264**	**9,138**	**9,512**
Percentage Increase/Decrease from Previous Census	**-0.5%**	**-1.45%**	**+4.1%**

TABLE #8 - POPULATION DISTRIBUTION

Total – Distribution (%) of the population by broad age groups*	2016	2021
	100%	
0 to 14 years	18.0%	19.2%
15 to 64 years	63.1%	59.1%
65 years and over	18.9%	21.7%
85 years and over	2.5%	2.8%
Average Age	41.4	41.9
Median Age	42.4	41.6

**Note -* *Total - Age groups and the population's average age - 100% data.*

TABLE #9 - BREAKDOWN OF POPULATION BY ETHNICITY

Total – Visible Minority for the Population in Private Households *	2016	2021
	8,995	9,320
Total Visible Minority Population	130	200
South Asian	30	30
Chinese	10	0
Black	45	50
Filipino	0	30
Latin American	10	0
Arab	0	45
Southeast Asian	25	25

Total – Visible Minority for the Population in Private Households *	2016	2021
	8,995	9,320
West Asian	0	0
Korean	0	0
Japanese	0	0
Visible minority (not identified elsewhere)	0	0
Multiple visible minorities	10	10
Not a visible minority	8,870	9,115

***Note -** Visible minority refers to whether a person belongs to a visible minority group as defined by the Employment Equity Act and, if so, the visible minority group to which the person belongs.*

TABLE #10 - INDIGENOUS POPULATION

Total – Indigenous Identity for the Population in Private Households*	2016	2021
	8,995	9,320
Indigenous Identity	105	175
Single Indigenous Responses	105	155
First Nations (North American Indian)	60	50
Métis	45	105
Inuk (Inuit)	0	0
Multiple Indigenous responses	0	0
Indigenous responses not included elsewhere.	0	25
Non-Indigenous identity	8,895	9,140

**Note -* *Indigenous identity refers to whether the person identifies with the Indigenous peoples of Canada.*

TABLE #11 - LOW-INCOME POPULATION

Low-income Status for the Population in Private Households to Whom Low-Income Concepts are Applicable*	2016	2020
Total	9,000	9,320
0-17 years	2.020	2,150
0-5 years	660	790
18-64 years	5,375	5,280
65 years and over	1,605	1,890

**Note -* *Low-income status – The income situation of the statistical unit concerning a specific low-income line in a reference year. Statistical units with income below the low-income line.*

TABLE #12 - INCOME POPULATION

Total Income Groups in the Population Aged 15 years and Over in Private Households*	2015	2020
Total	7,350	7,490
Without Total Income	215	160
With Total Income	7,135	7,330
Percentage with Total Income	97.1%	97.7%
Under $10,000 (including Loss)	825	520
$10,000 to $19,999	1,305	925
$20,000 to $29,000	1,105	1,115
$30,000 to $39,999	975	980

Total Income Groups in the Population Aged 15 years and Over in Private Households*	2015	2020
$40,000 to $49,999	945	985
$50,000 to $59,999	640	825
$60,000 to $69,999	455	645
$70,000 to $79,999	290	395
$80,000 to $89,999	190	275
$90,000 to $99,000	145	190
$100,000 to $149,000	205	350
$150,000 and over	70	120

***Note -** Total Income – The sum of certain incomes (in cash and, in some circumstances, in-kind) of the statistical unit during a specified reference period.*

TABLE #13 - GROWTH OF POPULATION HURON EAST VS ONTARIO, 2006 - 2031[50]

Year	2006	2011	2016	2021	2026	2031
Huron East Population Count	9,310	9,264	9,138	9,829	10,317	10,761
Percentage Change	/	-0.49%	-1.36%	/	4.96%	4.31%
Ontario Population Count	12,160,282	12,851,821	13,448,494	14,699,530	15,562,392	16,419,880
Percentage Change	/	5.70%	4.60%	/	5.87%	5.51%

[50] "Situational Analysis for the Municipality of Huron East." McSweeney & Associates. Accessed November 28, 2023. https://www.huroneast.com/en/business-and-development/resources/EDO/Huron-East_Situational-Analysis_April-2022_Final.pdf

TABLE #14 - NEIGHBOURING MUNICIPALITY'S POPULATION CHANGE 2016 – 2021[51]

Municipality	Population		
	2016	2021	% Change
Municipality of North Perth	13,130	15,538	18.3%
Municipality of Bluewater	7,136	7,540	5.7%
Township of Howick	3,873	4,045	4.4%
Municipality of Central Huron	7,576	7,799	2.9%
Municipality of Morris-Turnberry	3,496	3,590	2.75
Municipality of West Perth	8,865	9,038	2.0%
Municipality of South Huron	10,096	10,063	-0.3%

[51] "Focus on Geography Series, 2021 Census of Population, Huron East, Municipality. Accessed November 28, 2023. https://www12.statcan.gc.ca/census-recensement/2021/as-sa/fogs-spg/Page.cfm?lang=e&topic=1&dguid=2021A00053540040

TABLE #15 - POPULATION AND HOUSING HISTORICAL AND FORECAST BY STRUCTURE TYPE, 2006 TO 2051[52]

Year		Population (Including Undercount)*	Population (Excluding Undercount)	Housing Units				
				Singles and Semis	Multiple Dwellings**	Apartments***	Other	Total Households
Historical	2006	9,690	9,310	3,075	40	280	45	3,440
	2011	9,640	9,264	3,099	82	279	80	3,540
	2016	9,510	9,138	3,170	95	300	65	3,630
	2021	9,928	9,512	3,245	105	315	40	3,705
	2024	10,181	9,754	3,332	119	341	40	3,832
Forecast	2016	10,254	9,824	3,339	157	347	40	3,883
	2031	10,538	1,0096	3,427	187	369	40	4,023
	2036	11,387	10,910	3,615	245	450	40	4,350
	2041	12,222	11,710	3,779	310	541	40	4,670
	2046	12,930	12,388	3,900	372	629	40	4,941
	2051	13,496	12,930	3,984	431	713	40	5,168

Note: Population, including the undercount, has been rounded.

** Census undercount estimated at approximately 4.38%.*

*** Includes townhouses and apartments in duplexes.*

**** Includes bachelor, 1-bedroom, and 2-bedroom+ apartments.*

[52] "Population and Housing Projections Study Huron County." Watson & Associates. Accessed May 12, 2024. https://www.huroncounty.ca/wp-content/uploads/2024/03/Huron-County-2023-Population-and-Housing-Projections-Study-Final-Report-March-6-2024.pdf

APPENDIX E - PROFILE WORKSHEET #4(B) – DEMOGRAPHIC PROFILE

Demographic Profile Risks

The following is a list of the demographic groups of concern within the community, as well as the fire and other emergency issues and matters relating to each group.

Note: *The level of risk of the following features is not in order.*

Within this document, some charts have identified risks that have been colour-coded and are listed from high to low:

Low	Moderate	High

Identified Demographic Group	Issues/ Concern
Senior Population	• There are some vulnerable sector occupancies in the municipality, and as the senior population grows, so does the need for housing. • Some of the seniors have mobility and cognitive and behavioural issues that may require constant care. • At vulnerable sector occupancies, there could be a shortage of personal care workers during evening and night shifts. • The residents may lack knowledge regarding escape routes due to mental confusion. • Some seniors may receive assistance and care from personal support worker organizations.

Identified Demographic Group	Issues/ Concern
General Population	• As the population of the Municipality increases, so does the number of fire calls. • Increased drug-related medical events province-wide may increase the number of medical calls. • Pedestrians, cyclists, and distracted drivers may disregard the movement of emergency vehicles, particularly during tourist activities. • When a fire alarm is activated, individuals may not understand the importance of vacating a building. • HEFD may require additional resources to deliver public education messaging.
Persons with Disabilities	• In 2022, approximately one in seven people (1.85 million residents) in Ontario live with a disability. • The HEFD should develop emergency preparedness and fire safety education around barriers faced by persons with disabilities:[53] • Distribute or make the Emergency Preparedness Guide from Emergency Management Ontario known to those with disabilities and make it available on the Municipality of Huron East's website.[54]
Crime-Related Fires in the Municipality of Huron East	• The FPO of the HEFD has trained/ become certified in NFPA 1033, the standard for fire investigations. • The chief officers should also be certified in NFPA 1033. • Captains should train to a modified NFPA 1033 as part of the officer development program. • Monitor fire origin and cause, identify any patterns and act accordingly.

[53] "Common Barriers to Participation Experienced by People with Disabilities." Center for Disease Control. Accessed December 1, 2023. https://www.cdc.gov/ncbddd/disabilityandhealth/disability-barriers.html#Attitudinal

[54] "Emergency preparedness guide for people with disabilities." King's Printer for Ontario. Accessed December 1 ,2023. https://www.ontario.ca/page/emergency-preparedness-guide-people-disabilities

<table>
<tr><th>Identified Demographic Group</th><th>Issues/ Concern</th></tr>
<tr><td></td><td>• Use outside sources such as the OFM, OPP, TSSA, and Electrical Safety Authority, during investigations.</td></tr>
<tr><td>Crime in the Municipality of Huron East</td><td>• The Municipality has an A- crime rating.[55]
<table>
<tr><th rowspan="2">Index</th><th>Municipality of Huron East</th><th>Ontario</th><th>National</th></tr>
<tr><th colspan="3">Per 100k People</th></tr>
<tr><td>Total Crime</td><td>2,469 (Estimate)</td><td>3,086</td><td>4,223</td></tr>
<tr><td>Violent Crime</td><td>634 (Estimate)</td><td>792</td><td>1,042</td></tr>
<tr><td>Property Crime</td><td>1,835 (Estimate)</td><td>2,294</td><td>3,181</td></tr>
</table></td></tr>
<tr><td>Visible Minority Population</td><td>• This demographic may experience language barriers, social barriers, and socioeconomic inequalities.
• Like other demographic groups, some may lack knowledge on fire safety matters, including smoke and carbon monoxide alarms and the need to develop and practice fire escape plans for their residence.
• They may not be familiar with the building's fire safety system(s).
• With so few visible minorities in the municipality, HEFD should monitor if language or cultural barriers exist and adjust its fire prevention initiatives accordingly to meet the needs of this demographic.
• HEFD does not focus its fire prevention programs on this demographic due to the lack of resources and the small population. This has not, however, been an issue.</td></tr>
</table>

[55] "Huron East, ON Crime Rates." AreaVibes Inc. Accessed May 12, 2024. https://www.areavibes.com/huron+east-on/crime/#:~:text=Huron%20East%20crime%20rates%20are%2042%25%20lower%20than,41%20chance%20of%20becoming%20a%20victim%20of%20crime

Identified Demographic Group	Issues/ Concern
	• HEFD should monitor the call types to identify areas requiring fire safety messaging within a specific demographic group.
The Disenfranchised, Homelessness and those Experiencing Low Income	• Some individuals experiencing homelessness are couch-surfing to meet their housing needs. • Homeless may resort to establishing encampments to meet their needs for shelter. There is a high number of encampment fires throughout Southern Ontario. • This demographic is increasing, and the lack of services is problematic. ○ The County of Huron's (Huron Heart to Home) program is a program whereby the County staff work with local organizations and agencies to reduce homelessness.
Service Industry Workers and Migrant Workers	• They may lack a fire escape plan at their place of residency. • They may not be familiar with fire safety features in their building. • They may require public education on safe cooking practices. • There could be language barriers. • They may need to be reminded not to leave candles or other flame-related articles burning when they leave the premises or retire for the night.

Identified Demographic Group	Issues/ Concern

Indigenous Community	• Indigenous males statistically suffer more fire-related deaths than Indigenous women.[56]
	• Indigenous groups may conduct sacred fires to heal, bond, and begin sacred ceremonies, events, and rituals.
	  ○ A firekeeper is responsible for the fire and must remain with it until it is extinguished.
	  ○ A sacred fire is integral to Indigenous spirituality and communication with the spirit realm and ancestors.
	  ○ The municipality may wish to dedicate a location where the Indigenous community can gather and conduct a sacred fire event.
	• To ensure fire safety, the HEFD should inspect the site annually to ensure fire safety.

Seasonal Visitors	• During interaction with fire department personnel, the individual may not understand English, resulting in a language barrier. • Some fire services have language cards with multiple questions. • Arrange for translating services to be made available. • There is a lack of multi-lingual fire safety messaging within locations that provide overnight accommodations. • Lack of knowledge of escape routes from buildings • Lack of understanding regarding shelter-in-place procedures. • May reside in a short-term accommodation that lacks fire safety measures. • Some may not know their location and have difficulty communicating when calling 9-1-1.

[56] Mohan B. Kumar. "Mortality and morbidity related to fire, burns and carbon monoxide poisoning among First Nations people, Métis and Inuit: Findings from the 2011 Canadian Census Health and Environment Cohort." Centre for Indigenous Statistics and Partnerships, Statistics Canada. Accessed December 3, 2023. https://www.publications.gc.ca/collections/collection_2021/statcan/CS2-54-2021-eng.pdf

APPENDIX F - PROFILE WORKSHEET #5 – HAZARD PROFILE

This section will list potential hazards in the community, including but not limited to HAZMAT spills, floods, freezing rain, ice storms, forest fires, hurricanes, tornadoes, transportation emergencies (e.g., air, rail, or road), snowstorms, windstorms, extreme temperature, cyber-attacks, human health emergencies, and energy supply (e.g., pipelines, storage and terminal facilities, electricity, and oil facilities).

Note: *The information contained within this section should be considered confidential.*

Hazard Profile Risks

The following is a list of hazards to the Municipality of Huron East. Evaluating each threat based on its probability of occurrence and subsequent consequences determines its assigned risk level.

Note: *The list of hazards is the same as the Municipality of Huron East's HIRA.*

The rows are assigned a level of risk by colour code and in order of severity from high to low risk.

Low	Moderate	High

Identified Hazard	Probability	Consequence	Assigned Risk Level
Cyber Attack on Municipal Servers	Almost Certain	Minor	Moderate
Extreme Temperatures – Cold	Almost Certain	Minor	Moderate
Drought – Low Water	Almost Certain	Minor	Moderate
Road Incident - Motor Vehicle Collisions	Almost Certain	Minor	Moderate
Ice storm	Possible	Moderate	Moderate
Snowstorm/Blizzard/Hail	Possible	Moderate	Moderate
Severe Wind – Non-Tornado	Likely	Minor	Moderate

Identified Hazard	Probability	Consequence	Assigned Risk Level
Chemical	Almost Certain	Minor	Moderate
Structural Collapse	Rare	Minor	Low
Wildland Urban-Interface Fires	Possible	Insignificant	Low
Plant Disease and Pest Infestation	Unlikely	Minor	Low
Thunderstorm	Possible	Minor	Low
Lightning	Possible	Insignificant	Low
Flood	Possible	Insignificant	Low
Utility Disruption	Possible	Insignificant	Low
Potable Water – Municipal Water System	Possible	Insignificant	Low
Waste-Water Treatment Plant	Unlikely	Minor	Low
Severe Wind Event – Tornado	Unlikely	Minor	Low
Extreme Temperatures – Heat	Possible	Minor	Low
Erosion	Possible	Insignificant	Low
Substance Abuse	Possible	Minor	Low
Infectious Disease	Rare	Moderate	Low
Farm Animal Disease	Unlikely	Minor	Low
Fire – Explosion	Rare	Minor	Low
Aviation Emergency	Unlikely	Minor	Low
Terrorism and Sabotage	Rare	Insignificant	Low
LPG, Natural Gas, Oil, Gasoline/Methane Emergencies	Unlikely	Minor	Low

Identified Hazard	Probability	Consequence	Assigned Risk Level
Petroleum Product – Storage	Rare	Moderate	Low
Active Threat	Rare	Moderate	Low
Food Shortage	Unlikely	Minor	Low
Food Contamination	Likely	Insignificant	Low
Critical Infrastructure Failure	Unlikely	Minor	Low
Medical Supply Disruption	Unlikely	Minor	Low
Fog	Possible	Insignificant	Low
Earthquake	Rare	Insignificant	Low
Landslide	Rare	Insignificant	Low
Mail Delivery	Rare	Minor	Low
Hurricane	Rare	Insignificant	Low
Dam Failure	Rare	Insignificant	Low
Radioactive/Nuclear Emergency	Not Applicable	Not Applicable	Not Applicable
Loss of skills	Not Applicable	Not Applicable	Not Applicable
Nuclear Facility	Not Applicable	Not Applicable	Not Applicable
High Angle Rescue	Not Applicable	Not Applicable	Not Applicable
Extreme Downburst	Not Applicable	Not Applicable	Not Applicable
Influenza Outbreak	Not Applicable	Not Applicable	Not Applicable
Open Pit Quarry/Mining Accident	Not Applicable	Not Applicable	Not Applicable
High Angle Rescue	Not Applicable	Not Applicable	Not Applicable

Identified Hazard	Probability	Consequence	Assigned Risk Level
Trench Rescue	Not Applicable	Not Applicable	Not Applicable
Workplace Strike	Not Applicable	Not Applicable	Not Applicable
Criminal Activity	Not Applicable	Not Applicable	Not Applicable
Workplace Violence	Not Applicable	Not Applicable	Not Applicable
Health and Safety Incidents	Not Applicable	Not Applicable	Not Applicable
Hunting Incidents	Not Applicable	Not Applicable	Not Applicable
Communications Disruption	Not Applicable	Not Applicable	Not Applicable
Business Bankruptcy	Not Applicable	Not Applicable	Not Applicable
Trench Rescue	Not Applicable	Not Applicable	Not Applicable
International Emergency	Not Applicable	Not Applicable	Not Applicable
Public Transit Disruption	Not Applicable	Not Applicable	Not Applicable
Transportation Emergency – Marine	Not Applicable	Not Applicable	Not Applicable
Geometric Storm	Not Applicable	Not Applicable	Not Applicable
Electromagnetic Impulse	Not Applicable	Not Applicable	Not Applicable
Forest Fire – Evacuees	Not Applicable	Not Applicable	Not Applicable
Avalanche	Not Applicable	Not Applicable	Not Applicable
Storm Surge	Not Applicable	Not Applicable	Not Applicable
Train Derailment	Not Applicable	Not Applicable	Not Applicable
Climate Change	Not Applicable	Not Applicable	Not Applicable
Human Health – Epidemic	Not Applicable	Not Applicable	Not Applicable

Identified Hazard	Probability	Consequence	Assigned Risk Level
Human Health – Pandemic	Not Applicable	Not Applicable	Not Applicable
HAZMAT Incident	Not Applicable	Not Applicable	Not Applicable
Subsidence	Not Applicable	Not Applicable	Not Applicable
Natural Space Object Crash	Not Applicable	Not Applicable	Not Applicable
Human-Made Space Object Crash	Not Applicable	Not Applicable	Not Applicable
Space Weather	Not Applicable	Not Applicable	Not Applicable
Civil Disorder	Not Applicable	Not Applicable	Not Applicable
Special Events – Crowd Disaster	Not Applicable	Not Applicable	Not Applicable
CBRNE	Not Applicable	Not Applicable	Not Applicable
Geopolitical Pressures	Not Applicable	Not Applicable	Not Applicable
Mine Accident	Not Applicable	Not Applicable	Not Applicable
Potable Water Emergency – Wells	Not Applicable	Not Applicable	Not Applicable
Emergency Water Supply	Not Applicable	Not Applicable	Not Applicable

APPENDIX G - PROFILE WORKSHEET #6 - PUBLIC SAFETY RESPONSE PROFILE

This section considers other public safety response agencies (e.g., police, EMS, rescue) that might be tasked assistance or could assist in responding to emergencies or mitigating the impact of crises. Consider the types of incidents each agency can respond to and any issues or concerns that may impact the fire department's response.

Public Safety Response Profile Risks

The chart lists the public safety response agencies in the Municipality's area and the types of incidents they may attend.

Identified Public Safety Response Agency	Incident Types They Respond To	Role During the Incident	Issues and Concerns
Ontario Provincial Police – Detachments in: *Listowel, Clinton and Sebringville*	• MVCs. • Fire scenes • Marine emergencies • Acts of crime • Acts of violence • Acts of terrorism • Upon implementation of the ERP. • Security of dignitaries • Medium Urban Search and Rescue (USAR) • Major structural collapse • Entrapments • Earthquakes	• Scene and crowd control, traffic control, investigations • Establish perimeters. • Provide marine support. • Protective services • Canine services • Provide air support – helicopter and fixed-wing. • Search and rescue • Tactical response teams • The CBRNE support team	• OPP resources cover a large geographical area. ○ Their response may be delayed depending on the time of day, staffing, and call volume.

Identified Public Safety Response Agency	Incident Types They Respond To	Role During the Incident	Issues and Concerns
	• Tornadoes and severe weather • Explosions		

Royal Canadian Mounted Police	• Acts of terrorism or sabotage
	• Criminal activity of international significance
	• Illegal importing of goods such as drugs
	• Human trafficking
	• Security of dignitaries
		• Investigations that fall under their jurisdiction
		• Notification of Interpol and other international police agencies as required.
		• Provide the following services:
		  ○ Canine services
		  ○ Marine
		  ○ Aircraft
			None Known

Outside Fire Services	• Automatic or Mutual Aid Incidents
	• Respond to structure fires with tanker support due to the lack of hydrants (very long response timeline).
	• May need to be summoned to mitigate the following:
	  ○ HAZMAT incidents
	  ○ Elevator rescues
	  ○ Technical rescues
		• Fire suppression
		• Provide staffing and equipment as requested.
		• Perform all duties requested by the HEFD's Incident Commander.
			• Any automatic aid or response agreements should meet the needs of the residents living in the response area of that agreement.
			• Annually review and make updates as required.
			• HEFD and the Municipality must enter into response agreements with outside agencies to mitigate technical rescues and HAZMAT incidents.

Identified Public Safety Response Agency	Incident Types They Respond To	Role During the Incident	Issues and Concerns
Huron County Paramedic Services (HCPS)	• Medical calls • Fire standby • Acts of violence • Acts of terrorism • Mass casualty • Any time the ERP is implemented/ required.	• Take control and provide direction upon arrival in treating the sick and injured. • Triage patients at mass casualty incident • Transport sick and injured to medical facilities. • Liaise with local hospitals on patient condition	• The tiered Medical By-Law is outdated and needs updating for the Council's approval. The new agreement must include the call types HEFD will respond to and training, medication administration, and equipment exchanges. • The Huron County Fire Chief's Administration Group discusses with HCPS the availability of a Cyanokit® and the administration of its medication to victims suffering from smoke inhalation. • Cyanide poisoning may result from inhalation, ingestion, or dermal exposure to various cyanide-containing compounds, including smoke from closed-space fires.

Identified Public Safety Response Agency	Incident Types They Respond To	Role During the Incident	Issues and Concerns
			• Take advantage of any collaborative training opportunities with HCPS.
Canada Border Services Agency	• Illegal immigrants • Smuggling of goods into the country • Border security • Marine operations at major ports • Threats to the welfare and protection of Canada	• Scene control, traffic control, investigations • Establish perimeters. • Detain individuals who enter the country illegally. • Seizure of illegal goods coming into the country. • Protect food supply entering the country. • Provide detector dogs. • Work collaboratively with Canadian and International agencies.	None Known
St. John Ambulance *Barrie Grey, Bruce, Huron Branch*	• Assist with medical services at large public gatherings	• Support local paramedic services by providing basic first aid at events. • Do not transport patients to medical facilities. • Provide a first aid post/rest area.	None Known

Identified Public Safety Response Agency	Incident Types They Respond To	Role During the Incident	Issues and Concerns
Canadian Red Cross *London Office*	• Public events in which many people are in attendance. • Attend major incidents where people have become displaced from their homes	• Supporting HEFD at public events and extreme disasters. • Sheltering and connecting family members. • Provide emergency and disaster services (e.g., temporary shelter, food, clothing).	None Known
Ontario Fire Marshal	• Suspicious fires • Attend fires in which there is a civilian or firefighter fatality. • High dollar loss fires • Fires at vulnerable occupancies • Fires which may be in the public's best interest • Incidents that require a provincial specialty team, such as HAZMAT or CBRNE • Emergency Preparedness and Response Unit • Support communities when local resources are exhausted.	• Investigation – Lead agency working in conjunction with the police. • Provide technical support	None Known

Identified Public Safety Response Agency	Incident Types They Respond To	Role During the Incident	Issues and Concerns
	• Maintains command and control and is responsible for the results management of the incident.		
Emergency Management Ontario – Heavy Urban Search and Rescue	• Major structural collapse • Entrapments • Earthquakes • Tornadoes • Severe weather events • Explosions	• Leverage technical specializations to conduct search and rescue.	• Heavy USAR teams are available from Toronto. • The OPP maintains the only Medium USAR team in the province. They are also known as the USAR CBRNE Response Team (UCRT). • A Light USAR is available from Windsor and Ottawa.
Emergency Management Ontario	• Locally declared emergencies. • Assist local AHJ in the development of emergency response plans.	• Support and provide direction to local authorities.	None Known
Ministry of Natural Resources and Forestry	• Forest fires • Flooding • Mining incidents • Dam failures • Erosion and unstable land • Responsible for provincial parks	• Responsible for Crown Lands belonging to the province. • Coordinate the response of resources to suppress and extinguish forest fires. • Coordinate evacuations if required. • Manage, monitor and, in some cases, control flood waters.	None Known

Identified Public Safety Response Agency	Incident Types They Respond To	Role During the Incident	Issues and Concerns
	• Land, waters, and wildlife management	• Coordinate mine rescue teams	
Transport Canada	• Respond to transportation accidents involving some road vehicles and all rails, marine, and aviation incidents.	• Take the lead investigative role in many transportation accidents with the support of other agencies. • Many transportation regulations are the department's responsibility to develop and monitor. • The findings of these investigations may lead to changes in some of the transportation regulations. • Canadian Transport Emergency Centre aids communities by responding and providing mitigation strategies for dangerous goods emergencies.	None Known
Canadian Armed Forces	• Airlifts, medical evacuations, and disaster assistance • Respond at the request of the Municipality through the OFM to declared emergencies. • Attend natural disasters.	• Responsible for the defence of Canada. • Provide support by providing equipment and staffing. • Operation LENTUS follows an established plan of action to support communities during a crisis.	None Known

Identified Public Safety Response Agency	Incident Types They Respond To	Role During the Incident	Issues and Concerns
	• Aid in evacuations during wildfire season and flooding in the spring.		
Canadian Forces Base Borden	• Largest training establishment of the Canadian Armed Forces. • Even though it is primarily a training base, military personnel have assisted communities during emergencies.	• Provide logistics (i.e., tents and supplies and personnel carriers). • 400 Tactical Helicopter Squadron can respond as part of 1 Wing CH-146 Griffon. • Support personnel will aid as required.	None Known
Trenton Search and Rescue – Joint Rescue Co-Ordination Centre Trenton	• Air and marine incidents • Rescues in remote areas • Searches for lost persons	• Perform search and rescue operations not only for crash incidents but also humanitarian responses such as lost hunters, removal of injured hikers or other medical evacuations due to the remote location they may be in or weather conditions. • Treat and transport injured persons. • The search and rescue crews may direct additional resources to the location of the incident.	None Known

Identified Public Safety Response Agency	Incident Types They Respond To	Role During the Incident	Issues and Concerns
Technical Standards and Safety Authority	• Attend fires and explosions involving fuel-fired appliances such as gas kitchen appliances, furnaces, water heaters, barbeques, gas fireplaces, etc. • Gas leaks from pressurized vessels and pipelines. • Carbon monoxide leaks • Boilers and pressurized vessel failures • Elevator, ski lift and amusement park ride failures	• Investigations relating to cause and origin. • Investigations that involve the failure of a pressurized vessel (e.g., boilers, LPG tanks) • Assist other agencies during investigations. • Assist with enforcement. • Technical support	None Known
Enbridge (Union Gas)	• Carbon monoxide alarms • Natural gas leaks in residences • Leaks within their infrastructure	• Coordinate response with HEFD. • Responsible for making areas that involve gas leaks safe. • Monitor air for explosive limits. • Attend emergencies to either turn off or lock and tag out gas lines.	None Known
Electrical Safety Authority	• Fires that involve electrical equipment	• General inspections for OFC compliance.	None Known

Identified Public Safety Response Agency	Incident Types They Respond To	Role During the Incident	Issues and Concerns
		• Electrical code enforcement	
Hydro One Power Distribution Inc. and Festival Hydro	• Downed power lines • Severe weather events • Structure fires • Incidents requiring the disconnecting of the power	• Terminate power supply on transmission systems as needed. • Reinstate the power supply as required.	None Known
Ausable Bayfield Conservation Authority and Maitland Conservation Authority	• Provides services to the municipality and the public to protect life and property from natural hazards such as flooding and erosion.	• They monitor watersheds and weather conditions. • Operate a flood forecasting system to provide warning of anticipated or actual flood conditions. • Issuing Water Level Notices • Provide advice on preventing or reducing the effects of flooding. • Maintaining communications with the municipality and other agencies • Has a Flood Contingency Plan	None Known
Non-Governmental Organizations Alliance of Ontario	• Non-governmental agencies that support the emergency management needs within Ontario	• Provide support in emergency planning, preparedness, response, and recovery before and during declared emergencies.	None Known

APPENDIX H - PROFILE WORKSHEET #7 - COMMUNITY SERVICES PROFILE

Worksheet 7 reviews community service agencies, organizations or associations that support the fire department's delivery of public fire safety education, Fire Code inspection and enforcement, and emergency response. This profile may include services in-kind, financial support, provisions of venues for training, increased access to high-risk groups in the community, and temporary shelter for displaced residents following an incident.

Historically, the HEFD has not taken advantage of partnerships with outside organizations for financial or other means of support. These opportunities have been successful in many fire departments, and HEFD should explore this opportunity in the future. It could be a viable option and lessen the financial exposure of providing fire safety messaging.

Community Services Profile Risks

The following is a list of the community service agencies and the types of services they can provide.

Community Service Agencies	Types of Assistance They Can Provide	Issues and Concerns
The County of Huron and the Municipality of Huron East *Community Emergency Management Coordinators*	• Assist residents during emergency evacuations. • Arrange buses for temporary shelter.	None Known
County of Huron Social and Property Services	• Integrated social services. • Community outreach • Community housing services • Financial support services	None Known

Community Service Agencies	Types of Assistance They Can Provide	Issues and Concerns
Huron County Housing and Property Services	• Emergency and long-term housing • Access to vulnerable population • Children's services	None Known
Ministry of Community and Social Services – Ontario	• Housing • Financial support	None Known
Huron Perth Public Health	• General well-being support • Continuous improvement in the quality of services and programs with all efforts oriented to meet the specific needs of the people and communities served. • Design services and programs to reduce health disparities and inequities. • Provide immunizations, health education, hearing, and vision screening	None Known
Huron Perth United Way	• Support individuals and families in need.	None Known
Home and Community Care Support Services - Formally Local Health Integration Network – Southwest *London Office*	• Health care services • Living and long-term care services • Community Care Access Centres • Community Health Centres and Support Services • Client Intervention and Assistance Programs • Mental Health and Addiction Services	None Known
Huron Community Family Health Team	• Health care services • Living and long-term care services	None Known

Community Service Agencies	Types of Assistance They Can Provide	Issues and Concerns
Huron County Children's Services	• Parent education • Early learning activities and resources	None Known
Victim Services of Huron County	• The service provides immediate support and referrals to victims of crime or traumatic experiences. • Shelter, clothing, and food following an incident. • Support victims of crime, trauma, personal crises, and sudden tragedies.	None Known
Community Support Services Huron Perth	• Suicide prevention	None Known
Canadian Mental Health Association	• Ongoing mental health support	None Known
Huron Shores Area Transit	• Provide buses for shelter for residents.	None Known
Huron Perth Student Transportation Services	• Provide buses for shelter for residents, pending availability. They are required to transport students in the early mornings and mid-afternoons.	None Known .
Avon Maitland District School Board Huron Perth Catholic District School Board	• Access to the student population	None Known

Community Service Agencies	Types of Assistance They Can Provide	Issues and Concerns
Royal Canadian Legion *Branch 156 – Seaforth* *Branch 218 – Brussels* *Branch 468 - Hensall*	• Services in-kind • Financial support for public education programs • Facility for the delivery of fire safety programs	None Known
Huron East Chamber of Commerce	• Services in-kind	None Known
Churches in the Municipality of Huron East	• Emergency food supply • Emergency shelter • Emergency support	None Known
Service Clubs and Groups in the Municipality of Huron East	• Services in-kind • Facilities • Financial support	None Known

APPENDIX I - PROFILE WORKSHEET #8 - ECONOMIC PROFILE

This section considers the industrial and commercial sectors that provide significant economic production and jobs to the local economy and the impact on the community's economy if a fire or other emergency occurs in occupancies housing those sectors.

Agriculture and retail are the primary economic contributors to the Municipality of Huron East's overall fiscal position – fire risks come with each. Fire safety information relating to the industry should be made available to the agricultural community of the municipality: Brussels and Seaforth are the leading retail drivers for the region. The rolling topography, progressive retail opportunities, wildlife, and conservation areas, along with recreation and entertainment opportunities, all aid in attracting commerce to the area.

There are a few more prominent industries in the Municipality, such as Vanastra Packaging, Sun North Systems, and the Hensall and District Co-Operative. Other significant employment includes healthcare and social assistance, agriculture, forestry, fishing, hunting, and manufacturing. All facets of tourism are increasing as the number of visitors and recreational opportunities increases annually.

Economic Profile Risks

The following is a list of the industrial or commercial occupancies that provide significant economic production and jobs in the community. List the fire or other emergency risks in each occupancy and assign probability, consequence, and risk levels for each risk identified. The risk level assessments are from historical data.

***Note**: The following features are in the order of their level of risk.*

Within this document, some charts have identified risks that have been colour-coded and, in some appendices, listed from high to low:

Low	Moderate	High

Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
Industrial Manufacturing	Closure – Permanent	Likely	Major	High
	Domestic Terrorism	Possible	Catastrophic	High
	Pandemic	Possible	Major	High
	Closure – Temporary	Possible	Moderate	Moderate
	Power Disruption	Possible	Minor	Moderate
	Fire	Unlikely	Major	Moderate
	Natural Gas Disruption	Possible	Moderate	Moderate
	Cyber Attack	Rare	Insignificant	Low
Agriculture - Farms	Fire	Possible	Catastrophic	High
	Closure – Permanent	Possible	Major	Moderate
	Closure – Temporary	Possible	Moderate	Moderate
	Power Disruption	Possible	Major	Moderate
	Pandemic	Possible	Moderate	Moderate
	Domestic Terrorism	Rare	Insignificant	Low
	Cyber Attack	Rare	Insignificant	Low
	Natural Gas Disruption	Rare	Insignificant	Low
Grocery Stores	Domestic Terrorism	Possible	Catastrophic	High
	Power Outage	Likely	Major	High
	Weather Event	Possible	Moderate	Moderate
	Closure - Temporary	Possible	Moderate	Moderate
	Telecommunications Disruption	Unlikely	Moderate	Moderate

Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
	Fire	Unlikely	Moderate	Moderate
	Pandemic	Possible	Moderate	Moderate
	Cyber Attack	Rare	Insignificant	Low
	Natural Gas Disruption	Unlikely	Minor	Low
Municipal Operations	Cyber Attack	Possible	Catastrophic	High
	Domestic Terrorism	Possible	Catastrophic	High
	Power Outage	Likely	Major	High
	Ammonia Leak (Arena)	Unlikely	Moderate	Moderate
	Closure - Temporary	Possible	Minor	Moderate
	Fire	Unlikely	Major	Moderate
	Flooding	Possible	Moderate	Moderate
	Natural Gas Disruption	Possible	Minor	Moderate
	Pandemic	Possible	Major	Moderate
	Wildland Fires	Unlikely	Moderate	Moderate
	Road Closure of Long Duration	Possible	Moderate	Moderate
	Weather Event	Possible	Moderate	Moderate
	Closure - Permanent	Rare	Insignificant	Low
Small Business	Domestic Terrorism	Possible	Catastrophic	High
	Pandemic	Possible	Catastrophic	High
	Closure - Permanent	Possible	Moderate	Moderate
	Closure - Temporary	Possible	Moderate	Moderate

Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
	Cyber Attack	Unlikely	Major	Moderate
	Weather Event	Possible	Minor	Moderate
	Fire	Possible	Major	Moderate
	Natural Gas Disruption	Possible	Minor	Moderate
	Power Outage	Likely	Moderate	Moderate
	Telecommunications Disruption	Unlikely	Minor	Low
Campgrounds/ Seasonal Lodging	Domestic Terrorism	Possible	Catastrophic	High
	Pandemic	Possible	Moderate	Moderate
	Closure - Temporary	Possible	Minor	Moderate
	Weather Event	Likely	Moderate	Moderate
	Fire	Possible	Moderate	Moderate
	Cyber Attack	Rare	Insignificant	Low
	Closure - Permanent	Unlikely	Minor	Low
Financial Institutions	Fire	Unlikely	Moderate	High
	Pandemic	Possible	Catastrophic	High
	Closure - Permanent	Unlikely	Moderate	Moderate
	Closure - Temporary	Possible	Moderate	Moderate
	Cyber Attack	Possible	Moderate	Moderate
	Domestic Terrorism	Possible	Catastrophic	Moderate
	Telecommunications Disruption	Possible	Moderate	Moderate
	Natural Gas Disruption	Possible	Minor	Moderate

Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
	Weather Event	Possible	Moderate	Moderate
Municipality	Pandemic	Possible	Catastrophic	High
	Hazardous Materials Incident	Possible	Moderate	Moderate
	Weather Event	Possible	Moderate	Moderate
	Cyber Attack	Rare	Insignificant	Low
Restaurants/ Fast Food Outlets	Cyber Attack	Possible	Catastrophic	High
	Domestic Terrorism	Possible	Catastrophic	High
	Pandemic	Possible	Catastrophic	High
	Closure - Temporary	Possible	Moderate	Moderate
	Closure - Permanent	Possible	Minor	Moderate
	Weather Event	Possible	Minor	Moderate
	Fire	Possible	Major	Moderate
	Natural Gas Disruption	Possible	Moderate	Moderate
	Power Outage	Likely	Moderate	Moderate
	Telecommunications Disruption	Unlikely	Minor	Low
Educational Facilities	Domestic Terrorism	Possible	Catastrophic	High
	Pandemic	Possible	Catastrophic	High
	Closure - Permanent	Rare	Moderate	Moderate
	Closure - Temporary	Possible	Moderate	Moderate
	Fire	Unlikely	Major	Moderate
	Influenza Outbreak	Possible	Moderate	Moderate

Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
	Natural Gas Disruption	Possible	Moderate	Moderate
	Potable Water Emergency	Unlikely	Moderate	Moderate
	Power Outage	Likely	Moderate	Moderate
	Weather Event	Possible	Moderate	Moderate

APPENDIX J - PROFILE WORKSHEET #9(A) - PAST LOSS AND EVENT HISTORY PROFILE

This section reviews previous response data to identify trends regarding the deaths, injuries, dollar loss, and causes of fire in various occupancy types. This profile assists in determining the leading causes of fires and high-risk locations and occupancies. Without fire loss data, local knowledge may be your community's most reliable predictor of fire risk. Provincial statistics can assist in determining the types of occupancies and locations where fire losses, injuries, and deaths most commonly occur.

TABLE #16 - FIRE BY PROPERTY CATEGORY

		2019	2020	2021	2022	2023*
Total	**Loss Fires** **Est $ Loss**	**23** **2,065,800**	**12** **1,076,500**	**13** **1,007,000**	**12** **1,415,000**	**13** **17,897,000**
Structure with Loss	Loss Fires Est $ Loss	12 1,985,600	8 1,030,500	8 917,000	6 1,365,000	3 17,505,000
Outdoor	Loss Fires Est $ Loss	0 0	1 1,000	2 55,000	2 6,500	0 0
Vehicle	Loss Fires Est $ Loss	11 80,200	3 45,000	3 35,000	4 48,000	7 377,000
No Loss **Outdoor Fires Excluded**	Loss Fires Est $ Loss	0 0	0 0	0 0	0 0	0 0
Total Injuries		**0**	**1**	**0**	**0**	**0**
Total Deaths		**0**	**0**	**0**	**1**	**0**
Total No Loss Fires		**4**	**9**	**7**	**4**	**2**

Note: *During the height of the pandemic in 2020 and 2022, all fire services experienced fewer calls as more people worked from home and health contact restrictions were enforced, especially during medical calls.*

****Note:*** *The 2023 data has yet to be verified by the OFM.*

TABLE #17 - STRUCTURE FIRES BY PROPERTY CLASSIFICATION

		Year 2021					Year 2022					Year 2023*				
		Number of Fires	Dollar Loss	Number of Injuries	Number of Deaths	Causes	Number of Fires	Dollar Loss	Number of Injuries	Number of Deaths	Causes	Number of Fires	Dollar Loss	Number of Injuries	Number of Deaths	Causes
GROUP A	Assembly	0	$0	0	0	n/a	0	$0	0	0	n/a	0	$0	0	0	n/a
GROUP B	Detention & Treatment Centres	0	$0	0	0	n/a	0	$0	0	0	n/a	0	$0	0	0	n/a
GROUP C	Residential	5	$341,000	0	0	See Below	5	$1,265,000	0	0	See Below	1	$500,000	0	0	See Below
	Mobile Homes & Trailers	0	$0	0	0	n/a	0	$0	0	0	n/a	0	$0	0	0	n/a
GROUP D	Business & Personal Services	0	$0	0	0	n/a	0	$0	0	0	n/a	0	$0	0	0	n/a
GROUP E	Mercantile	0	$0	0	0	n/a	0	$0	0	0	n/a	0	$0	0	0	n/a
GROUP F	Industrial	2	$101,000	0	0	See Below	0	$0	0	0	n/a	0	$0	0	0	n/a
Other - Structures & Properties not Classified by OBC		0	$0	0	0	n/a	0	$0	0	0	n/a	0	$0	0	0	n/a
Properties Classified Under National Farm Building Code		1	$475,000	0	0	See Below	1	$100,000	0	0	See Below	2	$17,005,000	0	0	See Below
TOTALS		8	$917,000	0	0	0	6	$1,365,000	0	0	0	3	$17,505,000	0	0	0

TABLE #18 - SUMMARY OF TOTAL EMERGENCY CALLS (FIRES AND NON-FIRE CALLS)

Municipality of Huron East

	Total	Loss Fire Structure	Loss Fire Other	Loss Fire Vehicle	No Loss Fire	No Loss Fire – Excluded	Non-Fire Call
2018	159	7	3	7	6	8	128
2019	137	12	0	11	3	1	110
2020*	113	8	1	3	5	4	92
2021*	133	8	2	3	1	6	113
2022*	91	6	2	4	1	3	75
2023**	171	3	3	7	2	20	136

Province of Ontario

	Total	Loss Fire Structure	Loss Fire Other	Loss Fire Vehicle	No Loss Fire	No Loss Fire – Excluded	Non-Fire Call
2018	546,337	7,012	806	3,249	2,097	7,414	525,759
2019	536,860	6,715	694	3,263	1,886	5,763	518,539
2020	450,018	6,842	837	2,921	1,954	8,248	429,216
2021	492,638	7,081	857	2,770	1,866	9,271	470,793
2022	579,343	7,482	1,010	3,106	1,943	10.064	555,738

***Note:** Responses were lower during COVID-19 as more people worked from home, and there was less road traffic.*

****Note:** The 2023 is not yet available as it needs to be verified by the OFM.*

TABLE #19 - OVERVIEW OF PROPERTY CLASS, INJURIES, CAUSE, IGNITION SOURCE

				2019	2020	2021	2022	2023
Structure	Total		Loss Fires	12	8	8	6	3
			Injuries	0	1	0	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	1,985,600	1,030,500	917,000	1,365,000	17,505,000
			No Loss Fires	3	1	0	0	2
	Intentional	Total	Loss Fires	0	0	1	1	1
			Est $ Loss	0	0	5,000	60,000	500,000
		Arson	Loss Fires	0	0	1	1	1
			Est $ Loss	0	0	5,000	60,000	500,000
		Vandalism	Loss Fires	0	0	0	0	0
			Est $ Loss	0	0	0	0	0
	Unintentional	Total	Loss Fires	8	8	6	5	2
			Est $ Loss	1,760,600	1,030,500	907,000	655,000	17,005,000
		Design / Construction / Maintenance Deficiency	Loss Fires	1	0	0	1	0
			Est $ Loss	150,000	0	0	650,000	0
		Mechanical / Electrical Failure	Loss Fires	3	4	2	0	1
			Est $ Loss	1,300,000	510,000	476,000	0	17,000,000
		Misuse of Ignition Source / Material First Ignited	Loss Fires	3	3	3	1	0
			Est $ Loss	310,000	370,500	331,000	5,000	0

				2019	2020	2021	2022	2023
		Other Unintentional	Loss Fires Est $ Loss	1 600	1 150,000	0 0	0 0	0 0
		Undetermined	Loss Fires Est $ Loss	0 0	0 0	1 100,000	3 650,000	1 5,000
	Other	Total	Loss Fires Est $ Loss	**1** **5,000**	**0** **0**	**1** **5,000**	**0** **0**	**0** **0**
		Other	Loss Fires Est $ Loss	1 5,000	0 0	1 5,000	0 0	0 0
	Undetermined	Total	Loss Fires Est $ Loss	**3** **220,000**	**0** **0**	**0** **0**	**3** **650,000**	**0** **0**
		Undetermined	Loss Fires Est $ Loss	3 220,000	0 0	0 0	3 650,000	0 0

TABLE #20 - STRUCTURE FIRE CAUSES VS. THE PROVINCE IN 2022*

	Municipality of Huron East		Ontario	
Fire Causes	Number of Fires	Percentage of Total Fires	Number of Fires	Percentage of Total Fires
Arson	1	17%	498	7%
Intentional Other	0	0%	2	0%
Vandalism	0	0%	121	2%
Children Playing	0	0%	33	0%
Design / Construction / Maintenance Deficiency	1	17%	416	6%
Mechanical / Electrical Failure	0	0%	1,100	15%
Misuse of Ignition Source / Material First Ignited	1	17%	1,889	25%
Other Unintentional	0	0%	567	8%
Unintentional Undetermined	0	0%	710	9%
Vehicle Collision	0	0%	8	0%
Other	0	0%	414	6%
Undetermined	3	50%	1715	23%
Unknown, not reported	0	0%	9	0%

Note: The percentage figures indicated in TABLE #18 were obtained from OFM and did not include no-loss or vehicle fires.

**Note: The 2023 Provincial data will not be available until Q-4 of 2024.*

TABLE #21 - FIRES BY IGNITION SOURCE

			2019	2020	2021	2022	2023
Structure	Total	Loss Fires Injuries Fatalities Est $ Loss No Loss Fires	12 0 0 1,985,600 3	8 1 0 1,030,500 1	8 0 0 917,000 0	6 0 1 1,365,000 0	3 0 0 17,505,000 2
	Appliances	Loss Fires Est $ Loss	0 0	0 0	0 0	1 400,000	0 0
	Cooking Equipment	Loss Fires Est $ Loss	2 200,600	0 0	1 300,000	1 5,000	0 0
	Electrical Distribution Equipment	Loss Fires Est $ Loss	2 550,000	3 500,000	0 0	0 0	0 0
	Heating Equipment, Chimney, etc.	Loss Fires Est $ Loss	3 130,000	1 10,000	3 131,000	1 650,000	1 5,000
	Open Flame tools, smoker's articles	Loss Fires Est $ Loss	0 0	2 20,500	2 6,000	1 60,000	0 0
	Other Electrical and Mechanical	Loss Fires Est $ Loss	1 750,000	1 350,000	1 475,000	0 0	1 17,000,000
	Miscellaneous	Loss Fires Est $ Loss	0 0	1 150,000	1 5,000	0 0	0 0
	Exposure	Loss Fires Est $ Loss	1 5,000	0 0	0 0	0 0	0 0
	Undetermined	Loss Fires Est $ Loss	3 350,000	0 0	0 0	2 250,000	1 500,000

TABLE #22 - STRUCTURE FIRE IGNITION SOURCE VS. THE PROVINCE IN 2022

	Municipality of Huron East		Ontario	
Ignition Source	Number of Fires	Percentage of Total Fires	Number of Fires	Percentage of Total Fires
Appliances	1	17%	306	4%
Cooking Equipment	1	17%	1,019	14%
Electrical Distribution Equipment	0	0%	604	8%
Heating Equipment, Chimney, etc.	1	17%	518	7%
Lighting Equipment	0	0%	179	2%
Open Flame tools, smoker's articles	1	17%	1,037	14%
Other electrical/mechanical	0	0%	393	5%
Processing Equipment	0	0%	78	1%
Miscellaneous	0	0%	701	9%
Exposure	0	0%	391	5%
Undetermined	2	33%	2,256	30%
Unknown, not reported	0	0%	0	0%

Note: The provincial totals may have inaccuracies due to improperly coded fire reports sent to the OFM.

TABLE #23 - NON-FIRE EMERGENCY CALLS

Non-Fire Emergency Calls*	2020		2021		2022		2023	
	Total # of Calls	% of All Calls	Total # of Calls	% of All Calls	Total # of Calls	% of All Calls	Total # of Calls	% of All Calls
Outdoor Burning – Controlled	6	5%	7	5%	3	3%	1	1%
CO False Alarms	3	3%	4	3%	2	2%	8	4%
False Fire Calls	12	11%	21	16%	15	16%	31	18%
Medical/Resuscitator Calls	21	19%	25	19%	16	18%	41	23%
Other Response	15	13%	20	15%	12	13%	25	14%
Overpressure Rupture/Explosion	0	0%	0	0%	3	3%	0	0%
Pre-Fire Conditions	4	4%	2	2%	5	5%	2	1%
Public Hazard	8	7%	7	5%	8	9%	8	4%
Rescue	23	20%	27	20%	11	12%	20	1%
Total of All Calls in Huron East	**113**		**133**		**91**		**171**	

**Note:* *Not all call types are listed*

APPENDIX K - PROFILE WORKSHEET #9(B) - PAST LOSS AND EVENT HISTORY PROFILE

Past Loss and Event History Profile Risks

This section lists the causes for each occupancy type identified on the previous worksheet and assigns probability, consequence, and risk levels to each cause.

The following table identifies the level of risk for fires that occurred in each occupancy classification and frequent non-fire calls.

Based on 2018 to 2023 OFM data, the following were the causes of fires in those years:

- Arson
- Design/ Construction/ Maintenance Deficiency
- Mechanical/ Electrical Failure
- Misuse of ignition source/ materials first ignited.
- Other Unintentional
- Unintentional Undetermined
- Other
- Undetermined

TABLE #24 - LEVEL OF RISK BASED ON PREVIOUS HISTORY OF FIRES

Occupancy Type/Location	Causes	Probability	Consequences	Assigned Risk Level
Group C – Residential – *Between 2018 and 2023, there were 25 residential fires.*	See Above	Almost Certain	Major	High
Classified under the National Farm Building Code – *HEFD attended 12 loss fires between 2018 and 2023 in this Occupancy Classification.*	See Above	Possible	Major	Moderate

Occupancy Type/Location	Causes	Probability	Consequences	Assigned Risk Level
Structures /Properties not classified by the OBC. – *HEFD attended six loss fires in this Occupancy Classification between 2018 and 2023.*	See Previous Page	Possible	Moderate	Moderate
Group D – Business and Personal Services — *HEFD had one documented loss fire in this Occupancy Classification Between 2018 and 2023.*	See Previous Page	Unlikely	Insignificant	Low
Group F – Industrial – *Between 2018 and 2023, HEFD attended three loss fires at Industrial Occupancies.*	See Previous Page	Rare	Moderate	Low
Group A – Assembly – *HEFD had zero loss fires in this Occupancy Classification Between 2018 and 2023.*	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Group B – Care and Detention – *HEFD had no documented loss fires in this Occupancy Classification Between 2017 and 2023.*	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Group E – Mercantile – *HEFD has had no documented loss fires in this Occupancy Classification Between 2018 and 2023.*	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Other Non-Fire Responses				
Utility Wires Down/Loss of Power When vehicles strike a power utility pole, residents also lose power due to weather events or MVCs.		Almost Certain	Moderate	High
Motor Vehicle Collisions The increased number in the summer during the heightened tourist season Severe weather events in the winter are factors that cause more MVCs.		Almost Certain	Moderate	High

Occupancy Type/Location	Causes	Probability	Consequences	Assigned Risk Level
Wildland-Urban Interface Fires	Causes range from lightning strikes to campfires inappropriately extinguished to careless smoking and unattended open-air burning.	Likely	Moderate	Moderate
Medical Calls	Approximately 23% of HEFD's call volume in 2023 was medical-related.	Almost Certain	Minor	Moderate
Flooding	Flooding may occur due to extreme rain events and during the spring thaw.	Unlikely	Minor	Low
HAZMAT Incidents	HAZMAT incidents are at static locations and/or during transit.	Rare	Minor	Low
Technical Rescues	Technical rescues include low and high angles, confined spaces, trenches, and elevators.	Rare	Minor	Low

APPENDIX L - PROFILE WORKSHEET #9(C) - PAST HISTORY PROFILE PROPERTY CONSERVATION

Past Loss and Event History Profile Risks

Structure fire dollar loss is an area that fire services review as part of the incident response data. This cost is the best estimate to repair or rebuild a structure damaged by a fire based on current forecasts of construction materials, labour, and contents (e.g., furniture, appliances, fixtures, etc.). When calculating the fire loss, some departments do not remember to include the building's contents.

Fire services review this data when they disseminate the last year's activities at the beginning of each year. The focus has been on the dollars lost and what the department could implement to help reduce this statistic. Some may include operational matters, staffing, and resource deployment/ acquisition changes. The dollar loss projects a negative overtone when reporting it to the media or council.

Property and lives saved are statistics that have not usually been part of fire reports. The best description is the property that does not need to be repaired or replaced. Statistics often forgotten during the completion of incident reports are the lives that did not require rescue or were uninjured. The property and lives saved are successes in fire operations and are missing in the current reporting methodology. For example, a fire service may have a downtown fire that caused $4 million in damage, but they may have saved $8 million from being damaged or destroyed. Statistics such as these should be endorsed and commemorated despite the dollar loss factor.

Not all structure fires will have a savings component. Year-end reports to the municipality's council should include the dollar amounts and lives saved from a fire. This data would illustrate efficiency in fire department operations at structure fires; firefighters should know these statistics. When shared with the firefighters, such data could serve to recognize excellent performance levels in the evaluation process of their duties.

The following worksheet is available to document property and lives saved data. During the year, the department, post structure fire, would record this information to be collated at year's end and inserted within the worksheet.

When calculating the value of the property saved, the following formula may be of assistance.

TABLE #25 - TOTAL OF PROPERTY SAVED

Note: If a fire were to occur in a townhouse complex or a row of commercial operations in a plaza or downtown core, the value saved is related to only that specific unit where the fire occurred, based on individual unit owners. If the fire spreads to other businesses in the complex, include these when calculating property values saved.

If the fire did not reach a specific unit but sustained damage from smoke or water contamination, factor the value into the total value saved equation.

	Year and Value of Property Saved				
Occupancy Classification	2024	2025	2026	2027	2028
Group A – Assembly					
Group B – Detention/Care and Treatment/Care					
Group C – Residential					
Group D – Business and Personal Service					
Group E – Mercantile					
Group F – Industrial					
Structures/ Properties not classified by the O.B.C.					
Classified under the National Farm Building Code					
Total Value of Property Saved					
Number of Lives Saved					